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An Automated Accounts Receivable and Interdepartmental
Billing System for University Center Administration U of M

by

Samir Mahmoud Soueidan

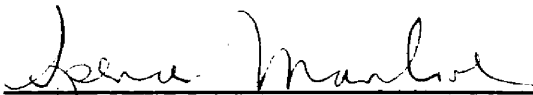
B. S., University of Montana, 1984

Presented in partial fulfillment for the degree of
Master of Science

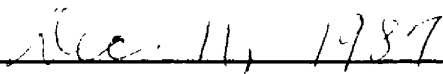
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Abstract

Soueidan, Samir M., M.S. November 1987

Computer Science

An Automated Accounts Receivable and Interdepartmental Billing;
System for the University Center Administration, U of M

Director: Professor Spencer Manlove

SM

An Automated Accounts Receivable and Interdepartmental Billing System(UCARIBS) has been developed to assist the UC Administration in producing accounts receivable and interdepartmental invoices for their clients. Also, this system will enable the Controller's Office to use the bottom portion of these invoices (Appendix A. figures 4.1 and 4.2) as data entry for their accounting purposes.

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The UC Administration Existing System

The University Center (UC) Administration produces all the accounts receivable and interdepartmental invoices for the various operations in the University Center at U of M. See the context diagram for the existing system (Appendix A. figure 1.0). These operations include the Scheduling office for space rental, the University Center Food Service catering and contract meals, Graphics, UC Administration rentals and copier billing, Commissary Vehicle usage and overhead charges, and some advertising for ASUM Programming.

Presently, all invoices are typed from the various worksheets used by each department. The invoicing process for all of the above operations is done manually. See the level-0 diagram for the existing system (Appendix A. figure 2.0).

UC ADMINISTRATION INTERDEPARTMENTAL/ACCOUNTS RECEIVABLE PROCEDURE

SOURCE DOCUMENTS

The UC Administration produces all the accounts receivable invoices and Interdepartmental invoices for the various operations in the University Center (UC). These operations include the Scheduling Office for space rental, University Center Food Service (UCFS) Catering and Contract meals, Graphics, UC Administration rentals and copier billing, Commissary Vehicle usage and overhead charges, and some advertising for ASUM programming.

Source documents from all of the above departments are used for the interdepartmental and receivable invoice preparations. Examples of these documents, specifically the UCFS Catering, UCFS, and scheduling office, are exhibited in Appendix A., figures 3.0, 3.1, and 3.2, respectively. An example of an interdepartmental and receivable invoice is shown in Appendix A (figures 4.0 and 4.2).

An Accounts Receivable invoice is used when a client/customer does not have a U of M account to charge the event to. These clients are usually off campus. They make payments by cash or check.

Interdepartmental invoices are used when a department on campus is charging and no cash or check is exchanged. This invoice is sent to the Controller's Office. Then the Controller's Office will make a transfer of charges from the buyers/department accounts to the UC Administration accounts. The charges transfers are made through the State Budgetary Accounting System (SBAS). SBAS is located in Helena and is used by the U of M Controller's Office for accounting purposes.

INTERDEPARTMENTAL AND RECEIVABLE INVOICE FIELDS

The fields in each invoice are defined as follows:

Event: the name or the title of the activity

Responsibility Center: the name of the department that is responsible for charge

Invoice Date: the date when the invoices are created

Document Number: an invoice number, assigned by UC

Administration in a continuous series for record keeping

purposes Example: 831xxxxx - 832xxx.... The two digit prefix for interdepartmental invoice; 8391xxx - 8392xxx...

The three digit prefix for the receivable invoice

Responsibility Center Number (Resp.ctr.No./RC#): a four digit number, assigned by the Controller's Office for each department on the U of M campus, for accounting purposes.

Event Date: the occurrence date of the event.

Description: the description of each transaction in the invoice, listed according to the typist's judgment.

Subtotal: the cost amount for each transaction.

Grand Totals: the total amount of the invoice.

Description(column 12-31): the description of who purchased the service, what was purchased, and when.

Object code(Obj. Code): a four digit number assigned to various expense and revenue accounts. Each number represents a different kind of expense or revenue.

Absolute Totals(column 57-64): the total of the expend/income amount column. The absolute totals are used only in interdepartmental invoice as a check for the data entry person in the Controller's Office

The following fields are only used by recivable invoices:

Bill To: the name of the person to be billed

Billing Address: the address of the person to be billed.

DIFFERENCES BETWEEN INTERDEPARTMENTAL AND RECEIVABLE INVOICES

The bottom portion of the receivable invoice is different from the bottom portion of the interdepartmental invoice (Appendix A. Figures 4.1 and 4.2). The accounts receivable invoice shows only the RC#'s and Obj code numbers of the seller, while the interdepartmental bottom portion shows the RC#'s and Obj code numbers of both the seller and the buyer.

INTERDEPARTMENTAL INVOICE PREPARATION

An invoice may be made up from one source document or up to ten source documents.

The total amount of the invoice is calculated manually and put in the Grand Total column.

After the total amount of the invoice is put in the grand total column, a separate calculation must be made to determine what amounts should be charged to various responsibility center (RC) numbers (figure 4.1). For example, since room rent is separate from catering charges, all catering charges are totaled and put on the 1840-0489 line. Then, all room rent charges are totaled and put on the 1844-0606 line. If any different charges are made, they are totaled and put on the blank line with the correct RC#.

After the invoice has been prepared, copies are distributed to the appropriate departments.

The Controller's Office gets the white copy of the invoice, the yellow copy goes to the buyer department, the UC Administration keeps

the blue copy, and the pink copy goes to back to the originator.

When an interdepartmental invoice is sent to the Controller's Office, it is usually entered into the State Budgetary Accounting System (SBAS) and processed immediately. Monthly, the SBAS report which the Controller's Office send to the UC Administration (Appendix A. figure 5.0) will indicate that the transaction went through the system. At this point, the UC checks-off the transaction and indicates that the invoice is processed correctly. The check-off procedure is as follows: The UC Administrative Aide or the manager will pull the monthly SBAS report for the current month. They then look for the object (Obj) code that corresponds to the object code on invoice. They match up the amount and the invoice (document) number with the SBAS report. They check the amount off of the SBAS report and they mark paid on the invoice and stamp the invoice with the month and year shown on the SBAS report where the transaction is found. This procedure is repeated until every transaction on the invoice is marked paid. Then they proceed to the next invoice. If an error is noticed during the check-off procedure such as: key punch errors, incorrect amount for an object code entered, or charge to incorrect object code or RC#, a distribution voucher is written to initiate a change for the Controller's office. These changes, such as increase or decrease revenue or expense, transfer from one object code to the correct object code or RC#.

RECEIVABLE INVOICES

Accounts Receivable invoices are produced in somewhat the same manner as the interdepartmental invoices.

After the receivable invoice is created, copies are distributed as follows:

The white copy goes to the buyer, the yellow copy is kept in the Accounts Receivable outstanding file in the UC, the blue copy is kept in a separate accounts receivable file in the UC Administration and the pink copy is sent back to the originator.

RECEIVABLE PAYMENTS

When a payment is received, by the UC Administration, the yellow copy of the invoice is pulled. The yellow copy is used to produce a receipt card (Appendix A figure 5.1) to give to the Controller's office with the payment. The receipt card and the yellow copy are marked paid. The yellow copy is then attached to the blue copy in the book for paid Accounts Receivables that actually paid but they did not enter into SBAS yet. When monthly SBAS reports come out, the invoice is checked to make sure it was entered correctly. If an error is found, a journal voucher will initiate a change to the Controller's Office. The checking procedure and error types are exactly as the ones for the interdepartmental invoices.

If a partial payment is made, a decision must be made on how to apply the payment to each RC#. The cashier makes this decision and marks it on the yellow copy (Appendix A figure 5.2). The yellow copy

remains in the unpaid accounts receivable. It is checked periodically to see if the partial payment was processed correctly in SBAS.

Buyers are to detach and return the bottom portion of the invoice (Appendix A. figure 4.2) with their payment. This makes it easier for UC Administration to match up the payment with the invoice. When this is not done, it is difficult for them to find the invoice because all invoices are placed in books by invoice number.

REPORTS

The only report that is produced with the manual system is the Accounts Receivable debt list. This list is generated at the end of the fiscal year. It is a list of all outstanding accounts receivables as of June 30 (Appendix A figure 6.0).

CUFS

A new software package called CUFS (College and University Financial System) was recently purchased by University of Montana Controller's Office to replace the old system, SBAS (State Budgetary Accounting System).

The new CUFS system has made it necessary to change the interdepartmental invoices slightly. The same description field is used for both the seller and the buyer in the SBAS reports, instead of separate descriptions for the buyer and seller. CUFS allows only one seller and multiple buyers on an interdepartmental invoice. SBAS allows multiple sellers and one buyer. See Appendix A (figure 7.0).

The accounts receivable system will remain the same. The Controller's Office found it inconvenient to purchase a software package for the receivable accounts, since the UC Administration is virtually the only department doing off-campus charges.

The Proposed System

SYSTEM OBJECTIVES

The UC Administration wishes to computerize its accounts receivable and interdepartmental billing system to aid them in the following ways:

- a). The proposed system will be used to keep track of accounts receivable and interdepartmental invoices. Also, this system will save time and effort in record keeping.
- b). The information which will be produced by the proposed system will serve as input data to the new CUFS accounting system.
- c). Accounts receivable statements will be produced for clients whose invoices are 30 days or more past due. These statements will be produced at the end of every month. For an example of the statement see Appendix A (figure 8.0).
- d). Monthly reports will be generated to determine what invoices have not been paid and what the amounts are for each responsibility center and object code. This report will be sorted by responsibility and object code numbers and will alphabetize clients within object codes. For an example of this report see the "OUTSTANDING" in Appendix A (figure 8.1).
- e). The system will produce income reports for the receivable and interdepartmental accounts to supply other departments with information about their income status. These reports will be sorted by the responsibility and object code numbers. Also, these reports will be produced on a weekly, monthly, and yearly

basis. For an example of the income reports see Appendix A (figure 8.2).

- f). A monthly past due accounts receivable report to indicate invoices that are 30, 60, 90, and 180 days or older will be produced. This report will be sorted by date and subtotaled by invoice number. It will also be produced on monthly basis. For an example of this report see Appendix A (figure 8.3).
- g). The user will be able to query a data base by invoice number, event date, or by client name.

SYSTEM DEVELOPMENT METHODOLOGY

The proposed system (UCARIBS) will be developed through the following software life-cycle:

1. Requirement Analysis and Specification:

the methodology of Structure System Analysis for the Requirements and Specification will be expressed with the technique developed by Tom DeMarco, using Data Flow Diagrams [1]. This technique has three elements used to describe the system to be developed. These are as follows:

1. Data Flow Diagrams are used to describe how input data is transformed to output throughout the entire system
2. A Data Dictionary is used to describe each data flow and its primitive components, the Data Element, and the system files. These system files will be built in a database called UCARIBS database using the "Third Normal Set" [1] in order to achieve

a maximum efficiency in accessing the data and to minimize the amount of disk storage

3. Process Descriptions (Mini-spec) are structured English descriptions of the low-level processes (bubbles) in the Data Flow Diagrams. These process description describe the procedures.

2. DESIGN and IMPLEMENTATION:

The design phase will be done using the structured design technique described by Yourdon and Constantine [2]. This technique is used to transfer the Data Flow Diagrams into Structure Charts. After the design is complete, the system will be implemented on a Wang microcomputer with 512K RAM and a 30 megabyte hard disk using dBaseIII language.

The design goal of the proposed system are:

User-friendly, menu-driven and easy to maintain. The people who will operate the system are the Administrative Aide and the business manager of the UC Administration. The Administrative Aide has a basic knowledge of computers and is familiar with data entry types. The Business manager has some knowledge of computers and has programed in different languages. This knowledge will help later in maintaining the new system.

The Requirements and Specification of the Proposed System

After analyzing the overall UC Administration needs, it was found that a system consisting of two subsystems was required. There will be one system for the interdepartmental accounts and a second for the receivable accounts. These two subsystems are shown in the level-0 Data Flow Diagram of the proposed system. See Appendix A (figure 9.1). This diagram shows the major components of the proposed system.

The Requirements and Specifications for UCARIBS System were developed through the following steps:

Step 1: After studying the current system, it was found that the UC Administration handles all data coming from different departments as mentioned above. These data are used to produce the bills and invoices for both the interdepartmental accounts and receivable accounts. This can be seen in the context diagram of the proposed system. See Appendix A (figure 9.0). This diagram portrays the general picture of the proposed system's net inputs and outputs. "The Context Diagram documents the domain of the study by showing the set of Data Flows that cross into and out of the domain" pp. 76 [1].

Step 2: This step involved collecting all the information about the inputs and the outputs of the manual system. This information was organized and refined to get the final inputs and outputs to the proposed system. See Appendix B. This step was

completed with the help of the people working in UC Administration and in Auxiliary Services, who are responsible for CUFS University Accounting Services. The involvement of the user was critical in completing the specification of the proposed system.

Step 3: the Structured System Specification began with breaking down the context diagram into a network of components, or the top-level (level-0) Data Flow Diagrams which show the major function of the entire UCARIBS system (Appendix A, figure 9.1). Each function or component is represented by a bubble or process. These functions are as follows:

- 1.0 Interdept_Maintenance
- 2.0 Receivable_Maintenance
- 3.0 Print_Invoice(s)
- 4.0 Generate_Reports
- 5.0 Payment
- 6.0 File_Maintenance

Each major function of the system is described briefly below. Each function will be delineated and expounded upon later in the requirement document. See Appendix B.

1.0 Interdept__Maintenance is the main function for the entire interdepartmental subsystem. It accepts all the necessary information or data (Interdept__Master__Info) (see Appendix B) to perform the following subfunctions:

- 1. Add new interdepartmental invoices to the database

2. Modify an existing invoice or deleting or adding new transactions
3. Inquire about an existing invoice using invoice number, event date, or the first three letters of the sponsor's (Buyer's) name

2.0 Receivable_Maintenance is the main function for the Receivable subsystem. It accepts all the necessary information or data (Receivable_Master_Info) (see Appendix B) to perform the following subfunctions:

1. Add a new receivable invoice to the database
2. Modify an existing invoice or delete or add new transactions
3. Inquire about an existing invoice using invoice number, event date, or the first three letters of the sponsor's (Buyer's) name

3.0 Print_Invoices: This is the process which is responsible for printing a final interdepartmental or receivable invoice when entering each one. It also prints individual invoices by entering the invoice number to be printed. It can also print out the invoices as a group.

4.0 Generate_Reports: This process accepts the choice (Report_Request) (see Appendix A figure 2.0) from the user and depending upon the type of the request, produces a hard copy of the report.

5.0 Payment: This process accepts the necessary information to

process payments (Partial/Full) from the user. After that, it checks for the validity of the information, records payments, and updates the database.

6.0 File_Maintenance: This process is used to maintain the interdepartmental and receivable database for the entire UCARIBS system. It is used to purge the entire database at the end of each fiscal year, to backup the entire database when adding or modifying invoices, and to reindex the database system when an index file is damaged.

The above six elements, themselves, were broken down by function until they could not be decomposed any further. This breakdown was redone several times to check for the correctness of the incoming and outgoing data, which flows through the bubbles. This step was necessary to accomplish a correct specification. The complexity of the system required this kind of technique to ensure the system was correctly described and none of the data were missed or forgotten.

Once the top-level DFD was constructed, the leveling process began. This step involved the breakdown of each "bubble" in the top-level data flow diagram. This leveling process was done to make the complex system more understandable and manageable. Each process in the top level diagram represents a large amount of transformation effort, changing the data inflows to data outflows.

The numbering convention and labeling of the diagram's process "bubbles" was done as follows: Each process was named with the

description of what occurs in that process, just as in the top-level diagram. Also the processes, or bubbles, were numbered with 1.x to indicate that they were part of the top level diagram number 1. and so on.

During the construction process of the DFD's, a quick overview for the top-level (Appendix A figure 9.1) was conducted with the user, who had little knowledge of what DFD's meant. This quick overview was done to allow the user to become familiar with the new system. After that, and during the leveling process, many walk-throughs in deep detail were conducted with the user. These walk-throughs were scheduled to make sure that there were no data elements or processes missing or misunderstood and that the entire DFDs for the new system were correct.

Step 4: This step involved the development of the Data Dictionary in Appendix B. The Data Dictionary has a description of all the data flow names and their components, which are the Data Flow Elements. Also, the Data Dictionary contains an other important part which are the files. These files represent the areas where data is temporarily stored and retrieved.

Step 5: The final logical file structure for the UCARIBS system (see Appendix B) was produced by the derivation of a "Third Normal Set". This derivation is described by Tom DeMarco, in his book (pp. 238-258) [1].

Step 6: The final part of the contents of the Data Dictionary is the Mini-spec, or the low-level process bubble names, and their structured English description. See Appendix B.

The Design Structure

After the Requirements Specification for the UCARIBS, was completed the design phase was begun.

The design methodology used in the UCARIBS system is based on the concepts of Structured Design. The Structured Design is a good strategy to use in designing a highly maintainable, reliable, verifiable, and easy-to-test system. The first step in the structured design is developing the Structured Charts. The Structured Charts display graphically, in the form of a tree diagram, the hierarchy of modules. These charts show the main modules and their subsequent and subordinate modules. This tree diagram illustrate how elements of data flow diagrams can be implemented as a hierarchy of modules (pp. 44) [3].

The Structure Charts in this project were derived from the Data Flow Diagrams by using two different methods depending on the nature or the kind of the Data Flow Diagrams. The first of these methods is the Transform Analysis. This technique is applied only in the portion of the UCARIBS Data Flow Diagrams which clearly identify the input streams, the central process, and output streams. This is done by sectioning the Data Flow Diagram into three parts. The first one is the afferent data element (input stream), which is a high-level element of data that is removed from physical input, but still acts as input to the system. The second part is the central transform

(central process), which is the process responsible for accepting the afferent data element as input stream, and then transferring them to output stream. The last part is the efferent data element (output stream), which is a data element that is removed from the physical output, but still acts as output.

After the sectioning process is done, the initial structure chart is directly derived from the Data Flow Diagram by drawing a single box for each input stream, central transform, and output stream, by putting the central transform box at the top of the structure chart. An example of the use of this technique in this project is taken from part of the Data Flow Diagram (Appendix A figure 10.0). This was done as following: The first step was identifying the `interdept_info`, which is the users input data to the system, as an input stream. Second, identifying the bubble 1.1 as the central process where the input data stream is processed. The third, was identifying the `Valid Interdept_Info` as the output data stream. The final structure chart for this example is shown in Appendix A (figure 10.1).

The second technique was the Transaction Analysis. This method was applied in the project where the portion of the system Data Flow Diagrams deal with transactions, such as entering an element, a flag, or decision which triggers an action or sequence of actions (pp. 224 [2]). An example of this is shown in the Data Flow Diagram (Appendix A figure 10.2) for printing reports.

This is done by identifying the bubble 4.1 (`Reports_Route`). The process inside this bubble is the generation of a particular report.

The structure chart for this is done by drawing a box (or module) which represents that bubble at the top of the structure chart. Both techniques were used to derive the initial structure charts of the UCARIBS system. After deriving the initial structure charts, the refinement and analysis process began, to get the final structure chart (see Appendix A figure 10.3). This process is done by using the concept of the "black box", which is a system or subsystem with known input and output and with unknown knowledge of how that system works.

The other refinement process is to look for the cohesion of a module and the coupling between modules. A module is said to be a highly cohesive if the elements in that module have a high degree of functional relatedness. That means each module should have all the necessary elements to achieve its function. Coupling between modules is the strength of interconnections between these modules. In other words, coupling is the dependency of modules on each other.

To achieve the refinement process, we should look into the following four parts which identify the cohesiveness and coupling between modules:

1. The afferent module, or the program unit, which is responsible for accepting data from a unit at the lower-level in the structure chart and passing it to the higher-level unit.

2. The Transform Flow module which is a program unit that accepts data from the higher-level unit, transforms that data, and sends it back to the same unit.

3. The efferent module, or the output, is a program unit which

accepts data from the higher-level unit and passes it to the lower-level unit.

4. The coordinate module, a unit whose function is to control and manage other units. See Appendix A (figure 10.4).

Deriving the structure charts was completed after many refinements. These refinements were done to make sure that the system is highly cohesive and loosely coupled. The advantage of this process is that any program unit can be replaced by an equivalent unit with little or no changes. An example of highly cohesive and loosely coupled module is the print invoice module (PRNTRCV), which is used in the UCARIBS system in different areas of the project. This module can be changed without affecting the other modules in the system. The only connection between this module and the rest of the system modules, is the invoice number. See Appendix A (figure 10.5).

The second step in the design phase was writing the module descriptions. This step specifies each module in the structure charts. The module description uses a pseudocode, or structured English, to describe the function of each module. This description will be very helpful when modifying parts of the system in the future, as it is easy to read and understand. For an example, see "module description" in Appendix C.

The Implementation of the UCARIBS System

After the design phase has been completed, the decision on what language to use and what hardware to implement the system on is usually made. This was done before starting the project in the case of this system. The decision was to use the data base management system (dBaseIII) as the language for implementation, and to use a Wang microcomputer, owned by UC Administration to save money.

dBaseIII is a relational capability database management system. It has a full relational and programming features for interactive use and programmed applications development. dBaseIII is a suitable implementation medium for implementing a software system using a structured programming language. It is especially useful for business-oriented software systems such as the UCARIBS system because of the following features:

- _ It has the capability of creating, maintaining, and querying data files, by issuing English-like commands.
- It has the sequence structure DO and RETURN
- _ It has selection structures such as:
 - _ IF ... THEN ... ELSE ... ENDIF
 - _ CASE ... ENDCASE
- _ It has the iteration structure DO WHILE ... ENDDO
- _ It allows the declaration of local and global variables using PRIVATE and PUBLIC and passing parameters between procedures and programs.

- _ It has very sophisticated file handling and record locating commands which makes the implementation of a business-oriented software easy and simple.
- _ It has a built-in, full screen editor, which gives the implementor the ability to modify and create programs without leaving the database management system. Also, it has a development tool to debug the programs.

From the above features of the dBaseIII application and its powerful, structured programming language, the implementation of the UCARIBS system is almost a direct translation of the design module description. For an example of that, see the module design description for figure 10.6 and its coding equivalent, figure 10.7 (Appendix A).

TESTING

The testing phase of the system was done during the coding phase. The technique used through the testing phase is called top-down incremental testing. This technique is described by Yourdon and Constantine (pp 381 - 389) [2]. The top-down incremental testing allows the top-level module in the hierarchy to be tested before the lower-level modules.

The advantage of the top-down testing technique is allowing the tester to test one new module at a time. This helps find some of the errors in the early stages of the implementation.

MAINTENANCE

The maintenance phase will be the responsibility of the UC Administration manager, who has good knowledge of the dBaseIII application and its programming environment. Also, the manager is familiar with the entire project and will have access to the requirement specifications, the design document, the source code, and the user's manual.

Conclusion

Structured System Analysis (SSA) is a methodology which is adequate for typical, traditional forms of data processing and well-defined systems using structured programming languages such as COBOL, FORTRAN, C, and databases.

The above methodology was followed in its entirety in the development of the University Center Accounts Receivable and Interdepartmental Billing System (UCARIBS). The requirements and specifications of the system were well-defined and agreed upon with the users. The College and University Financial System (CUFS) is to use the same outputs and forms produced by the manual system which was acting as a data entry to the old State Budgetary Accounting System (SBAS).

The SSA methodology was very helpful during the requirements and specification phase of the project, especially in modifying a process function or adding, changing a field or data element in the requirements (target) documents such as Data Dictionary (DD) and Process Description. It would be even more helpful if there were tools available, such as a Data Dictionary Manager, which would make the above changes easier. The communication with the user was good and very helpful in finishing the requirements and specifications of the project. Also, by involving the user in the walk-through of the DFDs greatly helped in the communication and understanding of the new system. These walk-throughs were helpful in finishing the

requirement phase.

After the Requirements and Specification were done, the design phase began. This phase went smoothly and was completed quickly. After that the implementation phase began. The implementation and coding were easy and smooth in the beginning of this phase. Later, almost at the end of coding and testing process, it was found that some changes should be made because the people who are responsible for maintaining CUFS had changed the data entry forms and fields names. As mentioned before, the UCARIBS system produced both the Interdepartmental and the Receivable invoices (Appendix A figures 7.0 and 7.1). The bottom information on both figures are the input data for the CUFS system. This information was modified many times in the coding stage of the UCARIBS system by the people who are responsible for maintaining CUFS in the Controller's Office. Each time they modified the input data to CUFS, I had to go back and make changes to the UCARIBS system requirements and design documents to make the information fit the exact changes done to CUFS. These changes were different each time, sometimes adding new fields to UCARIBS files and sometimes changing or deleting an entire function or process. These changes occurred many times, finally I decided to go forward in finishing the coding phase and each time after that when new changes occurred I made the change in the codes. When the changes in CUFS data entry were stopped, I made the changes in the requirement and design documents depending on the code. If I had known these changes were to happen many times in the implementation

stage, I would have used the Prototyping technique in developing this project. This technique, which does not need to satisfy all the requirements of the final system, and is easy to modify and refine later to meet the final requirements. More information about this technique can be found in many computer texts.

This project was a good learning experience from the real world.

Appendix A
Example Figures

Context Diagram for Existing System

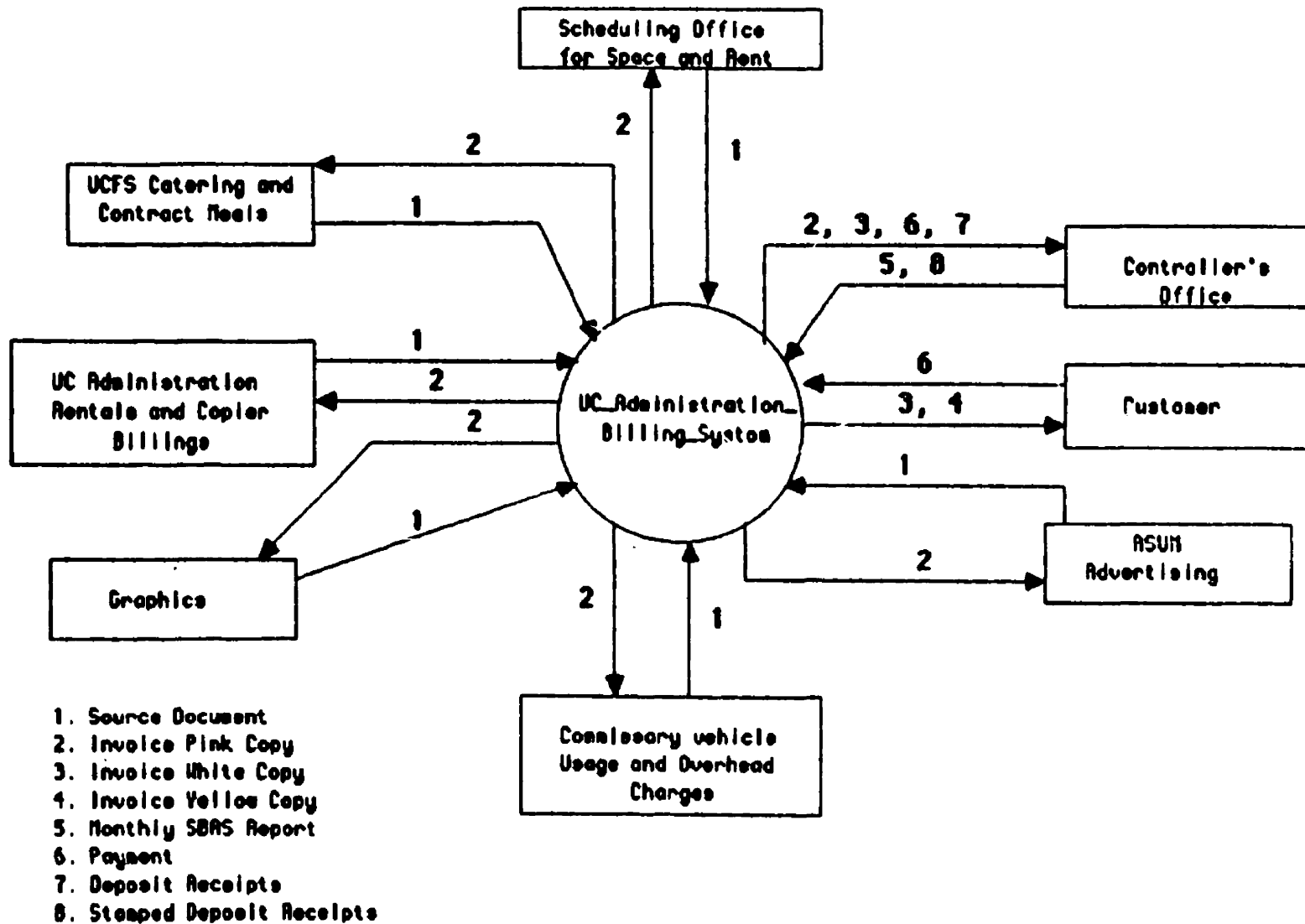


Figure 1.0

Level_0 Diagram for the Existing System

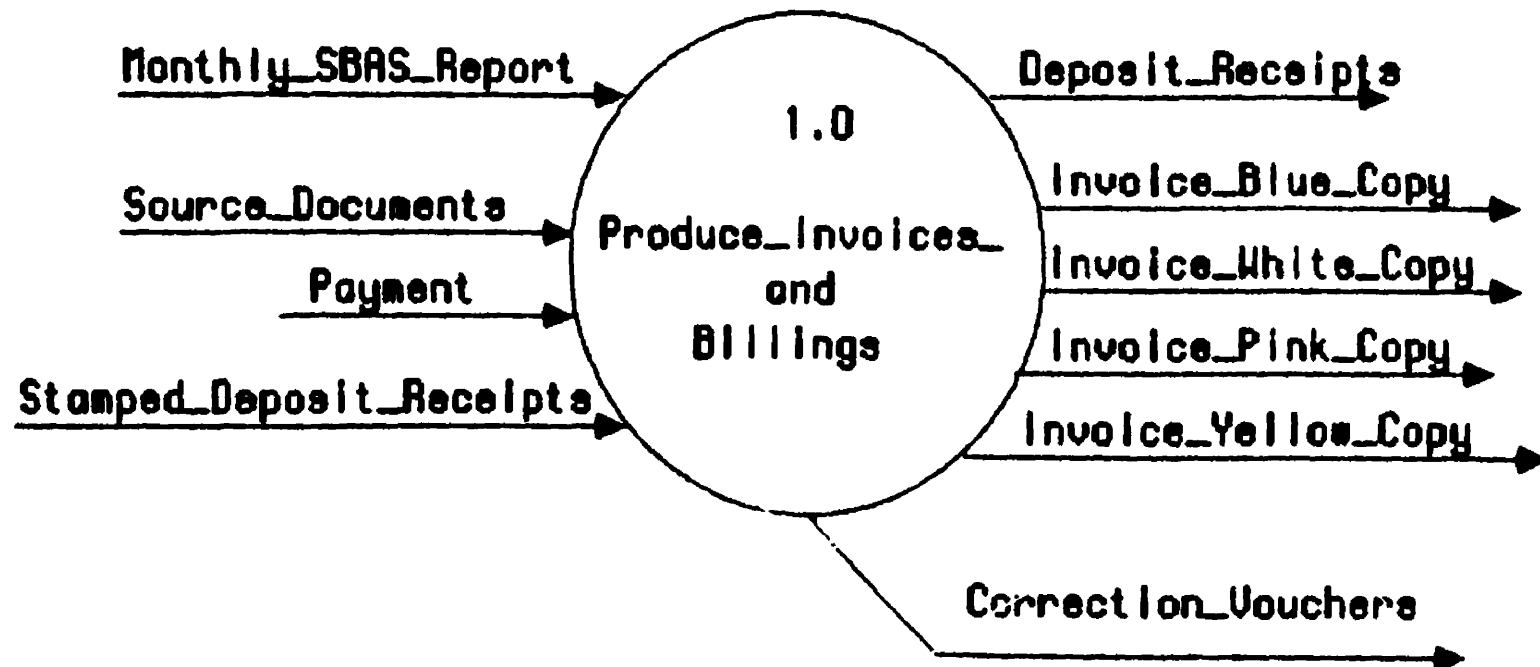


Figure 2.0

INVOICE # _____
DATE _____

Career & Services

TITLE OF EVENT		Noon		1:00 PM	
Tuesday, November 17, 1987					
DAY AND DATE		FROM		TO	
360 A		Don Hjelmsetih			
AREA		REQUESTED BY			
		2022			
		TELEPHONE			
BILL TO		ADDRESS			
5		1271-2824/640		11/10 In	
EST ATTENDANCE		RESP. CENL		OBJECT CODE	
				ORDER BOOKED BY	

MENU ITEM	DESCRIPTION	PRICE: \$ 4.75 /PERSON:
Sandwich		Head Table # _____
Clubhouse - no cheese on whole wheat		Linen Colors _____ Napkins: _____
Tossed green salad		Tablecloths: _____
Hot German potato salad		Guaranteed #: _____
Dessert:		Set for #: _____
Peach Melba		# Served: _____
Beverages		<u>SPECIAL INSTRUCTIONS</u>
		15% tip 6.50
		CREDIT: 1840- 0489

BILLING INFORMATION:

Guests 5 @ 4.75 = \$ 23.75

Delivery Charges \$

Miscellaneous Charges \$

TOTAL CHARGES \$ _____

Distribution:

White - Master File
Blue - Catering Lead
Pink - Catering Board
Gold - Production
Green - Scheduling Office

2975—UM Printing Services

Figure 3.0

UNIVERSITY CENTER

Date: 10/12/87 Area: CC. Init: Smy
 Dept: UC Administration or Maintenance ☐
 Resp. Ctr. #: 1840 Obj. code: 0606

Number	Item	Each	Total
	B.y.O.S	<u>1</u>	<u>2.25</u>
	Coke	<u>1</u>	<u>0.70</u>
	ice cream	<u>1</u>	<u>0.80</u>
	Apple Juice	<u>1</u>	<u>1.25</u>
	CHARGE		
Total:			<u>5.00</u>

Signature: Lamin M. Loueidan

Figure 3.1



**UNIVERSITY CENTER
RESERVATION FORM**
University of Montana, Missoula, Montana 59812

Invoice # _____
Date Billed _____

TITLE OF EVENT: Cub's Corner (Beginning Journalism)
DAY & DATE: Wednesday, April 22, 1987 From 5:30 AM, PM to 7:00 AM, PM
AREA: 360 FG Requested by: Adrienne
EST. ATTENDANCE: 10 AOCT: 1835 TELEPHONE: 2802
Sponsored by: _____ Date Requested: 3/16/87 ch
Bill To: _____ Billing Address: _____

FOOD SERVICES NEEDED: _____ Breakfast _____ Lunch _____ Dinner _____ Served _____
Refreshments: _____ Coffee _____ Tea _____ Punch Times: _____ am
TIP: _____ Cookies _____ Donuts _____ Rolls _____ pm
Food Table _____ Ice Water _____ Juice _____ Pop _____ Linen _____
Colors: _____

FACILITY REQUIREMENTS: Telephone _____ Ext. No. _____ TECHNICAL: _____
Lecture Style _____ Platform _____ Stage size _____ PA _____
w/Head Table X Piano _____ Tuner _____ Film Requirements _____
Lectern _____ Lighting _____
Lecternette _____ Floor mics _____
w/mic _____
Conference Style _____ Sound Shell _____
U-Shaped _____ Bar Stools _____
Wishbone X Parking Permits _____
No Furniture _____ Dressing Rooms _____
Flip Chart _____ Room # _____
Easel(s) _____ Screen _____ Overhead _____ Slide Projector _____
Ice Water _____ Tablecloths _____ Blackboard _____

BILLING INFORMATION:

Food Service: _____
Room Rent: \$20.00
Technical: _____
Other: _____

Figure 3.2

EVENT
Botany
RESPONSIBILITY CENTER
Botany

UNIVERSITY CENTER
University of Montana
**INTERDEPARTMENTAL
CHARGE/INVOICE**

Controller's Office
Missoula, MT 59812

MO. 1-2	DAY 3-4	YR.
9	8	87
Document No. 5-11		
83		

Resp. Ctr. No. 1004

Inquiries concerning invoice may be directed to 243-5082.

☐ Other ☐ Credit

Date	Qty.	Description	Subtotal	Total
April 30, 1987		Coffee, Tea and Cookies Delivery Charge	35.00 10.00	
Grand Total				45.00

Controllers Office Use

Description 12-31	Resp. Ctr. 32-35				Obj. Code 36-39				Order/Ref. No. 40-48	Order Amount 49-56	Expend/Income Amt. 57-64	P/P 71
Botany/cookies	1	8	4	0	0	4	8	9			45.00	
	1	8	4	4	0	6	0	6				
	1	8	3	1	0	4	6	5				
UC Food and Beverage	1	0	0	4							45.00	
UC Facility Use												
UC Graphics Design												
Absolute Totals											90.00	

Business Office Copy
UM Printing Services

Figure 4.0

EVENT
Outdoor Program
RESPONSIBILITY CENTER

UNIVERSITY CENTER
University of Montana
INTERDEPARTMENTAL
CHARGE/INVOICE

Controller's Office
Missoula, MT 59812

MO. 1-2	DAY 3-4	YR.
06	06	86
Document No. 5-11		
83	09861	

Resp. Ctr. No. 1843

Inquiries concerning invoice may be directed to 243-5082.

☐ Other ☐ Credit

Date	Qty.	Description	Subtotal	Total
May 7, 1986		Rivers Week Displays & Programs		
		Room Rent	50.00	
		Technical Services	16.00	
		Big Screen TV & VCR		
May 10, 1986		Food Service		
		1 gallon coffee	5.50	
May 11, 1986		Food Service		
		1 gallon coffee	5.50	
Grand Total				77.00

Controllers Office Use

Description 12-31	Resp. Ctr. 33-36	Obj. Code 38-39	Order/Ref. No. 40-48	Order Amount 49-56	Expend/Income Amt. 57-64	P/P 71
UMP/May 10, 11	1 8 4 0	0 4 8 9			11 00	
UMP/May 7/Rivers	1 8 4 4	0 6 0 6			50 00	
	1 8 3 1	0 4 6 8				
UMP/May 7/Rivers	1 8 3 2	0 4 6 0			16 00	
UC Food and Beverage	1 8 4 3				11 00	
UC Facility Use	1 8 4 3				50 00	
UC Graphics Design						
UC Tech Service	1 8 4 3				16 00	
Absolute Totals					154 00	

Business Office Copy
UM Printing Services

Figure 4.1

Roxy Carper Promotions

Box 21036

Billings, MT 59104

UNIVERSITY CENTER

University of Montana

ACCOUNTS RECEIVABLE/INVOICE

Missoula, MT 59812

Phone 243-5082

MO. 1-2	DAY 3-4	YR.
10	10	85
Document No. 5-11		
83	9	5939

☐ Cash

☐ Other

Save this portion for your records

Date	Qty.	Description	Subtotal	Total
September 11, 1985		Kenneth Cooper Total Fitness Seminar		
		Food Service (Breakfast)	117.00	
		Room Rent		
		Mt. Sentinel Room	100.00	
		commercial fee	100.00	
		Lecture Hall	125.00	
		Monitor Labor	50.00	
		Technical Service		
		mic/lectern	20.00	
		slide projector	12.00	
		cassette tape player	12.00	
		IMS setup for Lecture Hall	65.00	
Grand TOTAL DUE				601.00

Roxy Carper Promotions

PLEASE DETACH AND RETURN WITH YOUR REMITTANCE

83 9 5939

Please pay within 30 days of date of invoice.

Make checks payable to: University of Montana. Mail payment to
University Center, Room 207, University of Montana, Missoula, MT 59812

				Amount
Roxy Carper	1840	0489	Foodservice catering	117.00
Roxy Carper	1844	0606	Facilities usage	375.00
	1831	0465	Graphic design	
Roxy Carper	1832	0460	Technical Service	44.00
Roxy Carper	1844	2148	Event Expense	XXXXX 65.00
Grand Total				601.00

Customer Copy
1738—UM Printing Services



Figure 4.2

REPORT PAGE NO. 16

U M FORM 661

REPORT DATE: 6/01/1987 TIME: 18:25.03

PERCENT ELAPSED TIME: YTD 91.64

ENTITY 34142

UNIVERSITY OF MONTANA
RESPONSIBILITY CENTER FINANCIAL REPORT
FISCAL PERIOD: 7/01/1986 TO 6/30/1987

CENTER 1855 - GOLF COURSE
R CHAPMAN/H JOHNSON
U.C./GOLF COURSE

FOR THE MONTH OF MAY, 1987

PART C - SECTION II - THIS MONTH'S CURRENT YEAR TRANSACTION DETAILS

EXPENSE	OBJECT CODE	FORM CODE	DOCUMENT NUMBER	TRANSACTION DATE	TRANSACTION REFERENCE	BUDGET	REVENUE	EXPENSE
	276		9519249	5/08/1987	SHERMAN MAJESTIC 21796			25.00+
	276		9519249	5/08/1987	SHERMAN MAJESTIC 21622			248.91+
	276		9519250	5/08/1987	CASH DISCOUNT 121258			47.65+
	276		9519250	5/08/1987	EARLS DISTRIBUTING 121258			83.53+
	276		9519250	5/08/1987	EARLS DISTRIBUTING 121245			84.75+
	276		9519252	5/13/1987	ZIP NEWSPAGE 24605			232.56+
	276		9519253	5/14/1987	EARLS DISTRIBUTING 121756			36.96+
	276		9519253	5/14/1987	CASH DISCOUNT 121756			47.60+
	276		9519253	5/14/1987	EARLS DISTRIBUTING 121755			361.09+
					NET TOTAL FOR OBJECT		\$	7,163.75
	231		8709329	5/05/1987	ALL STAR GOLF SHIPPI			4.65+
	231		8709329	5/05/1987	ALL STAR PRO GOLF 10393			193.00+
	231		8709347	5/05/1987	DISC			6.36+
	231		8709347	5/05/1987	SHIPPING			6.96+
	231		8709347	5/05/1987	DUNLOP 10437			159.00+
	231		8709354	5/05/1987	SHIPPING			2.98+
	231		8709352	5/05/1987	RELIABLE OF MILWAUKEE 10436			50.00+
	231		8709386	5/04/1987	SHIPPING			12.44+
	231		8709386	5/04/1987	JONES SPORT CO 10393			189.66+
	231		8709422	5/05/1987	SHIPPING 10442			6.57+
	231		8709423	5/05/1987	DISC 10442			2.89+
	231		8709423	5/05/1987	FOOT JCV 10442			51.00+
	231		8709426	5/05/1987	TAYLOR WADP 10444			359.10+
	231		8709426	5/05/1987	DISCOUNT 10444			7.78+
	231		8709426	5/05/1987	SHIPPING 10444			4.41+
	231		8709439	5/05/1987	SHIPPING			1.63+
	231		8709443	5/05/1987	BROWNING SHIPPING 10466			4.74+
	231		8709443	5/05/1987	SUN DAY SPROTS 10468			3.02+
	231		8709449	5/05/1987	RELIABLE OF MILWAUKEE 10443			171.00+
	231		8709449	5/05/1987	RELIABLE OF MILWAUKEE 10443			2.47+
	231		8709460	5/06/1987	SHIPPING 660470			10.00+
	231		8709460	5/06/1987	SPALDING 660970			42.96+
	231		8709561	5/08/1987	SPALDING 10469			647.43+
	231		8709561	5/08/1987	DISC 10469			374.00+
	231		8709561	5/08/1987	SHIPPING 10469			3.74+
	231		8709990	5/22/1987	MACGREGOR DISC			4.78+
	231		8709990	5/22/1987	MACGREGOR SHIPPING			13.12+
	231		8709990	5/22/1987	MACGREGOR			17.77+
	231		8709991	5/22/1987	DISC 10478			328.00+
	231		8709991	5/22/1987	SHIPPING			2.47+
	231		8709991	5/22/1987	DUNLOP 10476			3.48+
	231		8710067	5/26/1987	DISC			70.50+
								1.44+

Figure 5.0

UNIVERSITY CENTER

University of Montana

ACCOUNTS RECEIVABLE/INVOICE

Missoula, MT 59812

Phone 243-5082

MO. 1-2	DAY 3-4	YR.
22	23	87
Document No. 5-11		
83	9	7777

 Cash

☐ Other

Save this portion for your records

Date	Qty.	Description	Subtotal	Total	
Cost Accounting Sept 1, 1967		UC Contract Meals (see attached)	319.50		
		Lodging (see attached)	68.00		
PAYER NAME		Resp Ctr	Obj Cd	REFERENCE NO	AMOUNT
GOV CONFAGING 93		1810	0424		319.50
↓		1810	0609		68.00
DEPOSIT PREPARED BY <i>Kay Nelson</i>		TOTAL			387.50
		um 34 5E09 87 4290 387.50 DL			
		PLEASE DO NOT WRITE IN THIS SPACE			
		83 9 7327			

**Please pay within 30 days of date of invoice.
Make checks payable to: University of Montana. Mail payment to
University Center, Room 207, University of Montana, Missoula, MT 59812**

University Center, Room 207, University of Montana, Missoula, MT 59812				Amount
	1840	0489	Foodservice catering	
	1844	0606	Facilities usage	
	1831	0465	Graphic design	
GovConfAging	1840	0424	UC Contract Meals	319.50
GovConfAging	1810	0639	Res Halls Special Events Rental	65.00
GRAND TOTAL				384.50

Receipt Copy
1738—U-M Printing Services

Figure 5.1

REPORT OF OUTSTANDING DEBTS

RESPONSIBILITY CENTER 1844
XXXX
OBJECT CODE 2148

SSN	NAME	AMOUNT	DESCRIPTION	DATE OF CHARGE
	ALPHA TAU OMEGA	\$35.00	6434/EVNT EXPNS/LOR	0586
	FORESTRY CLUB	\$35.00	4965/EVNT EXPNS/LONS	0584
	FRADETTE, JOHN/DEMOLAY	\$125.00	7259/EVNT EXPNSE	0687
	HI-NET COMMUNICATIONS	\$93.00	7192/EVNT EXPNSE	0587
	MSLA ADV MKTG	\$35.00	6104/LOR LONS CTRNG	1285
	MT STATE DEMO HDQRTS	\$75.00	7255/EVNT EXPNSE	0687
	POSTMA, ED	\$20.50	5111/EVNT EXPNS/IMS	0884
	STOUT, DEAN	\$35.00	5977/LOR LONS CTRNG	1085
	TANNER, REX	\$35.00	6255/EVNT EXPNS	0386
	UM FOUNDATION	\$293.70	7218/EVNT EXPNSE	0687
	US FOREST SERVICE	\$12.00	7196/EVNT EXPNSE	0687
	US OFC OF PERSONNEL MNGMNT	\$75.00	6592/EVNT EXPNS	0386
	TOTAL	\$869.20		

Figure 6.0

UNIVERSITY CENTER
243-5082
INTRA - INSTITUTIONAL VOUCHER

EVENT: PARTY
BUYER: PHYSICAL PLT

DATE: 10/07/87
DOC#: 8370005

EVENT_DATE	DESCRIPTION	AMOUNT
Sep 30, 76	10% TIP	10.00
TOTAL:		10.00

CONTROLLER'S OFFICE USE

Document No. IV: 8370005
Date: 10/07/87 Action: E Comment: TIPS/PP/PART Document Total: 10.00

Seller Organization

Area: 180 Orgn: 1840 Rev Src: 0489 Job No:

Buyer Organization

Area	Orgn	Obj	Sub	Job No.	Description	Amount	I/E
180	8002	1302			TIPS/PP/PARTY	10.00	D

Figure 7.0

UNIVERSITY CENTER
 ROOM 207
 UNIVERSITY OF MONTANA
 MISSOULA, MT 59812
 243-5082
 ACCOUNTS RECEIVABLE INVOICE

EVENT: SHOPKO

DATE: 10/07/87

BUYER: GARY OLSON
243 ESSEX STREET

DOC#: 8397004

LOLO MT 59847

EVENT_DATE	DESCRIPTION	AMOUNT
Aug 17, 87	FOOD SERVICE	176.00
Aug 17, 87	DELIVER CHARGE	10.00
TOTAL:		186.00

Invoice due 30 days from invoice date. Please send check to the above address. Make check payable to: UNIVERSITY OF MONTANA

PLEASE DETACH AND RETURN WITH YOUR REMITTANCE

BUYER: GARY OLSON

DOC#: 8397004

Area	Orgn	Obj	Sub	Job no.	Description	Amount	I/D
180	1840	0489			SHOPKO	186.00	

Figure 7.1

University Center
University of Montana
ACCOUNTS RECIEVABLE STATMENT
Missoula, MT 59812
Phone 243-5082

Name: JIM YELICH

Date: 12/03/87

Address: 3225 S. NORWOOD

TULSA, OK74135

Invoice #	Invoice Date	Subtotamount	Amount Paid	Amount due
8393328	05/25/82	500.48	0.00	500.48

			TOTAL DUE:	500.48

Page No. 1
11/03/87

UC ADMINISTRATION
OUTSTANDING ACCOUNT RECEIVABLE REPORT

ORGN	REVSRC	SUB	SPONSER NAME	AMOUNT_DUE	INVO_DATE	INVOICE NUMBER
** 1831 - 0465						
1831	0465		CAREER SERVICES	225.00	10/30/87	8397471
1831	0465		LARRY HICKETHIER	1026.67	10/30/87	8397469
1831	0465		NEIL WIEGERI	4.35	10/30/87	8397472
1831	0465		SALISH KOOTENAI COLLEGE	25.00	10/30/87	8397470
1831	0465		UC BOOKSTORE	1522.87	10/30/87	8397467
1831	0465		UM FOUNDATION	435.99	10/30/87	8397468
** Subtotal **				3239.88		
** 1840 - 0489						
1840	0489		MONTANA RAIL LINK	155.00	10/30/87	8397465
1840	0489		TRI DELTA	107.55	10/30/87	8397464
1840	0489		UC BOOKSTORE	50.80	10/30/87	8397466
** Subtotal **				313.35		
** 8002 - 1308						
8002	1308		TRI DELTA	9.45	10/30/87	8397464
** Subtotal **				9.45		
*** Total ***				3562.68		

Figure 8.1

AGING REPORT

INVO_NO	INVO_DATE	SPONSER NAME	INVO_AMNT	AMNT_PAID	AMNT_DUE
8397412	10/14/87	JIM YELICH	500.48	0.00	500.48
8397413	10/14/87	TAILFEATHERS. BOB	135.60	0.00	135.60
8397414	10/14/87	CEDS	40.00	0.00	40.00
8397415	10/14/87	GARNETT, STEVE	745.20	0.00	745.20
8397416	10/14/87	SPECTRUM COMMUNICATIONS	91.00	0.00	91.00
8397417	10/14/87	CEDS	5.50	0.00	5.50
8397418	10/14/87	US FISH & WILDLIFE SERVICE	20.00	0.00	20.00
8397419	10/14/87	CLOWES, JIM	12.75	0.00	12.75
8397420	10/14/87	KRILEY, JIM	45.00	0.00	45.00
8397421	10/14/87	MARI IRENIA	10.59	0.00	10.59
8397422	10/14/87	FEDRAZA, CARLOS	72.55	0.00	72.55
8397423	10/14/87	DUNCAN ENTERPRISES	60.00	0.00	60.00
8397424	10/20/87	UC BOOKSTORE	37500.00	0.00	37500.00
8397425	10/20/87	NASA	5.00	0.00	5.00
8397426	10/20/87	WENATCHEE VALLEY COLLEGE	291.00	0.00	291.00
8397434	10/22/87	UM EXCELLENCE FUND	82.10	0.00	82.10
8397435	10/22/87	UM FOUNDATION	419.20	0.00	419.20
8397436	10/22/87	UM FOUNDATION	175.00	0.00	175.00
8397437	10/22/87	PROFESSIONAL EDUCATION SYSTEMS	451.75	0.00	451.75
8397438	10/22/87	WAVERLY GROUP INC. HOME OFFICE	218.12	0.00	218.12
8397439	10/22/87	MISSOULA CHAMBER OF COMMERCE	26.25	0.00	26.25
8397440	10/22/87	GAA	1064.00	0.00	1064.00
8397441	10/22/87	MT DENTAL ASSOCIATION	214.35	0.00	214.35
8397442	10/22/87	CHAMPION INTERNATIONAL	46.00	0.00	46.00
8397443	10/22/87	DUMINOS PIZZA	68.75	0.00	68.75
8397444	10/22/87	PIZZA HUT	40.00	0.00	40.00
8397445	10/22/87	MISSOULIAN	47.60	0.00	47.60
8397446	10/22/87	UC BOOKSTORE	41.70	0.00	41.70
8397447	10/22/87	CHAMBER OF COMMERCE	66.70	0.00	66.70
8397448	10/22/87	PAUL TUSS	40.00	0.00	40.00
8397449	10/22/87	FIVE VALLEYS READING COUNCIL	2462.90	0.00	2462.90
8397450	10/27/87	UM FOUNDATION	355.00	0.00	355.00
8397451	10/27/87	FOREST SERVICE	120.00	0.00	120.00
8397452	10/27/87	CAROLE HENEGAR	3.60	0.00	3.60
8397453	10/27/87	GAMMA PHI HOME ASSOCIATION	726.10	0.00	726.10
8397454	10/27/87	UM FOUNDATION	705.65	0.00	705.65
8397455	10/27/87	MISSOULA ELECTRIC COOP	100.00	0.00	100.00
8397456	10/27/87	WARREN VAUGHN	26.00	0.00	26.00
8397457	10/29/87	CAMPUS REC/CENTER COURSE	125.00	0.00	125.00
8397458	10/29/87	YMCA	15.00	0.00	15.00
8397459	10/29/87	UC BOOKSTORE	61.25	0.00	61.25
8397460	10/29/87	ALLIANCE FOR ARTS EDUCATION	1667.00	0.00	1667.00
8397461	10/29/87	TONY LIANE	498.75	0.00	498.75
8397462	10/29/87	CRAIGHEAD WILDLIFE INSTITUTE	2813.00	0.00	2813.00
8397463	10/29/87	SPOTLIGHT SERIES	13.25	0.00	13.25
8397464	10/30/87	TRI DELTA	117.00	0.00	117.00
8397465	10/30/87	MONTANA RAIL LINE	155.00	0.00	155.00
8397466	10/30/87	UC BOOKSTORE	50.80	0.00	50.80
8397467	10/30/87	UC BOOKSTORE	1522.87	0.00	1522.87
8397468	10/30/87	UM FOUNDATION	435.99	0.00	435.99
8397469	10/30/87	LARRY HICKETHIER	1026.67	0.00	1026.67
8397470	10/30/87	SALISH KOOTENAI COLLEGE	25.00	0.00	25.00
8397471	10/30/87	CAREER SERVICES	225.00	0.00	225.00
8397472	10/30/87	NEIL WIEGFRI	4.35	0.00	4.35
AMOUNT DUE BETWEEN 0 - 30 DAYS:			55791.37	0.00	55791.37

Figure 8.2

Page No. 1
11/03/87

UC ADMINISTRATION
ACCOUNT RECEIVABLE INCOME REPORT

ORGN	KEYSRC	SUB	SPONSER NAME	SUB TOTAL	AMOUNT PAID	AMOUNT DUE	INVOICE DATE	INVOICE NUMBER
** 1831 - 0465								
1831	0465		CAREER SERVICES	225.00	0.00	225.00	10/30/87	8397471
1831	0465		LARRY HICKETHIER	1026.67	0.00	1026.67	10/30/87	8397469
1831	0465		NEIL WIEGERT	4.35	0.00	4.35	10/30/87	8397472
1831	0465		SALISH KOUTENAI COLLEGE	25.00	0.00	25.00	10/30/87	8397470
1831	0465		UC BOOKSTORE	1522.87	0.00	1522.87	10/30/87	8397467
1831	0465		UM FOUNDATION	435.99	0.00	435.99	10/30/87	8397468
** Subtotal **				3239.88	0.00	3239.88		
** 1840 - 0489								
1840	0489		MONTANA RAIL LINE	155.00	0.00	155.00	10/30/87	8397453
1840	0489		TRI DELTA	107.55	0.00	107.55	10/30/87	8397454
1840	0489		UC BOOKSTORE	50.80	0.00	50.80	10/30/87	8397456
** Subtotal **				313.35	0.00	313.35		
** 8002 - 1308								
8002	1308		TRI DELTA	9.45	0.00	9.45	10/30/87	8397454
** Subtotal **				9.45	0.00	9.45		
*** Total ***				3562.68	0.00	3562.68		

Figure 8.3

UCARIBS Context-Diagram

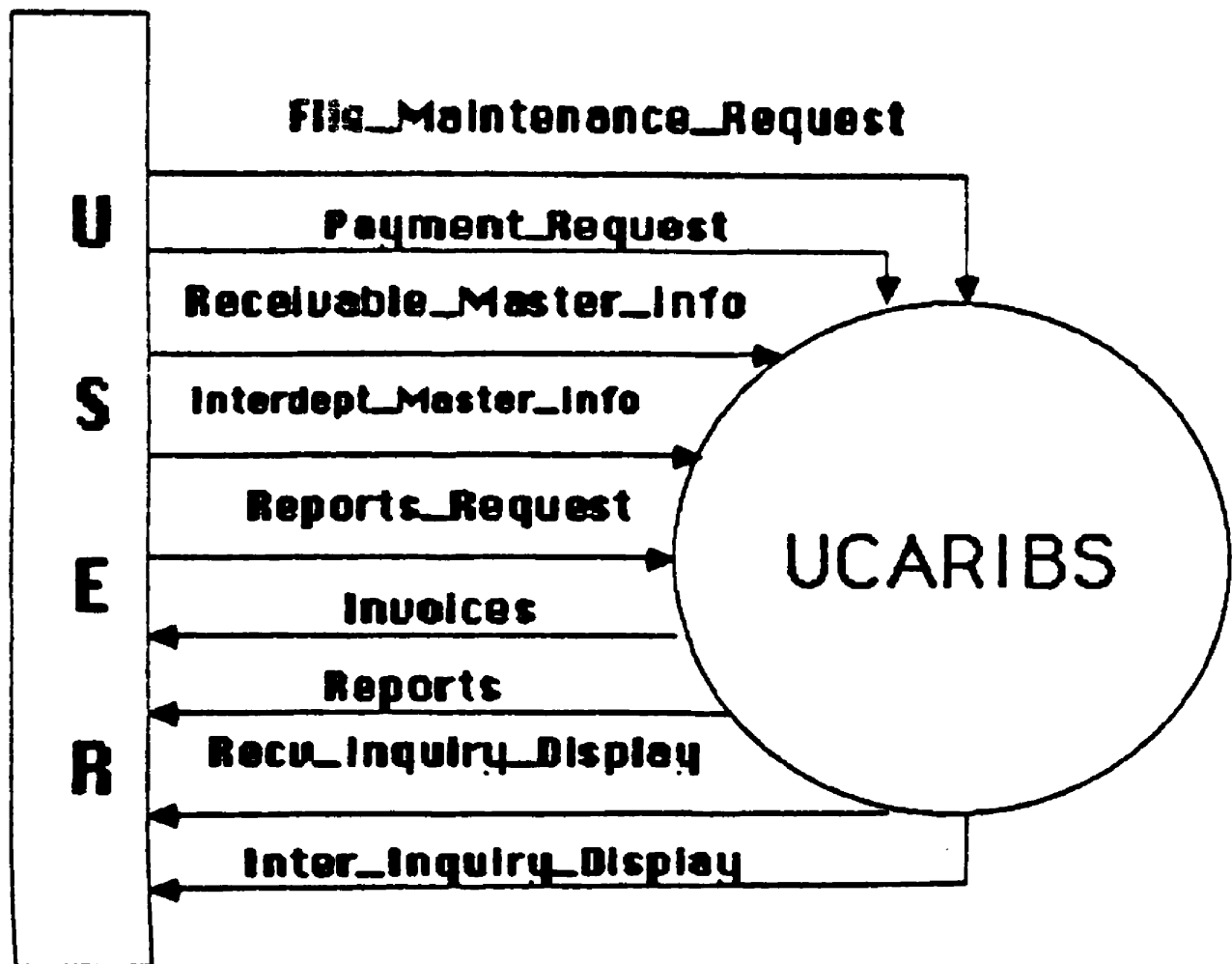


Figure 9.0

Level_0 Data Flow Diagram for UCARIBS

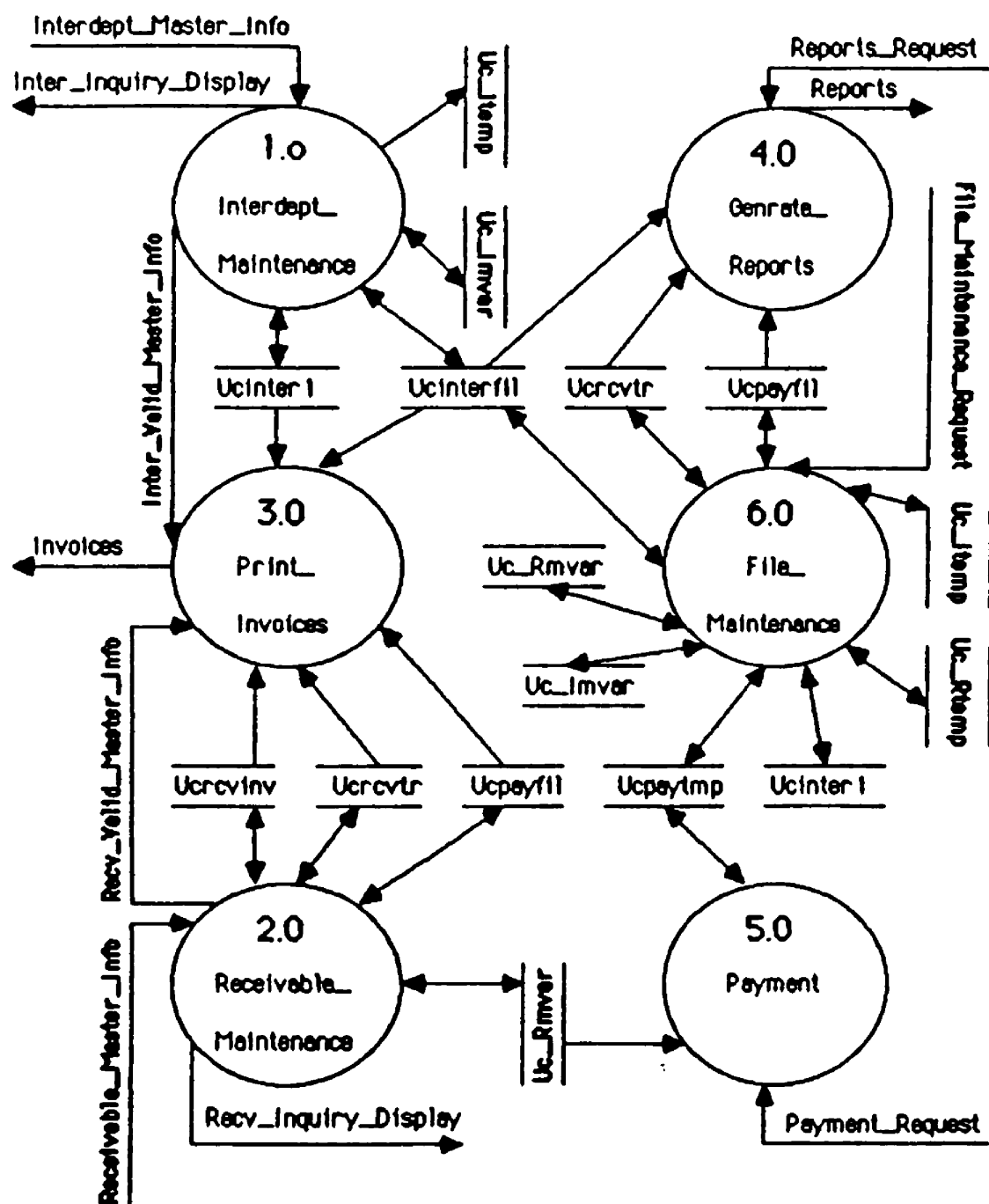


Figure 9.1

Level_1 Process 1.0 DFD for UCARIBS

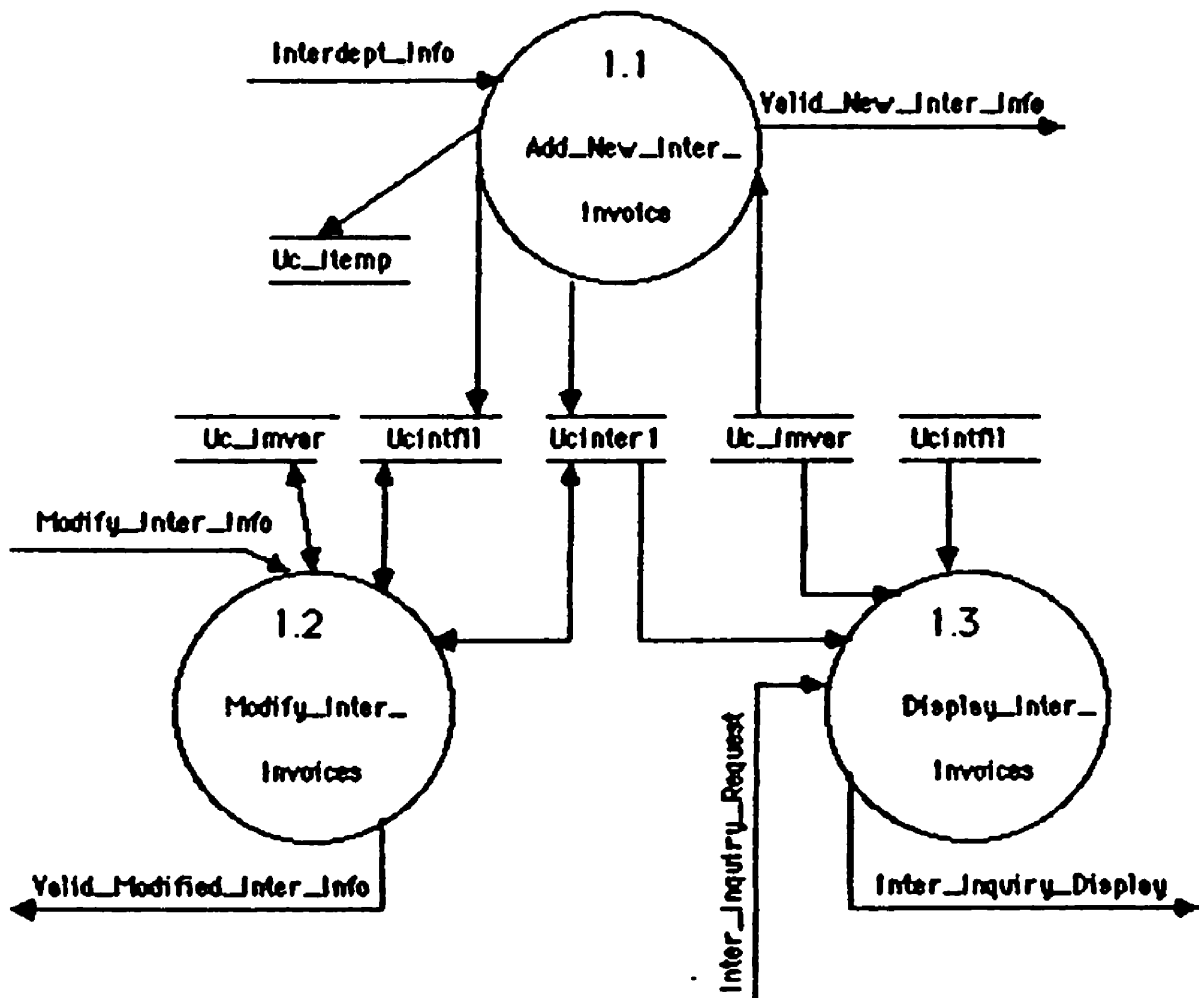
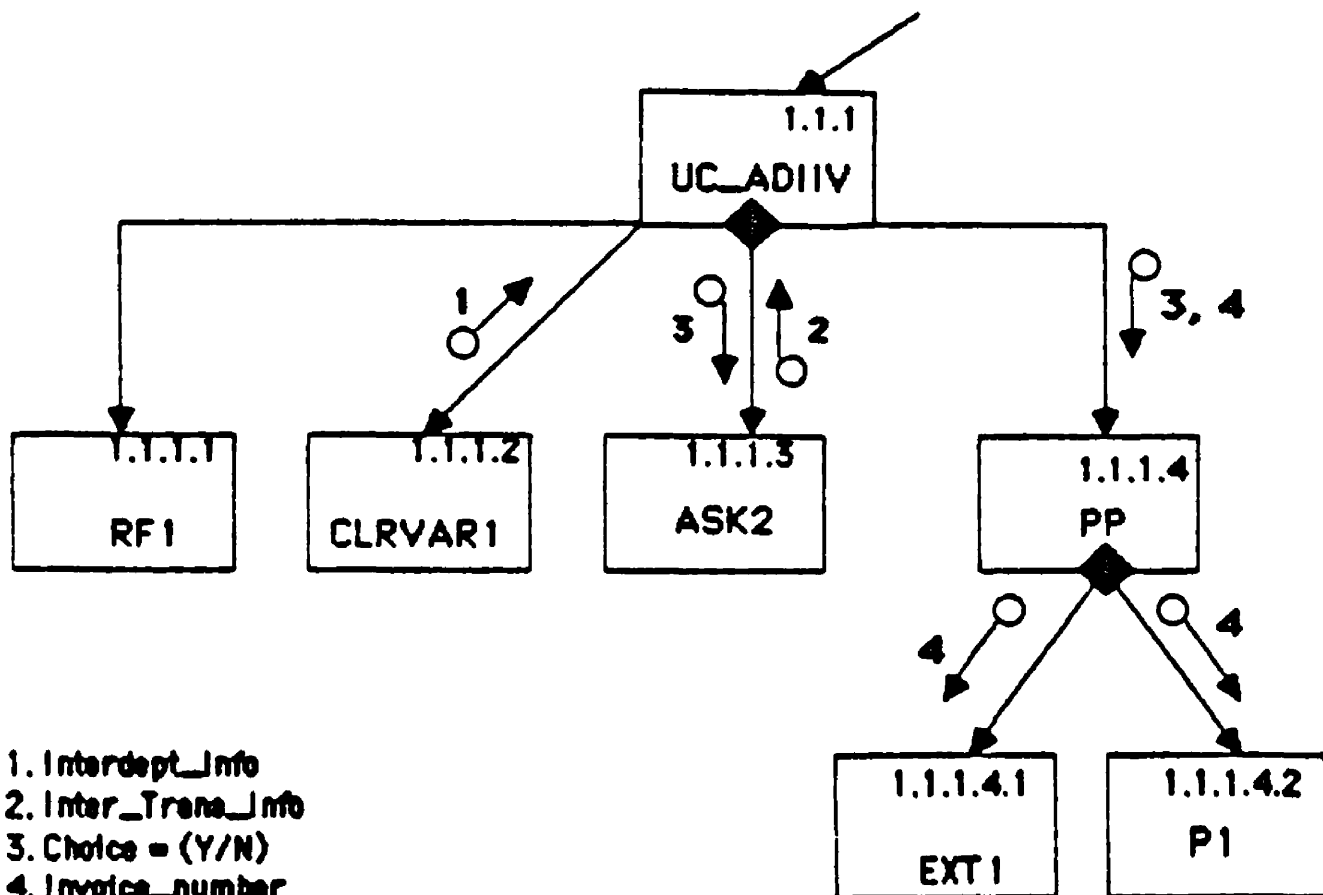


Figure 10.0



Structure Chart for Add New Interdept. Invoice

Figure 10.1

Level_1 Process 4.0 DFD for UCARIBS

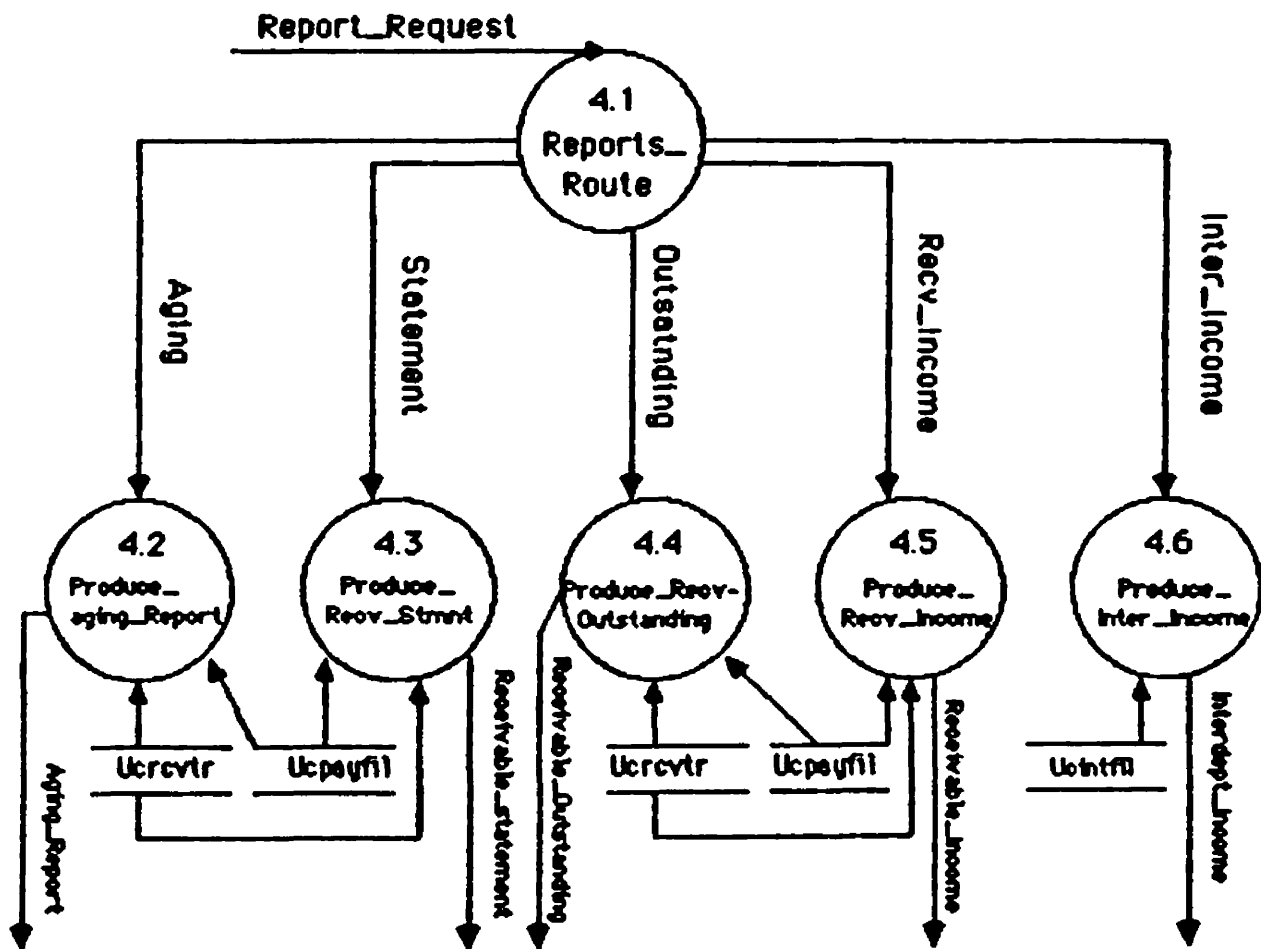
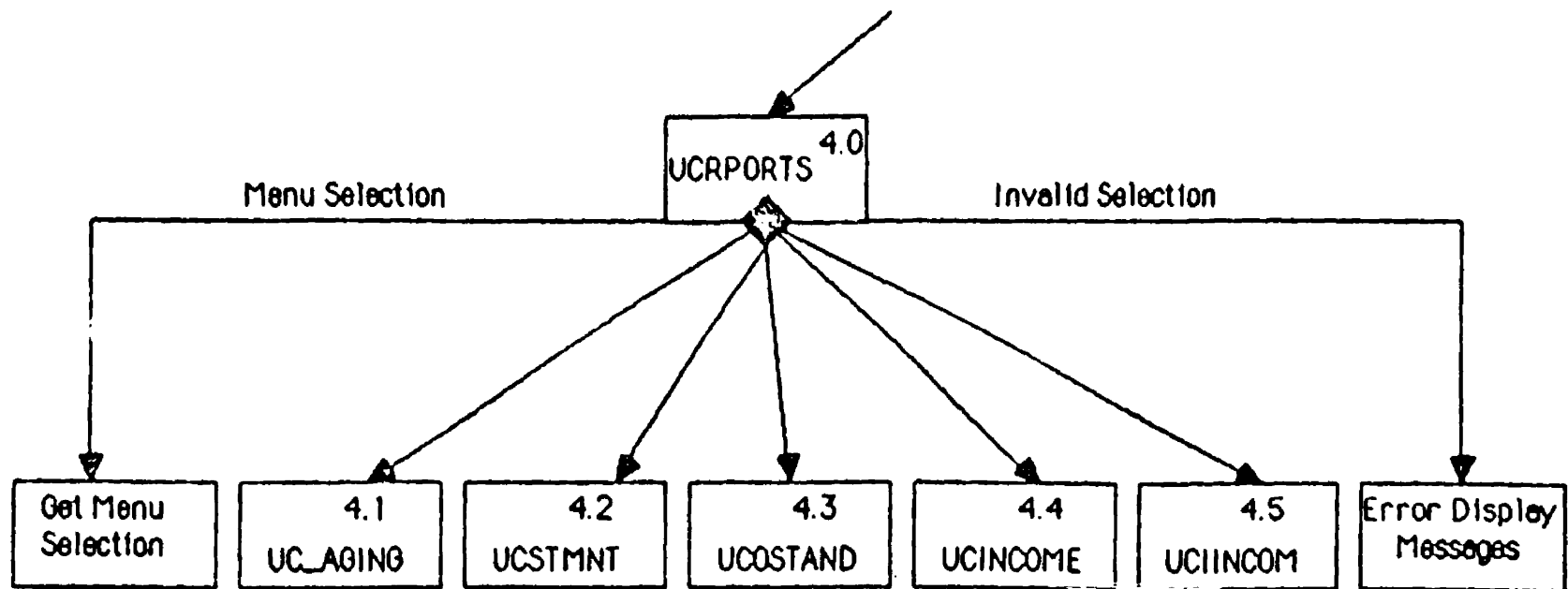
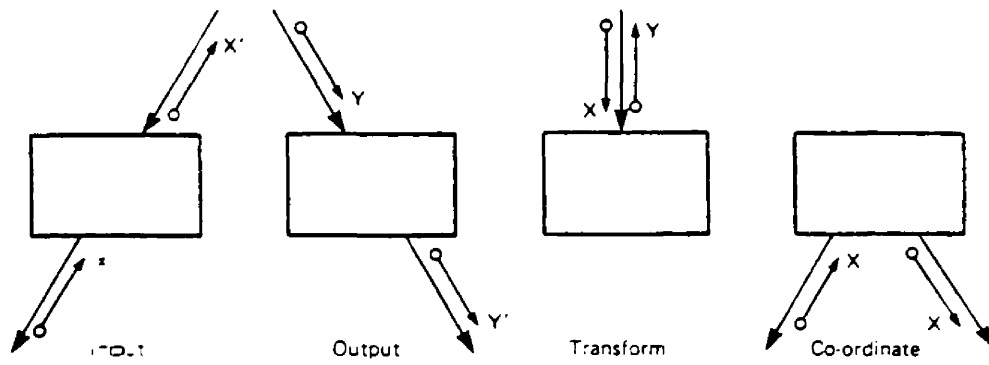


Figure 10.2

Figure 10.5



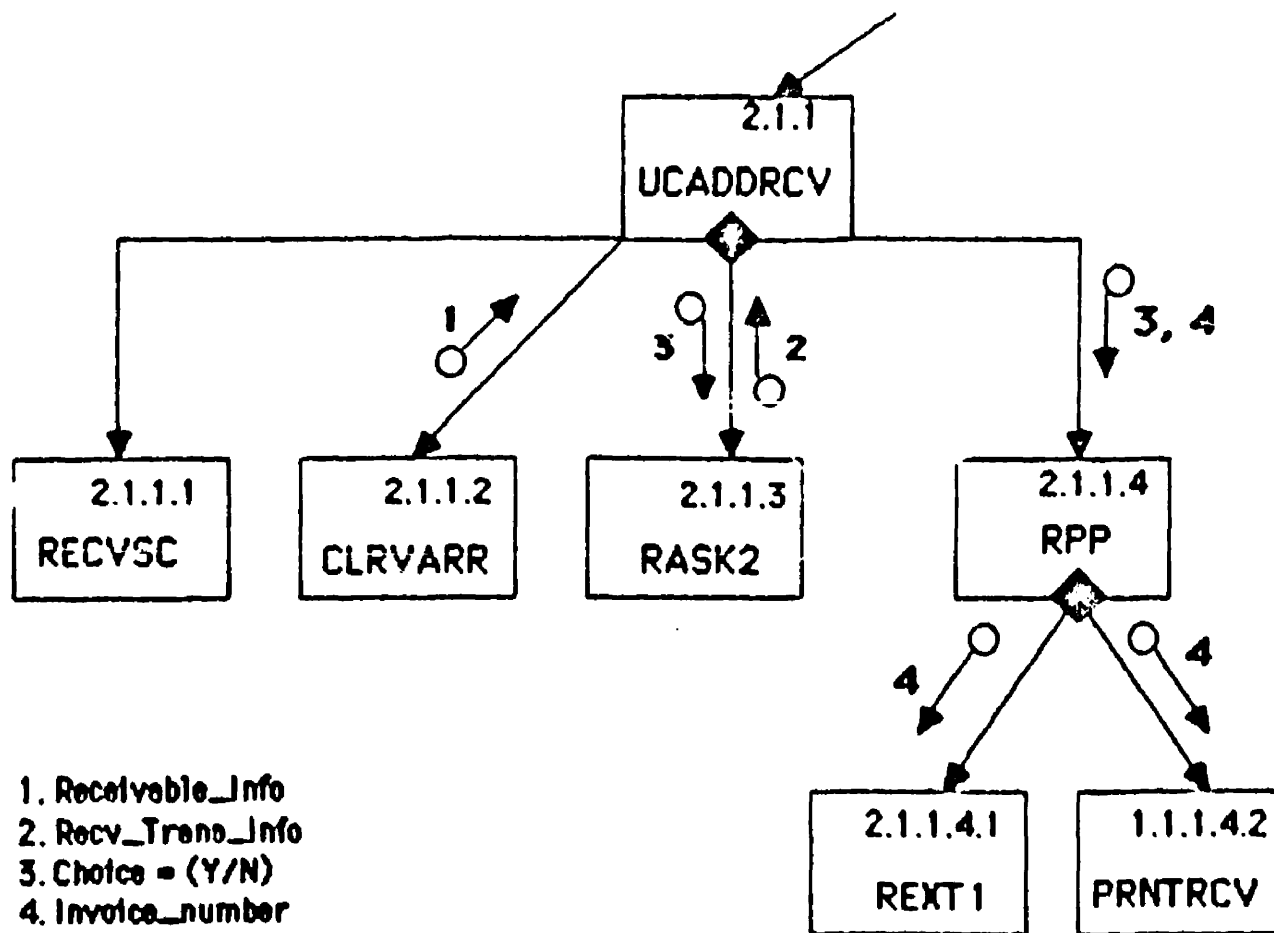
Structure Chart for the Reports Menu



Structure chart representation

Figure 10.4

Figure 10.5



Structure Chart for Add New Receivable Invoice

```

* Module ....: UC_IMENU (This is the main menu for the
*                  Interdept. Billing subsystem.)
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver for the Interdept.
*                  Billing subsystem.
* Calls .....: UC_ADIIIV and UC_IPROC to add new Interdept.
*                  invoice.
*                  UCMDIIIV to modify and delete or add more
*                  transactions.
*                  UCDSIIIV a main menu for invoice(s) Inquiry.
*                  UC_IPRD a main menu to print invoice(s)

* Called by.: UCARIBS

* Parameters: none

```

```
clear the screen
```

```

DO WHILE TRUE
  clear the screen
  Display the Interdept. Invoice Information Menu (see the
    screen section)
  DO WHILE option is not valid ( valid options 1..4 and
    Q or R)
    get an option

  ENDDO

  DO CASE
    CASE option = 1
      clear the screen

      Restore from the memory file the invoice number
      Call the Interdept. procedure file
      Do Add a new Interdept. Invoice
      Close the Interdept. procedure file
    CASE option = 2
      clear the screen
      Do Modify the Interdept. Invoice
    CASE option = 3
      clear the screen
      Display the Inquiry Menu

```

Figure 10.6

```
CASE option = 4
    clear screen
    Display the Print Invoice Menu
CASE option = R
    clear screen
    Display the Main Menu
CASE option = Q
    clear screen
    Terminate the system and Quit the dbaseIII
OTHERWISE
    Do Print Error Message "Invalid Choice"
ENDCASE
ENDDO
RETURN
```



```

* Program...: UC_IMENU.prg (module number 0)
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a main menu for the
*               interdepartmental billing system (UCARIBS).
*
* Calls.....: Procedure UC_IFROC.PRG, UC_ADIIIV.PRG, UC_MDIIV.PRG
*               UC_DSIIIV.PRG and UC_IFRD.PRG
* File used: UC_IMVAR.MEM
*

```

```

store 'F' to RTN
store '?' to OPTION
clear
do while RTN = 'F'

```

```

text

```

UC Administration

Interdept. Invoice Information Menu

```

=====

```

```

1 ==> Add New Invoice
2 ==> Modify Invoice & (Delete/Transactions)
3 ==> Inquiry
4 ==> Print Invoice(s)
R ==> Exit
Q ==> Quit

```

```

=====

```

```

endtext
@ 4,62 say date()
@ 20,40 say 'Enter Selection ==> ';
      get OPTION
read
@ 20, 0
clear

```

Figure 10.7

```

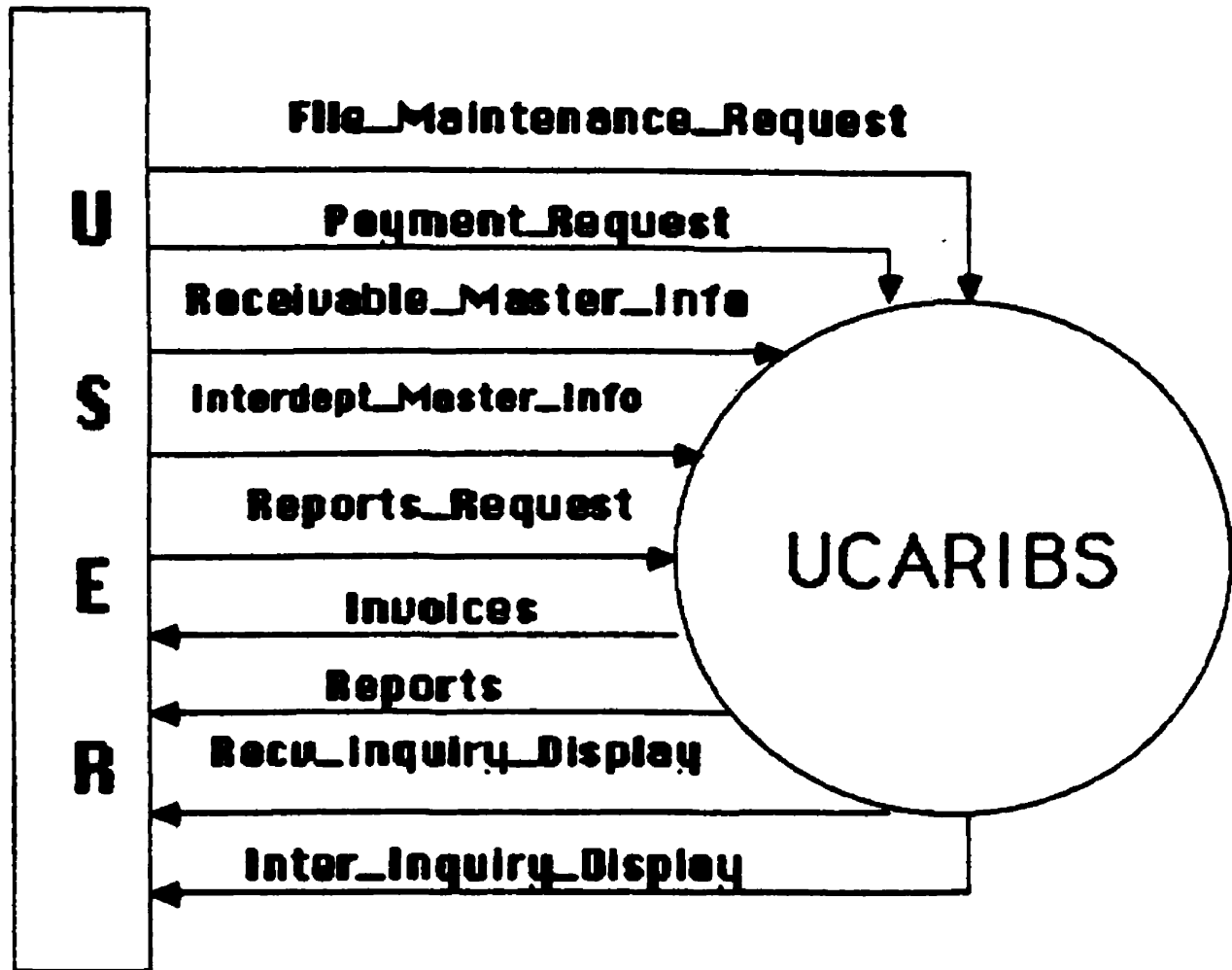
do case
  case OPTION = '1'
    restore from UC_IMVAR
    set Procedure to UC_IPROC
    do UC_ADIIIV
    set Procedure to
    close databases
  case OPTION = '2'
    do UC_MDIIV
  case OPTION = '3'
    do UC_DSIIV
  case OPTION = '4'
    do UC_IPRD
  case upper(OPTION) = 'R'
    clear
    return
  case upper(OPTION) = 'Q'
    set talk on
    cancel
    clear
  otherwise
    ? CHR(7)
    @ 22, 21
    wait '*** Invalid Entry - Press any key to try again ***'
  endcase
  clear
  store '?' to OPTION
enddo
return

```

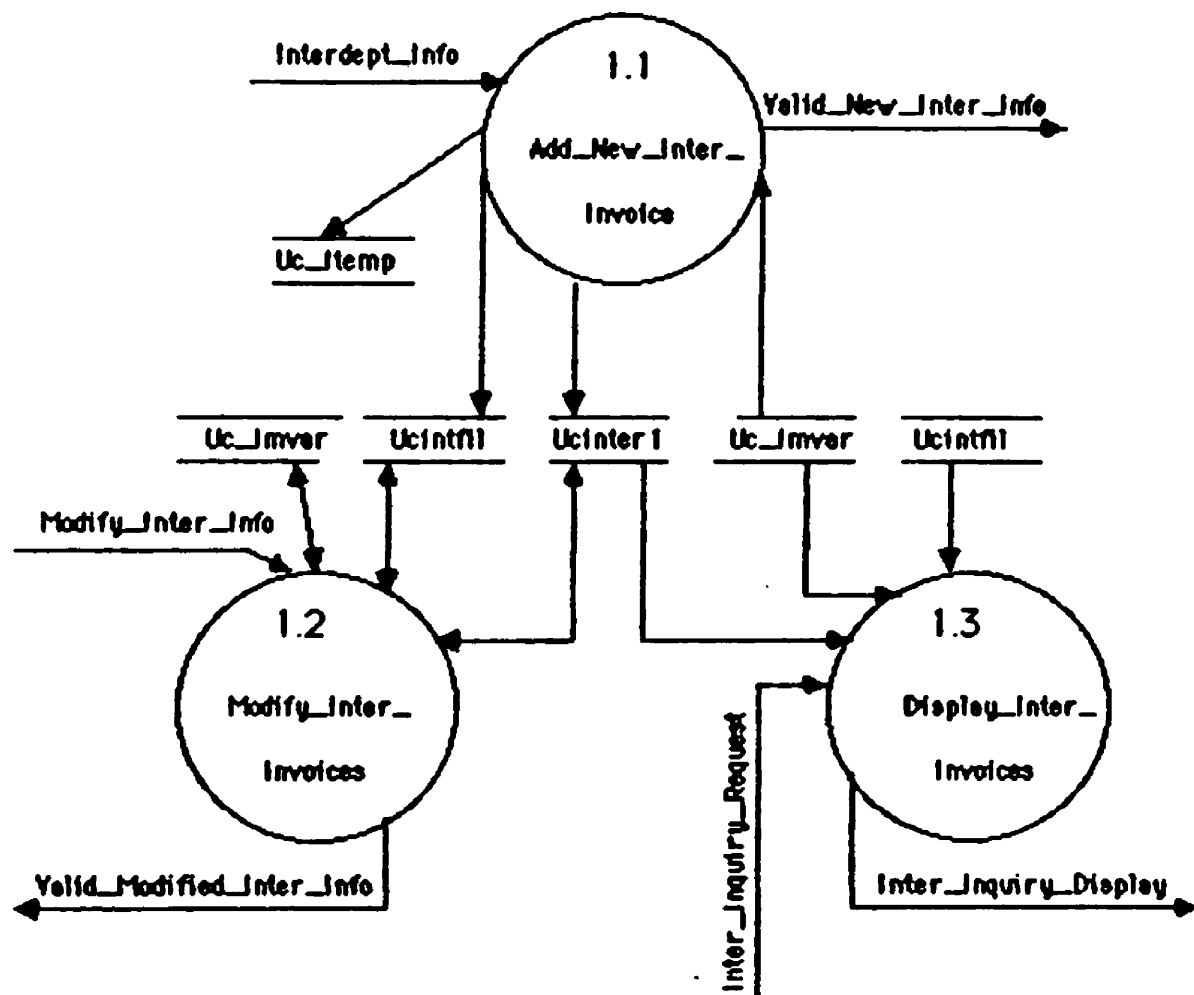
Appendix B
Requirements and Specification
for
UCARIBS

**Context
and
Data Flow Diagrams**

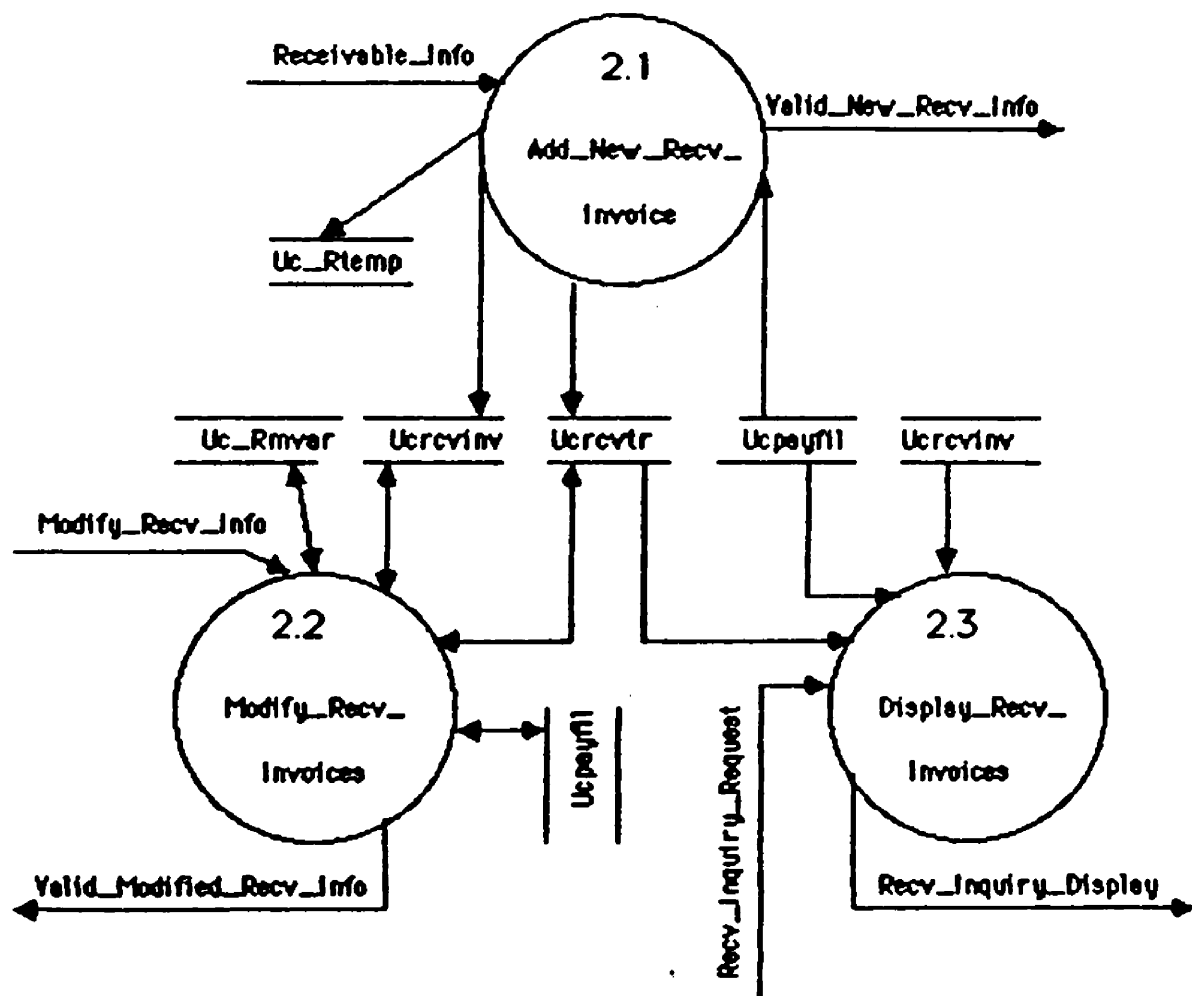
UCARIBS Context-Diagram



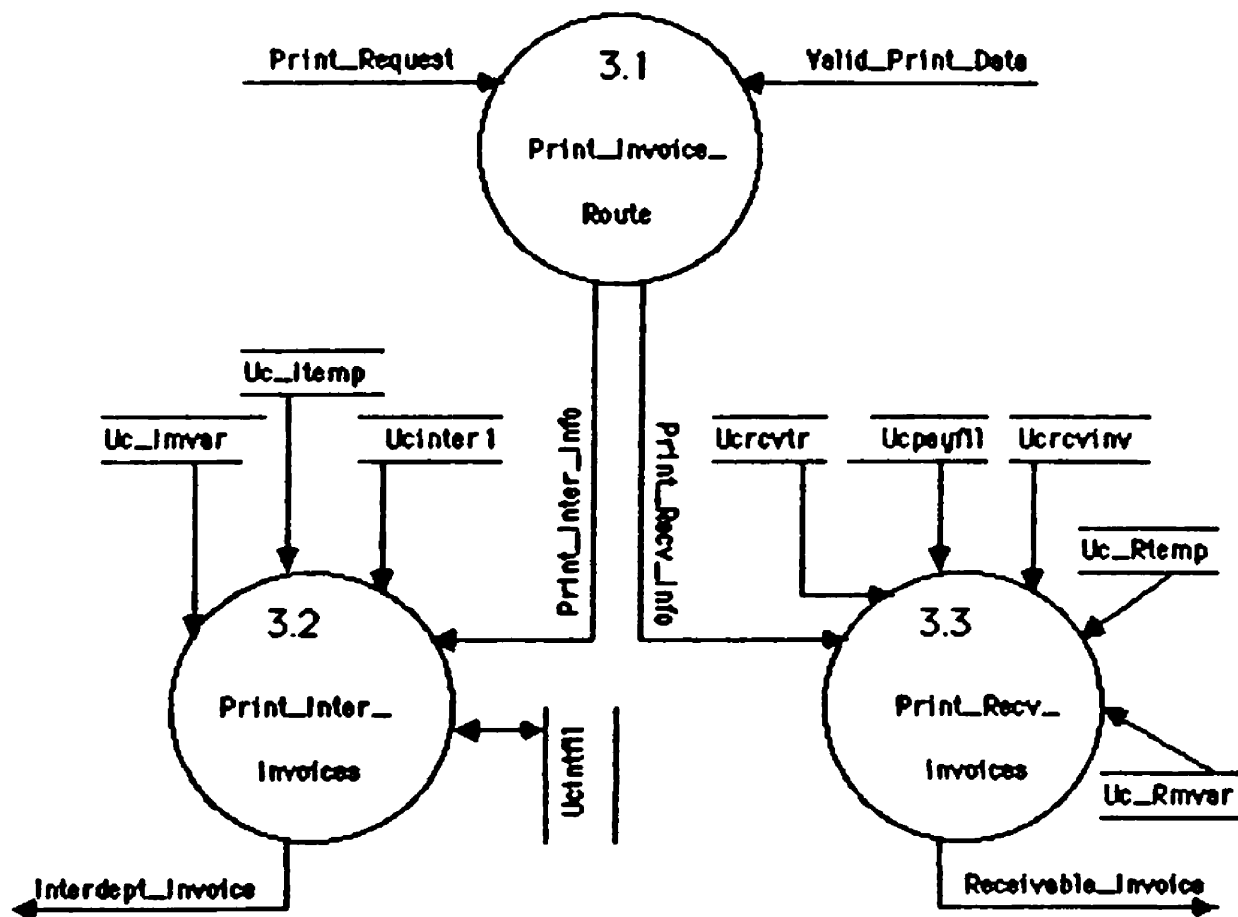
Level_1 Process 1.0 DFD for UCARIBS



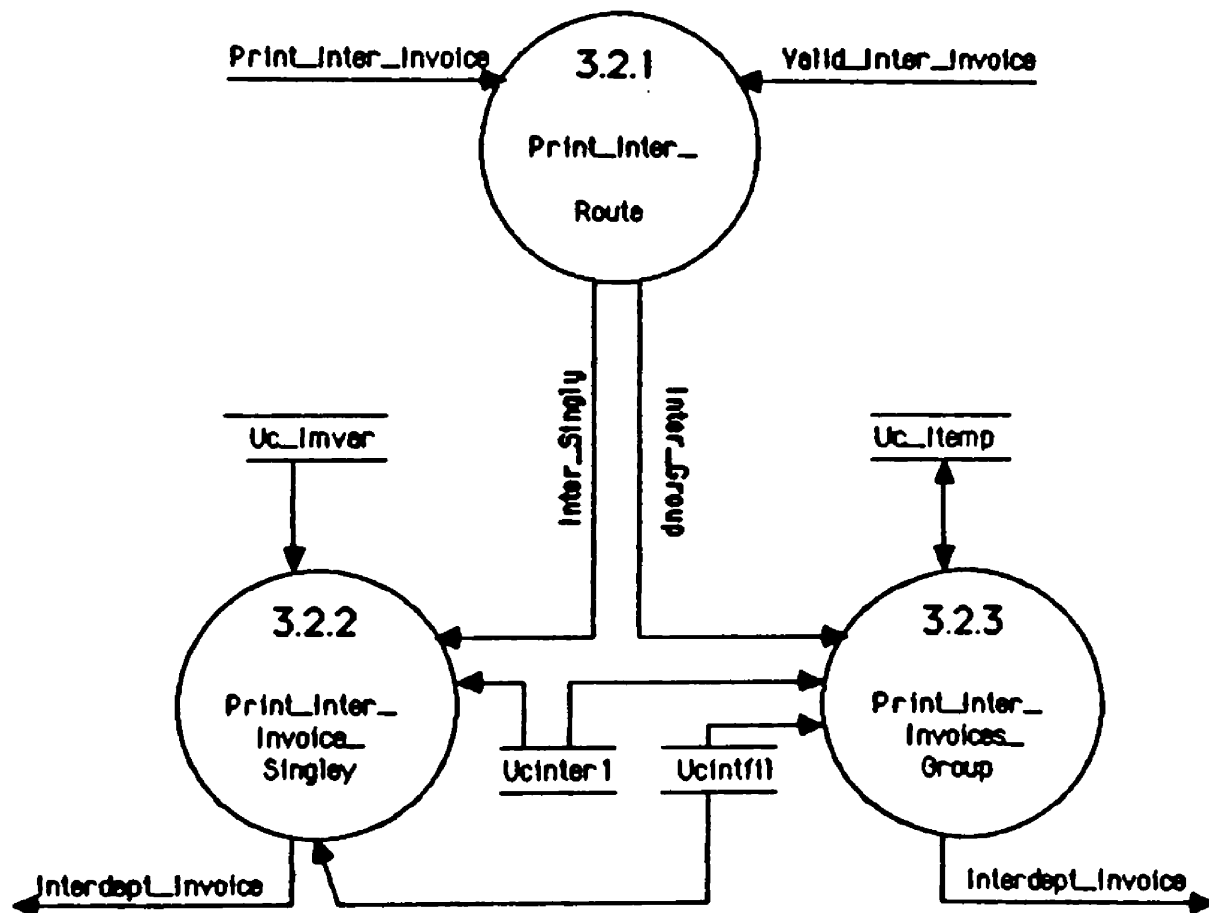
Level_1 Process 2.0 DFD for UCARIBS



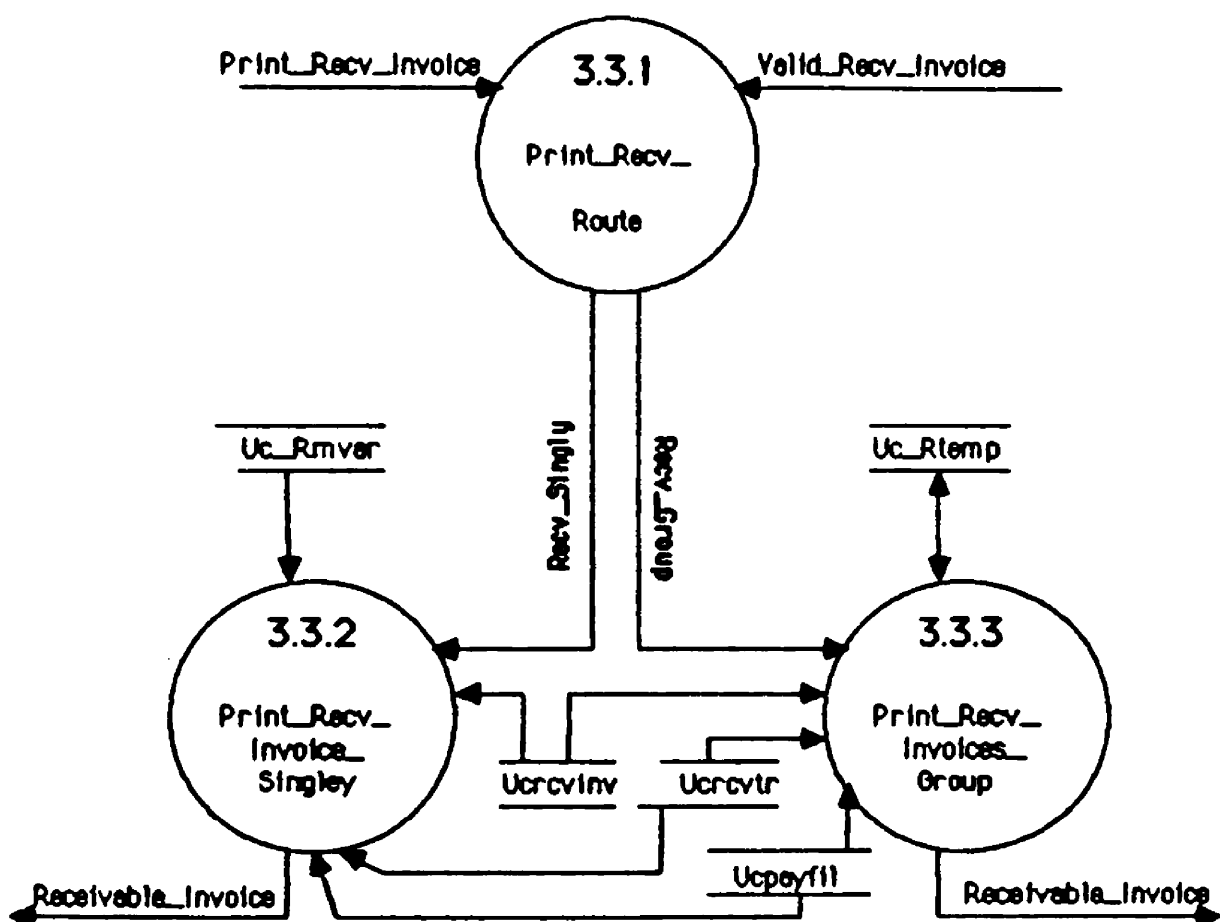
Level_1 Process 3.0 DFD for UCARIBS



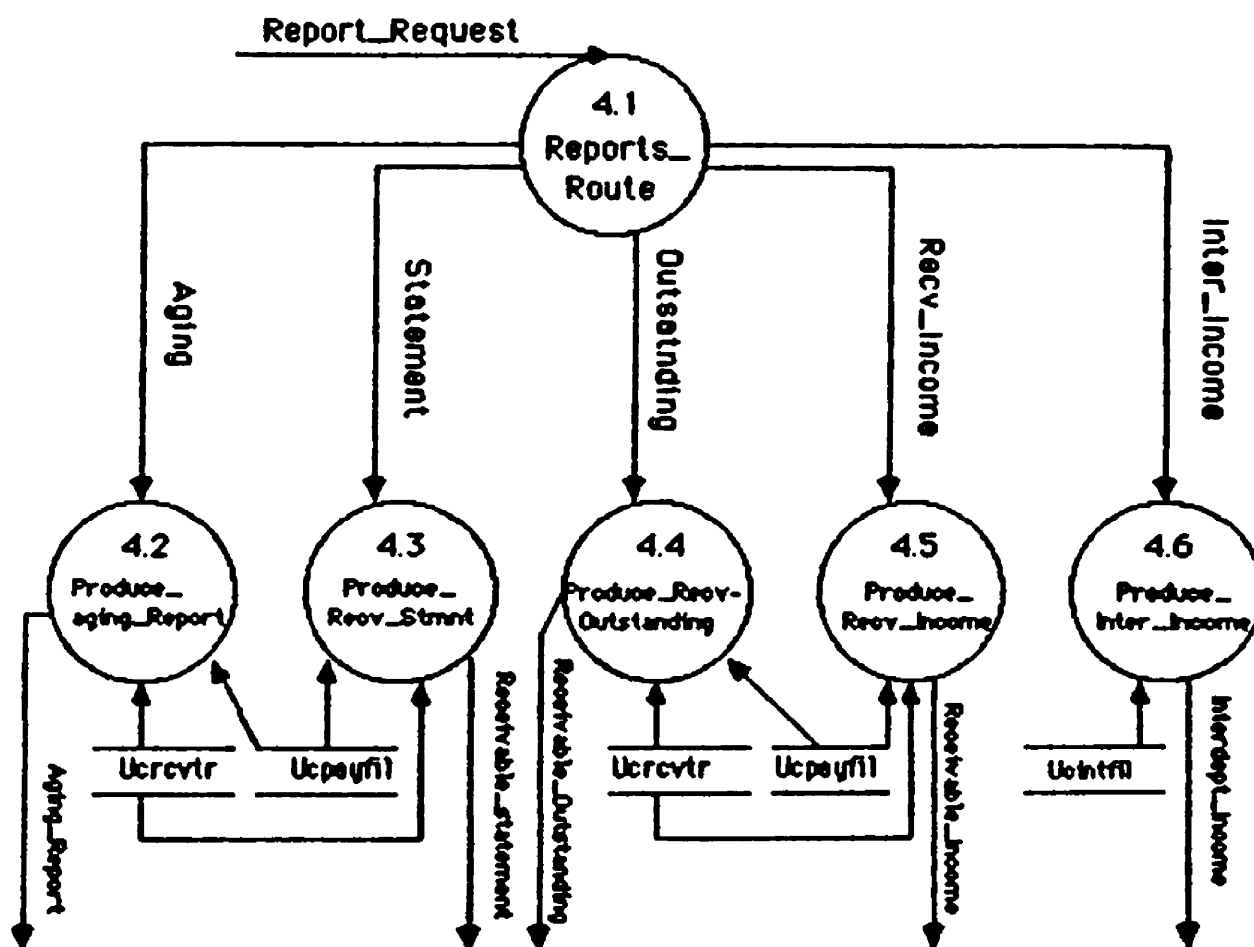
Level_2 Process 3.2 DFD for UCARIBS



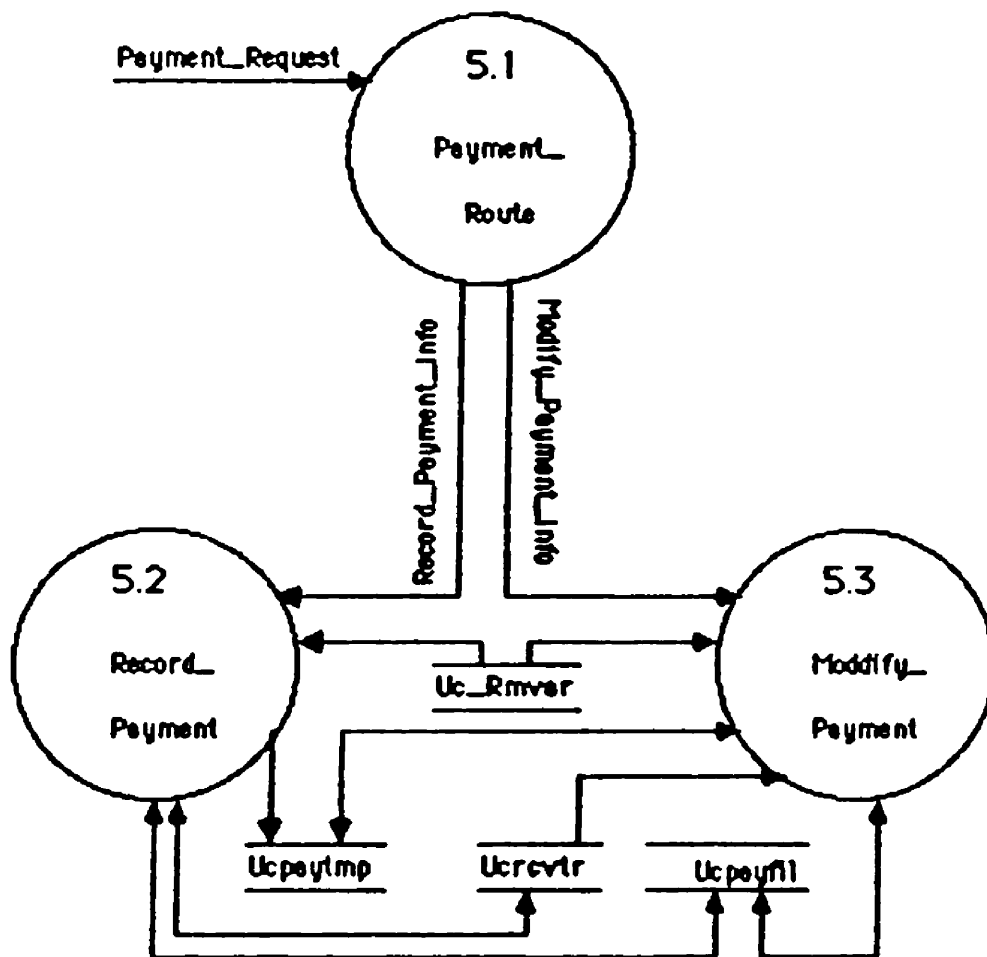
Level_2 Process 3.3 DFD for UCARIBS



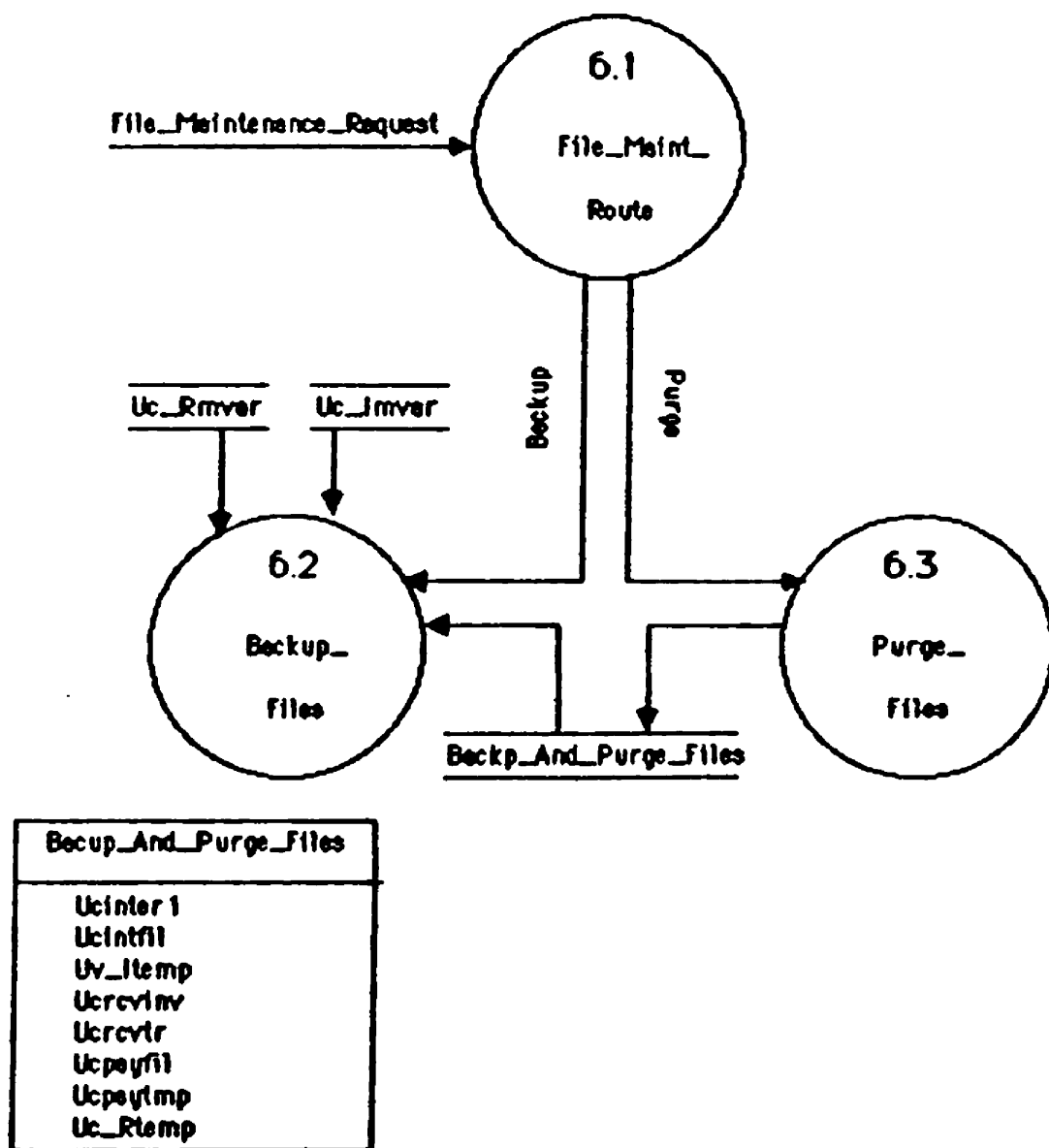
Level_1 Process 4.0 DFD for UCARIBS



Level_1 Process 5.0 DFD for UCARIBS



Level_1 Process 6.0 DFD for UCARIBS



Data Flow Names
for
UCARIBS

Requirements Specification for UCARIBS

DATA FLOW NAME: Aging_Report

ALIASES:

COMPOSITION:

```

Report_Date
+ {Due_Period
  + { Invoice_Number
    + Invoice_Date
    + Sponsor_Name
    + Subtotamnt
    + Amntpaid
    + amntdue
    + Description}
  + subtotal}
+ Total}

```

NOTES:

DATA FLOW NAME: Backup_Files

ALIASES:

COMPOSITION:

```

UCINTER1
+ UCINTFIL
+ UC_ITEMP
+ UC_IMVAR
+ UCRCVINV
+ UCRCVTR
+ UCPAYFIL
+ UCPAYTMP
+ UC_RTEMP
+ UC_RMVAR

```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: File_Maintenance_Request

ALIASES:

COMPOSITION:

Backup
; Purge

NOTES:

DATA FLOW NAME: Inter_Income

ALIASES:

COMPOSITION:

Report_Date
+{(Seller_Rc
+ Seller_Obj
+ Buyer_Name
+ Subtotal_Amount
+ Amount_Paid
+ Amount_Due
+ Invoice_Number
+ Description
+ Invoice_Date }
+ Subtotal
+ Total

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Inter_Inquiry_Display

ALIASES:

COMPOSITION:

Invoice_Number
+ Interdept_Info
+ Invoice_Total

NOTES:

DATA FLOW NAME: Inter_Inquiry_Request

ALIASES:

COMPOSITION:

Invoice_Number
! Trans_Date
! Buyer_Name

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Interdep_Info

ALIASES:

COMPOSITION:

```
{Invoice_Date
+ Title
+ Job_Number
+ Buyer_Name
+ Buyer_Area
+ Buyer_Rc
+ Buyer_Obj
+ Description
+ Seller_Area
+ Seller_Rc
+ Seller_Obj
+ Inc_Dec
+ {Item_Description
+ Trans_Date
+ Trans_Amount}}
```

NOTES:

DATA FLOW NAME: Interdept_Invoice

ALIASES:

COMPOSITION:

```
{Invoice_Number
+ Interdept_Info
+ Subtotal_Amount
+ Invoice_Total}
```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Interdept_Master_Info

ALIASES:

COMPOSITION:

```
Interdept_Info
! Modify_Inter_Info
! Inter_Inquiry_Request
```

NOTES:

DATA FLOW NAME: Inter_Valid_Master_Info

ALIASES:

COMPOSITION:

```
Valid_New Inter_Info
! Valid_Modified_Inter_Info
! Inter_Inquiry_Display
```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Inter_Group

ALIASES:

COMPOSITION:

Group
+ Valid_Inter_Invoice

NOTES:

DATA FLOW NAME: Inter_Singly

ALIASES:

COMPOSITION:

Invoice_Number
+ Singly

NOTES: The above (invoice_Number) is the Interdepartmental
Invoice Number

DATA FLOW NAME: Modify_Payment_Info

ALIASES:

COMPOSITION:

Invoice_Number
+ Modify_Payment_Amount

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Payment_Request

ALIASES:

COMPOSITION:

Record_Payment_Info
! Modify_Payment_Info

NOTES:

DATA FLOW NAME: Print_Request

ALIASES:

COMPOSITION:

Print_Inter_Invoice
! Print_Recv_Invoice

NOTES:

DATA FLOW NAME: Print_Inter_Invoice

ALIASES:

COMPOSITION:

Inter_Singly
! Inter_Group

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Print_Recv_Invoice

ALIASES:

COMPOSITION:

Recv_Singly
! Recv_Group

NOTES:

DATA FLOW NAME: Purge_Files

ALIASES:

COMPOSITION:

UCINTER1
+ UCINTFIL
+ UC_ITEMP
+ UCRCVINV
+ UCRCVTR
+ UCPAYFIL
+ UCPAYTMP
+ UC_RTEMP

NOTES:

DATA FLOW NAME: Record_Payment_Info

ALIASES:

COMPOSITION:

Invoice_Number
+ Amount_Paid
+ Payment_Date

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Recv_Inquiry_Display

ALIASES:

COMPOSITION:

Invoice_Number
+ Receivable_Info
+ Invoice_Total

NOTES:

DATA FLOW NAME: Recv_Inquiry_Request

ALIASES:

COMPOSITION:

Invoice_Number
! Trans_Date
! Buyer_Name

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Receivable_Info
 ALIASES:
 COMPOSITION:

```
{ Title
  + Job_Number
  + Buyer_Name
  + Buyer_Address
  + Buyer_City
  + Buyer_State
  + Buyer_Zipcode
  + Description
  + Seller_Area
  + Trans_Date
  + {Item_Description
    + Seller_Rc
    + Seller_Obj
    + Inc_Dec
    + Trans_Amount}}
```

NOTES:

DATA FLOW NAME: Receivable_Invoice
 ALIASES:
 COMPOSITION:

```
{Invoice_Number
  + Receivable_Info
  + Subtotal_Amount
  + Invoice_Total}
```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Receivable_Master_Info

ALIASES:

COMPOSITION:

Receivable_Info
! Modify_Recv_Info
! Recv_Inquiry_Request

NOTES:

DATA FLOW NAME: Recv_Group

ALIASES:

COMPOSITION:

Group
+ Valid_Recv_Invoice

NOTES:

DATA FLOW NAME: Recv_Singley

ALIASES:

COMPOSITION:

Invoice_Number
+ Singley

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Report_Request

ALIASES:

COMPOSITION:

```

    Aging
    | Statement
    | Outstanding
    | Recv_Income
    | Inter_Income
  
```

NOTES:

DATA FLOW NAME: Receivable_Income

ALIASES:

COMPOSITION:

```

    Report_Date
    +{(Seller_Rc
    + Seller_Obj
    + Buyer_Name
    + Subtotal_Amount
    + Amount_Paid
    + Amount_Due
    + Invoice_Number
    + Description
    + Invoice_Date }
    + Subtotal}
    + Total
  
```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Receivable_Outstanding

ALIASES:

COMPOSITION:

```

Report_Date
+{(Seller_Rc
+  Seller_Obj
+  Buyer_Name
+  Amount_Due
+  Invoice_Number
+  Description
+  Invoice_Date }
+  Subtotal }
+ Total

```

NOTES:

DATA FLOW NAME: Receivable_Statement

ALIASES:

COMPOSITION:

```

Buyer_Name
+ Statemnt_Date
+ Buyer_Address
+ Buyer_City
+ Buyer_State
+ Buyer_Zipcode
+ Invoice_Number
+ Invoice_Date
+ Invoice_Total
+ Amount_Paid
+ Amount_Due
+ Total_Due

```

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Valid_New_Interdept_Info
ALIASES:
COMPOSITION:

 Invoice_Number
 + Interdept_Info

NOTES:

DATA FLOW NAME: Recv_Valid_Master_Info
ALIASES:
COMPOSITION:

 Valid_New Recv_Info
 ! Valid_Modified_Recv_Info
 ! Recv_Inquiry_Display

NOTES:

DATA FLOW NAME: Valid_Modified_Inter_Info
ALIASES:
COMPOSITION:

 Invoice_Number
 + Interdept_Info

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Valid_Print_Data

ALIASES:

COMPOSITION:

Valid_inter_Invoice
! Valid_Recv_Invoice

NOTES:

DATA FLOW NAME: Valid_Inter_Invoice

ALIASES:

COMPOSITION:

Invoice_Number
+ Interdept_Info

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Valid_Recv_Invoice

ALIASES:

COMPOSITION:

Invoice_Number
+ Receivable_Info

NOTES:

DATA FLOW NAME: Valid_New_Recv_Info

ALIASES:

COMPOSITION:

Invoice_Number
+ Receivable_Info

NOTES:

DATA FLOW NAME: Valid_Modified_Recv_Info

ALIASES:

COMPOSITION:

Invoice_Number
+ Interdept_Info

NOTES:

Requirements Specification for UCARIBS

DATA FLOW NAME: Valid_Print_Data

ALIASES:

COMPOSITION:

Valid_inter_Invoice
! Valid_Recv_Invoice

NOTES:

**Data Element Names
for
UCARIBS**

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Aging

ALIASES:

VALUE and MEANINGS:

This is a flag used to produce the Aging Report
for the UC Administration.

NOTES:

DATA ELEMENT NAME: Amount_Due

ALIASES: Amntdue

VALUE and MEANINGS:

This is the amount of money the customer should
pay in a certain period of time.

NOTES:

DATA ELEMENT NAME: Amount_Paid

ALIASES: Amntpaid

VALUE and MEANINGS:

This is the amount of money paid by the customer.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Backup

ALIASES:

VALUE and MEANINGS:

This is a flag used to access the backup system
files process.

NOTES:

DATA ELEMENT NAME: Buyer_Area

ALIASES:

VALUE and MEANINGS:

This a an area number assigned by the controllers
office for each department on the U of M campus for
Accounting purposes.

NOTES:

DATA ELEMENT NAME: Buyer_City

ALIASES:

VALUE and MEANINGS:

The name of the city where the customer located.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Buyer_Address

ALIASES:

VALUE and MEANINGS:

The customer address (home or business).

NOTES:

DATA ELEMENT NAME: Buyer_Obj

ALIASES:

VALUE and MEANINGS:

This is an object code number assigned by the controller's office at U of M for accounting purposes. This is used only for departments on the U of M campus.

NOTES:

DATA ELEMENT NAME: Buyer_Name

ALIASES:

VALUE and MEANINGS:

The customer name or the department name at U of M.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Buyer_Rc

ALIASES:

VALUE and MEANINGS:

A responsibility center number assigned by
controller's office at U of M for accounting
purposes.

NOTES:

DATA ELEMENT NAME: Buyer_State

ALIASES:

VALUE and MEANINGS:

The name of the state where the customer is located.

NOTES:

DATA ELEMENT NAME: Buyer_Zipcode

ALIASES:

VALUE and MEANINGS:

The customer area zip code number.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Due_Period

ALIASES:

VALUE and MEANINGS:

The number of days the customer should pay the UC
Administration.

NOTES:

DATA ELEMENT NAME: Description

ALIASES:

VALUE and MEANINGS:

This description is used by the UC administration
to identify each invoice. It is a combination of
the event name and buyer name.

NOTES:

DATA ELEMENT NAME: Group

ALIASES:

VALUE and MEANINGS:

This is a flag is used to print the Interdept.
and Receivable invoices by groups.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Invoice_Date

ALIASES:

VALUE and MEANINGS:

The date when the invoice is typed into the
computer.

NOTES:

DATA ELEMENT NAME: Inc_Dec

ALIASES:

VALUE and MEANINGS:

This is a character is used to distinguish between
an increasing or decreasing amount for accounting
purposes.

NOTES:

DATA ELEMENT NAME: Item_Description

ALIASES:

VALUE and MEANINGS:

This is the description of each transaction.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Invoice_Number
 ALIASES:
 VALUE and MEANINGS:

 This is a number assigned for each invoice.

NOTES:

DATA ELEMENT NAME: Invoice_Total
 ALIASES:
 VALUE and MEANINGS:

 This is the total amount of each invoice.

NOTES:

DATA ELEMENT NAME: Inter_Income
 ALIASES:
 VALUE and MEANINGS:

 This is a flag used as an access to produce the
 Interdept.income report.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Job_Number

ALIASES:

VALUE and MEANINGS:

This is a number is used by the contorller's
office at U of M for accounting purposes.

NOTES:

DATA ELEMENT NAME: Modify_Payment_Amount

ALIASES:

VALUE and MEANINGS:

This is the correct amount of money to replace an
old incorrect amount when modifying a payment.

NOTES:

DATA ELEMENT NAME: Outstanding

ALIASES:

VALUE and MEANINGS:

This is a flag used an access to produce the
Receivable outstanding report.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Payment_Date

ALIASES:

VALUE and MEANINGS:

The date when the payment occurs.

NOTES:

DATA ELEMENT NAME: Report_Date

ALIASES:

VALUE and MEANINGS:

The date of the report when it produced.

NOTES:

DATA ELEMENT NAME: Recv_Income

ALIASES:

VALUE and MEANINGS:

This is a flag used as an access to produce the
Receivable income report.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Seller_Area

ALIASES:

VALUE and MEANINGS:

 This is a number assigned by the Controller's
 office at U of M for the UC Administration for
 accounting purposes.

NOTES:

DATA ELEMENT NAME: Seller_Obj

ALIASES:

VALUE and MEANINGS:

 This is an object code number assigned by the Con-
 troller's office for the UC Administration for
 accounting purposes.

NOTES:

DATA ELEMENT NAME: Seller_Rc

ALIASES:

VALUE and MEANINGS:

 This is the responsibility center number assigned
 by the Controller's office for the UC Administrat-
 ion for accounting purposes.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Singly

ALIASES:

VALUE and MEANINGS:

This is a flag used an access to print Interdept.
and Receivable invoices one by one (singly).

NOTES:

DATA ELEMENT NAME: Sponsor_Name

ALIASES: Buyer_Name

VALUE and MEANINGS:

NOTES:

DATA ELEMENT NAME: Statement

ALIASES:

VALUE and MEANINGS:

This is a flag used as an access to produce the
Receivable Statement for each customer.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Statement_Date
ALIASES:
VALUE and MEANINGS:

 This is the date when the statement is produced.

NOTES:

DATA ELEMENT NAME: Subtotal_Amount
ALIASES:
VALUE and MEANINGS:

 This is the total amount for each account within
one invoice.

NOTES:

DATA ELEMENT NAME: Subtotal
ALIASES:
VALUE and MEANINGS:

 This is the total amount for each account within
a report for the entire invoices.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Title
 ALIASES:
 VALUE and MEANINGS:

This is the name of the event.

NOTES:

DATA ELEMENT NAME: Total
 ALIASES:
 VALUE and MEANINGS:

The total amount for all Receivable or Interdept.
 invoices.

NOTES:

DATA ELEMENT NAME: Total_Due
 ALIASES:
 VALUE and MEANINGS:

The overall amount due for all Receivable or
 Interdept. invoices.

NOTES:

Requirements Specification for UCARIBS

DATA ELEMENT NAME: Trans_Amount

ALIASES:

VALUE and MEANINGS:

The amount of money for each transaction.

NOTES:

DATA ELEMENT NAME: Trans_Date

ALIASES:

VALUE and MEANINGS:

The date of each transaction when it occurs.

NOTES:

Process Description
for
UCARIBS

Requirements Specification for UCARIBS

Process Name: Add _New_Inter_Invoice

Process Number: 1.1

Process Description:

For each Invoice do the following

- _ Access the Interdept. Invoice Information Menu
from the main menu
- _ Select Add New Invoice
- _ Enter the Interdept_Info
- _ Check for Information Validity
- _ Display messages for entering transactions
- _ Create new Interdept_Record
- _ Update the Interdept_Files
- _ Display Print Messages
- _ Return to the Interdept. Invoice Information
Menu.

Requirements Specification for UCARIBS

Process Name: Modify_Inter_Invoices

Process Number: 1.2

Process Description:

For each Modify_Inter_Info do the following:

1. Get the Invoice_Number from user
2. Check for the Invoice_Number validity
3. Access the UCINTER1 and UCINTFIL files
4. Display the old Interdept_Info
5. Accept the new Interdept_Info
6. Replace the old Interdept_Info with the
new Interdept_info
7. Return to the Interdept. Invoice Information
Menu.

Requirements Specification for UCARIBS

Process Name: Display_Inter_Invoices

Process Number: 1.3

Process Description:

For each Inter_Inquiry_Request do the following:

1. Check for the Inter_Inquiry_Request validity
2. List the Invoice_Number
3. List the Interdept_Info
4. List the Invoice_Amount
5. Return to the Interdept. Invoice Information

Menu.

Requirements Specification for UCARIBS

Process Name: Add _New_Recv_Invoice

Process Number: 2.1

Process Description:

For each Invoice do the following

- _ Access the Receivable Invoice Information Menu
from the main menu
- _ Select Add New Invoice
- _ Enter the Receivable_Info
- _ Check for Information Validity
- _ Display messages for entering transactions
- _ Create new Receivable_Record
- _ Update the Receivable_Files
- _ Display Print Messages
- _ Return to the Receivable Invoice Information
Menu.

Requirements Specification for UCARIBS

Process Name: Modify_Recv_Invoices

Process Number: 2.2

Process Description:

For each Modify_Recv_Info do the following:

1. Get the Invoice_Number from user
2. Check for the Invoice_Number validity
3. Access the UCRCVINV, UCRCVTR and UCPAYFIL files
4. Display the old Receivable_Info
5. Accept the new Receivable_Info
6. Replace the old Receivable_Info with the
 new Receivable_info
7. Return to the Receivable Invoice Information
 Menu.

Requirements Specification for UCARIBS

Process Name: Display_Recv_Invoices

Process Number: 2.3

Process Description:

For each Recv_Inquiry_Request do the following:

1. Check for the Recv_Inquiry_Request validity
2. List the Invoice_Number
3. List the Receivable_Info
4. List the Invoice_Amount
5. Return to the Receivable Invoice Information

Menu.

Requirements Specification for UCARIBS

Process Name: Print_Inter_Invoice_Singly

Process Number: 3.2.2

Process Description:

From each Interdept_Invoice using Inter_Singly

do the the following:

1. Get the Invoice_Number from the user

_ Check for Validity of that Invoice_Number

Or using the Valid_inter_Invoice

2. Print the Interdept_Info and the Invoice_Number.

3. Return to the Interdept. Invoice Information
Menu.

Requirements Specification for UCARIBS

Process Name: Print_Inter_Invoices_Group

Process Number: 3.2.3

Process Description:

From each Interdept_Invoice using Inter_Group do
the following:

1. Access the UC_ITEMP file
2. Using the Invoice numbers in the UC_ITEMP
_ Access the UCINTER1 and the UCINTFIL files
3. Print the Interdept_info and the Invoice_
Number one after another
4. Empty the UC_ITEMP file
5. Return to the Interdept. Invoice Information
Menu

Requirements Specification for UCARIBS

Process Name: Print_Recv_Invoice_Singly

Process Number: 3.3.2

Process Description:

From each Receivable_Invoice using Recv_Singly

do the the following:

1. Get the Invoice_Number from the user

_ Check for Validity of that Invoice_Number

Or using the Valid_Recv_Invoice

2. Print the Receivable_Info and the Invoice_Number.

3. Return to the Receivable Invoice Information

Menu.

Requirements Specification for UCARIBS

Process Name: Print_Recv_Invoices_Group

Process Number: 3.3.3

Process Description:

From each Receivable_Invoice using Recv_Group do
the following:

1. Access the UC_RTEMP file
2. Using the Invoice numbers in the UC_RTEMP
_ Access the UCRCVINV, UCRCVTR and the
UCINTFIL files
3. Print the Receivable_info and the Invoice_
Number one after another
4. Empty the UC_RTEMP file
5. Return to the Receivable Invoice Information
Menu

Requirements Specification for UCARIBS

Process Name: Reports_Route

Process Number: 4.1

Process Description:

Using the Reports_Request from the Reports Menu

generate one of the following reports:

1. The Aging_Report
2. The Receivable_Statement
3. The Receivable_Outstanding
4. The Receivable_Income
5. The Interdept_Income

Return to the Main Menu.

Requirements Specification for UCARIBS

Process Name: Produce Aging Report
Process Number: 4.2
Process Description:

For each Aging option

Access the UCRCVTR and UCPAYFIL files

List the Aging Report.

Process Name: Produce Recv Stmt
Process Number: 4.3
Process Description:

For each Statement option

Access the UCRCVTR and UCPAYFIL files

List the Receivable Statement

Requirements Specification for UCARIBS

Process Name: Produce_Recv_Outstanding
 Process Number: 4.4
 Process Description:

For each Outstanding option

- _ Access the UCRCVTR and UCPAYFIL files
- _ List the Receivable_Outstanding

Process Name: Produce_Recv_Income
 Process Number: 4.5
 Process Description:

For each Recv_Income option

- _ Access the UCRCVTR and UCPAYFIL files
- _ List the Receivable_Income

Process Name: Produce_Inter_Income
 Process Number: 4.6
 Process Description:

For each Inter_Income option

- _ Access the UCINTFIL file
- _ List the Interdept_Income

Requirements Specification for UCARIBS

Process Name: Payment_Route
 Process Number: 5.1
 Process Description:

For each Payment_Request do the following:

- _ Access the Payment Menu from the Main Menu
- _ Select Record Payment

Or

- _ Select Modify Payment

Process Name: Record_Payment
 Process Number: 5.2
 Process Description:

For each Record Payment do the following:

- _ Get Invoice_Number from the user
- _ Get the Amount_Paid
- _ Get the Payment_Date
- _ Check for Validity and the existence of the
 Invoice_Number
- _ Update the corresponding files

Return to Payment Menu.

Requirements Specification for UCARIBS

Process Name: Modify_Payment

Process Number: 5.3

Process Description:

For each Modify Payment do the following:

- _ Get Invoice_Number from the user
- _ Get the Modify_Payment_Amount
- _ Get the Payment_Date
- _ Check for Validity and the existence of the Invoice_Number
- _ Choose the old Amount_Paid to be Modified
- _ Replace the old Amount_Paid with the Modify_Payment_Amount
- _ Update the corresponding files

Return to Payment Menu.

Requirements Specification for UCARIBS

Process Name: File_Maintenance
Process Number: 6.0
Process Description:

_ Access the File_Maintenance from the Main Menu to
do the following:

1. to Backup the system files
2. to Purge the system database files.

Process Name: File_Maint_Route
Process Number: 6.1
Process Description:

Choose one of the following:

1. Backup (to backup the system files)

OR

2. Purge (to purge the system files)

E. Return to the main Menu.

Requirements Specification for UCARIBS

Process Name: Backup_Files

Process Number: 6.2

Process Description:

For each Backup choice do the following:

Prepare for the copy environment

when ready, Backup the entire backup_files

to a floppy disk.

Return to the Main Menu.

Process Name: Purge_Files

Process Number: 6.3

Process Description:

For each Purge choice do the following:

Prepare for the Purge environment when ready

a) Purge the entire Purge_files

b) Prompt the user for new numbers for the

Interdept. and Receivable invoices.

Return to the Main Menu.

Data Base Files
for
UCARIBS

Structure for database: C:/UCINTER/UCINTER1.dbf

Number of data records: 0

Date of last update : 10/14/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	INVOICDATE	Date	8	
3	TITLE	Character	12	
4	JOB_NUMBER	Character	4	
5	SPONSAREA	Character	3	
6	SPONSER	Character	12	
7	SPONSERRC	Character	4	
8	SPONSEROBJ	Character	4	
9	UC_DESCRIP	Character	30	
10	SELLERAREA	Character	3	
11	SELLER_RC	Character	4	
12	SELLER_OBJ	Character	4	
13	INC_DEC	Character	1	
** Total **			97	

Structure for database: C:/UCINTER/UCINTFIL.dbf

Number of data records: 0

Date of last update : 10/14/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	DESCRIP1	Character	30	
3	EVENTDATE	Date	8	
4	AMOUNT1	Numeric	9	2
5	INC_DEC	Character	1	
** Total **			56	

Structure for database: C:/SAMIR@UCRCVINV.dbf

Number of data records: 199

Date of last update : 12/02/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	INVOICDATE	Date	8	
3	TITLE	Character	30	
4	JOB_NUMBER	Character	4	
5	SPONSORNAME	Character	30	
6	ADDRESS	Character	30	
7	ADDRESS2	Character	30	
8	CITY	Character	15	
9	STATE	Character	2	
10	ZIPCODE	Character	10	
11	UC_DESCRIP	Character	23	
12	SELLERAREA	Character	3	
** Total **			193	

Structure for database: C:/SAMIR@UCRCVTR.dbf

Number of data records: 453

Date of last update : 12/03/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	SPONSORNAME	Character	30	
3	UC_DESCRIP	Character	23	
4	EVENTDATE	Date	8	
5	DESCRIP1	Character	30	
6	SELLER_RC	Character	4	
7	SELLER_OBJ	Character	4	
8	INC_DEC	Character	1	
9	AMOUNT1	Numeric	8	2
10	INVOICDATE	Date	8	
** Total **			124	

Structure for database: C:/SAMIR®UCPAYFIL.dbf

Number of data records: 255

Date of last update : 12/03/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	INVOICDATE	Date	8	
3	SPONSRNAME	Character	30	
4	UC_DESCRIP	Character	23	
5	SELLER RC	Character	4	
6	INC DEC	Character	1	
7	SELLER OBJ	Character	4	
8	SUBTOTAMNT	Numeric	9	2
9	AMNTPAID	Numeric	9	2
10	AMNTDUE	Numeric	9	2
** Total **			105	

Structure for database: C:/SAMIR®UCPAYTMP.dbf

Number of data records: 95

Date of last update : 12/03/87

Field	Field Name	Type	Width	Dec
1	INVOICENUM	Numeric	7	
2	LASTAMNTP	Numeric	7	2
3	PAYDATE	Date	8	
** Total **			23	

```
.
Structure for database: C:/SAMIR®UC_RTEMP.dbf
Number of data records:      41
Date of last update       : 12/02/87
Field  Field Name  Type      Width  Dec
   1  INVOICENUM  Numeric      7
** Total **                      8
```

```
Structure for database: C:/UCINTER/UC_ITEMP.dbf
Number of data records:      0
Date of last update       : 12/03/87
Field  Field Name  Type      Width  Dec
   1  INVOICENUM  Numeric      7
** Total **                      8
```

```
RESTORE FROM UC_RMVAR.MEM
```

```
. LIST MEMORY
MPSINVO      pub    N      8390000.00  ( 8390000.00000000)
MPINVONUM    pub    N      8397627   ( 8397627.00000000)
    2 variables defined,      18 bytes used
    254 variables available,  5982 bytes available
```

```
. RESTORE FROM UC_IMVAR.MEM
```

```
. LIST MEMORY
MPINVONUM    pub    N      8370000.00  ( 8370000.00000000)
MPSINVO      pub    N      8370000.00  ( 8370000.00000000)
    2 variables defined,      18 bytes used
    254 variables available,  5982 bytes available
```

Menus and Screens
for
UCARIBS

UC Administration
Accounts Receivable and Interdepartmental
Billing System
Written By: Samir M. Soueidan

Main Menu 12/03/87

=====

- 1 ==> Interdep. Invoice Information Menu
- 2 ==> Receivable Invoice Information Menu
- 3 ==> Payment Menu
- 4 ==> Reports Menu
- 5 ==> Files Maintenance
- 6 ==> Reindexing system files
- X ==> Exit

=====

Enter Selection ==> [?]

UC Administration

Interdept. Invoice Information Menu

12/03/87

=====

- 1 ==> Add New Invoice
- 2 ==> Modify Invoice & (Delete/Transactions)
- 3 ==> Inquiry
- 4 ==> Print Invoice(s)
- R ==> Exit
- Q ==> Quit

=====

Enter Selection ==> [?]

Adding New Interdept. Invoice Entry Screen

12/03/87

 Inv_No:[8370001] Title:[THIS IS A TRIAL] Job_No:[20]

Buyer:[JHON SMITH] Area:[120] Buyer_Rc:[1200] Buyer_Obj:[3900]

 Seller_Area:[180] Seller_Rc:[1840] Seller_Obj:[0606][D]
 Description: [JUNK FOOD PARTY] I/D

	ITEMS DESCRIPTION	AMOUNT	EVENT DATE
1	[BUFFET FOR 120 P. @ \$5.00 EA.]	[600.00]	[12/03/8]

Please enter the above Information

UC Administration

Receivable Information Menu

12/03/87

=====

- 1 ==> Add New Invoice
- 2 ==> Modify Invoice & (Delete/Transactions)
- 3 ==> Inquiry
- 4 ==> Print Invoice(s)
- R ==> Exit
- Q ==> Quit

=====

Enter Selection ==> [?]

Adding New Receivable Invoice Entry Screen

12/03/87

 Inv_No:[8397628] Title:[SECON TRIAL] Job_No:[200]
 Buyer_Name:[JHON SMITH JR.]
 Buyer_Address:[2020 SE. HELLENA STR.]
 Address2:[]
 City:[MISSOULA] State:[MT] Zipcode:[59812]
 CUFS_Descrip:[UCFS/RETREAT PARTY] Area:[180]
 EVENT DATE ITEMS DESCRIPTION RC # OBJ# I/D AMOUNT
 1 [12/03/87] [BUFFET FOR 200 P. @ \$4.50 EA.] [1840]-[0489][] [900.00]

Please enter the above Information

UC Administration

Interdepartmental Inquiry Menu

12/03/87

=====

- 1 ==> Invoice by Invoice
- 2 ==> Invoice by Event Date
- 3 ==> Invoice by Sponser Name
- R ==> Exit

=====

Enter Selection ==> [?]

UC Administration

Receivable Inquiry Menu

12/03/87

=====

- 1 ==> Invoice by Invoice
- 2 ==> Invoice by Event Date
- 3 ==> Invoice by Sponser Name
- R ==> Exit

=====

Enter Selection ==> ?

UC Administration

Receivable Print Invoice(s) Menu

12/03/87

=====

- 1 ==> Print Individual Invoice
- 2 ==> Print Invoices by Group
- R ==> Exit

=====

Enter Selection ==> ?

UC Administration

Interdepartmental Print Invoice(s) Menu 12/03/87

=====

- 1 ==> Print Individual Invoice
- 2 ==> Print Invoices by Group
- R ==> Exit

=====

Enter Selection ==> ?

Payment Entry Screen

12/03/87

1 ==> to Record Payment
2 ==> to Modify Payment
E ==> to EXIT

Please enter your choice: ?

UC Administration

Payment Entry Screen

12/03/87

=====

Invoice Number: 8397438

Amount Paid: 1200.00

Payment Date: 12/03/87

=====

Press (E)/nter this payment

Hit the Space bar once for the invoice field

OR (R)/abort to return to previous screen --> ?

Modify Payment Screen

12/03/87

Enter the Invoice Number: 8397438
Enter the correct Amount: 1000.00
OR Press RETURN twice to Exit

Reports Menu

12/03/87

=====

- 1 ==> Aging Report
- 2 ==> Outstanding Report
- 3 ==> Statement Report
- 4 ==> Receivable Income Report
- 5 ==> Interdepartmental Income Report
- X ==> Exit

=====

Enter Selection ==> ?

File Maintenance Entry Screen

12/03/87

1 ==> Backup Files
2 ==> Purge Files
E ==> to EXIT

Please enter your choice: ?

Enter invoice number to EDIT

Or just press return to exit 839709

Enter invoice number to LOOK for

Or just press return to exit 849999

Please enter Search starting date: 01/01/87

Please enter search ending date : 12/03/8

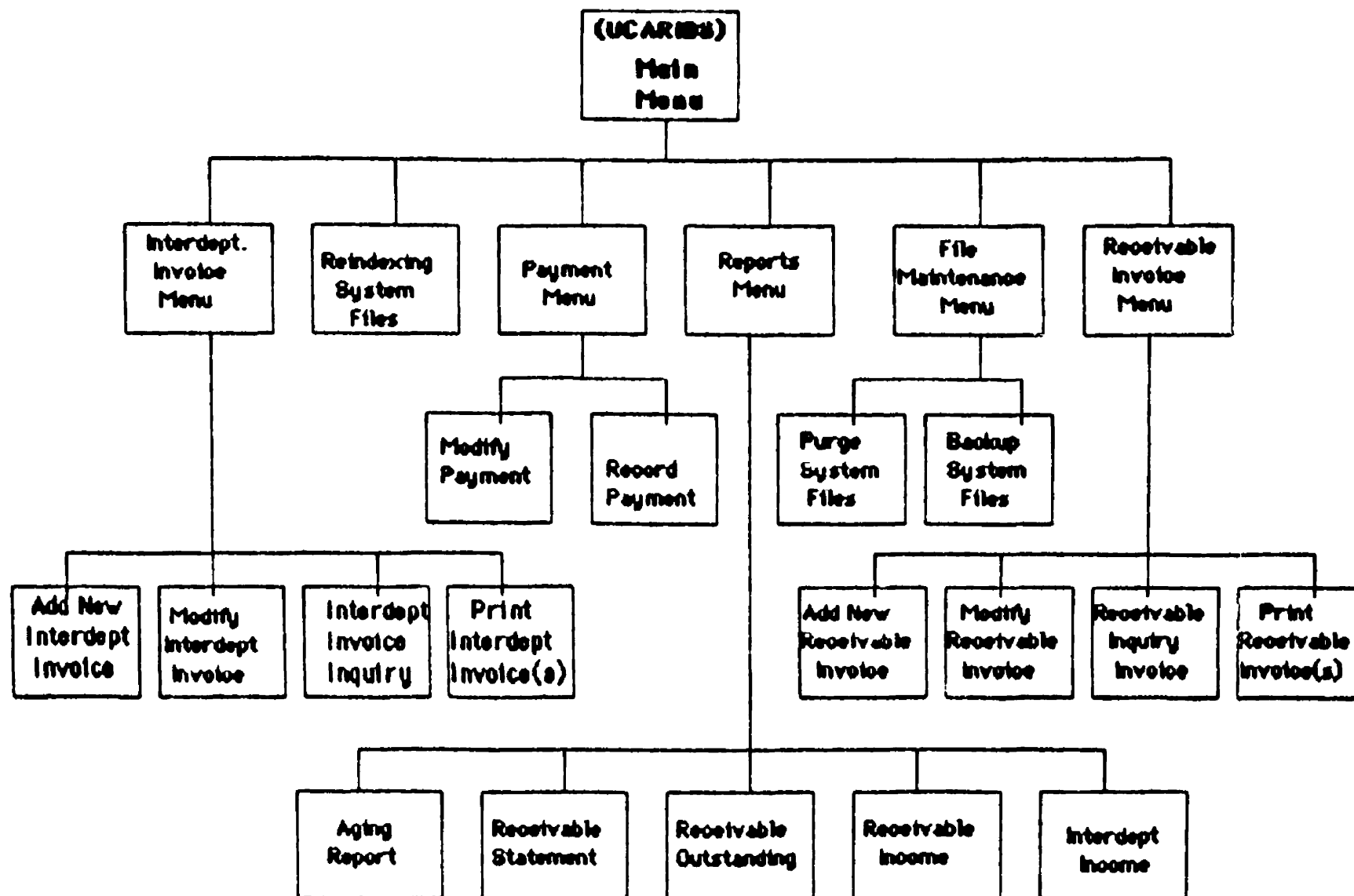
or Press RETURN twice to -- CANCEL

Please enter the first THREE letters of the SPONSER name MN
or Press RETURN twice to -- CANCEL

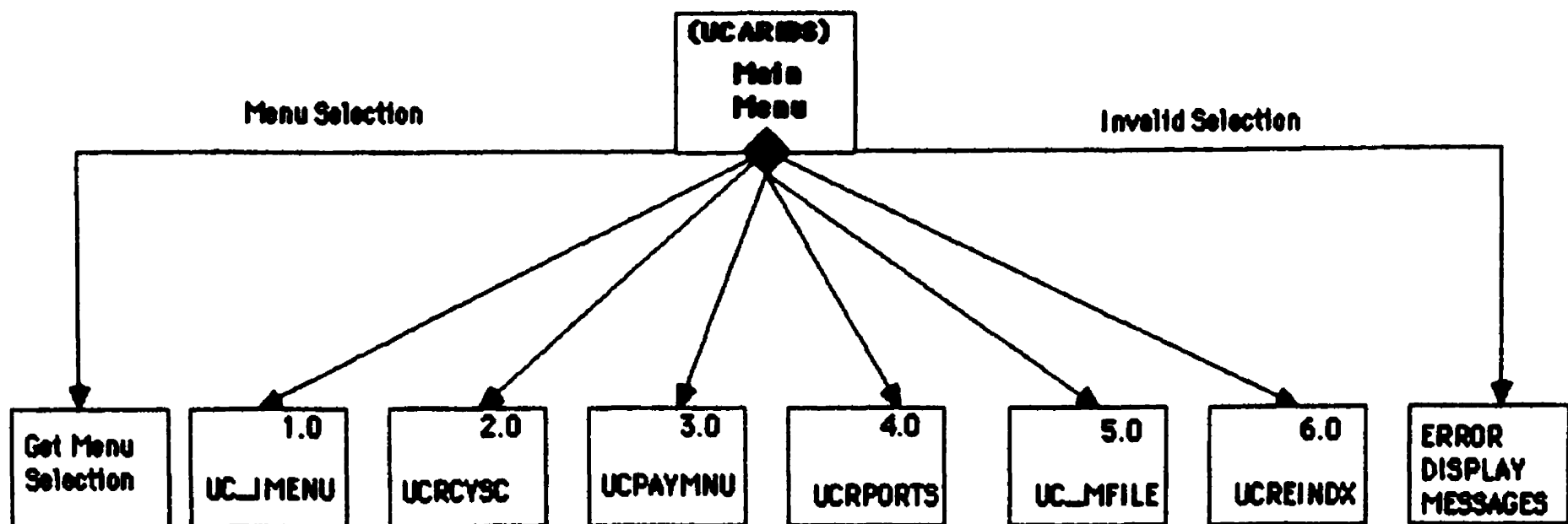
Enter the Invoice Number to Print
Or just Press RETURN to exit 840983

Appendix C
Structured Design
for
UCARIBS

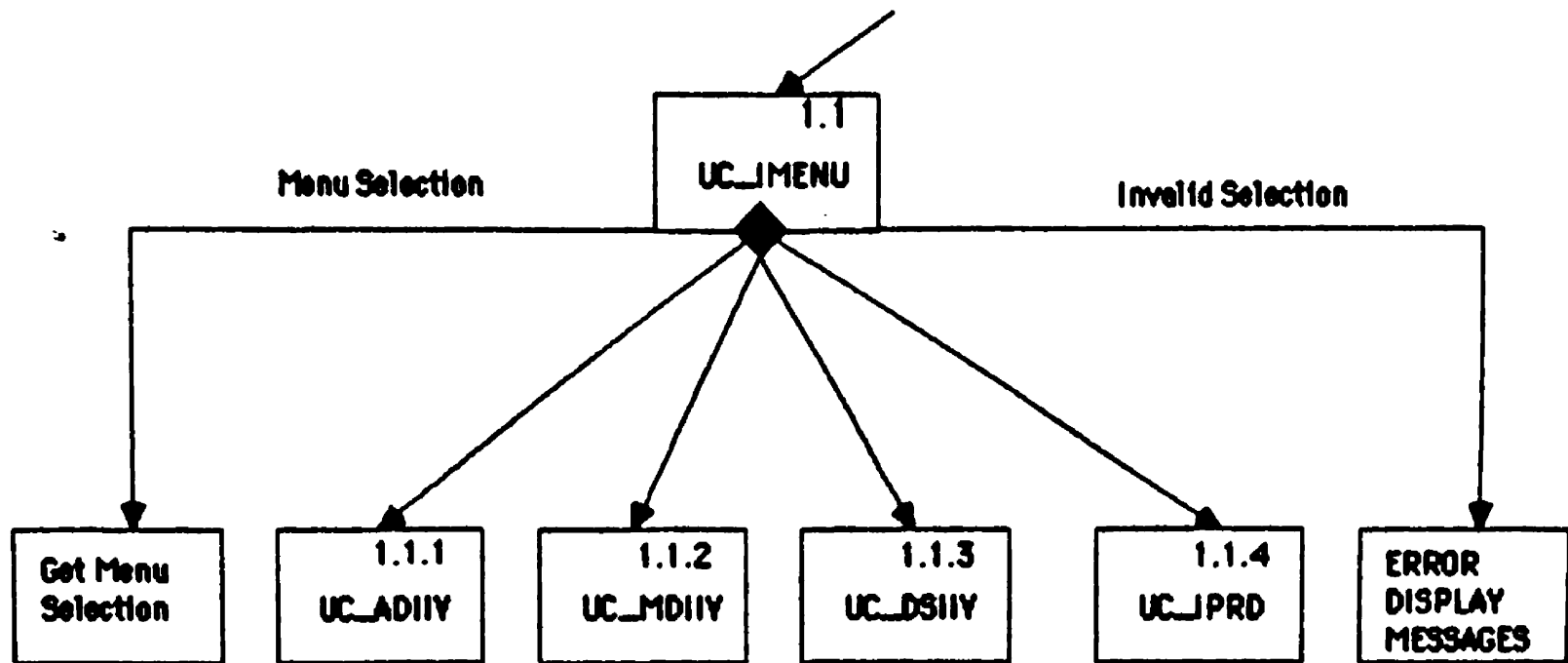
Structure Charts
for
UCARIBS



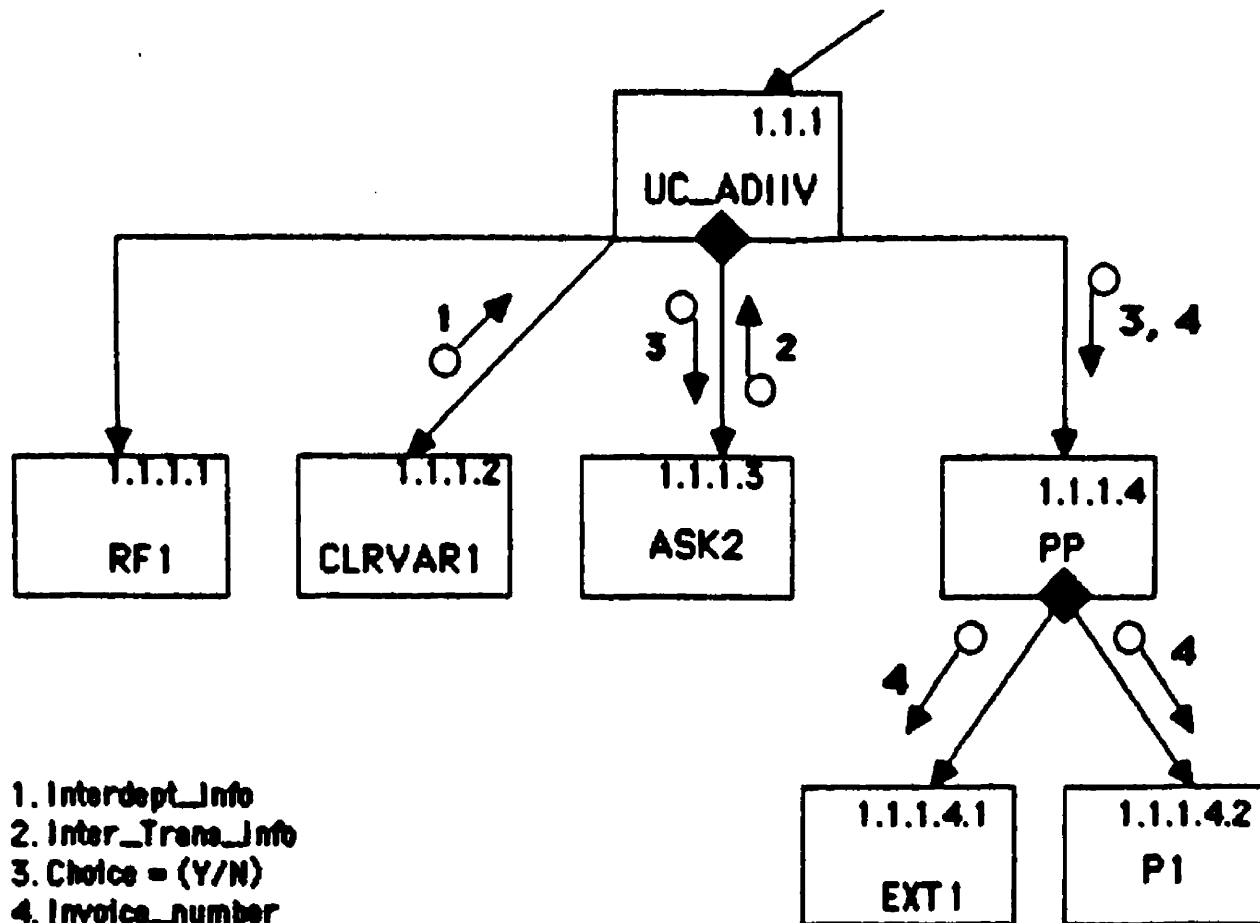
Overall Chart for the UCARIBS System



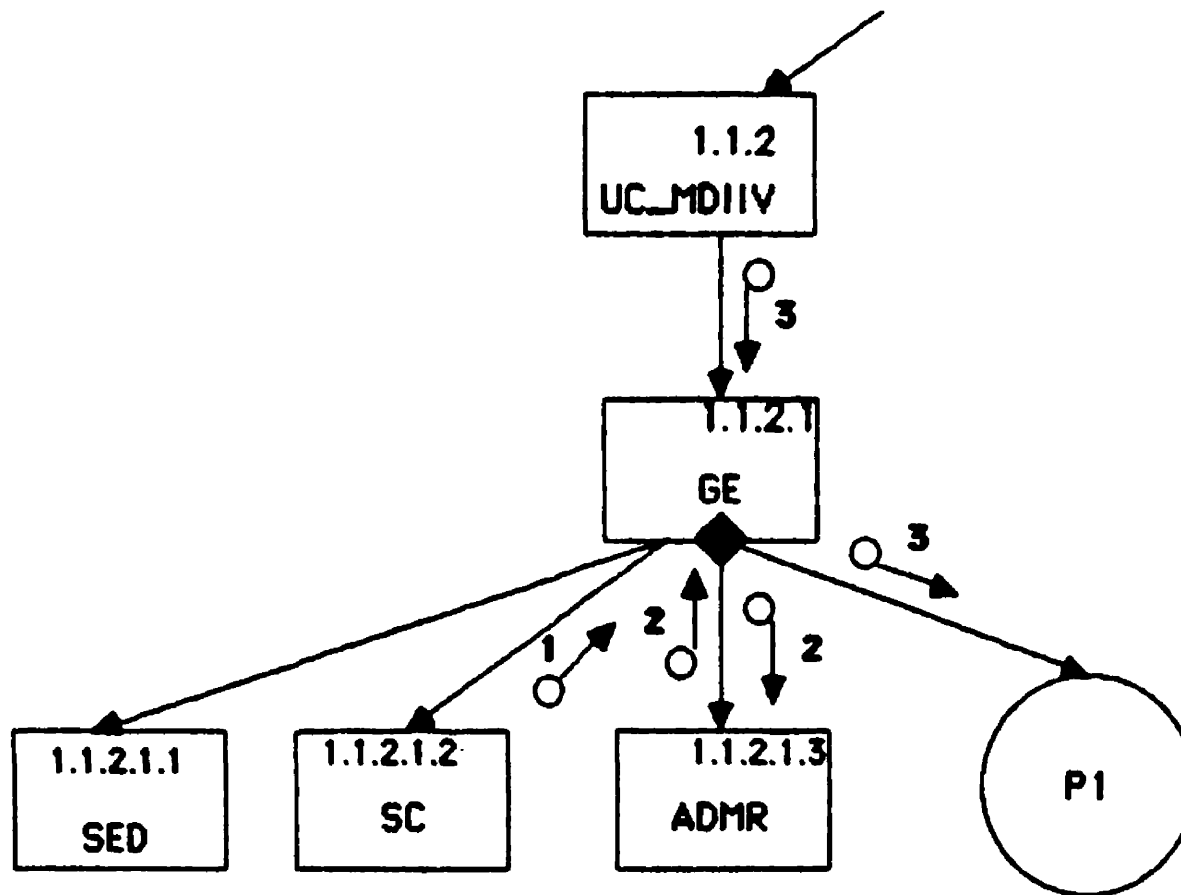
Structure Chart for the (UCARIBS) Main Menu



**Structure Chart for the Interdept. Invoice Information Menu
(UC_IMENU Module)**

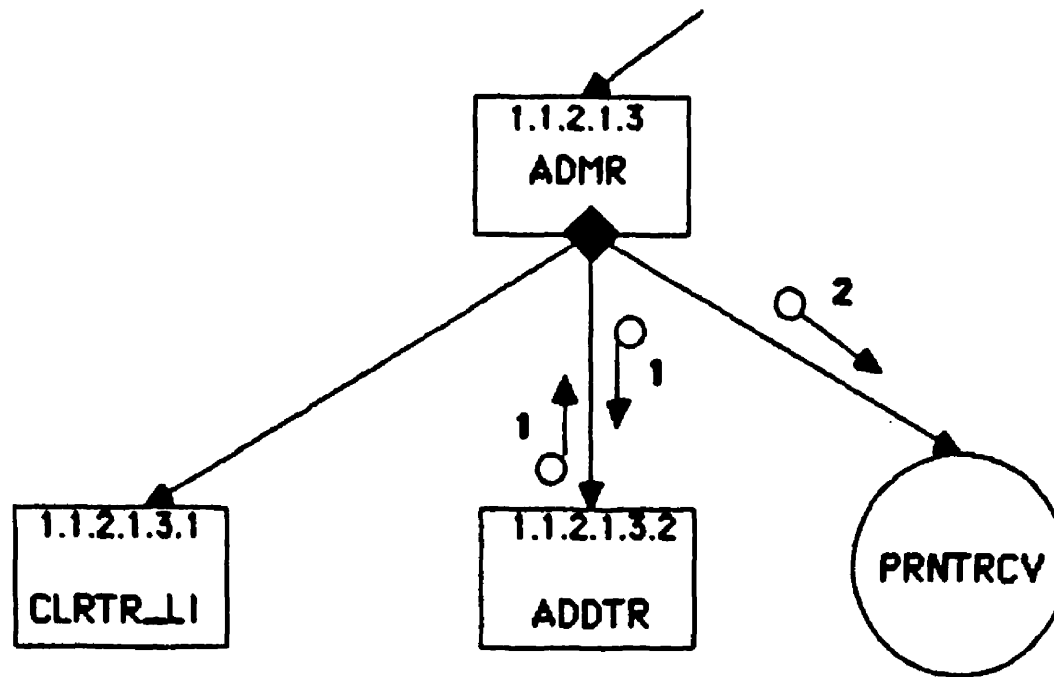


Structure Chart for Add New Interdept. Invoice



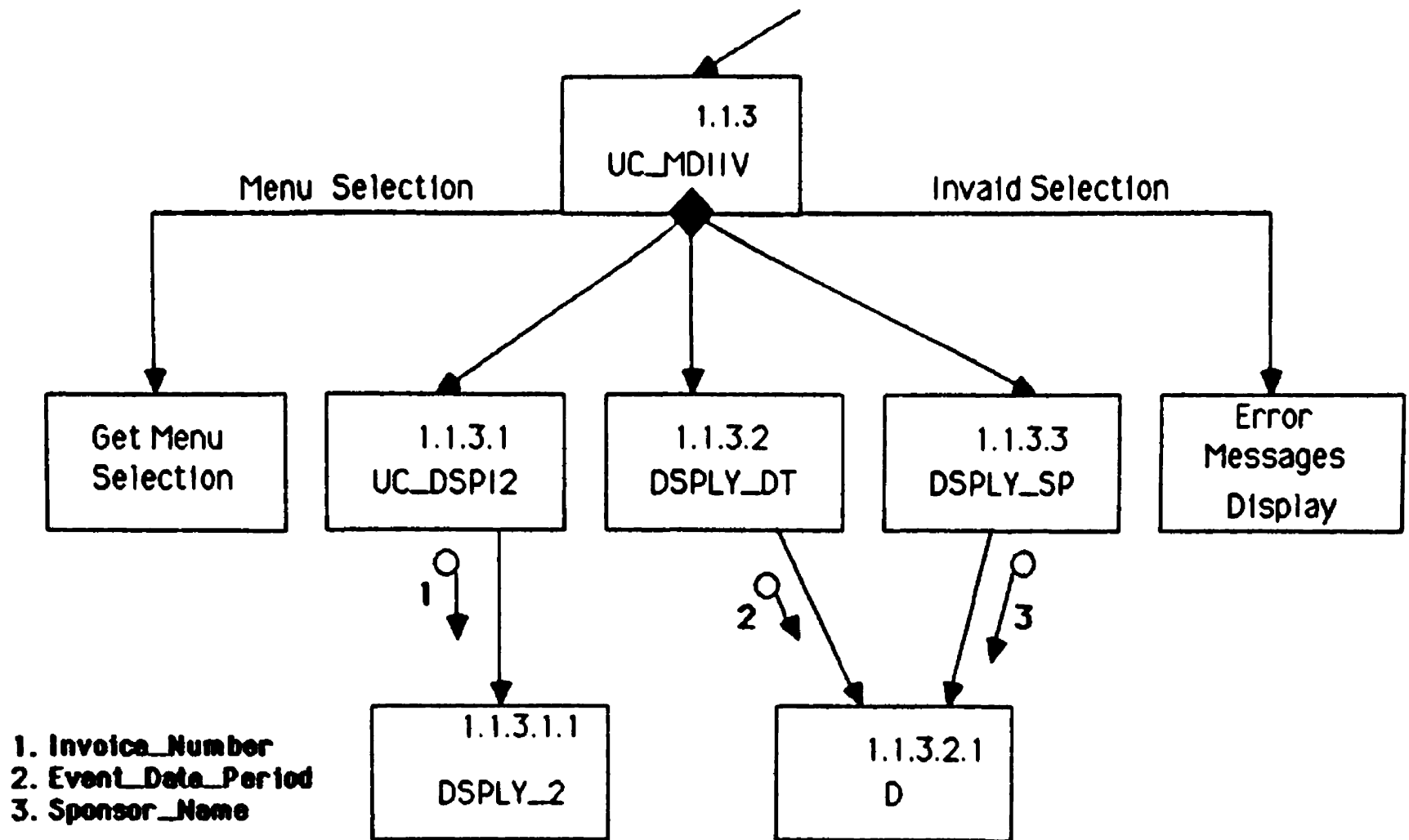
- 1. Interdept_Info
- 2. Inter_Trans_Info
- 3. Invoice_number

Structure Chart for Modify Interdept. Invoice

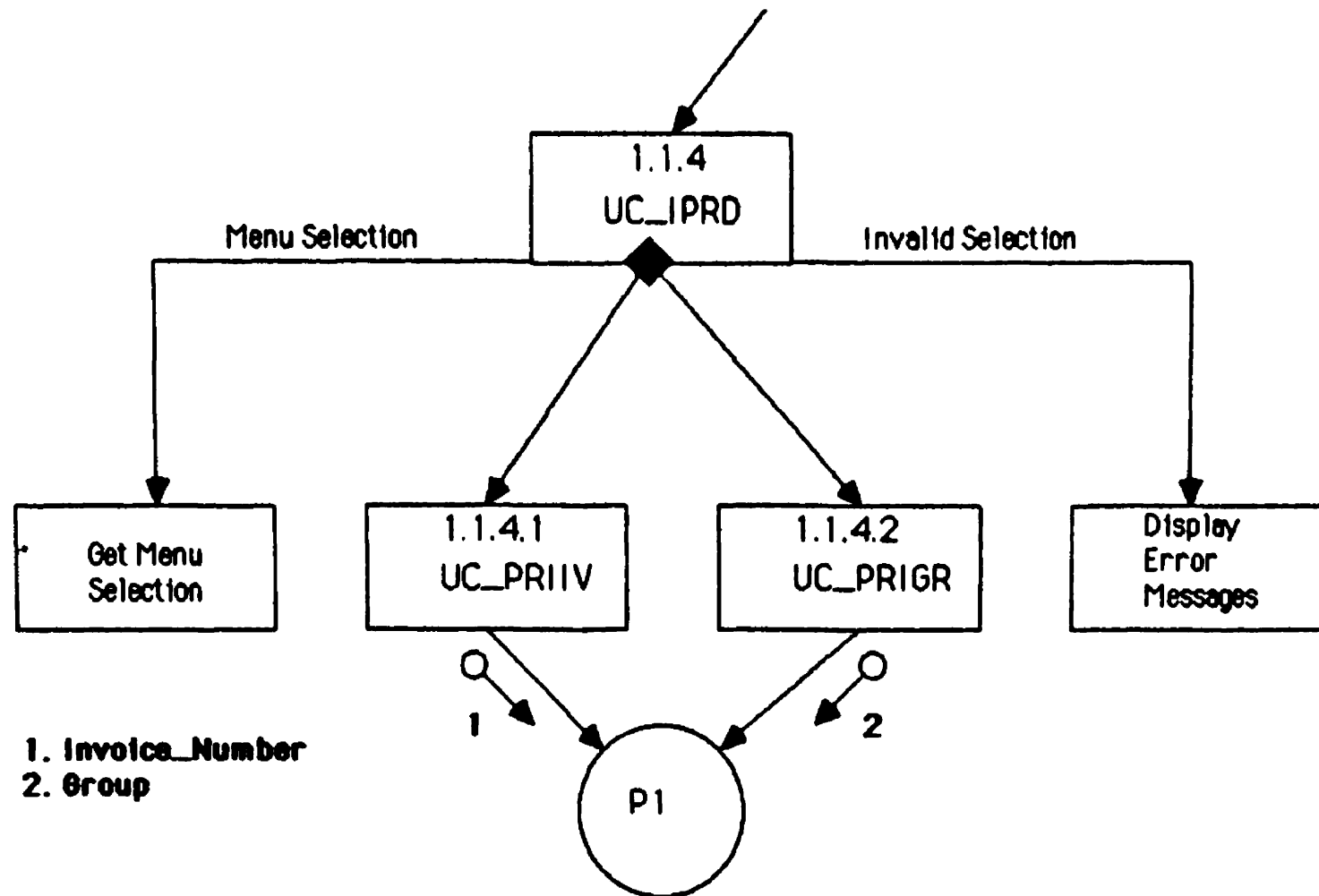


- 1. Recv_Trans_Info
- 2. Invoice_number

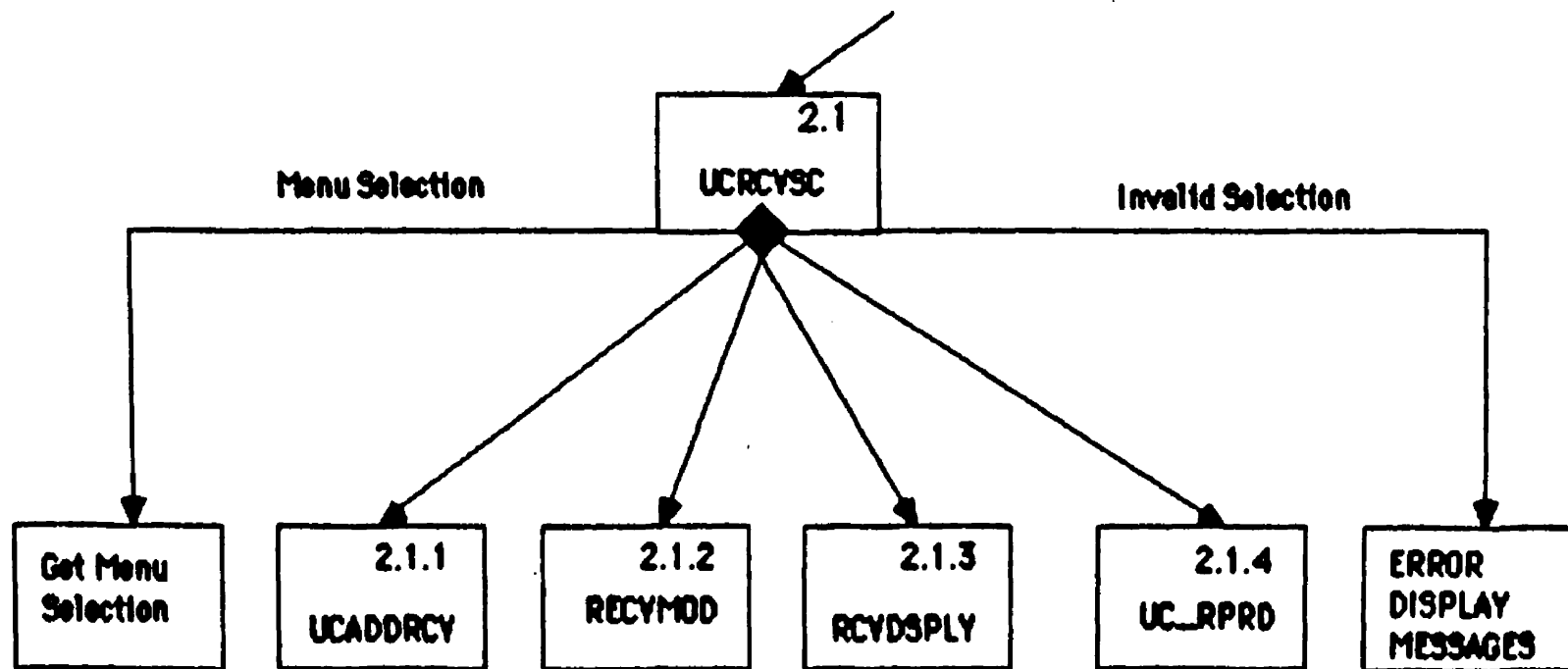
**Structure Chart for Adding the
Interdept. Invoice Transactions**



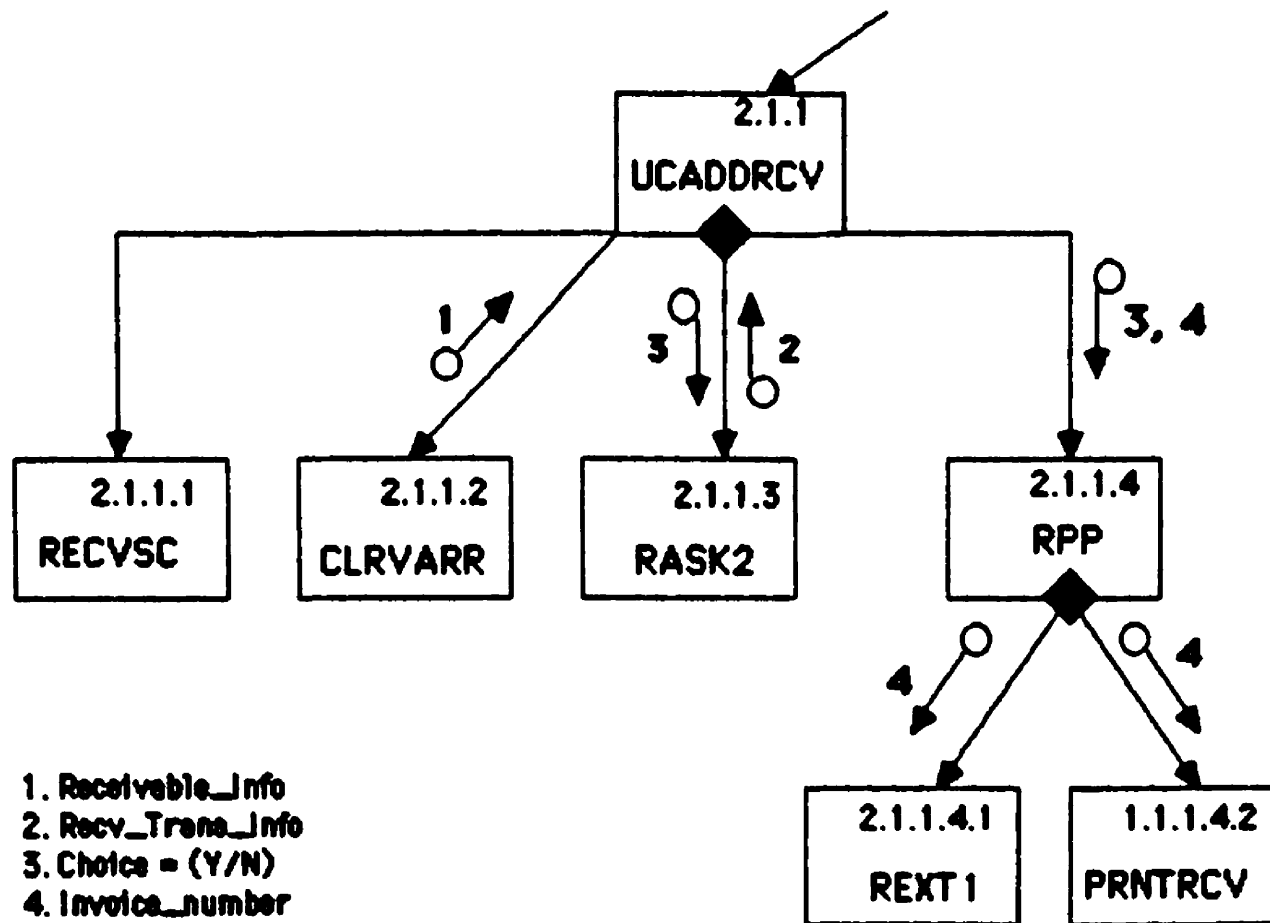
Structure Chart for the Interdept. Inquiry



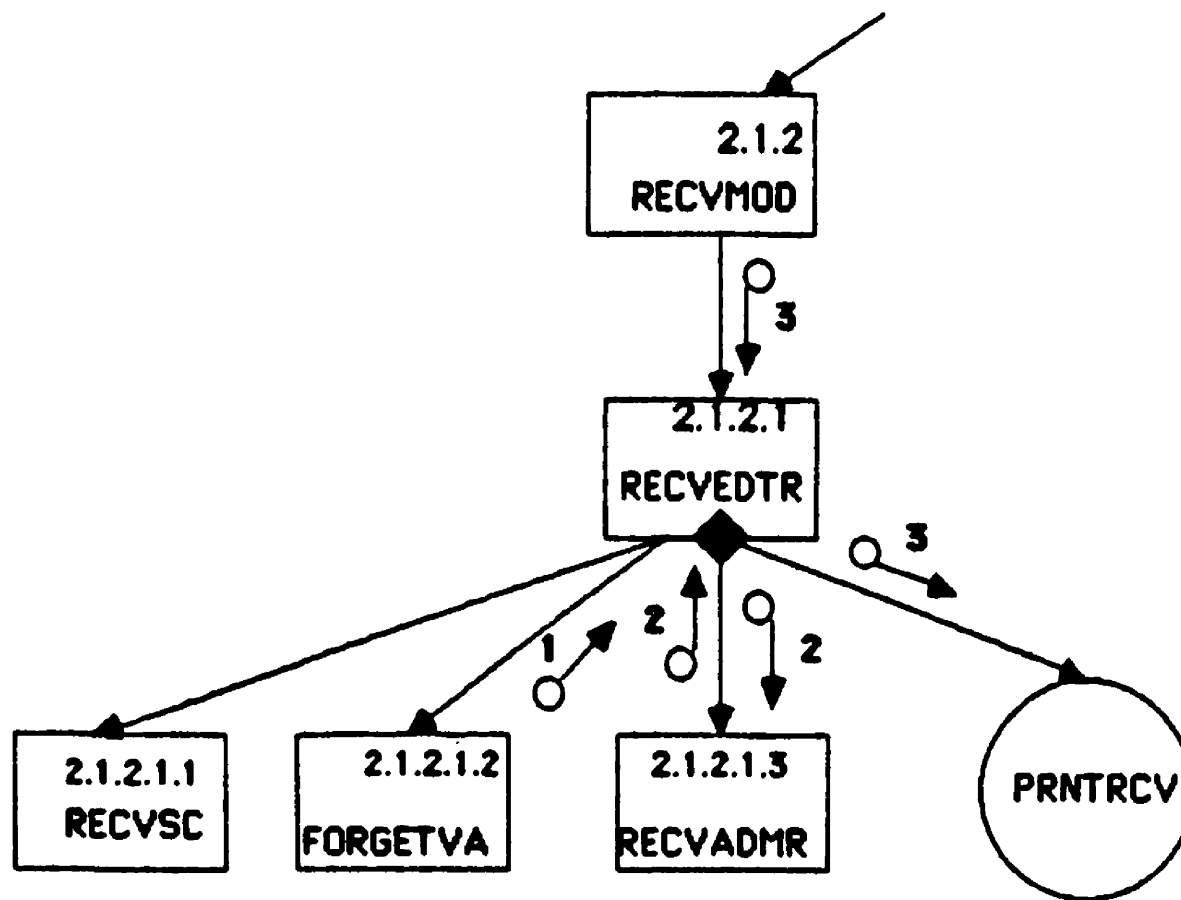
Structure Chart for Printing Interdept. Invoices Singly or Group



**Structure Chart for the Receivable Invoice Information Menu
(UCRCVSC Module)**

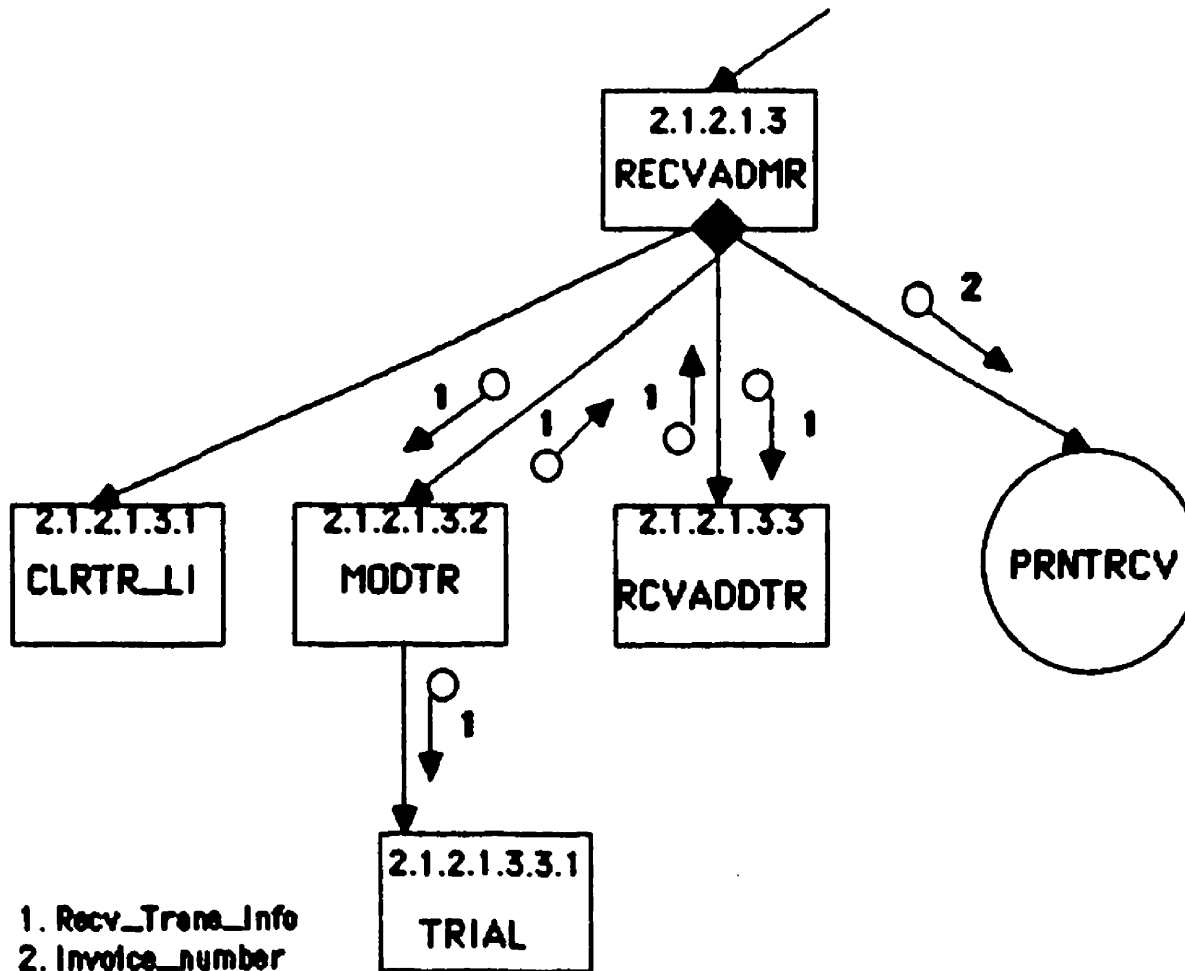


Structure Chart for Add New Receivable Invoice

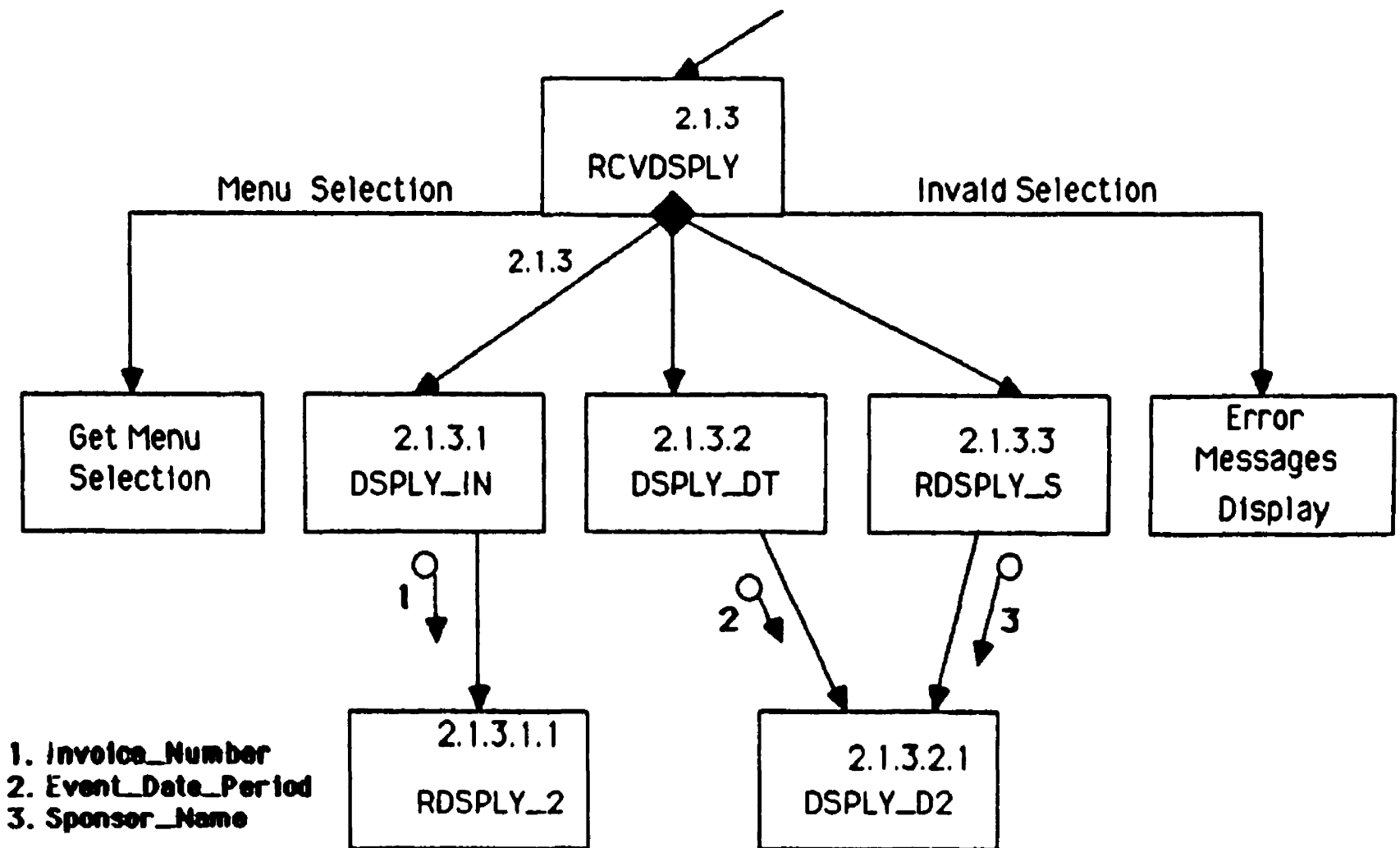


- 1. Receivable_Info
- 2. Recv_Trans_Info
- 3. Invoice_number

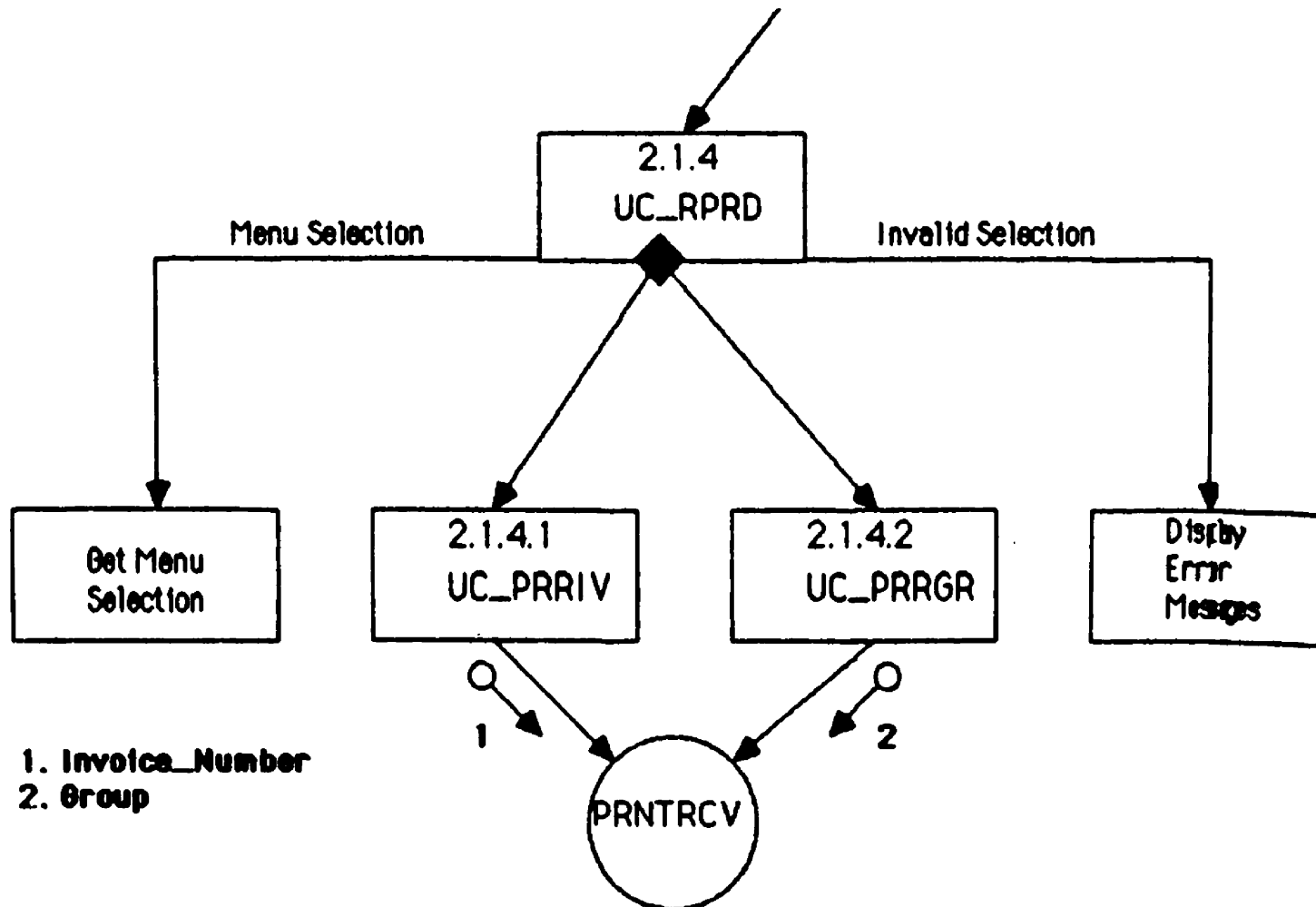
Structure Chart for Modify Receivable Invoice



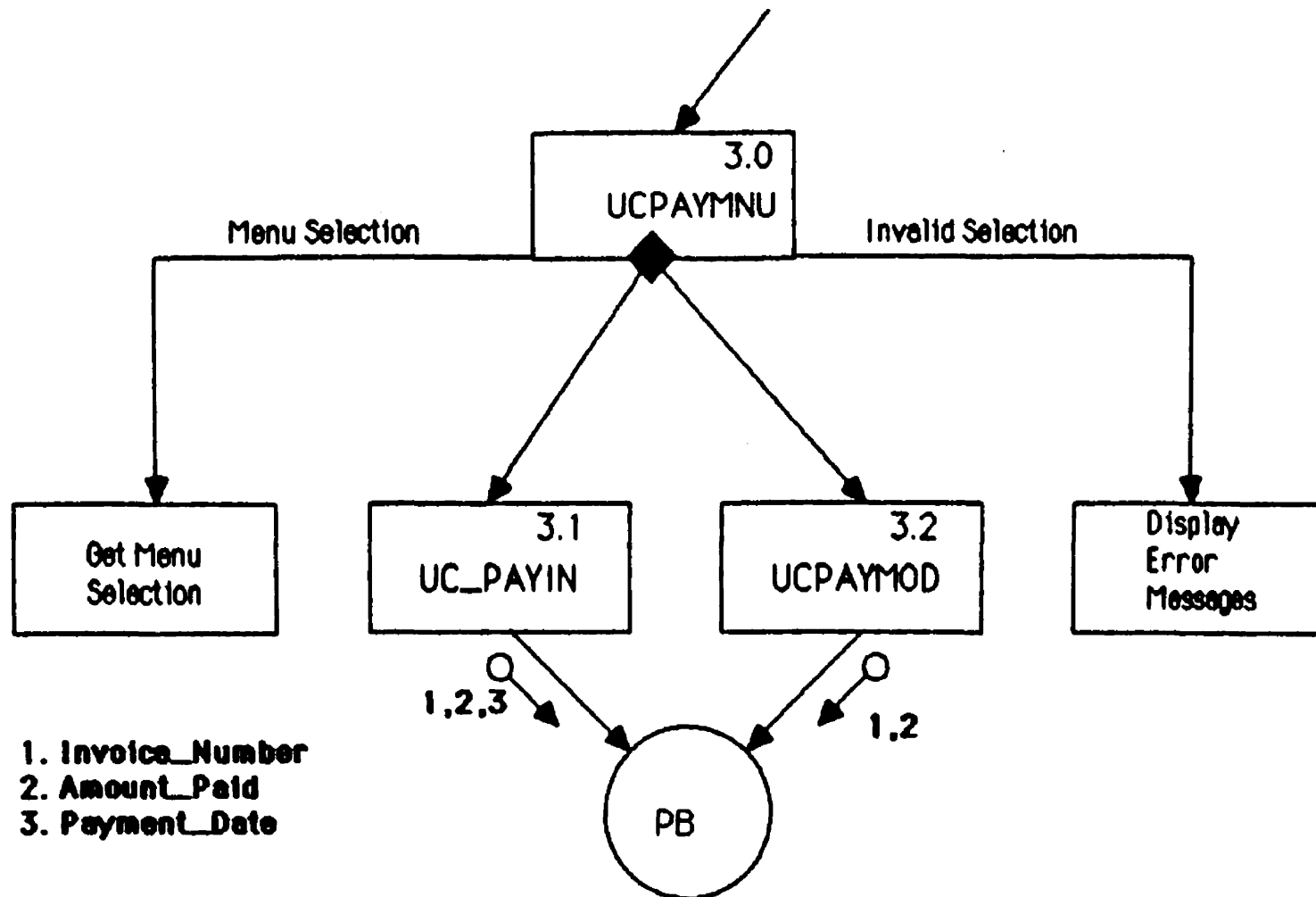
**Structure Chart for Modify/Delete/Add
Receivable Invoice Transactions**



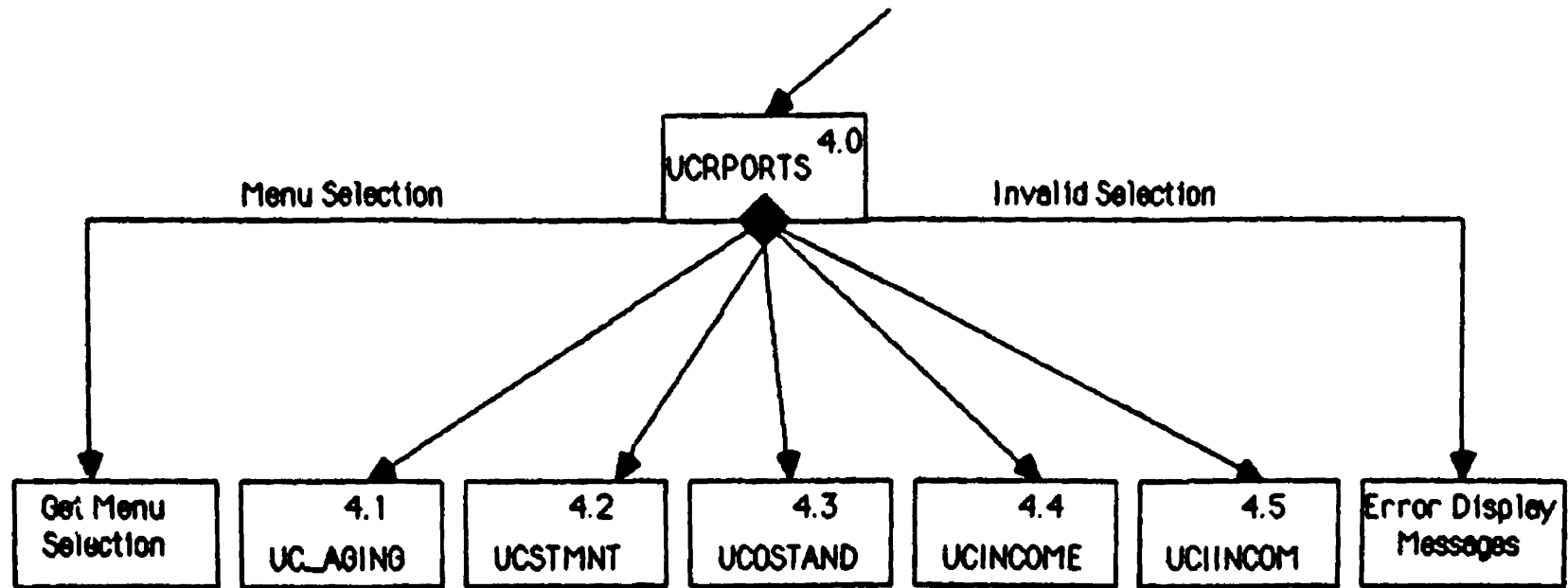
Structure Chart for the Receivable Inquiry



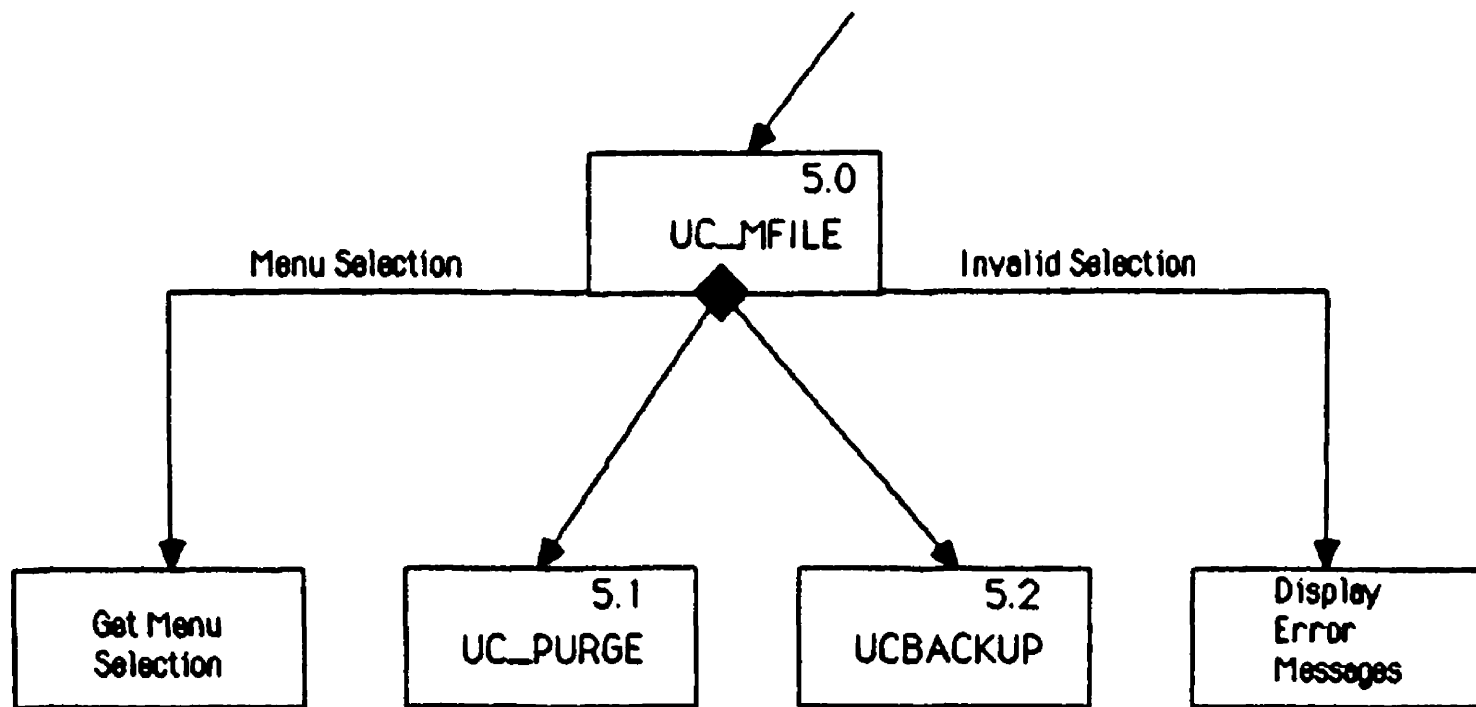
Structure Chart for Printing Receivable Invoices Singly or Group



Structure Chart for Record and Modify Payment



Structure Chart for the Reports Menu



Structure Chart for Purging and Backup System (UCARIBS) Files

Module Description
for
UCARIBS

```

* Module ....:  Invoke Subsystem MAIN Driver (UCARIBS)
* Author ....:  Samir M. Soueidan
* Date .....:  May 1, 1987
* Notice ....:
* Calls .....:  UC_IMENU (The main menu for the Interdept.
*                  Billing system.)

*                  UCRCVSC (The main menu for the Receivable
*                  Billing system.)

*                  UCPAYMNU (The main menu for recording or
*                  modifying a payment.)
*                  UCREPORTS (The main menu for generating the
*                  UCARIBS accounting reports.)
*                  UC_MFILE (The main menu for file maintenance
*                  such as purging or backing up the
*                  system files.)
*                  UCREINDX (This module is used to reindex the
*                  entire system database files.)
* Called by.:  none

```

Display message to enter the correct today date

```

DO WHILE TRUE
  clear the screen
  Display the Main Menu (see the screen section)
  DO WHILE option is not valid ( valid options 1..6 and E)
    get an option

  ENDDO

DO CASE
  CASE option = 1
    clear the screen
    Display the Interdept. Invoice Information Menu
  CASE option = 2
    clear the screen
    Display the Receivable Invoice Information Menu
  CASE option = 3
    clear the screen
    Display the Payment Menu

```

```
CASE option = 4
    clear screen
    Display the Reports Menu
CASE option = 5
    clear screen
    Display the File Maintenance Menu
CASE option = 6
    clear screen
    Reindex the system database files
CASE option = 7
    clear screen
    Terminate the program and quit the dBaseIII.
OTHERWISE
    Do Print Error Message "Invalid Choice"
ENDCASE
ENDDO
RETURN
```

```

* Module ....: UCRCVSC (This is the main menu for the
*               Receivable Billing subsystem.)
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver for the Receivable
*               Billing subsystem.
* Calls .....: UCADDRCV and RECVPROC to add new Receivable
*               invoice.
*               RECVMOD to modify and delete or add more
*               transactions.
*               RCVDSPLY a main menu for invoice(s) Inquiry.
*               UC_RPRD a main menu to print invoice(s)

```

```

* Called by.: UCARIBS

```

```

* Parameters: none

```

```

clear the screen

```

```

DO WHILE TRUE
  clear the screen
  Display the Receivable Invoice Information Menu (see the
    screen section)
  DO WHILE option is not valid ( valid options 1..4 and
    Q or R)
    get an option

```

```

ENDDO

```

```

DO CASE
  CASE option = 1
    clear the screen

    Restore from the memory file the invoice number
    Call the Receivable procedure file
    Do Add a new Receivable Invoice
    Close the Receivable procedure file

```

```
CASE option = 2
    clear the screen
    Do Modify the Receivable Invoice
CASE option = 3
    clear the screen
    Display the Inquiry Menu
CASE option = 4
    clear screen
    Display the Print Invoice Menu
CASE option = R
    clear screen
    Display the Main Menu
CASE option = Q
    clear screen
    Terminate the system and Quit the dbaseIII
OTHERWISE
    Do Print Error Message "Invalid Choice"
ENDCASE
ENDDO
RETURN
```

```

* Module ....: UCADDRCV (This is used to add a new
*               Receivable Invoice
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver to add an Receivable
*               Invoice.
* Calls .....: The following Procedures from RECVPROC:
*               RECVSC to display the Adding new Receivable
*               Entry Screen)
*               CLRVARR to get information from the screen.
*               RADD1 to add the information entered
*               including the first transaction date,
*               amount and description.
*               RADD2 to add the next transactions date,
*               amounts and descriptions.
*               RASK2 to display messages to add more trans_
*               action or to terminate the adding
*               process.
*               RPP   display a messages for printing the new
*               invoice before quitting or later.
*               PRNTRCV to print the new invoice.
*               REXT1 to keep track of the new invoice to be
*               printed later.

* Called by.: UCRCVSC
* Parameters: none

```

```

clear values in all temporary variables
DO display the Adding New Receivable Entry Screen (RECVSC)
DO WHILE NOT valid Receivable Information
    get all information for the new invoice (CLRVARR)
    IF NOT VALID information
        Display Error Message and try again
    ENDIF
DO Display a Choice Message for entering these informa_
tion or to Cancel it and quit the adding process
(RASK2)
IF the Choice = yes
    DO Accept the information (RADD1, RADD2)
DO WHILE Choice = yes
    DO Accept more transactions (RADD2)
ENDDO

```



```
ELSE
    DO Print invoice messages (RPP)
        IF Print Message Choice = Yes
            DO print the invoice (PRNTRCV)
            Check if the Print out is good
            IF the print out is bad
                DO print the invoice again
            ELSE
                Quit the adding process
            ENDIF
        ENDIF
    ENDIF
ENDIF
ENDDO

RETURN
```

```

* Module ....:  RECVMOD (This is used to modify an
*                  existing Receivable Invoice
* Author ....:  Samir M. Soueidan
* Date .....:  May 1, 1987
* Notice ....:  This is the main Driver to modify an existing
*                  Receivable Invoice and adding and deleting
*                  Transactions.
* Calls .....:  The UC_RMVAR.MEM file (the memory file where
*                  the last invoice number kept.
*                  GE to display the old invoice information
*                  before modifying it and as a drive for other
*                  sub-routines.

```

```

* Called by.:  UCRCVSC
* Parameters:  Invoice Number

```

```

RESTORE from a memory file the range of the Receivable
        invoice numbers (UC_RMVAR.MEM)
DO get the Invoice Number to be modified
  IF the Invoice Number = BLANK
    RETURN
  ELSE
    Check if the Invoice Number exists
    IF Invoice Number Exists
      DO modify the Invoice (RGE)
    ELSE
      DO print Error Message " This Invoice Number
        does not exist Try again
    ENDIF
  ENDIF
RETURN

```

```

* Module ....: RGE (This is used to display the old
*               Information of an existing Receivable
*               Invoice and preparing to accept the new
*               Information.
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This also acts as main Driver to modify an
*               existing Receivable. Invoice and adding and
*               deleting transactions by calling another
*               programs to do deleting and modify
*               transactions.
* Calls .....: RECVADMR to delete and add new transaction
*               and to update the database files.
*               FORGETVA to display the old invoice
*               information before modifying it.
*               RECVSC to display the Modify Receivable
*               Invoice Entry Screen.

* Called by.: RECVMOD
* Parameters: none

```

```

DO get the old Invoice Information using the Invoice Number
  from the invoices file (UCRCVINV)
  Display a message Choice to modify these information
  IF Choice = Yes
    DO get the new information and replace them with the
      old ones
    Display another Choice Message to modify the tran_
      sactions in the transaction file (UCRCVTR)
    IF the Choice = Yes
      clear the lower part of the screen (CLRTR_LI)
      DO the adding and modifying process (RECVADMR)
    ENDIF
    DO print the modified invoice (PRNTRCV)
  ENDIF

RETURN

```

```

* Module ....: RECVADMR (This is used to add, delete and
*              modify transactions for an existing
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....:
* Calls .....: RCVADDTR to add new transaction and to
*              update the database files.

```

```

*              MODTR to modify the transactions and Update
*              the transaction and payable files (UCRCVTR
*              and UCPAYFIL)

```

```

* Called by.: RGE
* Parameters: none

```

```

      Display the first transaction from the transactions_
      file (UCRCVTR)
      Display Choice Message to modify or delete
*      that transactions

```

```
DO WHILE NOT EOF (end of UCRCVTR file)
```

```
  DO WHILE Invoice Number TRUE
```

```
    IF the Choice = Delete ("D")
```

```
      DO (TRIAL) delete that transaction record and
      update the transaction and the Payable files
      (UCRCVTR and the UCPAYFIL)
```

```
    ELSE
```

```
      IF the Choice = Modify ("M")
```

```
        DO (MODTR) get the new transaction information
        and Replace the old ones also Update the transactions_
        tion and the Payable files (UCRCVTR
        and UCPAYFIL)
```

```
      ELSE
```

```
        IF Choice = Next ("N")
```

```
          Display the next transaction
          LOOP
```

```
        ENDIF
```

```
      ENDIF
```

```
    ENDIF
```

```
  ENDDO
```

```
ENDDO
```

```
RETURN
```

```
* Module ...: Adding new transactions (RCVADDTR)
* Author ...: Samir M. Soueidan
* Date .....: May 1, 1987
* Notes.....: This program is used to add a new transactions
*              for an existing invoices for the UC Receiva_
*              ble Billing System.
*
* Called by:  RECVADMR.PRG
* Calls.....: CLRTR_LI.PRG
*Parameters:  none
```

```
DO display Adding transaction Message (Y/N)
```

```
    DO WHILE Adding transaction Message = Yes ("Y")
      IF Message Reply = Yes ("Y")
        DO get the new transaction and update the (UCRCVTR
          and the UCPAYFIL) files (RCVADDTR).
        LOOP
      ELSE
        EXIT
      ENDIF
    ENDDO
```

```
RETURN
```

```
* Module ...: Modifying a transaction (MODTR)
* Author ...: Samir M. Soueidan
* Date ....: May 1, 1987
* Notes....: This program is used to Modify the transaction
*             for an existing invoice and Update the Trans_
*             action and the Payable files (UCRCVTR and
*             the UCPAYFIL) for the UC Receiva_
*             ble Billing System.
*
* Called by:  RECVADMR.PRG
* Calls.....: none
*Parameters: none
```

```
DO WHILE TRUE
```

```
    DO get the new transaction
    Replace the old transaction with the new one
    Update the Transaction and the Payable files
    (UCRCVTR and UCPAYFIL)
```

```
    LOOP
```

```
ENDDO
```

```
RETURN
```

```
* Module ...: Deleting the transaction (TRIAL)
* Author ...: Samir M. Soueidan
* Date ....: May 1, 1987
* Notes.....: This program is used to delete the transaction
*               for an existing invoice and Update the Trans_
*               action and the Payable files (UCRCVTR and
*               the UCPAYFIL) for the UC Receiva_
*               ble Billing System.
*
* Called by:  RECVADMR
* Calls.....: none
*Parameters: none
```

```
DO WHILE TRUE
```

```
    DO Delete the Transaction from the Transactions file
      (UCRCVTR)
```

```
    DO Update the Payable file (UCPAYFIL)
```

```
    LOOP
```

```
ENDDO
```

```
RETURN
```

```

* Module ....: RCVDSPLY
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a sub_menu to display
*               the Receivable invoices by invoice
*               number, Event date, or by the first three
*               characters of the customer name.
* Calls .....: DSPLY_IN, DSPLY_DT and RDSPLY_S.
* Called by.: UCRCVSC

```

```

RESTORE from the memory variables file (UC_RMVAR.MEM)
Display the Receivable. Inquiry Screen
DO WHILE TRUE
    clear the screen
    Display the Receivable. Inquiry Screen
    (see the screen section)
    DO WHILE option is not valid ( valid options 1..3 and R)
        get an option

```

```

    ENDDO

```

```

DO CASE
    CASE OPTION = '1'
        DO the Receivable. Inquiry Invoice by Invoice Number
        (DSPLY_IN)
        CASE OPTION = "2"
            DO the Receivable. Inquiry Invoice by Event Date
            (DSPLY_DT)
            CASE OPTION = "3"
                DO the Receivable. Inquiry Invoice by Sponsor Name
                (RDSPLY_S)
            CASE upper(OPTION) = 'R'
                CLEAR
                RETURN
            OTHERWISE
                ? CHR(7)
                @ 20, 21 SAY '*** Invalid Entry - Try again ***'
            ENDCASE
    ENDDO

```

```

RETURN

```



```
* Module ....: DSPLY_IN
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to as a drive to display
*              the Receivable invoices by invoice number.

* Calls .....: RDSPLY_2
* Called by.: RCVDSPLY
```

```
RESTORE from the memory variable file (UC_RMVAR.MEM) the
      last and first Invoice numbers
```

```
DO WHILE TRUE
DO get the Invoice Number you want to look for
Check for Validity
  IF the Invoice Number Exists
    DO the display the information with the total
      amount of the invoice (RDSPLY_2)
  ELSE
    DO Print Message '*** This Invoice Number does not
      Exist -- Press any key to try again ***'
    LOOP
  ENDIF
ENDDO

RETURN
```

```

* Module ....: RDSPLY_2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to as a drive to display
*               the Receivable invoices by Invoice Number.

* Calls .....: FORGETVA to get the information for an
*               Invoice.

*               RECVSC to display the Receivable Inquiry
*               screen by Invoice Number
* Called by.: DSPLY_IN

```

```

RESTORE from the memory variable file (UC_RMVAR.MEM) the
      last and first Invoice numbers

```

```

DO WHILE TRUE
DO get the Invoice Number you want to look for
Check for Validity
      IF the Invoice Number Exists

      Display the Receivable Inquiry Screen by Invoice
*      Number (RECVSC)
      DO get information from the Invoices file (UCRCVINV)
      DO the display the transactions information with the
      total amount of the invoice from (UCRCVTR) file
      (RECVSC)
      ELSE
      DO Print Message '*** This Invoice Number does not
      Exist -- Press any key to try again ***'
      LOOP
      ENDIF
ENDDO

RETURN

```

```
* Module ....: DSPLY_DT
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a drive to display the
*              Receivable invoices by invoice date.
*
* Calls .....: DSPLY_D2 to display the invoice information from
*              the (UCRCVINV and UCRCVTR) files correspon_
*              ding to the invoice numbers in a temporary
*              file sorted by event date.
* Called by.: DSPLY_DT

DO WHILE TRUE
DO get the Starting and ending event date to look for
IF the Starting and Ending Date = BLANK
    Return
ELSE
    Copy from the transaction file (UCRCVTR) all Records
        that have their Event Dates GREATER or EQUAL TO the
        Starting Date AND LESS THAN or EQUAL to The Ending
        Date to a temporary file

    Display the Receivable Inquiry Screen by Event Date
    Get the invoice numbers from the Temporary file and
    Access the Invoices and Transactions files (UCRCVINV
        and UCRCVTR) to Display the entire Information for
        each Invoice Number with the total for each invoice
        (RECVSC, FORGETVA and DSPLY_D2)
ENDIF
ENDDO

RETURN
```

```
* Module ....: RDSPLY_S
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as an entry screen to
                display the Receivable invoices by the first
                three letters of the customer(sponsor) name.

*
* Calls .....: DSPLY_D2 to display the invoice information from
*              the (UCRCVINV and UCRCVTR) files correspon_
                ding to the invoice numbers in a temporary
                file sorted by event date.

* Called by.: RDSPLY_S

DO WHILE TRUE
DO get the First Three Letters of the Sponsor Name
IF the Left BLANK
    Return
ELSE
    Copy from the transaction file (UCRCVTR) all Records
        that have their First Three Letters EQUAL TO the
        First Three Letter of the existing Sponsor Name
        to a temporary file

    Display the Receivable Inquiry Screen by Sponsor Name
    Get the invoice numbers from the Temporary file and
    Access the Invoices and Transactions files (UCRCVINV
        and UCRCVTR) to Display the entire Information for
        each Invoice Number with the total for each invoice
        (RECVSC, FORGETVA and DSPLY_D2)
ENDIF
ENDDO

RETURN
```

```
* Module ....: DSPLY_D2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to display the entire invoice
*              Information from the (UCRCVINV and UCRCVTR) files
*              with the total amount of each invoice

* Calls .....: none
* Called by.: DSPLY_DT and RDSPLY_S
* Parameters: Invoice Number.
```

```
DO WHILE TRUE
```

```
    Access the Invoices and Transactions files (UCRCVINV
    and UCRCVTR) to Display the entire Information for
    each Invoice Number with the total for each invoice
    (RECVSC, FORDETVA and DSPLY_D2)
```

```
ENDDO
```

```
RETURN
```

* Module: RECVSC
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used to display the Screen
* for Modify and Inquiry invoice Request for
* the Receivable Invoices.

* Calls: none
* Called by.: RDSPLY_2, RGE and DSPLY_DT
* Parameters: none

DO Display the invoices screen (RECVSC)

RETURN

```
* Module ....: FORGETVA
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to get the information
*              from the Invoices file (UCRCVINV) for
*              the Receivable Invoices.

* Calls .....: none
* Called by.: RDSPLY_2, RGE and DSPLY_2
* Parameters: none
```

```
DO get the invoice information from invoices file (UCRCVINV)
```

```
RETURN
```

```
* Module ....: RADD1
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to store the new Invo_
*              ice information to the (UCRCVINV) Invoices
*              file for the Receivable Invoices.

* Calls .....: none
* Called by.: UCADDRCV
* Parameters:  none
```

Using the Invoices file (UCRCVINV)

Append a new Record

Replace fields with complete Invoice Information

RETURN


```

* Module ....: RADD2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to store the new Tran_
*              saction to the (UCRCVTR) Transactions
*              file . Also it stores the transactions in
*              the Payable file (UCPAYFIL) according to the
*              accounting responsibility center and object
*              code Numbers after totaling the similar ones

* Calls .....: none
* Called by.: UCADDRCV
* Parameters:  none

```

Using the Invoices file (UCRCVTR)

Append a new Record

Replace fields with complete Transactions Information

Using the Payable file (UCPAYFIL)

```

FOR EACH new Transaction do
  IF the Responsibility center and the Object code
    exists in the Payable file
    Replace the Subtotal Amount in the Payable file by
    the subtotal Amount Plus the new transaction Amount
  ELSE
    Append a new record
    Replace fields with complete Transaction Information
  ENDIF
RETURN

```

```
* Module ....: RASK2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to Display Messages for
*              Adding more Transactions to the Transactions
*              file (UCRCVTR) for the Receivable Invoices.

* Calls .....: none
* Called by..: UCADDRCV
* Parameters:  none
```

```
DO WHILE Message CHoice (Y/N) (Yes or No)
IF Message Choice = Yes ("Y")
```

```
    DO get New Transactions once at a time
```

```
ELSE
```

```
    EXIT
```

```
ENDIF
```

```
LOOP
```

```
ENDDO
```

```
RETURN
```

```

* Module ....: RPP
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to Display Messages for
*               Printing the New Invoice after entering it
*               directly or keep track of it for later Print
*               by storing the invoice number in a file
*               (UC_RTEMP) using (REXT1).

* Calls .....: REXT1
* Called by.: UCADDRCV
* Parameters: none

```

```

DO WHILE TRUE
STORE BLANK to the Variable to YORN
DO WHILE NOT upper(YORN) = Yes or No (Y/N)
"Do you want to print this invoice now (Y/N): "
    get YORN
READ
ENDDO
IF upper(YORN) = 'Y'
Display "Make sure the Printer is on, then
Press any key to continue"
DO Print the Interdepartmental Invoice (PRNTRCV)
STORE BLANK to variable OKP
DO WHILE .NOT. upper(OKP) = Yes or NO (Y/N)
Display " IS the print went OK...!!!! (Y/N): ";
    get OKP
READ
ENDDO
IF upper(OKP) = 'Y'
EXIT
ELSE
STORE BLANK to the Variable OKP
Display "do you want to print the invoice again (y/n):"
LOOP
ENDIF
ELSE
DO store the New Invoice Number in (UC_RTEMP) a temporary
file (REXT1)
ENDIF
EXIT
ENDDO

RETURN

```

* Module: PRNTRCV
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used to Print the Receivable
* Invoice(s) (see Screen Section and Reports

* Calls: none
* Called by.: RPP
* Parameters: Invoice Number

DO WHILE TRUE

 Using the Invoice Number

 Access the Invoices, Payable and the Transactions files
 (UCRCVINV, UCPAYFIL and UCRCVTR)

 Print all Information Required (PRNTRCV)

ENDDO

RETURN

* Module: REXT1
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This procedure is used to Store the Receivab_
* le Invoice(s) Numbers in a temporary file
* (UC_RTEMP) for later to be Printed
* Calls: none
* Called by.: RPP
* Parameters: Invoice Number

using a temporary file (UC_RTEMP)

APPEND a new record

REPLACE the Invoice field with the Invoice Number

RETURN

```

* Module ....: UCPAYMNT
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a main menu for the
                  payment process for the UC Receivable Billing
                  System.

```

```

* Calls .....: UC_PAYIN and UCPAYMOD
* Called by.: UCARIBS (the main menu).
* Parameters: none

```

```

*

```

```

RESTORE from the memory variable file (UC_RMVAR.MEM) the
        last and first Invoice numbers

```

```

DO WHILE the variable RTN = 'F'
Display the "Payment Entry Screen"
Get the entry Choice variable CHOICE

```

```

DO CASE
    CASE upper(CHOICE) = '1'
        DO the record payment entry (UC_PAYIN)
    CASE upper(CHOICE) = '2'
        DO the modify payment entry (UCPAYMOD)
    CASE upper(CHOICE) = 'E'
        CLEAR
        RETURN

```

```

    OTHERWISE
        Display "**** Invalid option -- Press any key to
                try again ****"

```

```

    ENDCASE

```

```

    ENDDO

```

```

RETURN

```

```

* Module ....: UC_PAYIN
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to record partial and
                full payments and update the payment status
                for the UC Receivable Billing System invoices

* Calls .....: PB
* Called by.: UCPAYMNU
* Parameters: none

```

```
DO WHILE TRUE
```

```
DO Display the Payment Entry Screen (see screens section)
```

```
Get the Invoice Number
```

```
Check the validity of the invoice Number
```

```
    IF the Invoice Number = BLANKS:
```

```
        RETURN to the PAYment Menu (UCPAYMNU)
```

```
    ELSE
```

```
        IF the Invoice Number does not Exists
```

```
            Display message "Invalid Invoice Number
```

```
            -- Press any key to try again
```

```
        LOOP
```

```
    ELSE
```

```
        Get the Payment Amount
```

```
        Get the Payment Date
```

```
        Using the Payable file(UCPAYFIL)
```

```
        Calculate the total Invoice Amount
```

```
        Calculate the total Amount Due
```

```
        Using the Payment file(UCPAYTMP)
```

```
        Calculate the total Amount have been Paid
```

```
        Add the Payment Amount to the Amount have been
```

```
        Paid STORE them in the variable total_Paid
```

```
    IF the total Amount Due LESS THAN total_Paid
```

```
        Display a Message "This Payment cannot be
```

```
        Processed the Payment Amount is more than
```

```
        the Amount due
```

```
    RETURN
```

```

ELSE
    IF the total Amount Due EQUAL the total_Paid
    DO (PB) store the Payment Amount in the
    Payment file(UCPAYTMP)
    Replace the Amount Due by Zero in the Payable
        Payable file(UCPAYFIL)
    Display a Message "Payment is Processed"
    RETURN
ELSE
    Using the Payable file(UCPAYFIL)
    Replace the Entire Transaction Amount
    which have been paid by Zero
    Using the total_Paid
    go through the Payable file Transactions
    for that particular Invoice one by one
    check
    IF the Transaction Amount <= total_Paid

        Replace the Amount Due by transaction
            Amount
        DO (PB) Store the Payment Amount in the
            Payment file (UCPAYTMP)
        RETURN
    ELSE
        Replace the Amount Paid by the
            Transaction Amount
        Subtract the Transaction Amount from
            total_Paid
        LOOP WHILE total_paid GREATER THAN ZERO
    ENDIF
ENDIF
ENDIF
ENDIF
ENDIF
ENDDO

RETURN

```



```

* Module ....: UCPAYMOD
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to modify payments
                (partial or full) and update files for the
                UC Receivable Billing System invoices.

```

```

* Calls .....: PB
* Called by.: UCPAYMNU
* Parameters: none

```

```
DO WHILE TRUE
```

```

Display the " Modify Payment Screen"
Get the Invoice Number
Get the new payment Amount
Check the Validity of the Invoice Number
IF the Invoice Number = BLANK
RETURN
ENDIF

```

```

Check for the Invoice Number Validity
IF the Invoice Number does not exist
    Display a Message " This Invoice Number does not exist
                      -- Press any key to try again"

```

```

LOOP
ENDIF

```

```

Display the Old Payments from the Payment file(UCPAYTMP)
Choose the Old Payment you want to Modify
Calculate the total Old Payments
STORE the total Old Payments - Old Payment to be Modified
      + the New Payment to a variable NETPAY
Using the Payable file(UCPAYFIL)
Calculate the Invoice total amount
STORE the Invoice total amount in Variable TOTAL

```

```

IF NETPAY > TOTAL
Display a Message "Payment cannot be done"
      "TOTAL PAYMENT is more than the TOTAL DUE"
      ** Press any key to continue **
RETURN

```

```
ELSE
  Using the Payable file(UCPAYFIL)
  FOR each Transaction of that particular Invoice DO

    REPLACE AMNTPAID with 0.00, AMNTDUE with SUBTOTAMNT
  ENDDO
GO TO the first Transaction for that Invoice

DO WHILE TRUE
  IF NETPAY <= SUBTOTAMNT
    REPLACE AMNTPAID with NETPAY
    REPLACE AMNTDUE with SUBTOTAMNT - NETPAY
    Display a Message "***** the payment is processed
                      -- Press any key to Continue *****"
    Using the Payment file(UCPAYTMP)
    REPLACE Old Payment to be Modified with the New Payment
    RETURN
  ELSE
    REPLACE AMNTPAID with SUBTOTAMNT
    REPLACE AMNTDUE with 0.00
    STORE NETPAY - SUBTOTAMNT to NETPAY
  ENDIF
LOOP
ENDDO
ENDIF

ENDDO

RETURN
```

```
* Module ....: UC_RPRD
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program acts as a main menu for printing the
*              UC Receivable Billing System invoices either
*              singly or as a group.
*
```

```
* Calls .....: UC_PRRIV and UC_PRRGR
* Called by.: UCARIBS (the main menu).
* Parameters:  none
```

```
DO WHILE the Variable  RETN = 'F'
```

```
Display the "Receivable Print Invoice(s) Menu"
```

```
Get the Selection OPTION
```

```
DO CASE
```

```
    CASE OPTION = '1'
```

```
        DO (UC_PRRIV) Print Individual Invoice
```

```
    CASE OPTION = "2"
```

```
        DO (UC_PRRGR) Print Invoices by Group
```

```
    CASE UPPER(OPTION) = 'R'
```

```
        RETURN
```

```
    OTHERWISE
```

```
        Display a Message '*** Invalid Entry - Try again ***'
```

```
ENDCASE
```

```
ENDDO
```

```
RETURN
```

```

* Module ....: UC_PRRIV
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to print the Receivable
                  Billing System invoices singly.

```

```

*

```

```

* Calls .....: PRNTRCV
* Called by.: UC_RPRD
* Parameters:  none

```

```

RESTORE from the memory variable file (UC_RMVAR.MEM) the
        last and first Invoice numbers

```

```

DO WHILE the variable  STIL = 'F'
    Get the Invoice Number

```

```

IF the Invoice Number = BLANK
RETURN
ENDIF

```

```

IF the Invoice Number LESS THAN the first Invoice Number
    in the memory variable file(UC_RMVAR) AND GREATER THAN
    the last Number

```

```

Display a Message
    " this invoice number does not exist;
    -- Press any key to try again"

```

```

LOOP
ENDIF

```

```

Display a Message
    " Make sure the Printer is ready
    -- then Press any key to Continue..."

```

```

DO (PRNTRCV) Print all Information for that Receivable
    Invoice

```

```

LOOP (go and enter another Invoice Number to Print).

```

```

ENDDO

```

```

RETURN

```

```

* Module ....: UC_PRRGR
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to print the UC Receiv-
                  able Billing System new invoices as a group.

```

```

*

```

```

* Calls .....: PRNTRCV
* Called by.: UC_RPRD
* Parameters: none

```

```

DO WHILE the variable STIL = 'F'

```

```

    USING the file (UC_RTEMP) which keeps track of the Invoices
        to printed later

```

```

    DO WHILE the variable RTN = 'F'

```

```

        DO WHILE NOT the EOF (end of file)

```

```

            Display a Message "Make sure the printer is READY

```

```

                                -- Hit any key to Continue..."

```

```

            DO (PRNTRCV) Print the receivable Invoices in the later
                print file(UC_RTEMP) one after the other

```

```

        ENDDO

```

```

        IF EOF() (end of the file)

```

```

            Display a Message "There is no more Invoices in the
                                file to Print "

```

```

                                Press any key to Return to Previous Menu"

```

```

        ENDIF

```

```

CLOSE DATABASES (close the database files)

```

```

ZAP (Empty the later print file(UC_RTEMP))

```

```

ENDDO (end print)

```

```

RETURN

```

```
* Module ....: UC_IPRD
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program acts as a main menu for printing the
*              UC Interdept. Billing System invoices either
*              singly or as a group.
*
```

```
* Calls .....: UC_PRIIV and UC_PRIGR
* Called by.: UCARIBS (the main menu).
* Parameters:  none
```

```
DO WHILE the Variable RETN = 'F'
```

```
Display the "Interdept. Print Invoice(s) Menu"
```

```
Get the Selection OPTION
```

```
DO CASE
```

```
    CASE OPTION = '1'
```

```
        DO (UC_PRIIV) Print Individual Invoice
```

```
    CASE OPTION = "2"
```

```
        DO (UC_PRIGR) Print Invoices by Group
```

```
    CASE UPPER(OPTION) = 'R'
```

```
        RETURN
```

```
    OTHERWISE
```

```
        Display a Message '*** Invalid Entry - Try again ***'
```

```
ENDCASE
```

```
ENDDO
```

```
RETURN
```

```

* Module ....: UC_PRIIV
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to print the Interdept.
                  Billing System invoices singly.
*
* Calls .....: P1
* Called by.: UC_IPRD
* Parameters: none

```

```

RESTORE from the memory variable file (UC_IMVAR.MEM) the
      last and first Invoice numbers

```

```

DO WHILE the variable  STIL = 'F'
      Get the Invoice Number

```

```

IF the Invoice Number = BLANK
RETURN
ENDIF

```

```

IF the Invoice Number LESS THAN the first Invoice Number
      in the memory variable file(UC_IMVAR) AND GREATER THAN
      the last Number

```

```

Display a Message
      " this invoice number does not exist;
      -- Press any key to try again"

```

```

LOOP
ENDIF

```

```

Display a Message
      " Make sure the Printer is ready
      -- then Press any key to Continue..."

```

```

DO (P1) Print all Information for that Interdept.
      Invoice

```

```

LOOP (go and enter another Invoice Number to Print).

```

```

ENDDO

```

```

RETURN

```

```
* Module ....: UC_PRIGR
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to print the UC Interd-
                ept. Billing System new invoices as a group.
*
```

```
* Calls .....: P1
* Called by.: UC_IPRD
* Parameters: none
```

```
DO WHILE the variable STIL = 'F'
```

```
    USING the file (UC_ITEMP) which keeps track of the Invoices
        to printed later
```

```
DO WHILE the variable RTN = 'F'
```

```
DO WHILE NOT the EOF (end of file)
```

```
Display a Message "Make sure the printer is READY
                  -- Hit any key to Continue..."
```

```
DO (P1) Print the Interdept. Invoices in the later
        print file(UC_ITEMP) one after the other
```

```
ENDDO
```

```
IF EOF() (end of the file)
```

```
    Display a Message "There is no more Invoices in the
                      file to Print "
```

```
        Press any key to Return to Previous Menu"
```

```
ENDIF
```

```
CLOSE DATABASES (close the database files)
```

```
ZAP (Empty the later print file(UC_ITEMP))
```

```
ENDDO (end print)
```

```
RETURN
```


* Module: PB
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used to record new payment
 to the UCPAYTMP.DBF file for the UC Receiv-
 able Billing System.

* Calls: none
* Called by.: UCPAYMOD
* Parameters: none

Using the Payment file(UCPAYTMP)

Append new record

REPLACE the Payment record fields with the new Information

RETURN

```

* Module ....: UCRPORTS
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to print the Receivable
                and Interdepartmental Billing System reports.

* Calls .....: UCSTMNT, UCOSTAND, UCAGING, UCINCOME
*              and UCIINCOM.

* Called by.: UCARIBS
* Parameters: none

```

```

DO WHILE the variable EXIT = 'F'
Display the Reports Menu (see screens section)
    1 ==> Aging Report
    2 ==> Outstanding Report
    3 ==> Statement Report
    4 ==> Receivable Income Report
    5 ==> Interdepartmental Income Report
    X ==> Exit

```

```

Get the Variable OPTION

```

```

DO CASE

```

```

CASE OPTION = '1'
    DO (UC_AGING) the Aging Report

```

```

CASE OPTION = '2'
    DO (UCOSTAND) the Outstanding Report

```

```

CASE OPTION = '3'
    do (UCSTMNT) the Statement Report

```

```

CASE OPTION = '4'
    DO (UCINCOME) the Receivable Income Report

```

```

CASE OPTION = '5'
    DO (UCIINCOM) the Interdepartmental Income Report

```

```

CASE OPTION = 'X'
    RETURN

```

```

OTHERWISE
    Display a Message '*** Invalid Entry - Try again ***'
ENDCASE
ENDDO

```

```

RETURN

```

```
* Module ....: UC_MFILE
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a drive to backup or
                purge the UC Receivable and Interdepartmental
                Billing System database files.

* Calls .....: UCBACUP and UC_PURGE
* Called by.: UCARIBS
* Parameters: none
```

```
DO WHILE the variable EXIT = 'F'
```

```
    Display the File Maintenance Entry Screen
        (see screens section)
```

```
Get CHOICE
```

```
DO CASE
```

```
    CASE CHOICE = '1'
        DO (UCBACKUP) the Backup Data Files
```

```
    CASE CHOICE = '2'
        DO (UC_PURGE) the Purge Data Files
```

```
    CASE CHOICE = 'E'
        RETURN
```

```
    OTHERWISE
        Display a Message
        "* Invalid option -- Press any key to try again *"
```

```
ENDCASE
```

```
ENDDO
```

```
RETURN
```

* Module: UCBACKUP
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used to Backup the entire
 Receiveable and Interdepartmental
 Billing System database files.

* Called by.: UC_MFILE
* Parameters: none

Display the necessary Instructions for the User to Backup
all System (UCARIBS) Database Files

DO the necessary Commands

RETURN

* Module: UC_PURGE
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used to PURGE the entire
 Receivable and Interdepartmental
 Billing System database files.

* Called by.: UC_MFILE
* Parameters: none

Display the necessary Instructions for the User to Purge
all System (UCARIBS) Database Files

DO the necessary Commands

RETURN

```

* Module ....: UC_IMENU (This is the main menu for the
*                  Interdept. Billing subsystem.)
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver for the Interdept.
*                  Billing subsystem.
* Calls .....: UC_ADIIV and UC_IPROC to add new Interdept.
*                  invoice.
*                  UCMDIIV to modify and delete or add more
*                  transactions.
*                  UCDSIIV a main menu for invoice(s) Inquiry.
*                  UC_IPRD a main menu to print invoice(s)

* Called by.: UCARIBS

* Parameters: none

```

```
clear the screen
```

```

DO WHILE TRUE
  clear the screen
  Display the Interdept. Invoice Information Menu (see the
    screen section)
  DO WHILE option is not valid ( valid options 1..4 and
    Q or R)
    get an option

  ENDDO

  DO CASE
    CASE option = 1
      clear the screen

      Restore from the memory file the invoice number
      Call the Interdept. procedure file
      Do Add a new Interdept. Invoice
      Close the Interdept. procedure file
    CASE option = 2
      clear the screen
      Do Modify the Interdept. Invoice
    CASE option = 3
      clear the screen
      Display the Inquiry Menu

```

```
CASE option = 4
    clear screen
    Display the Print Invoice Menu
CASE option = R
    clear screen
    Display the Main Menu
CASE option = Q
    clear screen
    Terminate the system and Quit the dbaseIII
OTHERWISE
    Do Print Error Message "Invalid Choice"
ENDCASE
ENDDO
RETURN
```

```

* Module ....: UC_ADIIIV (This is used to add a new
*                  Interdept. Invoice
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver to add an Interdept.
*                  Invoice.
* Calls .....: The following Procedures from UC_IPROC:
*                  RF1 (to display the Adding new Interdept.
*                      Entry Screen)
*                  CLRVAR1 to get information from the screen.
*                  ADD1 to add the information entered
*                      including the first transaction date,
*                      amount and description.
*                  ADD2 to add the next transactions date,
*                      amounts and descriptions.
*                  ASK2 to display messages to add more trans_
*                      action or to terminate the adding
*                      process.
*                  PP   display a messages for printing the new
*                      invoice before quitting or later.
*                  P1   to print the new invoice.
*                  EXT1 to keep track of the new invoice to be
*                      printed later.

* Called by.: UC_IMENU
* Parameters: none

```

```

clear values in all temporary variables
DO display the Adding New Interdept. Entry Screen (RF1)
DO WHILE NOT valid Interdept. Information
    get all information for the new invoice (CLRVAR1)
IF NOT VALID information
    Display Error Message and try again
ENDIF
DO Display a Choice Message for entering these informa_
    tions or to Cancel it and quit the adding process
    (ASK2)
    IF the Choice = yes
        DO Accept the information (ADD1, ADD2)
    DO WHILE Choice = yes
        DO Accept more transactions (ADD2)
    ENDDO

```



```
ELSE
  DO Print invoice messages (PP)
    IF Print Message Choice = Yes
      DO print the invoice (P1)
      Check if the Print out is good
      IF the print out is bad
        DO print the invoice again
      ELSE
        Quit the adding process
      ENDIF
    ENDIF
  ENDIF
ENDIF
ENDDO

RETURN
```

```

* Module ....: UC_MDIIV (This is used to modify an
*                  existing Interdept. Invoice
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This is the main Driver to modify an existing
*                  Interdept.Invoice and adding and deleting
*                  Transactions.
* Calls .....: The UC_IMVAR.MEM file (the memory file where
*                  the last invoice number kept.
*                  GE to display the old invoice information
*                  before modifying it and as a drive for other
*                  sub-routines.

```

```

* Called by.: UC_IMENU
* Parameters: Invoice Number

```

```

RESTORE from a memory file the range of the Interdept.
          invoice numbers (UC_IMVAR.MEM)
DO get the Invoice Number to be modified
  IF the Invoice Number = BLANK
    RETURN
  ELSE
    Check if the Invoice Number exists
    IF Invoice Number Exists
      DO modify the Invoice (GE)
    ELSE
      DO print Error Message " This Invoice Number
        does not exist Try again
    ENDIF
  ENDIF
RETURN

```

```

* Module ....: GE (This is used to display the old
*               Information of an existing Interdept.
*               Invoice and preparing to accept the new
*               Information.
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This also acts as main Driver to modify an
*               existing Interdept. Invoice and adding and
*               deleting Transactions by calling another
*               programs to do deleting and modify
*               transactions.
* Calls .....: ADMR to delete and add new transaction and to
*               update the database files.
*               SC to display the old invoice information
*               before modifying it.
*               SED to display the Modify Interdept. Invoice
*               Entry Screen.

* Called by.: UC_MDIIV
* Parameters: none

```

```

DO get the old Invoice Information using the Invoice Number
  from the invoices file (UCINTER1)
  Display a message Choice to modify these information
  IF Choice = Yes
    DO get the new information and replace them with the
      old ones
    Display another Choice Message to modify the tran_
      sactions in the transaction file (UCINTFIL)
    IF the Choice = Yes
      clear the lower part of the screen (CLRTR_LI)
      DO the adding and modifying process (ADMR)
    ENDIF
    DO print the modified invoice (P1)
  ENDIF

RETURN

```

```

* Module ....:  ADMR (This is used to add, delete and
*                modify transactions for an existing
* Author ....:  Samir M. Soueidan
* Date .....:  May 1, 1987
* Notice ....:
* Calls .....:  ADDTR to add new transaction and to
*                update the database files.
* Called by.:  GE
* Parameters:  none

```

```

        Display the first transaction from the transac_
        file (UCINTFIL)
        Display Choice Message to modify or delete
*        that transactions

```

```

DO WHILE NOT EOF (end of UCINTFIL file)

```

```

    DO WHILE Invoice Number TRUE
        IF the Choice = Delete ("D")
            DO delete that transaction record and update the
            transaction file (UCINTFIL)
        ELSE
            IF the Choice = Modify ("M")
                DO get the new transaction information and
                Replace the old ones also Update the transac_
                tion file (UCINTFIL)
            ELSE
                IF Choice = Next ("N")
                    Display the next transaction
                    LOOP
                ENDIF
            ENDIF
        ENDIF
    ENDIF

```

```

ENDDO

```

```

ENDDO
RETURN

```

```
* Module ...: Adding new transactions (ADDTR)
* Author ...: Samir M. Soueidan
* Date ....: May 1, 1987
* Notes.....: This program is used to add a new transactions
*              for an existing invoices for the UC Interde_
*              partmental Billing System.
*
* Called by:  ADMR.PRG
* Calls.....: CLRTR_LI.PRG
*Parameters:  none
```

```
DO display Adding transaction Message (Y/N)
```

```
    DO WHILE Adding transaction Message = Yes ("Y")
        IF Message Reply = Yes ("Y")
            DO get the new transaction and update the
              (UCINTFIL) file (ADDTR).
            LOOP
        ELSE
            EXIT
        ENDIF
    ENDDO
RETURN
```

```

* Module ....: UC_DSIIV.PRG
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a sub_menu to display
*               the Interdepartmental invoices by invoice
*               number, invoice date, or by the first three
*               characters of the customer name.
* Calls .....: UC_DSP12.PRG, DS.PRG and DSPLY_SP.PRG.
* Called by.: UC_IMENU

```

```

RESTORE from the memory variables file (UC_IMVAR.MEM)
Display the Interdepart. Inquiry Screen
DO WHILE TRUE
    clear the screen
    Display the Interdepart. Inquiry Screen
    (see the screen section)
    DO WHILE option is not valid ( valid options 1..3 and R)
        get an option

    ENDDO

```

```

DO CASE
    CASE OPTION = '1'
        DO the Interdepart. Inquiry Invoice by Invoice Number
        (UC_DSP12)
    CASE OPTION = "2"
        DO the Interdepart. Inquiry Invoice by Event Date
        (DS)
    CASE OPTION = "3"
        DO the Interdepart. Inquiry Invoice by Sponsor Name
        (DSPLY_SP)
    CASE upper(OPTION) = 'R'
        CLEAR
        RETURN
    OTHERWISE
        ? CHR(7)
        @ 20, 21 SAY '*** Invalid Entry - Try again ***'
    ENDCASE
ENDDO

RETURN

```

```
* Module ....: UC_DSP12
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to as a drive to display
*              the Interdepartmental invoices by invoice
*              number.

* Calls .....: DSPLY_2
* Called by.: UC_DSIIV
```

```
RESTORE from the memory variable file (UC_IMVAR.MEM) the
      last and first Invoice numbers
```

```
DO WHILE TRUE
DO get the Invoice Number you want to look for
Check for Validity
      IF the Invoice Number Exists
            DO the display the information with the total
              amount of the invoice (DSPLY_2)
      ELSE
            DO Print Message '*** This Invoice Number does not
              Exist -- Press any key to try again ***'
            LOOP
      ENDIF
ENDDO

RETURN
```

```

* Module ....: DSPLY_2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to as a drive to display
*               the Interdepartmental invoices by Invoice
*               Number.

* Calls .....: SC to get the information for an Invoice.

*               SED to display the Interdepart Inquiry screen
*               by Invoice Number
* Called by.: UC_DSPI2

```

```

RESTORE from the memory variable file (UC_IMVAR.MEM) the
      last and first Invoice numbers

```

```

DO WHILE TRUE
DO get the Invoice Number you want to look for
Check for Validity
      IF the Invoice Number Exists

      Display the Interdepartment Inquiry Screen by
      Invoice Number (SED)
      DO get information from the Invoices file (UCINTER1)
      DO the display the transactions information with the
      total amount of the invoice from (UCINTFIL) file (SC)
ELSE
      DO Print Message '*** This Invoice Number does not
      Exist -- Press any key to try again ***'
      LOOP
ENDIF
ENDDO

RETURN

```



```

* Module ....: DS
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used as a drive to display the
*               Interdepartmental invoices by invoice date.
*

```

```

* Calls .....: D to display the invoice information from
*               the (UCINTER1 and UCINTFIL) files correspon_
*               ding to the invoice numbers in a temporary
*               file sorted by event date.

```

```

* Called by.: UC_DSIIV

```

```

DO WHILE TRUE

```

```

DO get the Starting and ending event date to look for

```

```

IF the Starting and Ending Date = BLANK

```

```

    Return

```

```

ELSE

```

```

    Copy from the transaction file (UCINTFIL) all Records
    that have their Event Dates GREATER or EQUAL TO the
    Starting Date AND LESS THAN or EQUAL to The Ending
    Date to a temporary file

```

```

    Display the Interdepartmental Inquiry Screen by
    Event Date

```

```

    Get the invoice numbers from the Temporary file and

```

```

    Access the Invoices and Transactions files (UCINTER1
    and UCINTFIL) to Display the entire Information for
    each Invoice Number with the total for each invoice
    (SED, SC and D)

```

```

ENDIF

```

```

ENDDO

```

```

RETURN

```

* Module: DSPLY_SP
* Author: Samir M. Soueidan
* Date: May 1, 1987
* Notice: This program is used as an entry screen to
display the Interdepartmental invoices by
the first three letters of the customer
(sponsor) name.

* Calls: D to display the invoice information from
* the (UCINTER1 and UCINTFIL) files correspon_
ding to the invoice numbers in a temporary
file sorted by event date.
* Called by.: UC_DSIIIV

DO WHILE TRUE

DO get the First Three Letters of the Sponsor Name

IF the Left BLANK

Return

ELSE

Copy from the transaction file (UCINTER1) all Records
that have their First Three Letters EQUAL TO the
First Three Letter of the existing Sponsor Name
to a temporary file

Display the Interdepartmental Inquiry Screen by
Sponsor Name

Get the invoice numbers from the Temporary file and

Access the Invoices and Transactions files (UCINTER1
and UCINTFIL) to Display the entire Information for
each Invoice Number with the total for each invoice
(SED, SC and D)

ENDIF

ENDDO

RETURN

```
* Module ....: D
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to display the entire invoice
*              Information from the (UCINTER1 and UCINTFIL) files
*              with the total amount of each invoice

* Calls .....: none
* Called by..: DSPLY_2 and DS
* Parameters: Invoice Number.
```

```
DO WHILE TRUE
```

```
    Access the Invoices and Transactions files (UCINTER1
      and UCINTFIL) to Display the entire Information for
      each Invoice Number with the total for each invoice
      (SED, SC and D)
```

```
ENDDO
```

```
RETURN
```

```
* Module ....: SED
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to display the Screen
*              for Modify and Inquiry invoice Request for
*              the Interdepartmental Invoices.

* Calls .....: none
* Called by.: DSPLY_2, GE and DS
* Parameters: none
```

DO Display the Invoices Screen (SED)

RETURN

```
* Module ....: SC
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to get the information
*              from the Invoices file (UCINTER1) for
*              the Interdepartmental Invoices.

* Calls .....: none
* Called by.: DSPLY_2, GE and DS
* Parameters: none
```

```
DO get the invoice Information from the Invoices file
  (UCINTER1) )
```

```
RETURN
```

```
* Module ....: ADD1
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to store the new Invo_
*              ice information to the (UCINTER1) Invoices
*              file for the Interdepartmental Invoices.

* Calls .....: none
* Called by.: UC_ADIIIV
* Parameters: none
```

Using the Invoices file (UCINTER1)

Append a new Record

Replace fields with complete Invoice Information

RETURN

```
* Module ....:  ADD2
* Author ....:  Samir M. Soueidan
* Date .....:  May 1, 1987
* Notice ....:  This program is used to store the new Tran_
*               saction to the (UCINTFIL) Transactions
*               file for the Interdepartmental Invoices.

* Calls .....:  none
* Called by.:  UC_ADIIIV
* Parameters:  none
```

Using the Invoices file (UCINTFIL)

Append a new Record

Replace fields with complete Transactions Information

RETURN

```
* Module ....: ASK2
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to Display Messages for
*              Adding more Transactions to the Transactions
*              file (UCINTFIL) for the Interdepartmental
*              Invoices.

* Calls .....: none
* Called by.: UC_ADIIIV
* Parameters: none
```

```
DO WHILE Message Choice (Y/N) (Yes or No)
IF Message Choice = Yes ("Y")
```

```
    DO get New Transactions once at a time
```

```
ELSE
```

```
    EXIT
```

```
ENDIF
```

```
LOOP
```

```
ENDDO
```

```
RETURN
```



```

* Module ....: PP
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to Display Messages for
*               Printing the New Invoice after entering it
*               directly or keep track of it for later Print
*               by storing the invoice number in a file
*               (UC_ITEMP) using (EXT1).

```

```

* Calls .....: EXT1
* Called by.: UC_ADIIV
* Parameters: none

```

```

DO WHILE TRUE
STORE BLANK to the Variable to YORN
DO WHILE NOT upper(YORN) = Yes or No (Y/N)
"Do you want to print this invoice now (Y/N): "
    get YORN
READ
ENDDO
IF upper(YORN) = 'Y'
Display "Make sure the Printer is on, then
Press any key to continue"
DO Print the Interdepartmental Invoice (P1)
STORE BLANK to variable OKP
DO WHILE .NOT. upper(OKP) = Yes or NO (Y/N)
Display " IS the print went OK...!!!! (Y/N): ";
    get OKP
READ
ENDDO
IF upper(OKP) = 'Y'
EXIT
ELSE
STORE BLANK to the Variable OKP
Display "do you want to print the invoice again (y/n):"
LOOP
ENDIF
ELSE
DO store the New Invoice Number in (UC_ITEMP) a temporary
file (EXT1)
ENDIF
EXIT
ENDDO

RETURN

```

```
* Module ....: P1
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This program is used to Print the Interdept.
*              Invoice(s) (see Screen Section and Reports
*
* Calls .....: none
* Called by.: PP
* Parameters: Invoice Number
```

```
DO WHILE TRUE
```

```
    Using the Invoice Number
```

```
    Access the Invoices and the Transactions files (UCINTER1
        and UCINTFIL)
```

```
    Print all Information Required (P1)
```

```
ENDDO
```

```
RETURN
```

```
* Module ....: EXT1
* Author ....: Samir M. Soueidan
* Date .....: May 1, 1987
* Notice ....: This procedure is used to Store the Interdep_
*               artmental Invoice(s) Numbers in a temporary
*               file (UC_ITEMP) for later to be Printed
* Calls .....: none
* Called by..: PP
* Parameters:  Invoice Number
```

using a temporary file (UC_ITEMP)

APPEND a new record

REPLACE the Invoice fields with the Invoice Number

RETURN

Appendix D
Implementation
for
UCARIBS

Main Menu Programs
for
UCARIBS

```
* Program...: UCREINDX.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: The purpose of this program is to reindex the
*             Interdepartmental and the Receivable Billing System
*             database files.
*
* Calls....: none
* File used: UCINTER1.DBF, UCINTFIL.DBF, UCRCVINV.DBF, UCRCVTR.DBF,
*            UCPAYFIL.DBF and UCPAYTMP.DBF.
*
set talk off
set safety off
use c:/ucinter/UCINTER1
index on INVOICENUM to INVO
use c:/ucinter/UCINTFIL
index on INVOICENUM to FIL
use c:/samir/UCRCVINV
index on INVOICENUM to RCVINDX
use c:/samir/UCRCVTR
index on INVOICENUM to RCVTNDX
use c:/samir/ucpayfil
index on seller_rc + seller_obj to pay
index on invoicenum to payinvo
use c:/samir/UCPAYTMP
index on INVOICENUM to PAYTMP
use
set safety on
exit
return
```

```

* Program...: UCARIBS.prg (module number 0)
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: UC Receivable and Interdepartmental Billing
*           System
*
* Called by: none
* Calls....: none
* File used: none
*
* Set up the UCARIBS environment
SET DELIMITER TO '['
SET DELIMITER ON
SET ECHO OFF
SET EXACT ON
SET TALK OFF
SET BELL OFF
SET CONFIRM OFF
SET SAFETY ON
clear
do DAT
clear
* do UCREINDX
STORE 'F' TO EXIT1
STORE '?' TO OPTION
DO WHILE EXIT1 = 'F'
TEXT

```

UC Administration
Accounts Receivable and Interdepartmental
Billing System
Written By: Samir M. Soueidan

Main Menu

```

=====
1 ==> Interdep. Invoice Information Menu
2 ==> Receivable Invoice Information Menu
3 ==> Payment Menu
4 ==> Reports Menu
5 ==> Files Maintenance
6 ==> Reindexing system files
X ==> Exit
=====

```

ENDTEXT

```

set color to w+, w+
@ 7, 63 SAY DATE()
@ 20,38 SAY 'Enter Selection ==> ' GET OPTION
READ
@ 19,0
DO CASE
    CASE OPTION = '1'
        set color to w+, w+
        set path to c:/ucinter
        do UC_IMENU
    CASE OPTION = '2'
        set path to c:/samir
        do UCRCVSC
    case OPTION = '3'
        set path to c:/samir
        do UCPAYMNU
    case OPTION = '4'
        set path to c:/samir
        do UCRPORTS
    case OPTION = '5'
        do UC_MFILES
    case OPTION = '6'
        do UCREINDX
    case UPPER(OPTION) = 'X'
        CLEAR
        RETURN
    OTHERWISE
        ? CHR(7)
@ 22,24 SAY '*** Invalid Entry - Try again ***'
CLEAR
set color to w, w+
ENDCASE
STORE '?' TO OPTION
ENDDO

```



```
* Program...: DAT.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to get the correct date for the
*              UC Receivable and Interdepartmental Billing System
*              (UCARIBS).
*
* Called by: UCARIBS.PRG
* Calls.....: The DOS operating system.
* File used: none
*
clear
run date
return
```

Interdepartmental Programs
for
UCARIBS

```

* Program...: UC_IMENU.prg (module number 0)
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a main menu for the
*               interdepartmental billing system (UCARIBS).
*
* Calls.....: Procedure UC_IPROC.PRG, UC_ADIIIV.PRG, UC_MDIIV.PRG
*               UC_DSIIIV.PRG and UC_IPRD.PRG
* File used: UC_IMVAR.MEM
*

```

```

store 'F' to RTN
store '?' to OPTION
clear
do while RTN = 'F'

```

```

text

```

UC Administration

Interdept. Invoice Information Menu

=====

```

      1 ==> Add New Invoice
      2 ==> Modify Invoice & (Delete/Transactions)
      3 ==> Inquiry
      4 ==> Print Invoice(s)
      R ==> Exit
      Q ==> Quit

```

=====

```

endtext
@ 4,62 say date()
@ 20,40 say 'Enter Selection ==> ';
      get OPTION
read
@ 20, 0
clear

```

```

do case
  case OPTION = '1'
    restore from UC_IMVAR
    set Procedure to UC_IPROC
    do UC_ADIIV
    set Procedure to
    close databases
  case OPTION = '2'
    do UC_MDIIV
  case OPTION = '3'
    do UC_DSIIV
  case OPTION = '4'
    do UC_IPRD
  case upper(OPTION) = 'R'
    clear
    return
  case upper(OPTION) = 'Q'
    set talk on
    cancel
    clear
  otherwise
    ? CHR(7)
    @ 22, 21
    wait '*** Invalid Entry - Press any key to try again ***'
  endcase
  clear
  store '?' to OPTION
enddo
return

```

```

* Program...: UC_ADIIIV.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: The purpose of this program is to add a new
*             Interdepartmental invoice.
*
* Calls.....: RF1.PRG, CLRVAR1.PRG, ASK2.PRG, ADD1.PRG,
*             AD2.PRG and PP.PRG
* File used: UCINTER1.DBF, UCINTFIL.DBF, UC_IMVAR.MEM
*
*
select 1
use UCINTER1 index INVO
select 2
use UCINTFIL index FIL
clear
store " " to MANSWER
store 0 to NUM
store 1 to NUMBER
store 10 to ML
store 1 to N
store '?' to OPTION
store 'F' to RTN
store ' / / ' to INVOICDATE
store MPINVONUM + 1 to MPINVONUM
store MPINVONUM to NUM
store ctod(' / / ') to EDATE
store space(4) to JOB_NUM
store space(30) to TIT
store space(12) to SPON
store space(3) to AR1
store space(4) to SRCC
store space(4) to SOBJ
store space(1) to KIND
store space(30) to DES1
store 0 to AMNT
store space(30) to COMNT
store space(3) to AR2
store space(4) to RCC
store space(4) to OBJ
store '?' to YORN
do while RTN = 'F'
do RF1
store '?' to OPTION
set color to w+, w+
@ 1, 1 say "Adding New Interdept. Invoice Entry Screen"
@ 1, 69 say DATE()
@ 22, 25 say "Please enter the above Information"

```

```

set color to w, w
do CLRVAR1
if (SPON = " " .or. SRCC = " " .or. SOBJ = " " .or. COMNT = " ";
.or. RCC = " " .or. OBJ = " " .or. dtoc(EDATE) = (' / / '))
? chr(7)
@ 22, 0
wait "    -- Incomplete Information -- Press any key to try again --"
loop
endif
do ASK2 with 22, 18, "HIT (A)dd this invoice number",;
"OR (C)ANCE this invoice and return to the previous Menu", "AC",
MANSWER
if upper(MANSWER) = 'A'
select UCINTER1
do ADD1
select UCINTFIL
do ADD2
ML = ML + 1
NUMBER = NUMBER + 1
N = N + 1
store 'Y' to MANSWER
do while upper(MANSWER) = 'Y'
do ASK2 with 22, 21, "HIT (Y) Add another Transaction", ;
"OR (N) Abort and return to previous Menu", "YN", MANSWER
if upper(MANSWER) = 'Y'
store ctod(' / / ') to EDATE
store space(30) to DES1
store 0 to AMNT
store " " to KIND
@ 22, 0
@ 23, 0
@ 24, 0
do while .T.
set color to w+, w+
@ ML , 3 say N picture "99"
@ ML, 7 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ ML, 46 get AMNT picture "99999.99"
@ ML, 62 get EDATE picture "99/99/99"
read
if DES1 = " " .or. dtoc(EDATE) = (' / / ')
? CHR(7)
@ 23, 20 say "INFORMATION INCOMPLETE"
wait "                      Press any key to try again..."
@ 23, 0
@ 24, 0
loop
else
exit
endif
enddo

```

```

ML = M1 + 1
NUMBER = NUMBER + 1
N = N + 1
if NUMBER > 12
@ 10, 0
@ 11, 0
@ 12, 0
@ 13, 0
@ 14, 0
@ 15, 0
@ 16, 0
@ 17, 0
@ 18, 0
@ 19, 0
@ 20, 0
@ 21, 0
@ 22, 0
store 10 to ML
store 1 to NUMBER
@ 10, 3 say N picture "99"
endif
do ADD2
loop
else
set color to w, w
exit
endif
enddo
else
clear
exit
endif
do pp
set safety off
save all like MP* to UC_IMVAR
else
set safety off
store MPINVONUM - 1 to MPINVONUM
save all like MP* to UC_IMVAR
clear
set safety on
exit
enddo
return

```

```
* Program...: UC_IPROC.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is a main procedure which contains the
*               following procedures:
*               CLRVAR1, RF1, ASK2, ADD1,ADD2, PP and EXT1.
*
```

```
* Calls.....: P1.PRG
* File used:  UCINTER1.DBF, UCINTFIL.DBF
*
```

```
Procedure CLRVAR1 (This procedure gets the information from screen)
```

```
@ 3, 7 get NUM picture "99999999"
clear gets
@ 3, 27 get TIT picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 3, 68 get JOB_NUM picture "99999999"
@ 5, 7 get SPON picture "!!!!!!!!!!!!"
@ 5, 30 get AR1 picture "!!!!"
@ 5, 48 get SRCC picture "9999"
@ 5, 68 get SOBJ picture "9999"
@ 7, 30 get AR2 picture "!!!!"
@ 7, 48 get RCC picture "9999"
@ 7, 68 get OBJ picture "9999"
@ 7, 74 get KIND picture "!"
@ 8, 13 get COMNT picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
set color to w+, w+
@ 10, 3 say N picture "99"
@ 10, 7 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 10, 46 get AMNT picture "99999.99"
*@ 10 ,56 get KIND picture "A"
@ 10, 62 get EDATE picture "99/99/99"
read
return
```

```
*****
```

Procedure ADD2 *(This procedure is used to add new informations
to the UCINIFIL.DBF file.)
append blank
replace INVOICENUM with NUM, DESCRIP1 with DES1
replace AMOUNT1 with AMNT, EVENTDATE with EDAT
return

Procedure ADD1 *(this procedure is used to add new informations
to UCINTER1.DBF file).
append blank
replace INVOICENUM with NUM, TITLE with TIT, INVOICDATE with DATE()
replace SPONSER with SPON, SPONSARAREA with ARI, SPONSERRC with SRC
replace SPONSEROBJ with SOBJ, UC_DESCRIP with COMNT, SELLER_RC with RCC
replace SELLER_OBJ with OBJ, JOB_NUMBER with JOB_NUM, SELLERAREA with
AR2
replace INC_DEC with KIND
return

Procedure RFI *(This procedure is used to disp1y the add entry screen)
set color to w, w+
clear
text

Inv_No: Title: Job_No:
Buyer: Area: Buyer_Rc: Buyer_Obj: I/D
Description: Seller_Area: Seller_Rc: Seller_Obj: AMOUNT
EVENT_DATE
endtext
RETURN

Procedure ASK2 *(This procedure is used to display messages on the screen)

```
parameters MLINE, MCOLUMN, MQUESTION1,MQUESTION2, MCHOICE, MANSWER
@ MLINE, 0
@ MLINE + 1, 0
set color to w+, w+
store ' ' to MANSWER
do while .not. MANSWER $ MCHOICE
@ MLINE, MCOLUMN
@ MLINE, MCOLUMN say MQUESTION1
@ MLINE + 1, MCOLUMN say MQUESTION2 ;
    get MANSWER picture "!"
read
enddo
set color to w, w
return
```

Procedure PP *(This procedure is used to print messages on the screen and also calls the program P1.PRG to print the new invoices. Also it calls EXT1.PRG to keep track of the new invoices to be printed later).

```
set color to w+, w+
store "do you want to print this invoice now (Y/N): " to CHOICE
do while .T.
store '?' to YORN
do while .not. upper(YORN) $ "YN"
@ 23, 0
@ 24, 0
@ 22, 18 say CHOICE;
    get YORN
read
enddo
@ 23, 0
if upper(YORN) = 'Y'
@ 22, 0
wait "Make sure the Printer is on, then Press any key to continue"
clear
do P1
@ 23, 0
store '?' to OKP
```

```

do while .not. upper(OKP) $ "YN"
@ 23, 18 say " IS the print went OK...!!!! (Y/N): ";
      get OKP
read
enddo
if upper(OKP) = 'Y'
clear
exit
else
store '?' to OKP
@ 23, 0
store "do you want to print the invoice again (y/n):" to CHOICE
@ 23, 18 say CHOICE
loop
endif
else
do EXT1
endif
clear
exit
enddo
set color to w, w
return

```

Procedure EXT1 *(This procedure keeps track of the new invoices
to be printed in later time.)

```

select 3
use UC_ITEMP
append blank
replace INVOICENUM with NUM
close databases
clear
return

```

```

* Program...: P1.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used as a drive to print the
*             UC Interdepartmental Billing System invoices
* Calls.....: none
* File used: UCINTER1.DBF and UCINTF1.DBF.
*
store 'F' to PRNT
do while PRNT = 'F'
STORE 1 TO MPAGE
STORE 60 TO MLINE
select UCINTER1
seek NUM
@ 13, 0
set color to w+, w+
@ 13, 20 say "Printing Invoice in Progress ..."
set print on
set device to print
SUBTOT = 0
IF INVOICENUM = NUM
IF MLINE > 56
@ 1, 30 say "UNIVERSITY CENTER"
@ 3, 24 say "INTRA - INSTITUTIONAL VOUCHER"
@ 5, 3 say "EVENT: " + TITLE
@ 5, 57 say "DATE: "
@ 5, 63 say DATE()
@ 7, 3 say "BUYER: " + SPONSER
@ 7, 56 say "DOCNM: "
@ 7, 59 say str(NUM)
@ 10, 3 say "BUYER: " + SPONSERRC + "-" + SPONSEROBJ
STORE 13 TO MLINE
ENDIF
@ MLINE, 3 say "EVENT_DATE"          DESCRIPTION          AMOUNT"
store MLINE + 2 to MLINE
select 2
use UCINTFIL index FIL
GOTO TOP
seek NUM
DO WHILE .NOT. EOF()
IF INVOICENUM = NUM
@ MLINE, 3 say substr(cmonth(EVENTDATE),1,3) + str(day(EVENTDATE),3) ;
+ ", " + substr(str(year(EVENTDATE),4),3)
@ MLINE, 25 say DESCRIP1
@ MLINE, 60 say AMOUNT1
STORE MLINE + 1 TO MLINE
STORE SUBTOT + AMOUNT1 to SUBTOT
ENDIF

```

```

SKIP
ENDDO
STORE MLINE + 2 TO MLINE
@ MLINE, 51 say "TOTAL: "
@ MLINE, 58 say SUBTOT picture "999999.99"
STORE 35 to MLINE
@ MLINE, 3 say "                                CONTROLLER'S OFFICE USE "
store MLINE + 2 to MLINE
select UCINTER1
@ MLINE, 46 say "Document No. IV: "
@ MLINE, 59 say str(NUM)
@ MLINE + 1, 3 say "Date: "
@ MLINE + 1, 9 say DATE()
@ MLINE + 1, 19 say "Action: E"
@ MLINE + 1, 30 say "Comment: "
@ MLINE + 1, 38 say SPONSER
@ MLINE + 1, 51 say " Document Total: "
@ MLINE + 1, 68 say SUBTOT picture "999999.99"
@ MLINE + 2, 3 say "-----";
-----"
@ MLINE + 3, 3 say "Seller Organization"
@ MLINE + 5, 3 say "Area: "
@ MLINE + 5, 10 say SELLERAREA
@ MLINE + 5, 18 say "Orgn: "
@ MLINE + 5, 24 say SELLER_RC
@ MLINE + 5, 37 say "Rev Src: "
@ MLINE + 5, 45 say SELLER_OBJ
@ MLINE + 5, 63 say "Job No: "
@ MLINE + 5, 72 say JOB_NUMBER
@ MLINE + 6, 3 say "-----";
-----"
@ MLINE + 7, 3 say "Buyer Organization"
@ MLINE + 10, 3 say "Area  Orgn  Obj Sub;
  Job No.           Description           Amount      I/D"
@ MLINE + 11, 3 say SPONSRAREA
@ MLINE + 11, 9 say SPONSERRC
@ MLINE + 11, 16 say SPONSEROBJ
@ MLINE + 11, 24 say JOB_NUMBER
@ MLINE + 11, 32 say UC_DESCRIP
@ MLINE + 11, 60 say SUBTOT
@ MLINE + 11, 75 say INC_DEC
SET PRINT OFF
SET DEVICE TO SCREEN
eject
clear
exit
enddo
return

```

```

* Program...: UC_MDIIIV.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a main drive to modify an
*              existing Interdepartmental invoices
*
* Called by: UC_IMENU.PRG
* Calls.....: GE.PRG
* File used: UC_IMVAR.MEM
*
set talk off
set exact on
set delimiter off
restore from UC_IMVAR.mem additive
store 'F' to STIL
do while STIL = 'F'
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter the Invoice Number to MODIFY"
@ 12, 12 say "Or just Press RETURN to exit";
    get LOOKUP
read
if LOOKUP = " "
clear
set color to w, w
exit
endif
? MPINVONUM, MPSINVO, LOOKUP
if val(LOOKUP) > MPINVONUM .OR. val(LOOKUP) < MPSINVO
set color to w, w
@ 15, 0
set color to w+, w+
wait " this invoice number &LOOKUP does not exist --;
    Press any key to try again"
clear
loop
endif
set color to w, /w+
store val(LOOKUP) to NUM
do GE
loop
clear
close databases
enddo
return

```

```

* Program...: GE.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to modify an existing invoice.
*             Also in the same time will add and delete transaction
*             for the UC Interdepartmental Billing System
*
* Called by: UC_MDIIV.PRG
* Calls....: SED.PRG, SC.PRG, P1.PRG, ADMR.PRG and CLRTR_LI.PRG.
*
* File used: UCINTER1.DBF and UCINTFIL.DBF.
*
*
select 1
use UCINTER1 index INVO
select 2
use UCINTFIL index FIL
store space(30) to DES1
store " " to DELT
store 0 to AMNT
store ctod(" / / ") to edate
set color to w+, /w+
store 'F' to TOPRINT
store 'F' to ABORT
do while upper(ABORT) = 'F'
select UCINTER1
seek NUM
do SED
@ 1, 0 say "Editing Interdept. Invoice Entry Sreen"
@ 1, 70 say DATE()
do SC
clear gets
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to edit the above information (Y/N)" ;
        get YORN picture "!"
read
enddo

```

```

set color to w, w
@ 22,0
if YORN = "Y"
set color to /w, /w+
store "T" to TOPRINT
do SC
read
set color to w, w+
endif
do SC
clear gets
set color to w, w
endif
set color to /w, /w+
store " " to YORN
do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to Edit Transactions (Y/N)";
      get YORN picture "!"
read
enddo
set color to /w, w
if upper(YORN) = "N"
set color to w, w
if TOPRINT = 'T'
do P1
endif
close databases
clear
exit
endif
do ADMR
@ 22,0
wait "This is the last transaction for this &LOOKUP;
  -- Press any key to Continue ..."
@ 23,0
store " " to OP
@ 22, 0
set color to /w, /w+
do while .not. OP $ "YN"
@ 23, 10 say " do you like to check again"  get OP picture "!"
read
enddo

```



```
if upper(OP) = "Y"
set color to w, w
do CLRTR_LI
set color to w, w
loop
else
if DELT = 'T'
pack all
endif
if TOPRINT = "T"
@ 22,10 say " You have to print this invoice again"
wait "      Make sure the Printer is Ready -- Press any key to print"
clear
do P1
endif
exit
enddo
return
```

```
* Program...: SED.PR6
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to draw the screen for modifying
*             and displaying the Interdepartmental invoices.
*
* Calls....: none
* File used: none
*
```

clear

TEXT

```
-----
Inv_No:           Title:           Job_No:
  Buyer:           Area:           Buyer_Rc:
Buyer_Obj:      I/D
                Area:           Seller_Rc:
Seller_Obj:
Description:
LnNo           ITEMS    DESCRIPTION           AMOUNT
EVENT_DATE
```

ENDTEXT

return

```

* Program...: SC.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is to get the information from the main
*               Interdepartmental database files.
*
* Calls.....: none
* File used:  none
*
*
@ 3, 7 get INVOICENUM picture "99999999"
clear gets
@ 3, 27 get TITLE picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 3, 68 get JOB_NUMBER picture "99999999"
@ 4, 7 get SPONSER picture "!!!!!!!!!!!!"
@ 4, 30 get SPONSERAREA picture "!!!!"
@ 4, 48 get SPONSERRC picture "9999"
@ 4, 68 get SPONSEROBJ picture "9999"
@ 5, 30 get SELLERAREA picture "!!!!"
@ 5, 48 get SELLER_RC picture "9999"
@ 5, 68 get SELLER_OBJ picture "9999"
@ 5, 74 get INC_DEC picture "A"
@ 6, 13 get UC_DESCRIP picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
return

```

```

* Program...: ADMR.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to delete, modify and recall
*             before exiting the program. It also adds a new
*             transactions for the UC Interdepartmental Billing
*             System invoices.
*
* Called by: GE.PRG
* Calls....: CLRTR_LI.PRG and ADDTR.PRG.
* File used: UCINTFIL.DBF
*
set color to w+, /w+
select 2
use UCINTFIL index FIL
do while .not. eof()
seek NUM
set color to w+, /w+
store 1 to n
store 8 to MLINE
do while INVOICENUM = NUM
if deleted()
@ MLINE, 4 say "DEL"
endif
@ MLINE, 0 get n picture "99"
@ MLINE, 13 get DESCRIP1
@ MLINE, 54 get AMOUNT1
@ MLINE, 69 get EVENTDATE
store n + 1 to n
@ 22,0
clear gets
@ 22, 0
set color to /w, /w+
store " " to YORN
do while .not. YORN $ "DRMN"
@ 22, 8 say "(D)eleate, (M)odify the last one above, (N)ext to
continue" ;
        get YORN picture "!"
read
set color to w, w+
enddo
if upper(YORN) = "R"
recall
@ MLINE, 4 say "      "
endif

```

```

if upper(YORN) = "M"
set color to w+, w+
store "MOD" to MD
store "T" to TOPRINT
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 4 say MDF
@ MLINE, 13 get descrip1
@ MLINE, 54 get amount1
@ MLINE, 69 get eventdate
read
set color to w+, /w+
else
if upper(YORN) = "D"
store " " to ANSWER
do while .not. ANSWER $ "YN"
@ 23, 10 say " Are you sure (Y/N): " get ANSWER picture "!"
read
enddo
if upper(ANSWER) = "Y"
delete
@ MLINE, 4 say "DEL"
store 'T' to DELT
endif
endif
set color to w, /w+
@ 22, 0
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 13 say descrip1
@ MLINE, 54 say amount1
@ MLINE, 69 say eventdate
endif
@ 22, 0
set color to w+, /w+
store MLINE + 1 to MLINE
if MLINE > 18
store 8 to MLINE
do CLRTR_LI
endif
skip
enddo
do ADDTR
return

```

```

* Program...: ADDTR.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to add a new transactions for an
*             existing invoices for the UC Interdepartmental Billing
*             System.
*
* Called by:  ADMR.PRG
* Calls.....: CLRTR_LI.PRG
* File used:  UCINTFIL.DBF
*
do while .T.
store " " to ADDTR
do while .not. ADDTR $ "YN"
@ 23, 0
@ 23, 10 say "do you want to add a new transaction to this invoice;
            (Y/N): " get ADDTR picture "!"
read
enddo

IF upper(ADDTR) = "Y"
@ MLINE, 0 say n picture "99"
@ MLINE, 13 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 54 get AMNT picture "99999.99"
@ MLINE, 69 get EDATE
read
append blank
replace INVOICENUM with NUM, DESCRIP1 with DES1,;
      AMOUNT1 with AMNT, EVENTDATE with EDATE
store n + 1 to n
store MLINE + 1 to MLINE
if MLINE > 18
store 8 to MLINE
do CLRTR_LI
endif
loop
else
exit
endif
enddo
return

```

```
* Program...: CLRTR_LI.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used only to clear the screen lines.
*
* Calls.....: none
* File used: none
*
@ 8, 0
@ 9, 0
@ 10, 0
@ 11, 0
@ 12, 0
@ 13, 0
@ 14, 0
@ 15, 0
@ 16, 0
@ 17, 0
@ 18, 0
@ 19, 0
@ 20, 0
@ 21, 0
return
```

```

* Program...: UC_DSIIIV.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a sub_menu to display the
*               Interdepartmental invoices by invoice number, invoice
*               date, or by the first three characters of the customer
*               name.
*
* Calls.....: UC_DSP12.PRG, DS.PRG and DSPLY_SP.PRG.
* File used: UC_IMVAR.MEM
*
*

```

```

restore from UC_IMVAR
set talk off
STORE 'F' TO RTN
STORE '?' TO OPTION
CLEAR
DO WHILE RTN = 'F'

```

```

text

```

UC Administration

```

=====

1 ==> Invoice by Invoice
2 ==> Invoice by Event Date
3 ==> Invoice by Sponser Name
R ==> Exit

=====

```

```

endtext
@ 4, 16 say "Interdepartmental Inquiry Menu"
@ 4,62 say DATE()
@ 14,40 SAY 'Enter Selection ==> ';
      GET OPTION
READ
@ 20, 0
CLEAR

```



```
DO CASE
  CASE OPTION = '1'
    do UC_DSP12
  CASE OPTION = "2"
    do DS
  CASE OPTION = "3"
    do DSPLY_SP
  CASE upper(OPTION) = 'R'
    CLEAR
    RETURN
  OTHEWISE
    ? CHR(7)
  @ 20, 21 SAY '*** Invalid Entry - Try again ***'
ENDCASE
STORE '?' TO OPTION
ENDDO
return
```

```

* Program...: UC_DSP12.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to as adrive to display the
*               Interdepartmental invoices by invoice number.
*
* Called by: UC_DSIIIV.PRG
* Calls.....: DSPLAY_2.PRG
* File used: UC_IMVAR.MEM
*
*
set talk off
set exact on
set delimiter off
restore from UC_IMVAR.mem additive
store 'F' to STIL
do while STIL = 'F'
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter the Invoice Number to DISPLAY"
@ 12, 12 say "Or just Press RETURN to exit";
    get LOOKUP
read
if LOOKUP = " "
clear
set color to w, w
exit
endif
if val(LOOKUP) > MPINVONUM .OR. val(LOOKUP) < MPSINVO
set color to w, w
@ 15, 0
set color to w+, w+
wait " this invoice number &LOOKUP does not exist -- ;
    Press any key to try again"
clear
loop
endif
set color to w, /w+
store val(LOOKUP) to NUM
do DSPLY_2
loop
clear
close databases
enddo
return

```

```

* Program...: DSPLY_2.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is the actual one to dsplay the
*               Interdepartmental invoices by invoice number.
*
* Called by: UC_DSP12.PRG
* Calls.....: SED.PRG, SC.PRG and CLRTR_L1.PRG.
* File used: UCINTER1.DBF and UCINTFIL.DBF.
*
*
set color to w+, w+
store 'F' to TOPRINT
store 'F' to ABORT
do while .T.
set color to w, w+
select 1
use UCINTER1 index INVO
select 2
use UCINTFIL index FIL
goto top
select UCINTER1
seek NUM
set color to w, w+
do SED
set color to w+, w+
@ 1, 0 say "Interdepartmental Inquiry Screen by Invoice Number"
@ 1, 70 say DATE()
do SC
clear gets
set color to /w, /w+
store " " to YORN
do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to look for the Transactions (Y/N)";
        get YORN picture "!"
read
enddo
set color to /w, w
if upper(YORN) = "N"
set color to w, w
clear
exit
endif

```

```

select UCINTFIL
goto top
do while upper(ABORT) = 'F'
seek NUM
set color to w+, /w+
store 1 to n
store 8 to MLINE
store 0 to TOTAL
do while INVOICENUM = NUM
@ MLINE, 0 get n picture "99"
@ MLINE, 13 get DESCRIP1
@ MLINE, 54 get AMOUNT1
@ MLINE, 69 get EVENTDATE
store TOTAL + AMOUNT1 to TOTAL
store n + 1 to n
@ 22,0
clear gets
@ 22, 0
set color to w, /w+
@ 22, 0
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 13 say DESCRIP1
@ MLINE, 54 say AMOUNT1
@ MLINE, 69 say EVENTDATE
@ 22, 0
set color to w+, /w+
store MLINE + 1 to MLINE
if MLINE > 20
store 8 to MLINE
@ 22, 10
wait "Press any key to view more transactions ' ' "
do CLRTR_LI
endif
skip
enddo
@ MLINE, 54 say "-----"
@ MLINE + 1, 47 say "TOTAL: "
@ MLINE + 1, 52 say TOTAL picture "9999999.99"
@ 22,0
@ 23, 10 say "Is this the last transaction for this %LOOKUP"
wait "          -- Press any key to Renter another Invoice Number --"
@ 23,0
@ 24, 0
clear
exit
enddo
exit
enddo
return

```

```

* Program...: DS.PRg
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used as a drive to display the
*             Interdepartmental invoices by invoice date.
*
* Called by: UC_DSIIIV.PRg
* Calls....: D.PRg
* File used: UCINTFIL.DBF and A temporary file called TEMP.DBF.
*
*
clear
set talk off
set delimiter off
store 'T' to AGAIN
do while AGAIN = 'T'
select 1
use ucinter1 index INVO
select 2
use UCINTFIL index FIL
store 0 to NUM
store 'F' to RTN
do while RTN = 'F'
set color to /w, /w+
store ctod(' / / ') to MDATEMIN
store ctod(' / / ') to MDATEMAX
@ 10, 10 say " Please enter Search starting date: ";
  get MDATEMIN
@ 12, 10 say " Please enter search ending date : ";
  get MDATEMAX
@ 14, 10 say "or Press RETURN twice to -- CANCEL"
read
if dtoc(MDATEMIN) = (" / / ")
set color to w, w
store 'F' to RTN
store 'F' to AGAIN
clear
exit
endif
copy to TEMP fields INVOICENUM, DESCRIP1, AMOUNT1, EVENTDATE ;
  FOR (EVENTDATE >= MDATEMIN .AND. EVENTDATE <= MDATEMAX)

```

```

select 3
use temp
index on INVOICENUM to INVONUM
goto top
do while .not. eof()
if INVOICENUM = NUM
skip
loop
endif
store INVOICENUM to NUM
set color to w, w+
store "Interdepartmental Invoice Inquiry by Invoice date" to INQUIRE
do D
select TEMP
set color to w, w+
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 23,10 say "IS this the INVOICE you are looking for (Y/N): " ;
        get YORN picture "!"
read
enddo
if upper(YORN) = "Y"
set color to w, w
exit
endif
set color to w, w
skip
enddo
set color to w, w
@ 22, 0
set color to w+, w+
wait " this is the end of search  -- Press any key to TRY again ..."
set color to w, w
close databases
erase temp.dbf
erase INVONUM.NDX
clear
exit
enddo
clear
loop
enddo
return

```

```

* Program...: D.PRg
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as an entry screen to display the
*               Interdepartmental invoice dates.
*
* Called by: DS.PRg
* Calls.....: SED.PRg, SC.PRg and CLRTR_LI.prg
* File used: UCINTER1.DBF and UCINTFIL.DBF
*
*
set delimiter off
select UCINTER1
goto top
seek NUM
do SED
set color to w+, w+
@ 1, 0 say INQUIRE
@ 1, 70 say Date()
set color to w, w+
do SC
clear gets
select UCINTFIL
goto top
seek NUM
store invoicenum to num
store 1 to n
store 8 to MLINE
store 0 to TOTAL
set color to w+, /w+
do while INVOICENUM = NUM
@ MLINE, 0 get n picture "99"
@ MLINE, 13 get DESCRIP1
@ MLINE, 54 get AMOUNT1
@ MLINE, 69 get EVENTDATE
store TOTAL + AMOUNT1 to TOTAL
store n + 1 to n
clear gets
set color to w, /w+

```

```
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 13 say DESCRIP1
@ MLINE, 54 say AMOUNT1
@ MLINE, 69 say EVENTDATE
set color to w+, /w+
store MLINE + 1 to MLINE
if MLINE > 18
store 8 to MLINE
@ 22,10
set color to /w+, w
wait " Press any key to view more transactions ! "
set color to w+, /w+
do CLRTR_LI
endif
skip
enddo
@ MLINE, 54 say "-----"
@ MLINE + 1, 47 say "TOTAL: "
@ MLINE + 1, 52 say TOTAL picture "9999999.99"
set color to /w, /w+
return
```



```

* Program...: DSPLY_SP.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as an entry screen to display the
*               Interdepartmental invoices by the first three letters
*               of the customer(sponser) name.
*
* Called by: UC_DSIIIV.PRG
* Calls.....: D.PRG
* File used: UCINTER1.DBF, UCINTFIL.DBF and TEMP.DBF (a temporary
*               file).
*
*
set talk off
set delimiter off
clear
store 'T' to AGAIN
do while AGAIN = 'T'
select 2
use UCINTFIL index FIL
select 1
use UCINTER1 index INVO
select UCINTER1
store 0 to NUM
store 'F' to RTN
do while RTN = 'F'
set color to /w, /w+
store " " to MSPONSER
@ 10, 10 say " Please enter the first THREE letters of the SPONSER
              name " get MSPONSER
@ 12, 10 say "or Press RETURN twice to  -- CANCEL"
read
store upper(MSPONSER) to MSPONSER
if MSPONSER = " "
set color to w, w
store 'F' to RTN
store 'F' to AGAIN
clear
exit
endif
copy to TEMP fields INVOICENUM,;
      SPONSER FOR substr(SPONSER, 1, 3) = substr(MSPONSER ,1, 3)

```

```

select 3
use temp
index on INVOICENUM to INVONUM
goto top
do while .not. eof()
if INVOICENUM = NUM
skip
loop
endif
store INVOICENUM to NUM
set color to w, w+
store "Interdepatmental Invoice Inquiry by sponser name" to INQUIRE
do D
select TEMP
set color to w, w+
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 23,10 say "IS this the INVOICE you are looking for (Y/N): " ;
           get YORN picture "!"
read
enddo
if upper(YORN) = "Y"
set color to w, w
exit
endif
set color to w, w
skip
enddo
@ 23, 0
set color to w+, w+
wait " -- this is the end of search -- Press any key to TRY again --"
set color to w, w
close databases
erase temp.dbf
erase INVONUM.NDX
clear
exit
enddo
clear
loop
enddo
return

```

```

* Program...: UC_IPRD.PRG ( INTERDEPART. PRINT INVOICE MAIN DRIVE )
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program acts as a main menu for printing the
*             UC Interdepartmental Billing System invoices either
*             singly or as a group.
*
* Calls....: UC_IPIIV.PRG and UC_PRIGR.PRG
* File used: none
*

```

```

clear
set talk off
store 'F' to RETN
store '?' to OPTION
clear
do while RETN = 'F'

```

```

text

```

UC Administration

```

=====
1 ==> Print Individual Invoice
2 ==> Print Invoices by Group
R ==> Exit
=====

```

```

endtext
@ 4, 16 say "Interdepartmental Print Invoice(s) Menu"
@ 4,62 say DATE()
@ 14,40 SAY 'Enter Selection ==> ';
      GET OPTION
READ
@ 20, 0
clear

```

```
do case
  case OPTION = '1'
    do UC_PRIIV
    store '?' to OPTION
    loop
  case OPTION = "2"
    do UC_PRIGR
  case upper(OPTION) = 'R'
    clear
    return
  othewise
    ? chr(7)
    @ 20, 21 say '*** Invalid Entry - Try again ***'
  endcase
  store '?' to OPTION
enddo
return
```

```

* Program...: UC_PRIIV.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to print the Interdepartmental
*             Billing System invoices singly.
*
* Calls.....: P1.PRG
* File used:  UCINTER1.DBF, UCINTFIL.DBF and UC_IMVAR.MEM
*
*
select 1
use UCINTER1 index INVO
select 2
use UCINTFIL index FIL
set talk off
set exact on
set delimiter off
restore from UC_IMVAR
store 'F' to STIL
do while STIL = 'F'
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter the Invoice Number to Print"
@ 12, 12 say "Or just Press RETURN to exit";
      get LOOKUP
read
if LOOKUP = " "
clear
set color to w, w
store 'T' to STIL
exit
endif
if upper(LOOKUP) > str(MPINVONUM, 6) .OR. upper(LOOKUP) < MPSINVO
set color to w, w
@ 15, 0
set color to w+, w+
wait " this invoice number &LOOKUP does not exist;
  -- Press any key to try again"
clear
loop
endif

```

```
set color to w, /w+
store val(LOOKUP) to NUM
clear
@ 12, 0
wait " Make sure the Printer is ready -- then Press any key to
Continue..."
do P1
clear
loop
exit
enddo
return
```

```

* Program...: UC_PRIGR.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to print the UC Interdepartmental
*              Billing System new invoices as a group.
*
* Calls.....: P1.PRG
* File used: UCINTER1.DBF, UCINTFIL.DBF and UC_ITEMP.DBF
*
clear
select 1
use UCINTER1 index INVO
select 2
use UCINTFIL index FIL
select 3
use UC_ITEMP
index on INVOICENUM to PRNTNDX
store 'F' to RTN
do while RTN = 'F'
do while .not. eof()
store INVOICENUM to NUM
@ 13, 0
wait " Make sure the printer is READY -- Hit any key to Continue..."
do P1
select UC_ITEMP
skip
enddo
if eof()
@ 14, 20 say " There is no more Invoices in the file to Print "
wait "                               Press any key to Return to Previous Menu"
endif
clear
close databases
use UC_ITEMP
zap
erase PRNTNDX.NDX
exit
enddo
return

```

Receivable Programs
for
UCARIBS


```

* Program...: UCRCVSC.PRG (main menu for receivable billing system).
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a main drive for the
*              UC Receivable Billing System.
*
* Called by: UCARIBS.PRG (the main menu for the entire system).
*
* Calls.....: RECVPROC.PRG, UCADDRCV.PRG, RECVMOD.PRG and RCVDSPLY.PRG.
* File used: UC_RMVAR.MEM.
*
*
STORE 'F' TO RTN
STORE '?' TO OPTION
CLEAR
DO WHILE RTN = 'F'

```

```
text
```

UC Administration

Receivable Information Menu

```
=====
```

```

1 ==> Add New Invoice
2 ==> Modify Invoice & (Delete/Transactions)
3 ==> Inquiry
4 ==> Print Invoice(s)
R ==> Exit
Q ==> Quit

```

```
=====
```

```
endtext
```

```
@ 4,62 say date()
```

```
@ 20,40 SAY 'Enter Selection ==> ';
      GET OPTION
```

```
READ
```

```
@ 20, 0
```

```
CLEAR
```

```
DO CASE
```

```

CASE OPTION = '1'
  restore from UC_RMVAR
  set Procedure to RECVPROC
  do UCADDRCV
  set Procedure to
  close database

```

```
CASE OPTION = "2"
do RECVMOD
close databases
CASE OPTION = "3"
do RCVDSPLY
close databases
CASE upper(OPTION) = 'R'
  CLEAR
  RETURN
CASE upper(OPTION) = 'Q'
  set safety off
  set talk off
  clear
  cancel
  set safety on
  set talk on
OTHEWISE
  ? CHR(7)
@ 20, 21 SAY '*** Invalid Entry - Try again ***'
ENDCASE
STORE '?' TO OPTION
ENDDO
return
```

```

* Program...: UCADDRCV.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as the main drive for adding a new
*              Receivable invoices.
*
* Called by: UCRCVSC.PRG
* Calls.....: RPP.PRG, REXT1.PRG and RECVPROC.PRG
*
* File used: UC_RMVAR.MEM, UCRCVINV.DBF, UCRCVTR.DBF and
*            UCPAYFIL.DBF.
*
*
*
clear
select 1
use UCRCVINV index RCVINDX
select 2
use UCRCVTR index RCVTNDX
select 4
use UCPAYFIL index PAYINVO, PAY
store " " to MANSWER
store 0 to NUM
store '?' to OPTION
store 'F' to RTN
store ' / / ' to INVOICDATE
store MPINVONUM + 1 to MPINVONUM
store MPINVONUM to NUM
store 1 to NUMBER
store 10 to ML
store 1 to N
store ctod(' / / ') to EDATE
store space(8) to JOB_NUM
store space(30) to TIT
store space(30) to SPONNAME
store space(30) to SADDRESS
store space(15) to SCITY
store space(2) to SSTATE
store 0 to SZIP
store space(30) to DES1
store 0 to AMNT
store space(30) to COMNT
store space(3) to AR2
store space(4) to RCC
store space(4) to OBJ
store space(1) to KIND
store '?' to YORN

```

```

do while RTN = 'F'
do RECVSC
store '?' TO OPTION
set color to w+, w+
@ 1, 1 say "Adding New Receivable Invoice Entry Screen"
@ 1, 69 say DATE()
@ 22, 25 say "Please enter the above Information"
do CLRVAR
if (SFONNAME = " " .or. SADDRESS = " " .or. SCITY = " " .or. SSTATE =;
    " " .or. COMNT = " " .or. RCC = " " .or. OBJ = " ";
    .or. dtoc(EDATE) = ( ' / / ' ) .or. DES1 = " " .or. SZIP = 0)
? chr(7)
@ 22, 0
wait "          -- Incomplete Information -- Press any key to try again
--"
loop
endif
@ 22, 0
do RASK2 with 23, 18, "HIT (A)dd this invoice number",;
"OR (C)ANCE this invoice and return to the previous Menu", "AC",;
ANSWER
if upper(MANSWER) = 'A'
select UCRCVINV
do RADD1
select UCRCVTR
do RADD2
select UCRCVTR
ML = ML + 1
NUMBER = NUMBER + 1
N = N + 1
store 'Y' to MANSWER
do while upper(MANSWER) = 'Y'
do RASK2 with 23, 21, "Add another Transaction (Y/N)", ;
"Abort and return to previous Menu", "YN", MANSWER
if upper(MANSWER) = 'Y'
store ctod(' / / ') to EDATE
store space(30) to DES1
store space(4) to RCC
store space(4) to OBJ
store space(1) to KIND
store 0 to AMNT
do while .T.
@ 22, 0
@ 23, 0
@ 24, 0
set color to w+, w+
@ ML, 0 say N picture "99"
@ ML, 5 get EDATE picture "99/99/99"
@ ML, 17 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"

```

```

@ ML, 52 get RCC picture "9999"
@ ML, 58 say "-"
@ ML, 59 get OBJ picture "9999"
@ ML, 65 get KIND picture "A"
@ ML, 70 get AMNT picture "99999.99"
read
if dtoc(EDATE) = ( ' / / ' ) .or. DES1 = " " .or. RCC = " ";
    .or. OBJ = " "
? chr(7)
@ 22, 0
wait "          Incomplete Information -- Press any key to try again --"
@ 23, 0
@ 24, 0
loop
else
exit
endif
enddo
store RCC to SRCC
store OBJ to SOBJ
ML = ML + 1
NUMBER = NUMBER + 1
N = N + 1
if NUMBER > 12
@ 10, 0
@ 11, 0
@ 12, 0
@ 13, 0
@ 14, 0
@ 15, 0
@ 16, 0
@ 17, 0
@ 18, 0
@ 19, 0
@ 20, 0
@ 21, 0
@ 22, 0
store 10 to ML
store 1 to NUMBER
@ 10, 0 say N picture "99"
endif
do RADD2
select UCRCVTR
loop
else
set color to w, w
exit
endif

```

```
enddo
else
clear
exit
endif
do RPP
set safety off
save all like MP* to UC_RMVAR
else
set safety off
store MPINVONUM - 1 to MPINVONUM
save all like MP* to UC_RMVAR
clear
set safety on
set procedure to
close databases
exit
enddo
return
```

```

* Program...: RECVPROC.PRG (This is the main procedure for adding new
*               receivable invoices).
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program contains the following procedures used for
*               adding new invoices for the UC Receivable Billing
*               System: RECVSC.PRG, CLRVARR.PRG, ASK2.PRG, ADD1.PRG and
*               ADD2.PRG.
*
* Calls.....: none
* File used:  UCRCVINV.DBF, UCRCVTR.DBF and UCPAYFIL.DBF.
*
*

```

```

Procedure CLRVARR  *(This procedure is used to get the information
*                   from the screen when entering new invoices.)
*

```

```

@ 3, 7 get NUM picture "99999999"
clear gets
@ 3, 27 get TIT picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 3, 68 get JOB_NUM picture "99999999"
@ 4, 14 get SPONNAME picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 5, 14 get SADDRESS picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 6, 14 get SCITY picture "!!!!!!!!!!!!!!"
@ 6, 48 get SSTATE picture "AA"
@ 6, 68 get SZIP picture "99999"
@ 7, 14 get COMNT picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 7, 68 get AR2 picture "!!!!"
set color to w+, w+
@ 10, 0 say N picture "99"
@ 10, 5 get EDATE picture "99/99/99"
@ 10, 17 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 10, 52 get RCC picture "9999"
@ 10, 58 say "-"
@ 10, 59 get OBJ picture "9999"
@ 10, 65 get KIND picture "A"
@ 10, 70 get AMNT picture "99999.99"
read
return

```

```

*****

```

```

Procedure RECVSC      *( This procedure is used to display the below
                        screen when entering new receivable invoices.)

```

```

set color to w, w+
clear
text

```

```

-----
Inv_No:                Title:                                Job_No:
  Buyer_Name:
Buyer_Address:
    City:                                State:
Zipcode:
  Description:
Area:

```

```

  EVENT_DATE          ITEMS DESCRIPTION      RC # _ OBJ# I/D    AMOUNT
endtext
return

```

```

*****

```

```

*
```

```

*
```

```

Procedure RADD1      *( This procedure is used to record the information
                        for the new invoices into UCRCVINV.DBF database
                        file.)

```

```

append blank

```

```

replace INVOICENUM with NUM, TITLE with TIT, INVOICDATE with DATE()

```

```

replace SPONSORNAME with SPONNAME, ADDRESS with SADDRESS, CITY with
SCITY

```

```

replace STATE with SSTATE, ZIPCODE with SZIP, UC_DESCRIP with COMNT

```

```

replace JOB_NUMBER with JOB_NUM, SELLERAREA with AR2

```

```

return

```

```

*****

```

```

*
```

```

*
```

```

Procedure RADD2 *( This procedure is used to record the new information
                    when entering new receivable invoices to the
                    transactions and payable database files (UCRCVTR.DBF
                    and UCPAYFIL.DBF).

```

```

*
```

```

select UCRCVTR

```

```

  append blank

```

```

  replace INVOICENUM with NUM, EVENTDATE with EDATE

```

```

  replace DESCRIP1 with DES1, SELLER_RC with RCC, SELLER_OBJ with OBJ

```

```

  replace AMOUNT1 with AMNT, INVOICDATE with DATE(), INC_DEC with KIND

```



```

select UCPAYFIL
goto top
seek NUM
do while .not. eof()
    if invoicenum = num .and. seller_rc = rcc .and. seller_obj = obj
        replace subtotamnt with subtotamnt + amnt
    exit
endif
skip
enddo
if eof()
    append blank
replace INVOICENUM with NUM, SFONSNAME with SPONNAME, UC_DESCRIP with
COMNT
replace SELLER_RC with RCC, SELLER_OBJ with OBJ, AMNTDUE with AMNT
replace SUBTOTAMNT with AMNT, INVOICDATE with DATE(), INC_DEC with KIND
endif
return

```

```

*****

```

```

*
```

```

*
```

```

Procedure RASK2  *(This is procedure is used to dsiply message on
*                the screen when entering new receivable invoices.)
*
```

```

parameters MLINE, MCOLUMN, MQUESTION1,MQUESTION2, MCHOICE, MANSWER

```

```

@ MLINE, 0

```

```

@ MLINE + 1, 0

```

```

set color to w+, w+

```

```

store ' ' to MANSWER

```

```

do while .not. MANSWER $ MCHOICE

```

```

@ MLINE, MCOLUMN

```

```

@ MLINE, MCOLUMN say MQUESTION1

```

```

@ MLINE + 1, MCOLUMN say MQUESTION2 ;

```

```

    get MANSWER picture "!"

```

```

read

```

```

enddo

```

```

set color to w, w

```

```

return

```

```

*****

```

```

* Program...: RPP.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to display messages for printing
*             the UC Receivable invoices.
*
* Called by: UCADDRCV.PRG
* Calls....: PRNTRCV.PRG and REXT1.PRG
* File used: none
*
*
store "do you want to print this invoice now (y/n): " to CHOICE
do while .T.
store '?' to YORN
do while .not. upper(YORN) $ "YN"
@ 16,0
@ 17,0
@ 18,0
@ 19,0
@ 20,0
@ 21,0
@ 22,0
@ 23,0
@ 24,0
set color to w+, w+
@ 17, 18 say CHOICE;
      get YORN
read
enddo
@ 17, 0
if upper(YORN) = 'Y'
do PRNTRCV
store '?' to OKP
do while .not. upper(OKP) $ "YN"
@ 17, 18 say " Is the print went OK...!!!! (Y/N): ";
      get OKP
read
enddo

```

```
if upper(OKP) = 'Y'  
clear  
exit  
else  
store '?' to OKP  
store "do you want to print the invoice again (y/n):" to CHOICE  
@ 17,18 say CHOICE  
loop  
endif  
else  
do REXT1  
endif  
clear  
exit  
enddo  
return
```

```
* Program...: REXT1.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to keep track of the new Receivable
*             invoices those are not printed during the adding new
*             invoices process.
* Called by: UCADDRCV.PRG
* Calls....: none
* File used: UC_RTEMP.DBF
*
select 3
use UC_RTEMP
append blank
replace INVOICENUM with NUM
clear
return
```

```

* Program...: RECVMOD.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to ckeck the validity of the
*              invoice number entered to be modified. Also acts as a
*              drive in modifying existing receivable invoices and
*              deleting, modifying and adding new transactions.
*
* Called by: UCRCVSC.PRG
* Calls.....: RECVSC.PRG and RECVEDTR.PRG
* File used: UC_RMVAR.MEM
*
*

```

```

public SPONNAME
set talk off
set exact on
set delimiter off
restore from UC_RMVAR
STIL = .T.
do while STIL
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter invoice number to EDIT"
@ 12, 12 say "Or just press return to exit" get LOOKUP
read
if val(LOOKUP) > MPINVONUM .and. val(LOOKUP) < MPSINVO
@ 23,0
@ 23, 10 say " this invoice number &LOOKUP does not exist "
wait
clear
loop
endif
if LOOKUP = " "
STIL = .F.
set color to w, w
clear
loop
endif
set color to w, /w+
store val(LOOKUP) to NUM
do RECVSC
do RECVEDTR
clear
close databases
enddo
return

```

```
* Program...: RECVSC.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a screen to be displayed when
*               enrering a new Receivable invoice.
```

```
*
* Calls.....: none
* File used:  none
```

```
*
```

```
*
```

```
set color to w, w+
clear
text
```

```
-----
Inv_No:                Title:                Job_No:
  Buyer_Name:
Buyer_Address:
    City:                State:
Zipcode:
  Description:
Area:
```

```
      EVENT_DATE      ITEMS DESCRIPTION      RC  #  _  OBJ#  I/D
AMOUNT
endtext
return
```

```

* Program...:  RECVEDTR.PRG
* Author....:  Samir M. Soueidan
* Date.....:  April 23, 1987
* Version...:  dBASE III, Version 3.00
* Notes....:  This program is used to display the old information for
*              the invoice before modify it.
*
* Called by:  RECVMOD.PRG
* Calls.....:  FORGETVA.PRG,    RECVADM.RPG,    CLRTR_LI.PRG    and
PRNTRCV.PRG.
* File used:  UCRCVIN.V.DBF, UCRCVTR.DBF and UCPAYFIL.DBF.
*
*
set talk off
set delimiters off
public SPONNAME, INVODATE
select 1
use UCRCVIN.V index RCVINDX
select 2
use UCRCVTR index RCVTNDX
select 5
use UCPAYFIL index PAYINVO, PAY
store space(30) to DES1
STORE 1 TO N
store 0.00 to AMNT
store ctod("  /  / ") to edate
store "    " to RCC
store "    " to OBJ
store space(1) to KIND
set color to w+, w+
store 'F' to TOPRINT
store 'F' to ABORT
@ 1, 0 say "Editing Receivable Invoice Entry Screen"
@ 1, 70 say date()
do while upper(ABORT) = 'F'
select UCRCVIN.V
seek NUM
do FORGETVA
store INVOICDATE to INVODATE
store SPONSNAME to SPONNAME
clear gets
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to edit the above information (Y/N)" ;
        get YORN picture "!"
read
enddo

```

```

set color to w, w+
@ 22,0
if YORN = "Y"
set color to w, w+
store 'T' to TOPRINT
do FORGETVA
read
set color to w, w+
endif
do FORGETVA
clear gets
endif
set color to w+, w+
store " " to YORN
do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to Edit Transactions (Y/N)";
      get YORN picture "!"
read
enddo
set color to w, w+
if upper(YORN) = "N"
set color to w, w
if TOPRINT = 'T'
@ 22, 0
@ 23, 0
@ 24, 0
set color to w+, w+
@ 21, 25 say "you have to print this invoice now"
wait "      Make sure the printer is READY -- and Press any key to print"
clear
do PRNTRCV
endif
close databases
clear
exit
endif
do RECVADMR
@ 22,10
wait "This is the last transaction for this &LOOKUP "
@ 23, 10 say "      -- Press any key to continue --"
@ 23,0
store " " to OP
@ 22, 0
@ 23, 0
set color to /w, /w+
PACK

```



```

do while .not. OP $ "YN"
@ 22, 10 say " do you want to check again (Y/N): " get OP picture "!"
read
enddo
if upper(OP) = "Y"
set color to w, w
@ 23, 0
do CLRTR_LI
set color to w, w+
loop
else
endif
if TOPRINT = 'T'
set color to w, w
@ 21, 0
@ 22, 0
@ 23, 0
@ 24, 0
set color to w+, w+
@ 21, 25 say "you have to print this invoice now"
wait " Make sure the printer is READY -- and Press any key to print"
clear
do PRNTRCV
endif
exit
enddo
return

```

```

* Program...: FORGETVAR.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to get the information for a new
*             Receivable invoices from the entry screen.
*
* Called by:  RECVEDTR.PRG
* Calls.....: none
* File used:  none
*
*
@ 3, 7 get INVOICENUM picture "9999999"
clear gets
@ 3, 27 get TITLE picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ 3, 68 get JOB_NUMBER picture "999999999"
@ 4, 14 get SPONSRNAME picture "!!!!!!!!!!!!!!"
@ 5, 14 get ADDRESS
@ 6, 14 get CITY
@ 6, 48 get STATE
@ 6, 68 get ZIPCODE
@ 7, 14 get UC_DESCRIP
@ 7, 68 get SELLERAREA picture "!!!"
return

```

```

* Program...: RECVADMR.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to delete, modify and recall
*             before exiting the program. It also adds a new
*             transactions for the UC Receivable Billing System
*             invoices.
*
* Called by: MODTR.PRG
* Calls....: CLRTR_LI.PRG, RCVADDTR.PRG, TRIAL.PRG and PRNTRCV.PRG.
* File used: UCRCVTR.DBF
*
*
set color to w+, /w+
select 2
select UCRCVTR
goto top
seek NUM
do while .not. eof()
set color to w+, /w+
store 1 to n
store 10 to MLINE
do while INVOICENUM = NUM
if deleted()
@ MLINE, 4 say "DEL"
endif
@ MLINE, 0 get n picture "99"
@ MLINE, 5 get EVENTDATE
@ MLINE, 17 get DESCRIP1
@ MLINE, 52 get SELLER_RC
@ MLINE, 57 say "-"
@ MLINE, 59 get SELLER_OBJ
@ MLINE, 65 get INC_DEC picture "A"
@ MLINE, 70 get AMOUNT1 picture "99999.99"
store n + 1 to n
@ 22,0
clear gets
@ 22, 0
set color to /w, /w+
store " " to YORN
do while .not. YORN $ "DMN"
@ 22, 8 say "(D)delete, (M)odify the last one above, (N)ext to;
           continue" get YORN picture "!"
read
set color to w, w+
enddo

```

```

if upper(YORN) = "M"
set color to w+, w+
store "M" to MDF
store 'T' to TOPRINT
store SELLER_RC to SRC
store SELLER_OBJ to SOBJ
store AMOUNT1 to AMNT1
store INC_DEC to INCDEC
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 3 say MDF
@ MLINE, 5 get EVENTDATE
@ MLINE, 17 get DESCRIP1
@ MLINE, 52 get SELLER_RC
@ MLINE, 57 say "-"
@ MLINE, 59 get SELLER_OBJ
@ MLINE, 65 get INC_DEC picture "A"
@ MLINE, 70 get AMOUNT1 picture "99999.99"
read
set color to w+, /w+
store AMOUNT1 to AM1
store seller_rc to r
store seller_obj to o
store INC_DEC to IND
do MODTR
endif
if upper(YORN) = "D"
store " " to ANSWER

do while .not. ANSWER $ "YN"
@ 21, 0
@ 22, 0
set color to w+, w+
@ 22, 15 say " Are you sure (Y/N): " get ANSWER picture "!"
read
set color to w+, /w+
enddo
if upper(ANSWER) = "Y"
delete
@ MLINE, 3 say "D"
store 'T' to TOPRINT
store seller_rc to rr
store seller_obj to ob
store amount1 to am
do TRIAL
set color to w+, /w+
endif
endif
endif

```

```
@ 22, 0
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 5 say EVENTDATE
@ MLINE, 17 say DESCRIP1
@ MLINE, 52 say SELLER_RC
@ MLINE, 57 say "-"
@ MLINE, 59 say SELLER_OBJ
@ MLINE, 65 say INC_DEC picture "A"
@ MLINE, 70 say AMOUNT1 picture "99999.99"
set color to w+, /w+
store MLINE + 1 to MLINE
if MLINE > 20
store 10 to MLINE
do CLRTR_LI
endif
skip
enddo
do RCVADDTR
return
```

```

* Program...: MODTR.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used for modifying the Receivable
*              invoice transactions and to update the receivable
*              databases.
*
* Called by:  RECVADMR.PRG
* Calls.....: none
* File used:  UCPAYFIL.DBF and UCRCVTR.DBF.
*
*
select UCPAYFIL
*set index
store 'F' to DONE
store 0 to tot
if R = SRC .and. 0 = SOBJ
goto top
seek NUM
do while INVOICENUM = NUM
if seller_rc = SRC .and. seller_obj = SOBJ
replace SUBTOTAMNT with SUBTOTAMNT - AMNT1 + AM1
replace AMNTDUE with SUBTOTAMNT - AMNTPAID
exit
else
skip
endif
enddo
else
goto top
seek NUM
do while INVOICENUM = NUM
if seller_rc = SRC .and. seller_obj = SOBJ
replace SUBTOTAMNT with SUBTOTAMNT - AMNT1
replace AMNTDUE with SUBTOTAMNT - AMNTPAID
if SUBTOTAMNT = 0.00
delete
pack
endif
exit
else
skip
endif
enddo
goto top
seek NUM

```

```
do while INVOICENUM = NUM
if SELLER_RC = R .and. SELLER_OBJ = 0
replace SUBTOTAMNT with SUBTOTAMNT + AM1
replace AMNTDUE with SUBTOTAMNT - AMNTPAID
store 'T' to DONE
exit
else
skip
endif
enddo
if DONE <> 'T'
append blank
replace INVOICENUM with NUM, SELLER_RC with R, SELLER_OBJ with 0
replace subtotamnt with AM1, amntpaid with 0, amntdue with subtotamnt
replace sponsrname with sponname, INC_DEC with IND
endif
endif
select UCRCVTR
return
```

```

* Program...: TRIAL.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to update the payable file
*              (UCAPYFIL.DBF) and the transaction file(UCRCVTR.DBF)
*              when deleting an existing transactions from receivable
*              invoice.
*
* Called by:  RECVADMR.PRG
* Calls.....: none
* File used:  UCPAYFIL.DBF and UCRCVTR.DBF.
*
*
store 0 to due
store 0 to famnt
select ucpayfil
set index to payinvo, pay
goto top
seek NUM
do while INVOICENUM = NUM
if seller_rc = rr .and. seller_obj = ob
famnt = subtotamnt - am
if famnt = 0
delete
pack
exit
else
replace subtotamnt with famnt
replace amntdue with famnt - amntpaid
endif
exit
else
skip
endif
enddo
select UCRCVTR
return

```



```

* Program...: RCVADDTR.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to add more transaction to an
*              existing Receivable invoice during the modification
*              process.
*
* Called by:  RECADMR.PRG
* Calls.....: CLRTR_L1.PRG
* File used:  UCRCVTR.DBF and UCPAYFIL.DBF
*
do while .T.
store " " to ADDTR
do while .not. ADDTR $ "YN"
@ 23, 0
@ 23, 10 say "add a new (Y/N): " ;
           get ADDTR picture "!"
read
enddo
set color to w+, w+
store space(30) to DES1
store space(4) to RCC
store space(4) to OBJ
store space(1) to KIND
store 0 to AMNT
IF upper(ADDTR) = "Y"
store 'T' to TOPRINT
@ MLINE, 0 say n picture "99"
@ MLINE, 5 get EDATE picture "99/99/99"
@ MLINE, 17 get DES1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 52 get RCC picture "9999"
@ MLINE, 57 say "-"
@ MLINE, 59 get OBJ picture "9999"
@ MLINE, 65 get KIND picture "A"
@ MLINE, 70 get AMNT picture "99999.99"
store MLINE + 1 to MLINE
@ 23, 0
read
select UCRCVTR
append blank
replace INVOICENUM with NUM, SPONSRNAME WITH SPONNAME, EVENTDATE with ;
      EDATE
replace DESCRIP1 with DES1, SELLER_RC with RCC, SELLER_OBJ with OBJ
replace AMOUNT1 with AMNT, INVOICDATE with INVODATE, INC_DEC with KIND
select UCPAYFIL
goto top
seek NUM

```

```

do while .not. eof()
if invoicenum = num .and. seller_rc = rcc .and. seller_obj = obj
replace subtotamnt with subtotamnt + AMNT
replace amntdue with subtotamnt - amntpaid
exit
else
skip
endif
enddo
if eof()
append blank
replace invoicenum with num, seller_rc with rcc, seller_obj with obj
replace subtotamnt with AMNT, amntpaid with 0, amntdue with subtotamnt
replace sponsrname with sponname, INVOICDATE with INVODATE, INC_DEC
with KIND
endif
enddo
store n + 1 to n
store MLINE + 1 to MLINE
if MLINE > 20
store 10 to MLINE
do CLRTR_LI
endif
loop
else
exit
endif
enddo
return

```

```
* Program...: CLRTR_LI.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used only to clear the screen lines.
*
* Calls.....: none
* File used: none
*
@ 8, 0
@ 9, 0
@ 10, 0
@ 11, 0
@ 12, 0
@ 13, 0
@ 14, 0
@ 15, 0
@ 16, 0
@ 17, 0
@ 18, 0
@ 19, 0
@ 20, 0
@ 21, 0
return
```

```

* Program...: RCVDSPLY.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used as a sub_menu to display the
*             Receivable invoices by invoice number, invoice date,
*             or by the first three characters of the customer name.
*
* Called by: UCRCVSC.PRG
* Calls....: DSPLY_IN.PRG, DSPLY_DT.PRG and RDSPLY_S.PRG.
* File used: UC_RMVAR.MEM
*
*
restore from UC_RMVAR
STORE 'F' TO RTN
STORE '?' TO OPTION
CLEAR
DO WHILE RTN = 'F'

text

```

UC Administration

```

=====

1 ==> Invoice by Invoice
2 ==> Invoice by Event Date
3 ==> Invoice by Sponser Name
R ==> Exit

=====

```

```

endtext
@ 4, 16 say "Receivable Inquiry Menu"
@ 4,62 say DATE()
@ 14,40 SAY 'Enter Selection ==> ';
      GET OPTION

READ
@ 20, 0
CLEAR

```

```
DO CASE
  CASE OPTION = '1'
    do DSPLY_IN
  CASE OPTION = "2"
    do DSPLY_DT
  CASE OPTION = "3"
    do RDSPLY_S
  CASE upper(OPTION) = 'R'
    CLEAR
    RETURN
  OTHERWISE
    ? CHR(7)
    @ 20, 21 SAY '*** Invalid Entry - Try again ***'
  ENDCASE
  STORE '?' TO OPTION
ENDDO
return
```

```

* Program...: DSPLY_IN.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to as adrive to display the
*              Receivable invoices by invoice number.
*
* Called by:  RCVDSPLY.PRG
* Calls.....: RDSPLY_2.PRG
* File used:  UC_IMVAR.MEM
*
set talk off
set exact on
set delimiter off
restore from UC_RMVAR
STIL = .T.
do while STIL
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter invoice number to LOOK for"
@ 12, 12 say "Or just press return to exit";
      get LOOKUP
read
if LOOKUP = " "
set color to w, w
clear
exit
endif
if val(LOOKUP) > MPINVONUM .or. val(LOOKUP) < MPSINVO
set color to w+, w+
@ 23,0
wait " this invoice number &LOOKUP does not exist --;
      Press any key to  try again"

loop
endif
set color to w, /w+
store val(LOOKUP) to NUM
do RDSPLY_2
set color to w+, w+
clear
close databases
enddo
return

```

```

* Program...: RDSPLY_2.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is the actual one to display the
*              Receivable invoices by invoice number.
*
* Called by: DSPLY_IN.PRG
* Calls.....: RECVSC.PRG, FORGETVA.PRG and CLRTR_LI.PRG.
* File used: UCRCVINV.DBF and UCRCVTR.DBF.
*
*
set color to w+, w+
store 'F' to TOPRINT
store 'F' to ABORT
store 0 to TOTAL
do while .T.
set color to w, w+
select 1
use UCRCVINV index RCVINDX
select 2
use UCRCVTR index RCVTNDX
goto top
select UCRCVINV
seek NUM
if eof()
clear
set color to w+, w+
@ 11, 20 say " This invoice have been deleted ....."
@ 12, 20 say " Please check the old History file ."
@ 14, 34 say "THANK YOU"
@ 16, 40
wait "                               Press any key to return to previous Menu"
clear
exit
set color to w, w
endif
set color to w, w+
do RECVSC
set color to w+, w+
@ 1, 0 say "Receivable Inquiry Screen by Invoice Number"
@ 1, 70 say DATE()
do FORGETVA
clear gets
set color to /w, /w+
store " " to YORN

```

```

do while .not. YORN $ "YN"
@ 22, 10 say "Do you want to look for the Transactions (Y/N)";
    get YORN picture "!"
read
enddo
set color to /w, w
if upper(YORN) = "N"
set color to w, w
clear
exit
endif
select UCRCVTR
goto top
do while upper(ABORT) = 'F'
seek NUM
set color to w+, /w+
store 1 to n
store 10 to MLINE
do while INVOICENUM = NUM
@ MLINE, 0 say n picture "99"
@ MLINE, 5 get EVENTDATE picture "99/99/99"
@ MLINE, 17 get DESCRIP1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 52 get SELLER_RC picture "9999"
@ MLINE, 57 say "-"
@ MLINE, 59 get SELLER_OBJ picture "9999"
@ MLINE, 66 get INC_DEC picture "A"
@ MLINE, 70 get AMOUNT1 picture "99999.99"
store TOTAL + AMOUNT1 TO TOTAL
store n + 1 to n
@ 22,0
clear gets
@ 22, 0
set color to w, /w+
@ 22, 0
@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 5 say EVENTDATE picture "99/99/99"
@ MLINE, 17 say DESCRIP1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 52 say SELLER_RC picture "9999"
@ MLINE, 57 say "-"
@ MLINE, 59 say SELLER_OBJ picture "9999"
@ MLINE, 66 say INC_DEC picture "A"
@ MLINE, 70 say AMOUNT1 picture "99999.99"
@ 22, 0
set color to w+, /w+
store MLINE + 1 to MLINE

```



```
if MLINE > 20
store 10 to MLINE
@ 22, 10
wait "Press any key to view more transactions ! "
do CLRTR_LI
endif
skip
enddo
@ MLINE, 70 say "-----"
@ MLINE + 1, 61 say "TOTAL: "
@ MLINE + 1, 68 say TOTAL picture "9999999.99"
@ 22,0
@ 23, 10 say " IS this the last transaction for this &LOOKUP"
wait "          -- Press any key to Renter another Invoice Number --"
@ 23,0
@ 24, 0
clear
exit
enddo
exit
enddo
return
```

```

* Program...: DSPLY_DT.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a drive to display the
*              Receivable invoices by event date.
*
* Called by:  RCVDSPLY.PRG
* Calls.....: DSPLY_D2.PRG
* File used:  UCRCVINV.DBF, UCRCVTR.DBF and A temporary file called
*              TEMP1.DBF.
*
*
clear
set delimiter off
clear
select 1
use UCRCVINV index RCVINDX
select 2
use UCRCVTR index RCVTNDX
store 0 to NUM
store 'F' to RTN
do while RTN = 'F'
set color to /w, /w+
store ctod('  /  / ') to MDATEMIN
store ctod('  /  / ') to MDATEMAX
@ 10, 10 say " Please enter Search starting date: ";
    get MDATEMIN
@ 12, 10 say " Please enter search ending date  : ";
    get MDATEMAX
@ 14, 10 say "or Press RETURN twice to  -- CANCEL"
read
if dtoc(MDATEMIN) = ("  /  / ")
set color to w, w
store 'F' to RTN
clear
exit
endif
copy to TEMP1 fields INVOICENUM, SPONSRNAME, EVENTDATE, DESCRIP1,;
    SELLER_RC, SELLER_OBJ, INVOICDATE for (EVENTDATE >= MDATEMIN .AND.;
    EVENTDATE <= MDATEMAX)
select 3
use TEMP1
index on INVOICENUM to INVONUM
goto top

```

```

do while .not. eof()
if INVOICENUM = NUM
skip
loop
endif
store INVOICENUM to NUM
set color to w, w+
do DSPLY_D2
select TEMP1
set color to w, w+
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 23,10 say " IS this the INVOICE you are looking for (Y/N): " ;
           get YORN picture "!"
read
enddo
if upper(YORN) = "Y"
set color to w, w
exit
endif
set color to w, w
skip
enddo
@ 23, 0
set color to w+, w+
wait " this is the end of search -- Press any key to continue .."
set color to w+, w
set color to w, w
close databases
erase TEMP1.DBF
erase INVONUM.NDX
clear
exit
enddo
return

```

```

* Program...: DSPLY_D2.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used as an entry screen to display the
*             Receivable invoices by dates and the first three
*             letters of the sponser name.
*
* Called by: DSPLY_DT.PRG
* Calls....: RECVSC.PRG, FORGETVA.PRG and CLRTR_LI.prg
* File used: UCRCVINV.DBF and UCRCVTR.DBF
*
*
select UCRCVINV
goto top
seek NUM
do RECVSC
set color to w+, w+
@ 1, 0 say "Inquiry Screen by Date"
@ 1, 70 say Date()
set color to w, w+
do FORGETVA
clear gets
select UCRCVTR
goto top
seek NUM
store INVOICENUM TO NUM
store 1 to n
store 10 to MLINE
store 0 to TOTAL
set color to w+, /w+
do while INVOICENUM = NUM
@ MLINE, 0 say n picture "99"
@ MLINE, 5 get EVENTDATE picture "99/99/99"
@ MLINE, 17 get DESCRIP1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 52 get SELLER_RC picture "9999"
@ MLINE, 57 say "-"
@ MLINE, 59 get SELLER_OBJ picture "9999"
@ MLINE, 66 get INC_DEC picture "A"
@ MLINE, 70 get AMOUNT1 picture "99999.99"
store TOTAL + AMOUNT1 to TOTAL
store n + 1 to n
clear gets
set color to w, /w+

```

```

@ MLINE, 0 say n - 1 picture "99"
@ MLINE, 5 say EVENTDATE picture "99/99/99"
@ MLINE, 17 say DESCRIP1 picture "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"
@ MLINE, 52 say SELLER_RC picture "9999"
@ MLINE, 57 say "-"
@ MLINE, 59 say SELLER_OBJ picture "9999"
@ MLINE, 66 say INC_DEC picture "A"
@ MLINE, 70 say AMOUNT1 picture "99999.99"
set color to w+, /w+
store MLINE + 1 to MLINE
if MLINE > 20
store 10 to MLINE
@ 22,10
set color to /w+, w
wait " Press any key to view more transactions ! "
set color to w+, /w+
do CLRTR_LI
endif
skip
enddo
@ MLINE, 70 say "-----"
@ MLINE + 1, 61 say "TOTAL: "
@ MLINE + 1, 68 say TOTAL picture "9999999.99"
set color to /w, /w+
return

```

```

* Program...: RDSPLY_S.PRG
* Author...: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used as an entry screen to display the
*             Receivable invoices by the first three letters
*             of the customer(sponser) name.
*
* Called by: RCVDSPLY.PRG
* Calls....: DSPLY_D2.PRG
* File used: UCRCVINV.DBF, UCRCVTR.DBF and TEMP1.DBF (a temporary
*             file).
*
*
clear
select 2
use UCRCVTR index RCVTNDX
select 1
use UCRCVINV index RCVINDX
store 0 to NUM
store 'F' to RTN
do while RTN = 'F'
set color to /w, /w+
store " " to MSPONSER
@ 10, 10 say " Please enter the first THREE letters of the SPONSER ;
name " get MSPONSER
@ 12, 10 say "or Press RETURN twice to  -- CANCEL"
read
store upper(MSPONSER) to MSPONSER
if MSPONSER = " "
set color to w, w
store 'F' to RTN
clear
exit
endif
copy to TEMP1 fields INVOICENUM,;
      SPONSERNAME FOR substr(SPONSERNAME, 1, 3) = substr(MSPONSER ,1, 3)
select 3
use TEMP1
index on INVOICENUM to INVONUM
goto top
do while .not. eof()
if INVOICENUM = NUM
skip
loop
endif
store INVOICENUM to NUM
set color to w, w+

```

```

do DSPLY_D2
select TEMP1
set color to w, w+
store " " to YORN
set color to /w, /w+
do while .not. YORN $ "YN"
@ 23,10 say " IS this the INVOICE you are looking for (Y/N): " ;
        get YORN picture "!"
read
enddo
if upper(YORN) = "Y"
set color to w, w
exit
endif
set color to w, w
skip
enddo
if eof()
clear
set color to w+, w+
@ 11, 20 say ".... Sorry !!!! there is no MATCH ...."
@ 12, 0
wait "                                Press any key to  -- try again --"
else
@ 23, 0
set color to w+, w+
wait "    -- this is the end of search -- Press any key to try agin --"
endif
set color to w, w
close databases
erase TEMP1.DBF
erase INVONUM.NDX
clear
exit
enddo
return

```

```

* Program...: UC_RPRD.PRG ( RECEIVABLE. PRINT INVOICE MAIN DRIVE )
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program acts as a main menu for printing the
*             UC Receivable Billing System invoices either
*             singley or as agroup.
*
* Calls....: UC_PRRIV.PRG and UC_PRRGR.PRG
* File used: none
*

```

```

clear
set talk off
store 'F' to RETN
store '?' to OPTION
clear
do while RETN = 'F'

```

```

text

```

UC Administration

```

=====
1 ==> Print Individual Invoice
2 ==> Print Invoices by Group
R ==> Exit
=====

```

```

endtext
@ 4, 16 say "Receivable Print Invoice(s) Menu"
@ 4,62 say DATE()
@ 14,40 SAY 'Enter Selection ==> ';
      GET OPTION
READ
@ 20, 0
clear
do case
    case OPTION = '1'
        do UC_PRRIV
        store '?' to OPTION
        loop
    case OPTION = "2"
        do UC_PRRGR

```



```
case upper(OPTION) = 'R'
  clear
  return
otherwise
  ? chr(7)
  @ 20, 21 say '*** Invalid Entry - Try again ***'
endcase
store '?' to OPTION
enddo
return
```

```

Program...: UC_PRRIV.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to print the Receivable Billing
*              System invoices singly.
*
* Calls.....: PRNTRCV.PRG
* File used:  UCRCVINV.DBF, UCRCVTR.DBF and UC_RMVAR.MEM
*
*
select 1
use UCRCVINV index RCVINDX
select 2
use UCRCVTR index RCVTNDX
set talk off
set exact on
set delimiter off
restore from UC_RMVAR
store 'F' to STIL
do while STIL = 'F'
clear
set color to /w, /w+
NUM = 0
LOOKUP = space(7)
@ 10, 12 say "Enter the Invoice Number to Print"
@ 12, 12 say "Or just Press RETURN to exit";
      get LOOKUP
read
if LOOKUP = " "
clear
set color to w, w
store 'T' to STIL
exit
endif
if val(LOOKUP) > MPINVONUM .or. val(LOOKUP) < MPSINVO
set color to w, w
@ 15, 0
set color to w+, w+
wait " this invoice number &LOOKUP does not exist;
  -- Press any key to try again"
clear
loop
endif

```

```
set color to w, /w+
store val(LOOKUP) to NUM
clear
@ 12, 0
wait " Make sure the Printer is ready -- then Press any key to ;
      Contine..."
do PRNTRCV
clear
loop
exit
enddo
return
```

```

* Program...: UC_PRRGR.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to print the UC Receivable
*             Billing System new invoices as a group.
*
* Calls....: PRNTRCV.PRG
* File used: UCRCVINV.DBF, UCRCVTR.DBF and UC_RTEMP.DBF
*
clear
select 1
use UCRCVINV index RCVINDX
select 2
use UCRCVTR index RCVTNDX
select 3
use UC_RTEMP
index on INVOICENUM to PRNTNDX
store 'F' to RTN
do while RTN = 'F'
do while .not. eof()
store INVOICENUM to NUM
@ 13, 0
wait " Make sure the printer is READY -- Hit any key to Continue..."
do PRNTRCV
select UC_RTEMP
skip
enddo
if eof()
@ 14, 20 say " There is no more Invoices in the file to Print "
wait "                               Press any key to Return to Previous Menu"
endif
clear
close databases
use UC_RTEMP
zap
erase PRNTNDX.NDX
exit
enddo
return

```

```

* Program...: PRNTRCV.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a drive to print the
*              UC Receivable Billing System invoices
*
* Calls.....: none
* File used:  UCRCVINV.DBF and UCRCVTR.DBF.
*
*

```

```

store 'F' to PRNT
do while PRNT = 'F'
store 1 to MPAGE
store 60 to MLINE
select UCRCVINV
seek NUM
store SELLERAREA to SELAREA
store JOB_NUMBER to JOBNO
set color to w+, w+
@ 13, 20 say "Printing in Progress ..."
set print on
set device to print
SUBTOT = 0
@ 1, 30 say "UNIVERSITY CENTER"
@ 3, 22 say "RECEIVABLE INSTITUTIONAL VOUCHER"
@ 5, 3 say "EVENT: " + TITLE
@ 5, 57 say "DATE: "
@ 5, 63 say DATE()
@ 7, 3 say "BUYER: " + SPONSORNAME
@ 7, 56 say "DOCNM: "
@ 7, 62 say str(NUM)
@ 10,3 say ADDRESS
@ 11, 3 say trim(CITY) + " " + STATE + " " + str(ZIPCODE)
STORE 13 TO MLINE
@ MLINE, 3 say "EVENT_DATE" DESCRIPTION
AMOUNT"
store MLINE + 2 to MLINE
select UCRCVTR
GOTO TOP
seek NUM
DO WHILE .NOT. EOF()
IF INVOICENUM = NUM

```

```

@ MLINE, 3 say substr(cmonth(EVENTDATE),1,3) + str(day(EVENTDATE),3) ;
+ ", " + substr(str(year(EVENTDATE),4),3)
@ MLINE, 25 say DESCRIP1
@ MLINE, 60 say AMOUNT1
STORE MLINE + 1 TO MLINE
STORE SUBTOT + AMOUNT1 to SUBTOT
ENDIF
SKIP
ENDDO
STORE MLINE + 2 TO MLINE
@ MLINE, 51 say "TOTAL: "
@ MLINE, 58 say SUBTOT picture "999999.99"
STORE 50 to MLINE
@ MLINE, 3 say "                                CONTROLLER'S OFFICE USE "
@ MLINE + 2, 3 say "Area  Orgn  Obj Sub;
Job no.           Description           Amount    I/D"
store MLINE + 4 to MLINE
select UCPAYFIL
set index to PAYINVO
goto top
seek NUM
do while .not. eof()
if INVOICENUM = NUM
@ MLINE, 3 say SELAREA
@ MLINE, 9 say SELLER_RC
@ MLINE, 16 say SELLER_OBJ
@ MLINE, 24 say JOBNO
@ MLINE, 32 say UC_DESCRIP
@ MLINE, 66 say SUBTOTAMNT
@ MLINE, 76 say INC_DEC
MLINE = MLINE + 1
endif
skip
enddo
eject
set print off
set device to screen
exit
enddo
return

```

```

* Program...: UCPAYMNU.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used as a main menu for the payment
*               process for the UC Receivable Billing System.
*
* Called by: UCARIBS.PRG (the main menu).
* Calls.....: UC_PAYIN.PRG and UCPAYMOD.PRG
* File used: UC_RMVAR.MEM
*
*
clear
restore from UC_RMVAR
store 'F' to RTN
store '?' to CHOICE
do while RTN = 'F'
set color to w+, w+
@ 2, 1 say "Payment Entry Screen"
@ 2, 69 say DATE()
@ 3, 0 say "-----";
        "-----"
@ 5, 25 say " 1 ==> to Record Payment"
@ 6, 25 say " 2 ==> to Modify Payment"
@ 7, 25 say " E ==> to EXIT  "
@ 9, 20 say "Please enter your choice: " get CHOICE
read

set color to w, w
do case
    case upper(CHOICE) = '1'
        do UC_PAYIN
    case upper(CHOICE) = '2'
        do UCPAYMOD
    case upper(CHOICE) = 'E'
        clear
        return
    otherwise
        ? chr(7)
        @ 22, 10 say "**** Invalid option -- Press any key to try again :
                    ****"

endcase
store '?' to CHOICE
enddo
return

```

```

* Program...: UC_PAYIN.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to record partial and full payments
*             and update the payment status for the UC Receivable
*             Billing System invoices.
* Called by: UCPAYMNU.PRG
* Calls....: PB.PRG
* File used: UCPAYFIL.DBF and UCPAYTMP.DBF.
*
clear
select 1
use UCPAYFIL index PAYINVO, PAY
select 2
use UCPAYTMP index PAYTMP
store 'F' to RTN
do while RTN = 'F'
store 0.00 to LPAID
store 0.00 to TOTAL
store 0.00 to TOTPAID
store 0.00 to amntleft
store '?' to OPTION
store space(7) to NUM
store 0.00 to AMNTP
store ctod(' / / ') to PDATE
clear
set color to w+, w+
select UCPAYFIL
text

```

UC Administration

Payment Entry Screen

=====

Invoice Number:

Amount Paid:

Payment Date:

=====

Press (E)/nter this payment
Hit the Space bar once for the invoice field
OR (R)/abort to return to previous screen -->

endtext


```

@ 4, 62 say date()
@ 7, 46 get NUM picture "999999"
read
if NUM = " "
clear
close databases
exit
endif
@ 9, 46 get AMNTP picture "99999.99"
@ 11, 46 get PDATE picture " / / "
read
do while .not. upper(OPTION) $ "ER"
@ 16, 67 get OPTION
read
enddo
if upper(OPTION) = "R"
clear
exit
endif
if val(NUM) > MPINVONUM .or. val(NUM) < MPSINVO
@ 22, 10
@ 18, 10 say NUM + " THIS NUMBER DOES NOT EXIST"
wait
store 'F' to RTN
clear
loop
endif
store val(NUM) to NUM
goto top
seek NUM
do while INVOICENUM = NUM
store TOTAL + SUBTOTAMNT to TOTAL
store TOTPAID + AMNTPAID to TOTPAID
skip
enddo
store total - totpaid to lpaid
if TOTAL - TOTPAID = 0.00
@ 22, 0
wait "** this invoice is already Paid -- Press any key to Continue **"
clear
loop
endif
store TOTAL - TOTPAID to DUE
if amntp > due
@ 22, 10 say "**** can't be processed payment is more than due ****"
wait "          **** Press any key to continue ****"
clear
loop
endif

```

```

store AMNTP to LPAID
if AMNTP = DUE
goto top
seek NUM
do while INVOICENUM = NUM
replace AMNTPAID with SUBTOTAMNT
replace AMNTDUE with 0.00
skip
wait "** No more payment for this customer;
-- Press any key to continue **"
do FB
clear
exit
enddo
loop
else
goto top
seek NUM
do while INVOICENUM = NUM
if SUBTOTAMNT - AMNTPAID = 0.00
skip
loop
else
if AMNTP - AMNTDUE <= 0.00
replace AMNTPAID with AMNTPAID + AMNTP
replace AMNTDUE with SUBTOTAMNT - AMNTPAID
wait " ** the payment is proccessed -- Press any key to Continue **"
do FB
clear
exit
else
store SUBTOTAMNT - AMNTPAID to AMNTLEFT
replace AMNTPAID with SUBTOTAMNT
replace AMNTDUE with SUBTOTAMNT - AMNTPAID
store AMNTP - AMNTLEFT to AMNTP
endif
endif
skip
loop
enddo
return
endif
store 'F' to RTN
enddo
return

```

```
* Program...: PB.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to record new payment to the
*             UCPAYTMP.DBF file for the UC Receivable Billing System.
*
* Called by: UCPAYMOD.PRG
* Calls....: none
* File used: UCPAYTMP.DBF and UCPAYFIL.DBF.
*
*
select UCPAYTMP
append blank
replace INVOICENUM with NUM, LASTAMNTP with LPAID, PAYDATE with PDATE
select UCPAYFIL
return
```

```

* Program...: UCPAYMOD.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to modify payments(partial or full)
*              and update files for the UC Receivable Billing System
*              invoices.
*
* Called by: UCPAYMNU.PRG
* Calls.....: none
* File used: UCPAYFIL.DBF and UCPAYTMP.DBF.
*
*
clear
set color to w+, w+
select 1
use UCPAYFIL index PAYINVO, PAY
select 2
use UCPAYTMP index PAYTMP
store 'F' to RTN
do while RTN = 'F'
store 0.00 to TOTAL
store 0.00 to T_LASTPAY
store space(7) to NUM
store 0 to PAYNUMBER
store 6 to MLINE
store " " to NUMBER
store 0.00 to NEWAMNTP
@ 3, 0 say "-----";
-----"
@ 2, 0 say " Modify Payment Screen"
@ 2, 69 say DATE()
@ 8, 20 say "Enter the Invoice Number: " get NUM picture "9999999"
@ 9, 20 say "Enter the correct Amount: ";
        get NEWAMNTP picture "99999.99"
@ 10, 20 say "OR Press RETURN twice to Exit"
read
if NUM = " "
clear
close databases
exit
else
store val(NUM) to NUM

```

```

if NUM < MPSINVO .or. NUM > MPINVONUM
? chr(7)
@ 22, 10
wait "          this invoice does not exist -- Press any key to try again"
clear
loop
endif
endif
@ 8, 0
@ 9, 0
@ 10, 0
@ 4, 1 say "PAY_NO"
@ 4, 12 say "INV_NO"
@ 4, 24 say "PAY_AMOUNT"
@ 4, 40 say "PAY_DATE"
select UCPAYTMP
goto top
seek NUM
do while INVOICENUM = NUM
store PAYNUMBER + 1 to PAYNUMBER
@ MLINE, 2 say PAYNUMBER picture "99"
@ MLINE, 12 say INVOICENUM
@ MLINE, 24 say LASTAMNTP
@ MLINE, 40 say PAYDATE
store MLINE + 1 to MLINE
store T_LASTPAY + LASTAMNTP TO T_LASTPAY
skip
enddo
store 'F' to CORRECT
do while CORRECT = 'F'
@ 21, 20 say " Press RETURN to CANCEL"
@ 22, 10 say "OR Enter payment NUMBER to correct (1 or 2 ..):" ;
  get NUMBER
  read
  if number = " "
  exit
  else
  if val(NUMBER) > PAYNUMBER .or. val(NUMBER) <= 0
  @ 22, 0
  wait "          ***  INVALID NUMBER  -- Press any key to try again  ***"
  @ 23, 0
  loop
  else
  exit
  endif
enddo

```

```

if number = " "
clear
set safety off
close databases
return
set safety on
endif
store val(NUMBER) to NUMBER
goto top
seek NUM
skip NUMBER -1
store T_LASTPAY - LASTAMNTP + NEWAMNTP TO NETPAY
store PAYDATE TO PDATE
select UCPAYFIL
goto top
seek NUM
do while INVOICENUM = NUM
store TOTAL + SUBTOTAMNT to TOTAL
skip
enddo
@ 21, 0
@ 22, 0
@ 23, 0
if NETPAY > TOTAL
@ 21, 25 say "Payment can't be done"
@ 22, 15 say "TOTAL PAYMENT is more than the TOTAT DUE"
wait "                ** Press any key to continue **"
clear
loop
endif
goto top
seek NUM
do while INVOICENUM = NUM
replace AMNTPAID with 0.00, AMNTDUE with SUBTOTAMNT
skip
enddo
goto top
seek NUM
do while INVOICENUM = NUM
if NETPAY <= SUBTOTAMNT
replace AMNTPAID with NETPAY
replace AMNTDUE with SUBTOTAMNT - NETPAY
@ 21,0
@ 22, 0

```

```
wait "** the payment is processed -- Press any key to Continue **"
select UCPAYTMP
goto top
seek NUM
skip NUMBER - 1
replace LASTAMNTP with NEWAMNTP
clear
exit
else
replace AMNTPAID with SUBTOTAMNT
replace AMNTDUE with 0.00
store NETPAY - SUBTOTAMNT to NETPAY
endif
skip
enddo
clear
store 'F' to RTN
loop
enddo
return
```

```

* Program...: UCRPORTS.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to print the Receivable
*              and Interdepartmental Billing System reports.
*
* Called by: UCARIBS.PRG
* Calls.....: UCSTMNT.PRG, UCOSTAND.PRG, UCAGING.PRG,
*              UCINCOME.PRG and UCIINCOM.PRG.
* File used:
*
*

```

```

CLEAR
STORE 'F' TO EXIT
STORE '?' TO OPTION2
DO WHILE EXIT = 'F'
TEXT

```

Reports Menu

```
=====
```

```

1 ==> Aging Report
2 ==> Outstanding Report
3 ==> Statement Report
4 ==> Receivable Income Report
5 ==> Interdepartmental Income Report
X ==> Exit

```

```
=====
```

```

endtext
set color to w+, w+
@ 2, 63 say DATE()
@ 13, 38 say 'Enter Selection ==> ' GET OPTION2
read
@ 13, 0
do case
    case upper(OPTION2) = '1'
        do UC_AGING
    case upper(OPTION2) = '2'
        do UCOSTAND

```



```
case upper(OPTION2) = '3'
    do UCSTMNT
case upper(OPTION2) = '4'
    do UCINCOME
case upper(OPTION2) = '5'
    set path to c:/ucinter
    do UCIINCOM
case upper(OPTION2) = 'X'
    clear
    return
otherwise
    ? chr(7)
@ 22,24 SAY '*** Invalid Entry - Try again ***'
clear
set color to w, w+
endcase
STORE '?' TO OPTION2
enddo
return
```

```

* Program...: UC_AGING.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program prints the aging report for the UC ;
*              Receivable account.
* Called by: UCRPORTS.PRG
* Calls.....: none
* File used: UCPAYFIL.DBF and temporary files(TEMP.DBF and
*              TEMP1.DBF).
*
set delimiter off
clear
select 1
use UCPAYFIL index PAYINVO, PAY
@ 11, 0
wait "Make sure the printer is ready then - Press any key to Continue "
@ 12, 0
@ 12, 25 say " AGING Process in Progress"
store 0.00 to TOTAL, TOTPAID, TOTDUE
store 0 to NUM
store 'F' to RTN
do while RTN = 'F'
total on INVOICENUM to TEMP fields SUBTOTAMNT,AMNTPAID,AMNTDUE for ;
    AMNTDUE > 0
select 2
use TEMP
store 0 to odate
store 30 to ddate
use temp
index on invoicdate to invodate
store 3 to MLINE
store 'F' to RR
set print on
set device to print
@ 2, 1 say "INVO_NO   INVO_DATE           SPONSER NAME       INVO_AMNT ;
    AMNT_PAID   AMNT_DUE"
store 4 to MLINE
do while RR = 'F'
goto top
do while .not. eof()
if date() - invoicdate > odate .and. date() - invoicdate <= ddate
store MLINE + 1 to MLINE
@ MLINE, 1 say INVOICENUM
@ MLINE, 10 say INVOICDATE
@ MLINE, 20 say SPONSNAME
@ MLINE, 54 say SUBTOTAMNT
@ MLINE, 65 say AMNTPAID
@ MLINE, 74 say AMNTDUE

```

```

store subtotamnt + total to total
store amntpaid + totpaid to totpaid
store amntdue + totdue to totdue
endif
skip
enddo
if total > 0
store MLINE + 2 to MLINE
@ MLINE, 10 say "AMOUNT DUE BETWEEN "+substr(str(ODATE),8,3)+" - "+;
substr(str(DDATE),8,3)+" DAYS: "
@ MLINE, 48 say TOTAL
@ MLINE, 59 say TOTPAID
@ MLINE, 68 say TOTDUE
endif
store MLINE + 1 to MLINE
store 0.00 to total, totpaid, totdue
if ddate > 360
clear
close databases
erase TEMP.DBF
erase INVODATE.NDX
set print off
set device to screen
eject
exit
endif
store odate + 30 to odate
store ddate + 30 to ddate
if ddate > 120 .and. ddate <= 180
store 120 to ODATE
store 180 to DDATE
endif
if ddate > 180 .and. ddate <= 360
store 180 to odate
store 360 to ddate
endif
loop
enddo
exit
enddo
return

```

```

* Program...: UCOSTAND.PRG
* Author...: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: This program is used to print out the UC Receivable
*             outstanding reports.
*
* Called by: UCRPORTS.PRG
* Calls....: OUTSATAD.FRM
* File used: UCPAYFIL.DBF
*
*
CLEAR
set delimiter on
set safety off
set talk off
do while .T.
@ 6, 30 say " OUTSTANDING SUMMARY REPORT"
* INITIALIZE DATES
Edate1 = ctod(space(8))
Edate2 = ctod(space(8))

* GET DATES AND FILL IN BLANK DATES
@ 9,17 SAY "STARTING DATE " GET Edate1
@ 9,43 SAY " ENDING DATE " GET Edate2
READ
* IF DATES ARE BLANK, RETURN TO MENU, IF NOT, USE GRAPHICS AND
* SET UP INDEXES AND PRINT REPORT.
IF DTOC(Edate1) <> " / / "
    USE UCPAYFIL
    index on SELLER_RC + SELLER_OBJ + SPONSORNAME TO OUT
@ 14, 0
WAIT "                PRESS RETURN WHEN YOUR PRINTER IS READY"
CLEAR
    REPORT FORM OUTSATAND FOR INVOICDATE >= edate1;
    .AND. INVOICDATE <= edate2 .and. amntdue > 0 TO PRINT NOEJECT
close databases
erase OUT.NDX
set safety on
endif
clear
exit
enddo
return

```

```

* Program...: UCSTMNT.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes....: The purpose of this program is to print monthly the
*             customer statements
* Calls.....: none
* File used: UCRCVINV.DBF, UCPAYFIL.DBF
*
clear
set talk off
set safety off
@ 14, 10 say " Processing Statments in Pogress !!!!!!!"
select 1
use UCRCVINV index RCVINDX
select 2
use UCPAYFIL index PAYINVO, PAY
total on INVOICENUM to TEMP fields SUBTOTAMNT, AMNTPAID, AMNTDUE
use TEMP
goto top
list invoicenum, invoicdate,amntdue
wait
copy to TEMP1 fields INVOICENUM, INVOICDATE, SPONSORNAME,SUBTOTAMNT;
,AMNTPAID,AMNTDUE for AMNTDUE > 0.00;
.and. (DATE() - INVOICDATE >= 30)
do while .T.
use TEMP1
list invoicenum, invoicdate, amntdue
wait
exit
set print on
set device to print
store 2 to MLINE
do while .not. eof()
store 2 to MLINE
store 0 to NUM
if INVOICENUM <> NUM
store INVOICENUM TO NUM
store SUBTOTAMNT to TOT
store AMNTPAID to PAID
store AMNTDUE to DUE
@ MLINE + 1, 31 say "University Center"
@ MLINE + 2, 29 say "University of Montana"
@ MLINE + 3, 25 say "ACCOUNTS RECIEVABLE STATMENT"
@ MLINE + 4, 31 say "Missoula, MT 59812"
@ MLINE + 5, 33 say "Phone 243-5082"
store 10 to MLINE
select UCRCVINV

```

```

seek NUM
@ MLINE + 1, 3 say "Name: " + trim(SPONSORNAME)
@ MLINE + 1, 60 say "Date: " + DTOC(DATE())
@ MLINE + 3, 3 say "Address: " + trim(ADDRESS)
@ MLINE + 5, 9 say trim(CITY) + ", " + STATE + str(ZIPCODE)
store 19 to MLINE
@ MLINE + 1, 3 say "Invoice #      Invoice Date      ;
  Subtotalamount      Amount Paid      Amount due"
store MLINE + 2 to MLINE
@ MLINE + 1, 1 say NUM
@ MLINE + 1, 18 say INVOICDATE
@ MLINE + 1, 32 say TOT
@ MLINE + 1, 46 say PAID
@ MLINE + 1, 61 say DUE
@ MLINE + 2, 64 say "-----"
@ MLINE + 4, 50 say "TOTAL DUE: "
@ MLINE + 4, 61 say DUE
@ MLINE + 5, 0 say " "
eject
endif
set print off
set device to screen
select TEMP1
store 2 to MLINE
@ 14, 0
skip
wait " Prepare Papers for next Statment to Print -- Press any;
  key to Continue ..."
if eof()
clear
@ 14, 0
wait " THIS IS THE END !!!!! -- Press any key to Quit --"
set print off
set device to screen
exit
endif
@ 14, 0
set print on
set device to print
enddo
set print off
set device to screen
close databases
erase temp.dbf
erase temp1.dbf
set device to screen
clear
exit
enddo
return

```

```

* Program...: UCINCOME.PRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: The purpose of this program is to print the income
*              reports for the receivable accounts
* Calls.....: UCRINCOM.FRM
* File used:  UCPAYFIL.DBF
*
*
CLEAR
set delimiter on
set talk off
set safety off
select 1
use UCPAYFIL
index on SELLER_RC + SELLER_OBJ+ SPONSNAME to OUT
do while .T.
* SHOW TITLE OF REPORT
@ 6, 30 SAY "INCOME SUMMARY REPORTS"
@ 14,0
* INITIALIZE DATES
Edate1 = ctod(space(8))
Edate2 = ctod(space(8))

* GET DATES AND FILL IN BLANK DATES
@ 9,17 SAY "STARTING DATE  " GET Edate1
@ 9,43 SAY "  ENDING DATE  " GET Edate2
READ
IF DTOC(Edate1) <> "  /  /  "
select UCPAYFIL
@ 14, 0
set color to w+, w+
wait "                                PRESS RETURN WHEN YOUR PRINTER IS READY"
CLEAR
    REPORT FORM UCRINCOM  for INVOICDATE >= edate1;
    .AND. INVOICDATE <= edate2 TO PRINT NOEJECT
close databases
erase OUT.NDX
set safety on
endif
close databases
clear
exit
enddo
return

```

```

* Program...: UCIINCOM.FRG
* Author....: Samir M. Soueidan
* Date.....: March 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: The purpose of this program is to print the income
*              reports for the interdepartmental billing system.
*
* Called by:  UCARIBS.FRG
* Calls.....: UCIINCOM.FRM
* File used:  UCINTER1.DBF

*
CLEAR
set delimiter on
set talk off
set safety off
select 1
use UCINTFIL
index on SELLER_RC + SELLER_OBJ + SPONSORNAME to INT
do while .T.
* SHOW TITLE OF REPORT
@ 6, 30 SAY "INCOME SUMMARY REPORTS FOR INTERDEPARTMENTAL"
@ 14,0
* INITIALIZE DATES
Edate1 = ctod(space(8))
Edate2 = ctod(space(8))

* GET DATES AND FILL IN BLANK DATES
@ 9,17 SAY "STARTING DATE  " GET Edate1
@ 9,43 SAY "  ENDING DATE  " GET Edate2
READ
IF DTOC(Edate1) <> "  /  /  "
select UCINTFIL
@ 14, 0
set color to w+, w+
wait "                                PRESS RETURN WHEN YOUR PRINTER IS READY"
clear
      REPORT FORM UCIINCOM  for INVOICDATE >= edate1;
      .AND. INVOICDATE <= edate2 TO PRINT NOEJECT
close databases
erase INT.NDX
set safety on
endif
close databases
clear
exit
enddo
return

```



```

* Program...: UCBACKUP.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used to backup the Interdepartmental
*              and the Receivable database files for the UC billing
*              system.
*
* Called by: UCARIBS.PRG
* Calls.....: none
* File used: UC_IMVAR.MEM, UC_RMVAR.MEM, UCINTER1.DBF, UCINTFIL.DBF
*              UC_ITEMP.DBF, UCRCVINV.DBF, UCRCVTR.DBF, UCPAYFIL.DBF
*              UCPAYTMP.DBF AND UC_RTEMP.DBF.
*
*
clear
set color to w+, w+
@ 12, 20 say "Please Insert BACKUP disk in drive A: "
wait "                      Press any key when you are ready"
@ 12, 0
@ 13,0
@ 12, 20 say "Please be patient BACKUP in progress"
@ 14, 24 say "Now backing up the UCINTER1.DBF"
copy file c:/ucinter/UCINTER1.DBF to a:UCINTER1.DBF
@ 14, 24 say "Now backing up the UCINTFIL.DBF"
copy file c:/ucinter/UCINTFIL.DBF to a:UCINTFIL.DBF
@ 14, 24 say "Now backing up the UC_ITEMP.DBF"
copy file c:/ucinter/UC_ITEMP.DBF to a:UC_ITEMP.DBF
@ 14, 24 say "Now backing up the UC_IMVAR.MEM"
copy file c:/ucinter/UC_IMVAR.MEM to a:UC_IMVAR.MEM
@ 14, 24 say "Now backing up the UCRCVINV.DBF"
copy file c:/samir/UCRCVINV.DBF to a:UCRCVINV.DBF
@ 14, 24 say "Now backing up the UCRCVTR.DBF "
copy file c:/samir/UCRCVTR.DBF to a:UCRCVTR.DBF
@ 14, 24 say "Now backing up the UCPAYFIL.DBF"
copy file c:/samir/UCPAYFIL.DBF to a:UCPAYFIL.DBF
@ 14, 24 say "Now backing up the UCPAYTMP.DBF"
copy file c:/samir/UCPAYTMP.DBF to a:UCPAYTMP.DBF
@ 14, 24 say "Now backing up the UC_RTEMP.DBF"
copy file c:/samir/UC_RTEMP.DBF to a:UC_RTEMP.DBF
@ 14, 24 say "Now backing up the UC_RMVAR.MEM"
copy file c:/samir/UC_RMVAR.MEM to a:UC_RMVAR.MEM
clear
@ 14, 20 say "      BACKUP PROCESS IS COMPLETE      "
@ 15, 16 say "Please keep the BACKUP copy in safe place "
wait "                      Press any key to return to main Menu"
set safety on
clear
return

```

```

* Program...: UC_PURGE.PRG
* Author....: Samir M. Soueidan
* Date.....: April 23, 1987
* Version...: dBASE III, Version 3.00
* Notes.....: This program is used purge the
*              Interdepartmental and the receivable files by
*              by the end of each fiscal year.
*
* Called by: UCARIBS.PRG
* Calls....: none
* File used: UC_IMVAR.MEM, UC_RMVAR.MEM, UCINTER1.DBF, UCINTFIL.DBF
*              UC_ITEMP.DBF, UCRCVINV.DBF, UCRCVTR.DBF, UCPAYFIL.DBF
*              UCPAYTMP.DBF AND UC_RTEMP.DBF.
*
clear
set safety off
do while .T.
@ 8, 16 say "Please read me carefully and answer the following (Y/N): "
store " " to FISCAL
store " " to REPORTS
store " " to PURGE
store 0 to NO1, NO2
@ 10, 20 say "Is this the end of the FISCAL year (Y/N): " get FISCAL
@ 11, 20 say "Did you print out the REPORTS you need (Y/N):" get REPORTS
@ 12, 20 say "Are you sure ? you want to DELETE the files (Y/N): ":
        get PURGE

read
if upper(FISCAL) = "Y" .and. upper(REPORTS) = "Y" .and. :
        upper(PURGE)="Y"

clear
@ 10, 9 say "PURGING INTERDEPARTMENTAL FILES Please be patient"
@ 12, 15 say "Now is PURGING the UCINTER1.DBF file"
use c:/ucinter/UCINTER1 index INVO
zap
@ 12, 15 say "Now is PURGING the UCINTFIL.DBF file"
use c:/ucinter/UCINTFIL index FIL
zap
@ 12, 15 say "Now is PURGING the UC_ITEMP.DBF file"
use c:/ucinter/UC_ITEMP
zap
use
clear
@ 10, 9 say "PURGING RECEIVABLE FILES Please be patient"
@ 12, 15 say "Now is PURGING the UCRCVINV.DBF file"
use c:/samir/UCRCVINV index RCVINDX
zap
@ 12, 15 say "Now is PURGING the UCRCVTR.DBF file"
use c:/samir/UCRCVTR index RCVTNDX
zap

```

```

@ 12, 15 say "Now is PURGING the UCPAYFIL.DBF file"
use c:/samir/UCPAYFIL index PAYINVO, PAY
zap
@ 12, 15 say "Now is PURGING the UCPAYTMP.DBF file"
use c:/samir/UCPAYTMP index PAYTMP
zap
@ 12, 15 say "Now is PURGING the UC_RTEMP.DBF file"
use c:/samir/UC_RTEMP
zap
use
clear
@ 12, 10 say "PURGING THE INTERDEPARTMENTAL and RECEIVABLE;
  FILES WAS SUCCESSFUL ...."
clear
@ 9, 15 say "NOW IS THE PROCESS FOR RENUMBERING THE INVOICES"
restore from UC_IMVAR.MEM
store space(7) to MPINVONUM
@ 12, 10 say "Enter the new starting INTERDEPARTMENATL invoice number";
      get MPINVONUM

read
store val(MPINVONUM) to MPINVONUM
store MPINVONUM to MPSINVO
save all like MP* to UC_IMVAR.MEM
restore from UC_RMVAR.MEM
store space(7) to MPINVONUM
@ 14, 10 say "Enter the new starting RECEIVABLE invoice number      ";
      get MPINVONUM

read
store val(MPINVONUM) to MPINVONUM
store MPINVONUM to MPSINVO
save all like MP* to UC_RMVAR.MEM
@ 16, 20 say "Process is complete ...."
wait "          Press any key to return to Main Menu"
else
clear
@ 12, 22 say "SORRY you can't PURGE the system files"
@ 13, 20 say "Please if you are not sure don't try again"
wait "          Press any key to return to the Main Menu"
set safety on
clear
exit
endif
clear
restore from UC_IMVAR.MEM
store space(7) to MPINVONUM
@ 12, 10 say "Enter the new starting INTERDEPARTMENATL invoice number";
      get MPINVONUM

read

```

```

store val(MPINVONUM) to MPINVONUM
store MPINVONUM to MPSINVO
save all like MP* to UC_IMVAR.MEM
restore from UC_RMVAR.MEM
store space(7) to MPINVONUM
@ 14, 10 say "Enter the new starting RECEIVABLE invoice numver      ";
      get MPINVONUM

read
store val(MPINVONUM) to MPINVONUM
list memory
wait
store MPINVONUM to MPSINVO
save all like MP* to UC_RMVAR.MEM
wait "          Press any key to return to Main Menu"
else
clear
@ 12, 22 say "SORRY you cann't PURGE the system files"
@ 13, 20 say "Please if you are not sure don't try again"
wait "          Press any key to return to the Main Menu"
endif
set safety on
clear
exit
enddo
return

```

Appendix E
User's Manual
for
UCARIBS

University Center Accounts Receivable
and
Interdepartmental
Billing System
(UCARIBS)

User's Manual

for the (UCARIBS) System

Written by: SAMIR M. SOUEIDAN

Date: 1987

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Using the Wang Pc

- Section 1 How to Start the UCARIBS System
- Section 2 General Data Explanation
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- Section 4 Interdept. Invoice Information Menu
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- Section 9 Interdepartmental Print Invoice(s) Menu
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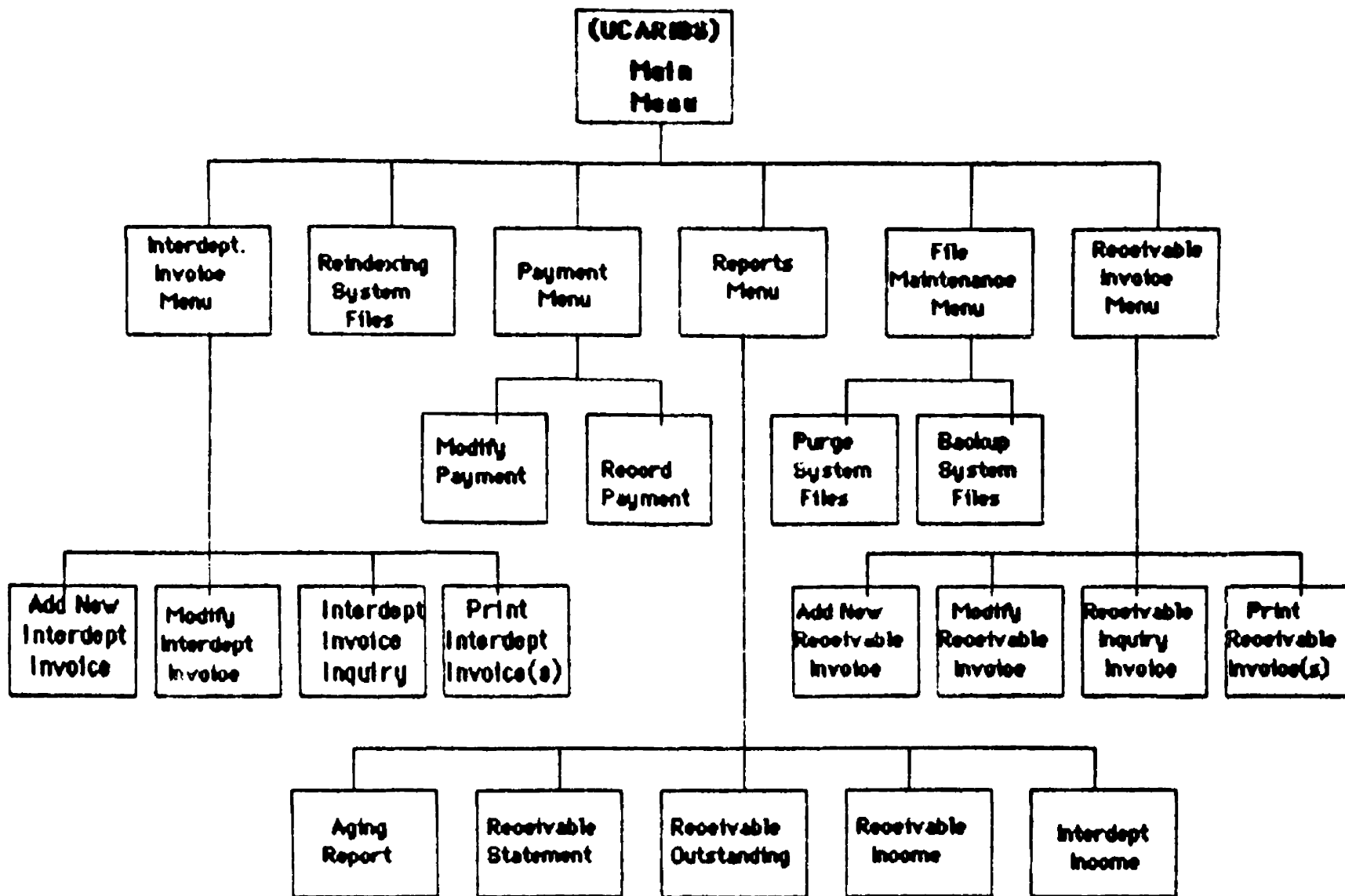
PREFACE

This manual is written for UC Administration employees who are familiar with some other computer packages using the WANG-PC. This manual provides the users with basic information on how to start-up and operate the UC Accounts Receivable and Interdepartmental billing system (UCARIBS) on the WANG-PC. Also this manual shows users most of the system messages, screens and provides them with important information about the (UCARIBS) system before they start. This information is a step-by-step tutorial which guides them through the basic operations of the system.

Introduction

Welcome to University Center Accounts Receivable and Interdepartmental Billing System (UCARIBS). UCARIBS system is a comprehensive automated billing package which will serve all your Receivable and Interdepartmental Billing system and reports need.

This Billing system was designed with the user in mind. All UCARIBS procedures are outlined in a UCARIBS system flow chart (Fig. D0) which serves as an easy step-by-step guide through the billing system. The menu screen overview shows all menus available and how they are accessed. There is a sample of each menu screen with a short description of each option.



(Fig. D0)

Overall Chart for the UCARIBS System

USING THE WANG-PC

I. How to turn on the Wang Computer

- A. Turn on/off switch to on position. This switch is located below and to the left of the keyboard.

II. Using the Wang Computer

- A. After turning on the on/off switch, wait until a Copyright screen appears with a blank date and time

```

01/01/85          All Copyright, Wang Laboratories, Inc., 1985          01:00: 4

```

WWW	WWW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY
WW	WW	HH	MM	YY	YY

```

Professional Computer

```

Date (mm/dd/yy): **/**/85 Time (hh:mm:ss): **:**:**

EXECUTE - Main Menu
RETURN - Next Field

1. Type in the date (month, day, and year) so that you will know the day you entered data onto the computer.
2. Type in the Time if you feel it is necessary.

Note 1: Make sure the latch to the Disk Drive is open.

Note 2: You may use either the alphabetic key pad or the numeric key pad for dates as well as all other purposes involving entering numbers.

Note 3: You may use the arrow keys to move the cursor.

Note 4: If you enter invalid information, the computer will "beep" at you or give you a message stating you entered invalid information.

3. After entering the date or time, press EXECUTE, which will take you to the Main System Menu:

01/01/85

Wang Professional Computer
M A I N S Y S T E M M E N U
Release 2.01

03:43:51

Select an Item and Proceed

- * Applications
- * Printer Support
- * Communications
- * DCS Command Processor
- * Program Development
- * System Utilities
- * Other

SPACE BAR - Item Select
EXECUTE - Proceed

8. At this point it is a good idea to decide if you will be using one of the printers while you are using the computer. If so, press the space bar so that the PRINTER SUPPORT item is high-lighted. Then press EXECUTE.

1. A new screen titled PRINTER SUPPORT MENU will appear:

01/01/85

Wang Professional Computer
P R I N T E R S U P P O R T M E N U
Release 2.00

03:44:59

Select an Item and Proceed

- * Redirect to Dot Matrix Printer
- * Redirect to Letter Quality Prntr
- * Character Translate Table Editor
- * Printer Function Table Editor
- * Printer Index Table Editor
- * Install Printer
- * System Utilities
- * Other

SPACE BAR - Item Select
EXECUTE - Proceed
CANCEL - Previous Menu

There are two types of printers available for use;

1. Dot Matrix Printer (right side of screen)
 2. Letter Quality Printer (left side of screen)
- b. Decide which printer you want to use and press Execute. The same screen will appear, with your choice highlighted. Now press CANCEL to exit out of the PRINTER SUPPORT MENU.
 - c. The MAIN SYSTEM MENU will appear. Go to APPLICATIONS and press EXECUTE in order to get into dBase III (where your UCARIBS SYSTEM is located).

C. After pressing EXECUTE, the APPLICATIONS MENU will appear:

01/01/85

Wang Professional Computer
A P P L I C A T I O N S M E N U
Release 2.00

03:46:13

Select an Item and Proceed

- * Word Processing
- * Lotus 123
- * dBase III
- * Convert Document to Text
- * Convert Text to Document
- * System Utilities
- * Other

SPACE BAR - Item Select
EXECUTE - Proceed
CANCEL - Previous Menu

1. Space bar down to dBase III and press EXECUTE.

III. Using dBase III

- A. After Pressing EXECUTE, a screen with dBase III information will appear. At the bottom of the screen, the following will appear:

dBASE III 25 July 1985 WANG/MSDOS ***

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Press the HELP key for Help.
Type a command (or ASSIST) and press the RETURN key.

- B. When the dot prompt appears (.). Go to Section One.

SECTION ONE

HOW TO START THE UCARIBS SYSTEM

Using the UC Administration Billing System (UCARIBS).

A. When the dot prompt appears (.) type DO UCARIBS and press the RETURN key.

B. After you have typed DO UCARIBS and press RETURN,

The System will Prompt you to enter the correct Today's Date.

If the Date which appears on the screen is a correct date.

Hit the <RETURN> key and the Main Menu for UCARIBS will appear.

Go to SECTION THREE.

Otherwise Enter the Correct Date as:

mm/dd/yy ==>> 08/10/87 and Hit the <RETURN> key

SECTION TWO
GENERAL DATA EXPLANATION

The following data field definitions are standard throughout the UCARIBS system. They should be followed when entering data.

Invoice Number	: 7 DIGIT NUMERIC
TITLE	: 30 ALPHA-NUMERIC CHARACTERS
Job No	: 8 DIGIT NUMERIC
Buyer:	: 12 ALPHA-NUMERIC CHARACTERS
Buyer Area	: 3 DIGIT NUMERIC
Buyer Rc	: 4 DIGIT NUMERIC
Buyer Obj	: 4 DIGIT NUMERIC
Description	: 30 ALPHA-NUMERIC CHARACTERS
Seller Area	: 3 DIGIT NUMERIC
Seller Rc	: 4 DIGIT NUMERIC
Seller Obj	: 4 DIGIT NUMERIC
I/D (Inc/Dec Amount)	: 1 DIGIT ALPHABETIC CHARACTERS
Items Description	: 30 ALPHA-NUMERIC CHARACTERS
Amount	: 5 DIGIT AND 2 DECIMALS NUMERIC (12345.75)
Date	: 6 DIGIT NUMBERS (MMDDYY)

Section 2

Buyer_Name : 30 DIGIT ALPHABETIC
Buyer_Address : 30 ALPHA-NUMERIC CHARACTERS
City : 15 ALPHABETIC CHARACTERS
State : 2 DIGIT ALPHABETIC
Zipcode : 5 DIGIT NUMERIC

NOTES:

WHEN ENTERING ANY AMOUNT THAT CONTAINS ANY DECIMAL POINT, YOU SHOULD ENTER THE DECIMAL POINT IF IT HAS ONE.

OTHERWISE AFTER ENTERING THE NUMBER HIT THE RETURN KEY. EXAMPLES:

\$ 1000 WOULD BE ENTERED AS 1000 + <RETURN> KEY

\$ 250.25 WOULD BE ENTERED AS 250 + DECIMAL POINT + 25

WHEN ENTERING DATES YOU WILL SEE THE FIELD OF ENTRY

AS: [/ /]

THEN FILL IN THE DATE WITHOUT ENTERING THE SLASHES (//)

AS MMDDYY. EXAMPLE: 01/25/87 WOULD BE 012587.

IF YOU ENTER AN INVALID DATE A BELL SOUND WILL BEEP AT YOU AND AN ERROR MESSAGE AT THE UPPER RIGHT OF THE SCREEN WILL BE DISPLAYED TELLING YOU TO HIT THE SPACE BAR TO GO BACK AND CORRECT THE DATE.

Section 2

IMPORTANT THINGS TO REMEMBER:

Some general features about UCARIBS system are presented below:

1. Inverse Mode (High lighted) messages are generally prompts for the user to enter the data or error messages. Error messages are preceded by a bell sound.
2. Some prompt messages are in normal mode; Be sure you read the messages to see if some input is required.
3. Always press the <RETURN> key after each field entry.
4. Data entry fields have maximum length. If the data entry exceeds that length, a bell sound beeps at you. Then it allows you to correct that field using the standard edit function of the system (Fig. F1).
5. There are two optional entry fields in UCARIBS system. The JOB_NUMBER and I/D (Increase/Decrease Amounts). The rest of the entry fields are required. If you forget to enter any of them, an error message will be displayed at the bottom of the screen and another request for data is to be entered.

Section 2

6. **BEFORE PRINTING OUT REPORTS REMEMBER**

- a. Make sure you have selected the printer you want to use.
- b. Is there paper in the printer?
- c. Have you forwarded the paper in the Dot Matrix printer to the top of the page? [Using the LF key on the printer when the printer is NOT ON LINE (greenlight is off)]
- d. To print, make sure the ON LINE key is on (green light is on).

7. If you have any questions or problems, please contact

KAY NELSON

SECTION THREE

BASIC SYSTEM AND ITS ACCESS
MAIN MENU

The UCARIBS system has eight areas of access and can be accessed from the Main Menu (Fig. M1).

UC Administration
Accounts Receivable and Interdepartmental
Billing System
Written By: Samir M. Soueidan

Main Menu mm/dd/yy
=====

1 ==> Interdept. Invoice Information Menu
2 ==> Receivable Invoice Information Menu
3 ==> Payment Menu
4 ==> Reports Menu
5 ==> Files Maintenance
6 ==> Reindexing System Files
X ==> Exit

=====

Enter Selection ==> [?]

Figure. M1

SELECT a valid action code of 1, 2, 3, 4, 5, 6 or X.

Note: If you entered a wrong valid action code a bell will sound and a message will be displayed at the bottom of the screen telling the user what action to make and asking for another input.

Section 3

SELECTION 1 ==> INTERDEPARTMENTAL INVOICE INFORMATION MENU

This selection is used to Add new interdepartmental Invoice, Modify Invoice (Add/Delete Transaction(s), Inquiry by Invoice Number/Sponsor Name/Invoice Date, Print Invoice(s).

If you choose this option, an INTERDEPT. INVOICE INFORMATION MENU screen appears. Go to Section 4.

SELECTION 2 ==> RECEIVABLE INVOICE INFORMATION MENU

This selection is used to Add new Receivable Invoice, Modify Invoice (Add/Delete Transaction(s), Inquiry by Invoice Number/Sponsor Name/Invoice Date, Print Invoice(s).

If you choose this option, an RECEIVABLE. INVOICE INFORMATION MENU screen appears. Follow exactly the same procedure as SELECTION 1.

SELECTION 3 ==> PAYMENT MENU

This selection is used to modify/record and update the partial and full payments. If you choose this option a PAYMENT ENTRY SCREEN will appear. Go to Section 10.

SELECTION 4 ==> REPORT MENU

This selection is used to print the following reports:

The OUTSTANDING, and the INCOME REPORTS for both the Receivable and the Interdepartmental Accounts. It will also

Section 3

print the AGING and CUSTOMER STATEMENT for the Receivable Account. Go to Section 15.

SELECTION 5 ==> FILES MAINTENANCE

This selection leads you to the Files Maintenance Menu which has two options:

1. Is to Backup the entire System (UCARIBS) Database Files
2. Is to Purge the entire System (UCARIBS) Database Files at the end of each Fiscal Year.

To BACKUP System Files go to Section 13.

To PURGE System Files go to Section 14.

SELECTION 6 ==> REINDEXING SYSTEM FILES

This selection is used to Reindex the entire (UCARIBS) Database System Files in a situation such as:

- _ Power Failure while the System Running
- _ A Displayed Message on the screen Telling You that the INDEXED FILES ARE DAMAGED

SELECTION X ==> EXIT (to Quit Database Session).

SECTION FOUR

INTERDEPT. INVOICE INFORMATION MENU

The Interdept. Invoice Information Menu (Fig.M2) is a Submenu of the Main Menu and has six areas of access. They are the Add New Invoice, Modify Invoice & (Delete/Transactions), Inquiry, and Print Invoice(s)

UC Administration

```

Interdept. Invoice Information Menu                      mm/dd/yy
=====
1 ==> Add New Invoice
2 ==> Modify Invoice & (Add/Delete/Transactions)
3 ==> Inquiry
4 ==> Print Invoice(s)
R ==> Exit
Q ==> Quit
=====

Enter Selection ==> [?]

```

Fig. M2

SELECT a valid action code 1, 2, 3, 4, R or Q

Note: If you entered a wrong valid action code a bell will sound and a message will be displayed at the bottom of the screen telling you what action to make and ask for another input.

SELECTION 1 ==> ADD NEW INVOICE

This selection is used to Add new interdepartmental Invoice.

If you choose this option, a sub menu ADDING NEW INTERDEPT.

INVOICE ENTRY SCREEN appears. Go to Section 5.

Section 4

SELECTION 2 ==> MODIFY INVOICE & (DELETE TRANSACTION(S))

This selection is used to Modify or Delete (Transaction(s) of an existing Invoice. If you choose this option go to Section 6

SELECTION 3 ==> INQUIRY.

This selection is used to display an existing Invoice by Invoice Number, or Sponsor Name or by Invoice Date.

If you choose this option, an INTERDEPARTMENTAL INQUIRY MENU appears. Go to Section 7.

SELECTION 4 ==> PRINT INVOICE(S)

This selection is used to print an existing Invoice singly or as a group. If you choose this option, a Print Menu will appear. Go to Section 8.

SELECTION R ==> EXIT.

This selection is used to return to the Main Menu (Fig. M1).

SELECTION Q ==> QUIT.

This selection is used to return to the DOT PROMPT.

SECTION FIVE

ADDING NEW INTERDEPT. INVOICE ENTRY SCREEN

```

Adding New Interdept. Invoice Entry Screen                               mm/dd/yy
-----
Inv_No:[870001]  Title:[                                           ]  Job_No:[       ]

Buyer:[           ]  Area:[     ]  Buyer_Rc:[     ]  Buyer_Obj:[     ]
Description:[           ]                                     I/D
                Area:[     ]  Seller_Rc:[     ]  Seller_Obj:[     ] [ ]
                ITEMS DESCRIPTION                AMOUNT          EVENT_DATE
1      [.....]  [    0.00]  [ / / ]

```

NOTES ON ADDING NEW INTERDEPT. INVOICE ENTRY SCREEN::

1. The Invoice Number and today's Date are displayed automatically in the above screen.
2. After entering each field hit the <RETURN> key to move from one field to another.
3. Remember if the entry field is a Numeric (1,2,3 ..) and you tried to type in Characters(A, b, C..); The High lighted under-score Cursor (_) will freeze until you type in the correct field type.

Section 5

4. After entering correctly all the data entry fields a message at the bottom of the screen appears as follows:

PRESS (A) to Enter this Invoice

OR PRESS (C) to Cancel and Return to the previous Menu

If you press the letter (C) the screen will be cleared and the INTERDEPT. INVOICE INFORMATION MENU appears.

If you press the letter (A)

the Invoice will be entered to the database files and a new message will be displayed at the bottom of the screen as follows:

(Y) Add another transaction

OR (N) Abort and return to previous menu [?]

- a) If you Press the letter(N) a new message will be displayed at the bottom of the screen as follows:

Do you want to print this invoice now (Y/N): [?]

If you press the letter (N). The screen will be cleared and the INTERDEPT. INVOICE INFORMATION MENU APPEARS.

NOTE:

Later you can print this invoice by selecting option 4 from the INTERDEPT. INVOICE INFORMATION MENU see section 9

- b) If you press the letter (Y). A new message will appear at the bottom of the screen as follows:

Section 5

Make sure the printer is ready, then press any key to continue.

If the printer is ready(printer is on, papers are lined-up).

Hit any key. Then the screen will be cleared and a message will be displayed as follows:

Printing is in Progress NOTE:

In the middle of printing the invoice a new message on the screen will appear as follows:

Did the print go OK ...!!!! (Y/N):

Please wait until the printer stops printing. Check the printed copy. If the print is ok, type the letter (Y) and the INTERDEPT. INVOICE INFORMATION MENU will appear. Otherwise you will be given another chance to print the invoice again.

SECTION SIX

MODIFY INVOICE & (ADD/DELETE TRANSACTION(S))

The screen will appear as follows:

Entry the Invoice Number to MODIFY

Or just Press RETURN to exit []

After entering the invoice number, the program check that number for validity.

- a) If the number is invalid an error message will be displayed at the bottom of the screen as follows:

This number xxxxxx does not exist -- Press any key to try again

Which allows you to enter another invoice number.

- b) If the invoice number you typed exists. An Editing Interdept.

Invoice Entry Screen appears as follows:

```

Editing Interdept. Invoice Entry Screen                                     mm/dd/yy
-----
Inv_No:[870001]  Title:[                                     ]  Job_No:[       ]

Buyer:[          ]  Area:[   ]  Buyer_Rc:[       ]  Buyer__Obj:[       ]
Description:[          ]                                     ] I/D
                Area:[   ]  Seller_Rc:[       ]  Seller_Obj:[       ] [   ]
                ITEMS DESCRIPTION                AMOUNT                EVENT_DATE

```

Please read and follow carefully the messages at the lower part of the screen until the end of this process. Finally the INTERDEPT. INVOICE INFORMATION MENU appears on the screen.

SECTION SEVEN

INTERDEPARTMENTAL INQUIRY MENU

UC Administration

Interdepartmental Inquiry Menu mm/dd/yy
=====

1 ==> Display Invoice by Invoice Number
2 ==> Display Invoice by Event Date
3 ==> Display Invoice by Sponsor Name
R ==> Exit

=====

Enter Selection ==> [?]

This Menu has four areas of access. They are DISPLAY INVOICE by INVOICE NUMBER, DISPLAY INVOICE by EVENT DATE, and DISPLAY INVOICE by SPONSOR NAME.

SELECT a valid action code 1, 2, 3 or R

Note:

If you entered a wrong valid action code a bell will sound and a message will be displayed at the bottom of the screen telling you what action to make and ask for another input.

SELECTION 1 ==> DISPLAY INVOICE BY INVOICE NUMBER

This selection is used to display all information about any specific Invoice using the invoice number as the key to search. If you choose this selection the old screen will disappear and a new screen will appear as follows:

Enter the Invoice Number to DISPLAY

Or just Press RETURN to exit []

Section 7

After entering the invoice number, the program check that number for validity.

- a) If the number is Invalid an error message will be displayed at the bottom of the screen as follows:

This number xxxxxx does not exist -- Press any key to try again
Which allows you to enter another invoice number.

- b) If the invoice number you typed in exists, go to section 8.

SELECTION 2 ==> DISPLAY INVOICE BY EVENT DATE

This selection is used to display all information about any specific Invoice using the event date as the key to search.

Go to section 8

SELECTION 3 ==> DISPLAY INVOICE BY SPONSOR NAME

This selection is used to display all information about any specific Invoice using the sponsor name as the key to search.

Go to section 8.

SELECTION R ==> EXIT

This selection is used to end the inquiry process and return to the INTERDEPT. INVOICE INFORMATION MENU. Go to section 8.

SECTION EIGHT

INQUIRY MENU SELECTIONS

If you select any options from the INTERDEPT. INQUIRY MENU and followed the messages at the bottom of the screen, you will end with the following screen. Except the first line at the top of the screen showing what key you used to display the inquired invoice.

```
Interdepartmental Inquiry Screen by ??????                      mm/dd/yy
-----
Inv_No:[870001]  Title:[ THIS IS THE FIRST TITLE ]  Job_No:[12345678]

Buyer:[WHO CARES   ]  Area:[123]  Buyer_Rc:[1234]  Buyer_Obj:[1234]
Description:[THIS DESCRIPTION IS 30 CHAR.   ]          I/D
                  Area:[123]  Seller_Rc:[1234]  Seller_Obj:[1234] [D]
```

This is the upper part of the screen. While at the bottom of the screen messages will be displayed. Please read and follow them carefully and you will never find any problems.

SECTION NINE

INTERDEPARTMENTAL PRINT INVOICE(S) MENU

The Interdepartmental Print Invoice(s) Menu has three areas of access. They are the Print Individual Invoice and Print Invoices by Group.

UC Administration

Interdepartmental Print Invoice(s) Menu mm/dd/yy
=====

1 ==> Print Individual Invoice
2 ==> Print Invoice(s) by Group
R ==> Exit

=====

Enter Selection ==> [?]

SELECT a valid action code 1, 2 or R

Note:

If you entered a wrong valid action code a bell will sound and a message will be displayed at the bottom of the screen telling you what action to make and ask for another input.

SELECTION 1 ==> PRINT INDIVIDUAL INVOICE

This selection is used to print an individual invoice.

Each time a prompt screen asks you to enter the invoice number you want to print. Read and follow carefully the messages at the screen and you will be doing great.

Section 9

SELECTION 2 ==> PRINT INVOICES BY GROUP

This selection is used to print all the new invoices entered
but were not print directly after enter.

SELECTION R ==> It will return you back to the INTERDEPT. INVOICE
INFORMATION MENU.

SECTION TEN

PAYMENT ENTRY SCREEN

The Payment Entry Screen has three areas of access. They are the Record Payment, Modify Payment and (E) for exit and return to previous Menu.

```
Payment Entry Screen                                     mm/dd/yy
=====
                1 ==> to Record Payment
                2 ==> to Modify Payment
                E ==> to Exit

=====

                Please enter your Choice ==> [?]
```

SELECT a valid action code 1, 2 or E

Note:

If you entered a wrong valid action code a bell will sound and a message will be displayed at the bottom of the screen telling you what action to make and ask for another input.

SELECTION 1 ==> RECORD PAYMENT

This selection is used to record new payment and update the payment files. If you choose this option the RECORD PAYMENT SCREEN will appears. Go to Section 11.

Section 10

SELECTION 2 ==> MODIFY PAYMENT

This selection is used to modify and update the partial and full payments. If you choose this option the MODIFY PAYMENT SCREEN will appears. Go to Section 12.

SELECTION E ==> EXIT

This selection clears the present screen and returns you to the previous one.

SECTION ELEVEN

RECORD PAYMENT SCREEN

Record Payment Screen mm/dd/yy
 =====

Enter the Invoice :[]
 Enter the Payment Amount:[0.00]
 Enter the Payment Date :[/ /]

=====

Press (RETURN) for The Invoice Number to quit
 Press (E)nter this Payment
 Or Press (R)Abort to return to Previous Menu ==> [?]

FILL IN the HIGHLIGHTED entry fields.

Press the letter (E) to confirm processing the payment. The entered information will be checked by the computer for validity such as the following:

If the Invoice Number does not exist. A beep sound with a message

This invoice xxxxxx does not exist -- Press any key to try again appears at the bottom of the screen.

If the payment Amount = 0 or the Payment date is left blank. A beep sound with a message

*** Incomplete Information -- Press any key to try again *** appears at the bottom of the screen.

If the payment Amount is greater than the Amount Due. A beep sound with a message

The Payment Amount is greater than the Amount Due.

Sorry this Payment can't be processed -- Press any key to try again. appears at the bottom of the screen.

Otherwise the Payment will be accepted.

SECTION TWELVE
MODIFY PAYMENT SCREEN

Modify Payment Screen mm/dd/yy
=====

Enter the Invoice Number: []
Enter the Correct Amount: [0.00]
OR Press RETURN twice to Exit

FILL IN the HIGHLIGHTED entry fields.

If the Invoice Number does not exist. A beep sound with a
message

This invoice xxxxxx does not exist -- Press any key to try again
appears at the bottom of the screen.

After entering the correct information. The program will check
the validity of the process. Also the program will display
appropriate messages at the bottom of the screen. These messages
will lead you to a successful operation. Just follow and read
these messages and you will do great.

SECTION THIRTEEN

BACKUP FILES

After selecting the BACKUP option from the MAIN MENU. The following message will appear at the middle of the screen:

Please Insert BACKUP disk in drive A

Press any key when you are ready ...

After pressing any key the old message will disappear and new one will appear as follows:

Please be Patient BACKUP in Progress ...

After the backup process is completed. A final message will appear

BACKUP PROCESS IS COMPLETE

Please Keep the BACKUP copy in safe place

Press any key to return to previous Menu

SECTION FOURTEEN

PURGE FILES

After selecting the PURGE FILES option from the MAIN MENU. The following message will appear at the middle of the screen:

Please Read Me Carefully and ask yourself the following QUESTIONS:

1. Is this the end of the FISCAL year. Answer (Y/N):
2. Did you produce the REPORTS you need Answer (Y/N):
- ...3...Do you Entire Files Purged. Answer (Y/N):

If the three answers above are (Y) which means YES. The Purging process starts with a displayed message at the middle of the screen as follows:

Please be Patient PURGING FILES in Progress

After the Purging process completed. A message will appear

PURGING FILES PROCESS IS COMPLETE

Press any key to Continue.

After pressing any key the following message on the screen will appear.

Enter the new starting INTERDEPARTMENTAL invoice number:[]

Enter the new starting RECEIVABLE invoice number :[]

Section 14

After pressing any key a final message at the screen will appear as follows:

The RE-NUMBERING PROCESS IS COMPLETE.

The starting number for interdept. invoices is : xxxxxxxx

The starting number for Receivable invoices is : yyyyyyy

Press any key to return to previous Menu.

HAVE A GOOD YEAR

SAMIR M. SOUEIDAN

Bibliography

- [1]. De Marco, Tom, Structured analysis and System Specification, Yourdon Inc., New York, New York, 1979.
- [2]. Yourdon, Edward, and Larry L. Constantine, Structured Design, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1979.
- [3]. Sommerville, Ian, Software Engineering, Addison-Wesley Publishers Limited, 53 Bedford Square, London, WC1B3DZ, 1982.
- [4]. Liskin, Miriam, Advanced dBase III Programming and Technoques, McGraw-Hill Inc., Berkeley, California 94710, 1986.