The Design and Implementation of a Computerized Information System of the Virginia Seafood Processors

Sea Grant
Extension Division
Virginia Polytechnic Institute and State University
Blacksburg, Virginia
THE DESIGN AND IMPLEMENTATION OF
A COMPUTERIZED INFORMATION SYSTEM
OF THE
VIRGINIA SEAFOOD PROCESSORS

by
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and
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and
State University
ACKNOWLEDGMENTS

This research project was carried out with the support of the Sea Grant Program of the National Oceanic and Atmospheric Administration (Grant No. 2-35352) U.S. Department of Commerce. Our special thanks are extended to Robert Holland who assisted in the design and writing of the computer programs and to Jeffrey L. Howe without whose assistance the data in its final form could not have been obtained. The State Health Department of Virginia is also acknowledged for their help in supplying part of the data. Finally, we acknowledge Mrs. Janet McMurray for her able assistance in typing the final manuscript.
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I. INTRODUCTION

As the age of the computer is entered into, the storage, retrieval and processing of data or information increases in importance. This importance grows simply from the continuous generation of increasing amounts of information in today's societies. In order not to be overcome by a oncoming deluge of data, the use of the computer is being relied on to handle data storage, retrieval and processing. Although many large organizations now rely solely on their computers for data management, many smaller organizations have yet to make any use of them. The principle reasons delaying the utilization of the computer by such organizations are (1) the availability of a computer, (2) the realization of a need of a computerized information system, and (3) the creation and management of such a system. The first obstacle is being overcome by the introduction of small computers and by the buying of computer time on large computer systems. Today, it is common to find companies who operate large computer systems for the purpose of selling computer time to the small user. The second and third reasons are not as clearly defined as the first. However, a particular realization of such a need and the implementation of the computerized information system to service it will be discussed.

A simple computerized information system has been designed and placed into operation in the Food Science and Technology Department at the Virginia Polytechnic Institute and State University. This data base consists of information describing the seafood processors in the state of Virginia. The need for such information has been apparent to the extension workers serving the seafood industry as well as to the processors themselves. Data describing the number and location of the processing plants and the products they handle was of obvious importance in advising and planning for a profitable growth of the industry. Having recognized the need for this information, it was decided that the information should be computerized. In this way, the information would be easier to update and process. The acquisition, design and processing of this information or data by the computer programs written for this project will be discussed.
II. DATA BASE

To compile the data describing the seafood processors in Virginia, it was decided to send a questionnaire to each requesting the needed information. Figure 1 shows a completed sample questionnaire. Most questions relating to their products only required the processor to check an appropriate answer rather than write a long or involved answer. Minimizing the effort needed to complete the questionnaire encouraged cooperation from the individuals canvassed. The questionnaire supplied accurate data since it was a direct method of communication. Unfortunately, it could not be relied upon to produce a high percentage response. Thus, it was necessary to have secondary methods of obtaining the information for those who failed to respond to the questionnaire. The secondary sources were the State Health Department and the Sea Grant extension personnel.

Having obtained the data, the next step was the transfer of it to keypunch cards which the computer could read. A keypunch card can contain 80 characters of information. Each character is printed across the top of the card while its appropriate computer code is punched below it. Before key punching the data on cards, the design of the data base* or, more specifically, which data was to be keypunched where on the cards, had to be decided. For the Virginia seafood processors directory, 90 keypunch cards were used for each questionnaire. Figure 2 shows the first keypunch card from the sample questionnaire of Figure 1. Figure 3 shows a listing of the entire 90 keypunch cards from the sample questionnaire. Here the design of the data base is very simple. Each card corresponds to a line in the questionnaire. Note that instead of the name of the seafood products appearing on the keypunch cards, a two digit code number appears. Figure 4 shows the seafood products and their code numbers. For example, on the second page of the sample questionnaire, Figure 1, the seafood processor indicated on the twelfth question that he handles freshwater catfish as fresh and fresh-frozen products. This is indicated on the twelfth keypunched card, Figure 3, where freshwater catfish is indicated by its code number, 1. If a processor did not handle a particular product, then the corresponding card was left blank. Thus in the data base, each seafood processor is represented by 90 keypunch cards or 7,200 (90 x 80) characters, hereafter called a record.

After all the information on the collected questionnaire had been keypunched on cards, these cards were read by the computer and the information keypunched on them was stored on a magnetic tape and a magnetic disk storage unit. Thus the data was stored in three different physical locations. The keypunch cards and the magnetic tape were both used as back-up files to insure against an accidental destruction of the data base.

* The terms data base and data set are used interchangeably here. In higher level information systems, a data base can be made up of several data sets.
FOOD PROCESSORS DIRECTORY QUESTIONNAIRE

PART 1

PLEASE FILL IN OR CHECK THE FOLLOWING BLANKS

OWNER OR MANAGER ____________________________ John L. Brown
COMPANY NAME _______________________________ Saluda Fish and Sales Co.
P. O. BOX OR STREET ADDRESS ___________________ 300 Hemer Parkway
CITY ____________________________ Saluda
COUNTY ____________________________ Middlesex
STATE AND ZIP CODE _________________________ Virginia 23149
TELEPHONE NO. _________________________ 804-369-1719
TYPE OF BUSINESS: (X) RETAIL (X) WHOLESALE
STATE CERTIFICATION NO. ________________ VA 599
FEDERAL IDENTIFICATION NO. ____________________________

Figure 1
A Sample Completed Questionnaire
**FOOD PROCESSORS DIRECTORY QUESTIONNAIRE**

**Part 2**

**I. Oyster Processors Only (Please check the blanks that apply to your operations.)**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4) Container Size(s)</th>
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<tbody>
<tr>
<td></td>
<td>Shellstock Dealer</td>
<td>Shucker Packer</td>
<td>Repacker</td>
<td>5 Gal.</td>
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</table>

<table>
<thead>
<tr>
<th>II. Fish</th>
<th>(2) Breaded</th>
<th>(3) Canned</th>
<th>(4) Convenience Dish</th>
<th>(5) Dehydrated</th>
<th>(6) Fresh</th>
<th>(7) Fresh-Frozen</th>
<th>(8) Live</th>
<th>(9) Pasteurized</th>
<th>(10) Pickled</th>
<th>(11) Salted</th>
<th>(12) Smoked</th>
<th>(13) Other</th>
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<td>Fresh Water</td>
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<td>(x) Trout</td>
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| Salt Water | | | | | | | | | | | | |
| Type of Fish Marketed: | | | | | | | | | | | | |
| (x) Fillets | | | | | | | | | | | | |
| (x) Whole   | | | | | | | | | | | | |
### Shellfish

#### Crabs

- **Blue (hard)**
- **Blue (soft)**
- **Other**

#### Oysters

- **Atlantic or Gulf**
- **Other**

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**Crabs**

- **Blue (hard)**
- **Blue (soft)**
- **Other**

**Oysters**

- **Atlantic or Gulf**
- **Other**
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<td>Hard or Quahog</td>
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### IV. Miscellaneous Products

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### IV. Miscellaneous Products

- **Conch** (X)
- **Mussels**
- **Turtles** (X)
- **Frogs** (X)
- **Crawfish**
- **Eels** (X)
- **Other (specify)**

### V. Convenience Foods

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<td>Type Packages Marketed = (X) Institutional Packages (X) Consumer Packages</td>
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<th>(X) Fish (Trout, Flounder, etc.)</th>
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<tbody>
<tr>
<td>(X) Blue Crab</td>
<td>(X)</td>
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<tr>
<td>(X) Oyster</td>
<td>(X)</td>
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Type Products Manufactured

- **Fish (Trout, Flounder, etc.)** (X)
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<tr>
<td>(x) Clams</td>
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<td>(x) Scallop</td>
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VI. Industrial and By-Products

( ) Bait
( ) Crab Shells
( ) Oyster Shells
( ) Clam Shells
( ) Fish Tankage
( ) Crab Meal
( ) Sea Weed
( ) Fish Meal
( ) Fish Scrap
( ) Fish Protein Concentrate
( ) Other (specify)
VII. Specialized Equipment

( ) Harris Claw Picking Machine

( ) Harris Oyster (Steam) Machine

( ) Other (specify)
Figure 2
A Keypunch Card
Figure 3
A Listing of the 90 Keypunched Cards for the Sample Questionnaire
Card Image

35 BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN
36 BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN
37 BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN
38 BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

Figure 3
(Cont'd)
I. Oyster Processor (99)

II. Fresh Water
   A. Catfish (1)
   B. Trout (2)
   C. Other (3)

III. Salt Water
   A. Fillets (4)
   B. Whole (5)
   C. Other (6)

IV. Shellfish
   A. Carbs
      1. Blue (hard) (7)
      2. Blue (sofe) (8)
      3. Other (9)
   B. Oysters
      1. Atlantic or Gulf (10)
      2. Other (11)
   C. Lobsters
      1. North Atlantic (Va. - Me.) (12)
      2. Florida (13)
      3. Other (14)
   D. Clams
      1. Hard or Quahog (15)
      2. Surf (16)
      3. Soft Shell (17)
      4. Other (18)
   E. Scallops
      1. Bay (19)
      2. Sea (20)
      3. Other (21)
   F. Shrimp
      1. Gulf (22)
      2. Other (23)

V. Miscellaneous Products
   A. Conch (24)
   B. Mussels (25)
   C. Turtles (26)
   D. Frogs (27)
   E. Crawfish (28)
   F. Eels (29)
   G. Other (30)

Figure 4
An Outline of the Seafood Products on the Questionnaire and Their Assigned Code Numbers.
VI. Convenience Foods
A. Type Packages Marketed (31)
B. Type Products Manufactured (32)
   1. Fish (33)
   2. Blue Carb (34)
   3. Oyster (35)
   4. Clams (36)
   5. Scallops (37)
   6. Shrimp (38)
   7. Specialty Dishes (39)
   8. Other (40)

VII. Industrial and By-Products
A. Bait (41)
B. Carb Shells (42)
C. Oyster Shells (43)
D. Clam Shells (44)
E. Fish Tankage (45)
F. Crab Meal (46)
G. Sea Weed (47)
H. Fish Meal (48)
I. Fish Scrap (49)
J. Fish Protein Concentrate (50)
K. Other (51)

VIII. Specialized Equipment
A. Harris Claw Picking Machine (52)
B. Harris Oyster (Steam) Machine (53)
C. Other (54)
The data on the disk storage unit was used as the primary data file, i.e., it was this data that was used by the computer programs in processing and producing the Virginia seafood processor's directory. Physically a disk storage unit is a set of rotating disks on which data may be recorded magnetically. Because of the physical make-up of a disk, the computer can read and write data on it faster than on a magnetic tape or on keypunch cards. It was for this reason that the primary data file was stored on a disk storage unit. The computer programs used to read the keypunch cards and store this data on the magnetic tape and disk storage unit are discussed in the following sections along with the other computer programs.
III. COMPUTER PROGRAMS

A. General Aspects of the Computer Programs

All the computer programs used were written in Fortran IV\(^1\) except for one which was an IBM supplied program\(^2\). A complete listing of the keypunch cards of each program is given in the Appendix. These listings consist of the Fortran statements for each program and all the other cards necessary, except the directory data cards, to execute each on the IBM 370 system at Virginia Polytechnic Institute and State University. The discussion of each program is not a complete or detailed description, but rather a general overview of the functionality of each. If certain details of a program are discussed, it is only to aid in the understanding of the function of the program. The program statements other than the Fortran statements are called Job Control Language statements (JCL)\(^3\). These statements perform two different functions.

The cards beginning with slashes (//) convey information to the computer about the program to be executed. These cards are of three basic types. First there is the JOB card which appears as the first card of each of the computer jobs to be processed. This card indicates to the computer the start of a new job, the name of the job (Program 1, B0899PR1), the account number to which the cost of the processing is to be charged (50462), and the name of the programmer (Shoemaker). Second there is the card // EXEC. This card instructs the computer to execute a specified computer program. For example, in Program 1, the letters FORTGCLG which follow EXEC on the third card instructs the computer to execute a Fortran program. The third type of // card is one on which the letters DD (Data Definition) appear. This type of card informs the computer as to where it can find the program that is to be executed or a data set that is to be retrieved or stored. In Program 1, the card //FORT.SYSIN DD* instructs the computer that the Fortran program to be executed (// EXEC FORTGCLG) follows it. The card beginning with //GO.FT09F001 DD defines the location of a data set to be processed by the above Fortran program to be on a disk storage unit. The last DD card of Program 1 (//GO.SYSIN DD *) defines a data set that will also be processed by the Fortran program to be the keypunch cards which follow it.

The JCL cards of the second type begin with /* with one exception. The function of these cards is to convey to the computer operator special instructions for processing of the job. In Program 1 the */SETUP card instructs the computer operator to mount the disk storage unit named USR301 on a disk drive in order that the computer can retrieve or store data on this disk when the program is executed. In Program 2, two */SETUP cards appear since for this job data is retrieved from the disk USR301 and stored on the magnetic tape 2152A. The exception to the */ cards is the card on which */ appears as the only characters. This is an end of file card (EOF).
Its function is to signal to the computer that the end of a program or data set has been reached. In Program 1, the last of the Fortran statements is followed by an /* card. Also the last card of the data cards describing the seafood processor's directory is also followed by an /* card.

According to the function of each of the programs, they can be separated into two groups. First, there are the programs which were used to create and maintain the data base. Second, there are the programs which were used to process the data base.

B. Creation and Maintenance of the Data Base

There are six programs which were used in the creation and maintenance of the data base. Program 1 was used to create the data base. This Fortran program read in the keypunch cards describing the seafood processors directory and stored the data on the disk storage unit which was the primary source of the data base. The disk was named USR301 as showed on the /*SETUP card. Since the disk also contained data stored by other computer users, the seafood processors data had to be identified by a Data Set Name (DSN). This was done on the Data Definition (DD) card //GO.FT09F001. The Data Set Name was VA.SEAFOD.A50462. Program 2 was used to copy the primary data base to a magnetic tape, thus creating a secondary source of the data base. Two /*SETUP cards are required in this program. The first is to identify the disk (USR301) and the second is to identify the magnetic tape (2152A) which are to be mounted by the computer operator. The //GO.FT08FO01 DD card identifies the location of the disk dataset which is to be retrieved by the Fortran program and the //GO.F09F001 card identifies the location of the magnetic tape dataset where the data is to be copied into. Once the original data base had been created, there were two maintenance features that were needed to keep the data current. These were the ability to add and delete data from the data base. Program 3, was used to add data at a later time to the base. For example, a new seafood processor might have opened for business after the data base for the seafood processor's had been created. Once a completed questionnaire was obtained from him, this data would have been keypunched on cards and then stored in the existing data base with Program 3. The only significant difference between Program 3 and 1 is on the //GO.FT09F001 DD card. On this card in Program 1, the characters DISP=(NEW, KEEP) inform the computer that the data base, the seafood processor's directory, is being created by this program. In Program 3, the characters DISP=(MOD, KEEP) inform the computer that the data base has been created previously and the data on the keypunch cards read by this program is to be stored at the end of this data base. Deleting the data describing a seafood processor could be done with Program 4. An example for the need of the program was when a seafood processor went out of business. In order to delete the record of information (90 cards) describing him from the data base, the first two cards, owner's name and company name, were used as input to
Program 4. Programs 3 and 4 could be used to offer an additional maintenance feature. If a seafood processor introduced a new product, his record in the data base would have been updated by first deleting the record (90 cards) describing him. Second, the new products would have been punched on the appropriate cards and then Program 3 would be used to add the record back to the data base. After additions or deletions were made to the primary base, Program 2 would be executed to keep the secondary data base on the magnetic tape current.

In addition to the maintenance programs already discussed, there are two others. If at any time a question arose as to the integrity of the data, Program 5 was used to produce an exact listing of the data as it existed on the disk. Program 6 was used to recreate the data base on the disk from the secondary copy stored on the magnetic tape which had been earlier created by Program 2. This gave a protection feature against the accidental destruction of the directory by some failure by a computer program or by the computing system. These programs, 1-6, are all that were needed to maintain the data base.

C. Processing of the Directory

With the data base created, a series of programs were written with the function of producing listings of the seafood processors in various orders. They would produce listings alphabetically with respect to owners, companies, cities or counties and numerically with respect to zip codes or state certification numbers. These programs are all the same with the exception of one card which identifies the item which the list is to be ordered by. A listing of Program 7 is in the Appendix. This particular program will order and list the directory by the company names. Program 7 is actually made up of two programs. The first is the IBM Sort/Merge Program 3 and is executed by the JCL statement // EXEC SORTD, PARM='MSG=AP,CORE=1000000'. This program retrieves the directory and reorders it according to control statement, card seventeen, SORT FIELDS= (81,50,CH,A), SIZE=1000. This statement instructs the program to sort the records of the seafood processor's directory in alphabetic (CH) ascending order (A), according to the field of the 81st character (81) to 81 + 50th character (50) of each seafood processor's record. The 81st character is where the company names are started on each record (90 cards), since they were keypunched starting in the first column on the second card. The DD cards //SORT WK01 through //SORT WK06 are used to allocated temporary disk work space that is needed by the sort program. The //SORTIN DD card defines where the seafood processors directory is located in the computer system and the //SORTOUT DD card allocates disk storage space for the reordered directory. The second program is a Fortran program and it begins with the statement // EXEC FORTGCLI. This program retrieves the reordered directory and sends it to the printer. It does not print out the entire record for each seafood processor, but only the first part of the completed questionnaire of each (see Figure 1). The passing of the reordered directory from the first to the second program is accomplished by using the same Dataset Names for the reordered directory as output.
(SORTOUT) by the first program and as input (GO.FT08F001) into the second program;

```
//SORTOUT DD DSN=&VA,...
//GO.FT08F001 DD DSN=&VA,...
```

Table 1 shows the other cards which, when substituted for the seventeenth card in Program 7, will order and list the directory with respect to the cities, counties, zip codes or state certification numbers. Using an example directory of five seafood processors, Program 7 produced the listing shown in Figure 12. In this listing, only the name, owner, location, telephone and state certification numbers are given. The format of the listings when ordered by the cards in Table 1 have the same form as Figure 5.

Besides having the ability to reorder the seafood processors in various ways, a program was written to show each seafood product listed on the questionnaire and the companies which handle it, Program 8. Program 8 actually consists of three programs. The first is the IBM Sort/Merge Program which reorders the seafood processor's directory alphabetically with respect to company names. This directory is then used by the next two Fortran programs in producing the resulting seafood product listing. The computer output produced by this program, using the example directory, is shown in Figure 6. Comparing this output to the completed questionnaire of one of the sample directory's companies, Figure 1, clearly illustrates the function of this program.

Finally, Program 9 was written to print the mailing addresses of all the seafood processors on 3 1/2 x 15-16 pressure sensitive labels. Program 9 also consists of two programs. First the IBM Sort/Merge program reorders the directory by zip codes. The second program is a Fortran program which prints the address labels. Since the labels are zip code ordered, this facilitates mailing by bulk mail. Figure 7 shows a reproduction of the mailing labels produced by Program 9 using the example directory. The /*FORMAT card of Program 9 instructs the computer operator to mount on the printer the special label forms on which the addresses are printed.
A list of control cards each of which when substituted for the eighteenth card of Program 7, Figure 11, will produce a Directory of the Sea Food Processors in the corresponding order.

<table>
<thead>
<tr>
<th>ORDER BY</th>
<th>CONTROL CARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>SORT FIELDS = (241,50,CH,A,81,50,CH,A), Size = E100</td>
</tr>
<tr>
<td>State Certification Number</td>
<td>SORT FIELDS = (641,15,CH,A), Size = E100</td>
</tr>
<tr>
<td>County</td>
<td>SORT FIELDS = (321,50,CH,A,81,50,CH,A), Size = E100</td>
</tr>
<tr>
<td>Zip Code</td>
<td>SORT FIELDS = (410,50,CH,A,81,50,CH,A), Size = E100</td>
</tr>
</tbody>
</table>
BAYOU SEAFOOD CO.
LARRY L. TRAHAN
P. O. BOX 792, 102 MALANT ST.
CHINCOTEAGUE VIRGINIA 23336
ACCOMACK
804-342-6167
WHOLESALE
VA 681 C

K AND R FISH CORPORATION
JOHN F. VFGA
2521 SOUTH BROAD AVENUE
NORFOLK VIRGINIA 23504
NORFOLK, CITY OF
804-972-3334
WHOLESALE

SALUDA FISH AND SALES CO.
JOHN L. BROWN
300 HEMER PARKWAY
SALUDA MIDDLESEX
804-369-1719
RETAIL, WHOLESALE
VA 599

SEASHELL SEAFOOD
RICHARD J. LACOSTE
9140 ST. CLAUDE AVENUE
LANCASTER VIRGINIA 22503
LANCASTER
804-222-3879
WHOLESALE
VA 998

SOUTHERN SEAFOODS CO., INC
JAMES D. WILLIAMS
831 FLYSIAN FIELDS AVENUE
HAMPTON VIRGINIA 23369
HAMPTON
804-711-1102
RETAIL, WHOLESALE
VA 410 AND VA 92 C

Figure 5
An Alphabetic List By Company Names of an Example Directory As Produced
Program 7.
I. OYSTER PROCESSORS

SEA SHELL SEAFOOD
SHELLSTOCK DEALER, SHUCKER PACKER

SOUTHERN SEAFOODS CO., INC
SHELLSTOCK DEALER, SHUCKER PACKER, REPACKER

Figure 6
A Seafood Product Listing Produced By Program 8.
II. FISH
   A. FRESH WATER
      1. CATFISH
         SALUDA FISH AND SALES CO.
         FRESH, FRESH-FROZEN
         SOUTHERN SEAFOODS CO., INC
         FRESH, FRESH-FROZEN
      2. TROUT
         SALUDA FISH AND SALES CO.
         FRESH, FRESH-FROZEN
         SOUTHERN SEAFOODS CO., INC
         FRESH, FRESH-FROZEN
   3. OTHER
      B. SALT WATER
         1. FILLETS
            K AND B FISH CORPORATION
            CANNED, FRESH, FRESH-FROZEN, PICKLED, SALTED
            SALUDA FISH AND SALES CO.
            FRESH, FRESH-FROZEN
            SOUTHERN SEAFOODS CO., INC
            FRESH, FRESH-FROZEN
      2. WHOLE FISH
         K AND B FISH CORPORATION
         CANNED, FRESH, FRESH-FROZEN, PICKLED, SALTED

Figure 6 (Cont'd)
SALUDA FISH AND SALES CO.
FRESH, FRESH-FROZEN

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

3. OTHER

K AND B FISH CORPORATION
FISH MEAL

Figure 6 (Cont'd)
III. SHELLFISH
A. CRABS
1. BLUF (HARD)

BAYOU SEAFOOD CO.
FRESH, FRESH-FROZEN, LIVE, PASTEURIZED

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN, LIVE, PASTEURIZED

2. BLUF (SOFT)

BAYOU SEAFOOD CO.
FRESH, FRESH-FROZEN, LIVE

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

3. OTHER
B. OYSTERS
1. ATLANTIC OR GULF

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

2. OTHER
C. LOBSTERS
1. NORTH ATLANTIC (VIRGINIA-MAINE)

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

2. FLORIDA (ROCK)

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

3. OTHER
D. CLAMS
1. HARD OR QUAHOG
SOUTHERN SEAFOODS CO., INC
CONVENIENCE DISH, FRESH, FRESH-FROZEN

2. SURF

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

3. SOFT SHELL
4. OTHER

E. SCALLOPS
1. BAY

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

2. SEA

SOUTHERN SEAFOODS CO., INC
FRESH, FRESH-FROZEN

3. OTHER

F. SHRIMP
1. GULF

SOUTHERN SEAFOODS CO., INC
BREADED, CANNED, CONVENIENCE DISH, DEHYDRATED, FRESH, FRESH-FROZEN

2. OTHER

Figure 6 (Cont'd)
IV. MISCELLANEOUS PRODUCTS
A. CONCH
   SALUDA FISH AND SALES CO.
   FRESH-FROZEN
B. MUSSELS
C. TURTLES
   SALUDA FISH AND SALES CO.
   FRESH-FROZEN
   SOUTHERN SEAFOODS CO., INC
   FRESH-FROZEN
D. FROGS
   SALUDA FISH AND SALES CO.
   BREADED
E. CRAWFISH
   SOUTHERN SEAFOODS CO., INC
   LIVE
F. EELS
   SALUDA FISH AND SALES CO.
   FRESH

Figure 6 (cont'd)
V. CONVENIENCE FOODS
A. TYPE PACKAGES MARKETED

SALUDA FISH AND SALES CO.
INSTITUTIONAL PACKAGES, CONSUMER PACKAGES

SOUTHERN SEAFOODS CO., INC.
INSTITUTIONAL PACKAGES, CONSUMER PACKAGES

B. TYPE PRODUCTS MANUFACTURED
1. FISH

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN, PICKLED

SOUTHERN SEAFOODS CO., INC
BREADED, FRESH-FROZEN

2. PLUFF CRAB

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

SEASHELL SEAFOOD
FRESH, FRESH-FROZEN, LIVE

SOUTHERN SEAFOODS CO., INC
BREADED, FRESH-FROZEN

3. OYSTERS

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

Figure 6 (Cont'd)
4. CLAMS

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

SOUTHERN SEAFOODS CO., INC
BREADED, FRESH-FROZEN

5. SCALLOPS

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

SOUTHERN SEAFOODS CO., INC
BREADED, FRESH-FROZEN

6. SHRIMP

SALUDA FISH AND SALES CO.
BREADED, CONVENIENCE DISH, FRESH, FRESH-FROZEN

SOUTHERN SEAFOODS CO., INC
BREADED, FRESH-FROZEN

7. SPECIALITY DISHES

8. OTHER

Figure 6 (Cont'd)
VI. INDUSTRIAL AND BY-PRODUCTS

A. BAIT
   K AND B FISH CORPORATION

B. CRAB SHELLS
   BAYOU SEAFOOD CO.

C. OYSTER SHELLS
   SEASHELL SEAFOOD

   SOUTHERN SEAFOODS CO., INC

D. CLAM SHELLS
   SOUTHERN SEAFOODS CO., INC

E. FISH TANKAGE
   K AND B FISH CORPORATION

F. CRAB MEAL
   BAYOU SEAFOOD CO.

Figure 6 (Cont'd)
SOUTHERN SEAFOODS CO., INC

G. SEA WEED
H. FISH MEAL
K. AND B. FISH CORPORATION

I. FISH SCRAP
K. AND B. FISH CORPORATION

SOUTHERN SEAFOODS CO., INC

J. FISH PROTEIN CONCENTRATE
K. OTHER

Figure 6 (Cont'd)
VII. SPECIALIZED EQUIPMENT
A. HARRIS CLAW PICKING MACHINE

BAYOU SEAFOOD CO.

B. HARRIS OYSTER STEAM MACHINE
C. OTHER

Figure 6 (Cont'd)
Figure 7
A Reproduction of the Address Labels
Produced by Program 9
IV. SUMMARY

A package of computer programs has been presented. The function of these programs was to create and maintain from keypunch cards a data base and to process this data in various ways. Also discussed was the obtaining of the data and the design of the data base.

Even though this package has been written for a directory describing the Virginia seafood processors, it could be used for seafood processor's directories in other states. However, this package could be easily modified for other applications. Such modifications could be made by rewording the questions in the questionnaire, and reassigning the code numbers in Fig. 4 to the new categories used. These modifications would only require one change in the programs. The format statements in Program 8 would have to be changed to print out the new categories used. These changes could be made by a programmer with only a moderate knowledge of the Fortran IV computer language. If more flexibility would be needed, then the entire questionnaire information could be transferred to ninety key punched cards. Programs one through six could then still be used for the creation and maintenance of the computerized data base, and the other programs would have to be rewritten for the format of the new directory.
REFERENCES


APPENDIX

A Listing of the Computer Programs
DIMENSION IREC(1800)
I=0
10 READ(5,5005,END=200,ERR=150) (IREC(J),J=1,20)
5005 FORMAT(20A4)
READ(5,5005,END=175,ERR=150) (IREC(J),J=21,1800)
I=I+1
WRITE(9,9005) IREC
9005 FORMAT(90(20A4))
GO TO 10
150 I=I+1
WRITE(6,6005) I
6005 FORMAT(//,' READ ERROR HAS OCCURRED WHILE READING THE ',I4,'COMPANY FILES CLOSED AT THAT POINT')
GO TO 200
175 WRITE(6,6010)
6010 FORMAT(//,' ONE OF THE COMPANIES READ HAS LESS THAN OR MORE THAN 90 CARDS')
200 END FILE 9
WRITE(6,6015) I
6015 FORMAT(//,' THE NUMBER OF COMPANIES READ AND WRITTEN WAS',I5)
STOP
END

Program 1
This Program Was Used to Create the Data Base on a Disk Storage Unit from the Keypunch Cards.
Program 2

This Program Was Used to Copy the Data Base from the Disk to a Magnetic Tape Which Served as a Backup Copy.
// R0899PR3 JOB 50462,SHOEMAKER,MSGLEVEL=1
// *SETUP DDNAME=FT09F001,UNIT=SYSDA,DISP=(MOD,KEEP),DSN=VA.SEAFOOD.A50462
// EXEC FORTGCLG
// FORT*SYSIN DD *

DIMENSION IREC(1800)
I=0
10 READ(5,5005,END=200,ERR=150) (IREC(J),J=1,20)
5005 FORMAT(20A4)
READ(5,5005,END=175,ERR=150) (IREC(J),J=21,1800)
I=I+1
WRITE(9,9005) IREC
9005 FORMAT(90(20A4))
GO TO 10
150 I1=I+1
WRITE(6,6005)
6005 FORMAT(//,'READ ERROR HAS OCCURRED WHILE READING THE ',I4,'COMPANY',//,' FILES CLOSED AT THAT POINT')
GO TO 200
175 WRITE(6,6010)
6010 FORMAT(//,'ONE OF THE COMPANIES READ HAS LESS THAN OR MORE THAN 90 CARDS')
200 END FILE 9
WRITE(6,6015) I
6015 FORMAT(//,'THE NUMBER OF COMPANIES READ AND WRITTEN WAS ',I5)
STOP
END

// GO FT09F001 DD UNIT=SYSDA,DISP=(MOD,KEEP),DSN=VA.SEAFOOD.A50462
// GO SYSIN DD *

' The Data Cards to Be Added to the Seafood Processor’s Directory Go Here '

Program 3
This Program Was Used to Add New Seafood Processors to the Already Existing Directory.
//0899PR4 JOB 50462,SHOEMAKER,MSGLEVEL=1
//SFTUP DDNAME=FT08F001,UNIT=SYSOA,ID=(USR301)
//MAIN LINES=30,TIME=15
// EXEC FORTGCLG
//FORT,SYIN DD *
C PROGRAM DELETE
C THIS PROGRAM IS USED TO DELETE RECORDS FROM THE DATA SET
C VA.SEAFOD.A50180 ON DISK PACK USF06 (DDNAME=FT08F001)
C
C A RECORD CONSISTS OF 90 CARDS CONTAINING INFORMATION DESCRIBING A
C COMPANY
C
C BY PLACING THE FIRST TWO CARDS OF ANY RECORD IN THE INPUT DATA
C AFTER THE //GO.SYIN DD * CARD WILL CAUSE THE ENTIRE RECORD TO BE
C DELETED FROM VA.SEAFOD.A50462
C
C ANY NUMBER OF RECORDS MAY BE DELETED DURING ONE RUN OF THIS
C PROGRAM
C
C FT09F001 AND FT10F001 ARE TEMPORARY DATA SETS USED BY THE PROGRAM
C
C COMMON OWNAME(20),CONAME(20),STADD(20),CITY(20),STZIP(20),
IBUS(20),STNUM(20),PHONE(20),COUNTY(20),IREST(1620)
EQUIVALENCE (IREC(1),OWNAME(1))
DIMENSION IREC(1800),OWN(20,40),CO(20,40)
INTEGER OWNAME,CONAME,OWN,CO
IA=5
IB=8
IC=6
ID=9
IF=10
C DIRECTORY IS COPIED TO TEMPORARY DATA SET ON UNIT IE
ICOUNT=0
DO 10 I=1,9999
READ(IA,5010,END=15,ERR=450) IREC
ICOUNT=I
WRITE(IE,5010) IREC
10 CONTINUE
15 CONTINUE
END FILE IE
REWIND IE
REWIND IA
WRITE(IC,6605) ICOUNT
6005 FORMAT(//,* NUMBER OF RECORDS EQUAL '15)
IF(ICOUNT.EQ.0) GO TO 450
C THE FIRST 40 RECORDS TO BE DELETED ARE READ IN
INPUT=0
9 JX=0
DO 11 J=1,40
READ(IA,5005,ERR=400,END=12) (OWN(I,J),I=1,20)
READ(IA,5005,ERR=400,END=400) (CO(I,J),I=1,20)
11 CONTINUE
12 CONTINUE
INPUT=1
GO TO 13
13 CONTINUE
IF(JX.EQ.0.AND.INPUT.EQ.0) GO TO 425
IF(JX.EQ.0) GO TO 100
JIND=0
C THE DIRECTORY IS NOW READ ONE RECORD AT A TIME - IREC
20 READ(IE,5010,END=65,ERR=450) IREC

Program 4
This Program Was Used to Delete Seafood Processors Who Had Gone Out of Business
from the Directory.
FORAT(90(20A4))
IF(JIND.EQ.1) GO TO 56
C IREC IS NOW COMPARED TO THE RECORDS TO BE DELETED
DO 55 J=1,JX
DO 50 I=1,20
IF(OWN(I,J).NE.OWNNAME(I)) GO TO 55
IF(CO(I,J).NE.CONAME(I)) GO TO 55
50 CONTINUE
C IREC HAS BEEN FOUND AMONG THE RECORDS TO BE DELETED
JD=J
GO TO 60
55 CONTINUE
C IREC HAS NOT BEEN FOUND AMONG THE RECORDS TO BE DELETED
C AND IS COPIED TO THE NEW TEMPORARY DIRECTORY
56 WRITE(IO,5010) IREC
GO TO 20
60 CONTINUE
C IREC IS TO BE DELETED
WRITE(IC,6010)
6010 FORMAT(//,'THE FOLLOWING WAS FOUND AND DELETED',//)
6015 FORMAT(9(1X,20A4,/) )
WRITE(IC,6015) (IREC(I),I=1,180)
C IREC IS NOW ALSO DELETED FROM THE LIST OF RECORDS WHICH WERE TO
C BE DELETED
JX=JX-1
IF(JX.NE.0) GO TO 61
JIND=1
GO TO 20
61 IF(JD.GT.JX) GO TO 20
DO 62 J=J0,JX
DO 60 I=1,20
OWN(I,J)=OWN(I,J+1)
60 CONTINUE
GO TO 20
C DIRECTORY HAS BEEN COPIED TO UNIT ID AND THE FIRST SET OF JX
C RECORDS HAVE BEEN SEARCHED FOR AND DELETED WHEN FOUND
65 CONTINUE
IF(JX.EQ.0) GO TO 75
C THE FOLLOWING WERE NOT FOUND IN DIRECTORY
WRITE(IC,6020)
6020 FORMAT(//,'THE FOLLOWING WAS NOT FOUND',//)
DO 70 J=1,JX
70 WRITE(IC,6015) (OWN(I,J),I=1,20),(CO(I,J),I=1,20)
75 CONTINUE
END FILE ID
RE WIND ID
RE WIND IE
DO 95 I=1,500
READ(IO,5010,END=96,ERR=450) IREC
WRITE(IE,5010) IREC
95 CONTINUE
END FILE IE
RE WIND IE
RE WIND ID
IF(INPUT.NE.0) GO TO 9
99 CONTINUE
ICOUNT=0
WRITE(IC,6030)
6030 FORMAT(//,'RECOPY OF VA_SEAFOO BEGUN',//)
DO 250 J=1,9999
READ(IO,5010,END=300,ERR=500) IREC
ICOUNT=J
WRITE(IB,5010) IREC
WRITE(IC,6035)(IREC(I),I=1,180)
Program 4
(Cont'd)
6035 FORMAT(//,9(1X,20A4,//))
250 CONTINUE
300 WRITE(IC,6040)
6040 FORMAT(1H1,///, ' END OF DATA')
END FILE 10
WRITE(IC,6005) ICOUNT
WRITE(IC,6036)
6036 FORMAT(///, ' RFCOPY OF VA.SEAFOO HAS ENDED'//)
STOP
400 WRITE(IC,6041)
6041 FORMAT(///, ' ***READ ERROR HAS OCCURRED, CHECK INPUT CARDS ***', / , ' ***DATA SET VA.SEAFOO UNCHANGED ***', //)
GO TO 600
425 WRITE(IC,6425)
6425 FORMAT(///, ' ***NO RECORDS WERE FOUND TO BE DELETED FROM UNIT 5 ***', / , ' ***DATA SET VA.SEAFOO UNCHANGED ***', //)
GO TO 600
450 WRITE(IC,6045)
6045 FORMAT(///, ' ***READ ERROR HAS OCCURRED DURING RECORD SEARCH ***', / , ' ***DATA SET VA.SEAFOO UNCHANGED ***', //)
GO TO 600
500 WRITE(IC,6050)
6050 FORMAT(///, ' ***ERROR HAS OCCURRED DURING RECOPY OF VA.SEAFOO ***')
600 STOP
END
/
/ **.FT04FO01 DD UNIT=SYSDA,DSN=VA.SEAFOO.A50462,DISP=(OLD,KEEP),
// DCB=(RECFM=FB,LRECL=7200,BLKSIZF=7200)
/ **.FT09FO01 DD UNIT=SYSDA,DISP=(NEW,DELETE),SPACE=(7200,(200,10)),
// DCB=(RECFM=FB,LRECL=7200,BLKSIZF=7200)
/ **.FT10FO01 DD UNIT=SYSDA,DISP=(NEW,DELETE),SPACE=(7200,(200,10)),
// DCB=(RECFM=FB,LRECL=7200,BLKSIZF=7200)
/ **.SYSD DD */
'A data Card for the Owner and a Card for the Company Go Here
for Each Company to Be Deleted from the Data Base'*/
/*
Program 5

This Program Was Used to Produce an Exact Listing of the Data Base as It Existed on the Disk Storage Unit.
//B0899PR6 JOB 50462,SHOEMAKER,MSGLEVEL=1
/*MAIN LINES=5,TIME=1
/*SETUP DDNAME=FT08F001,UNIT=TAPE9,ID=(2152A,NORING,SAVE SL)
/*SETUP DDNAME=FT09F001,UNIT=SYSDA,ID=(USR301)
// EXEC FORTGCLG
//FORT.SYSIN DD *
DIMENSION IREC(1800)
   I=0
10 READ(8,9005,END=200,ERR=150) IREC
    WRITE(9,9005) IREC
9005 FORMAT(90(20A4))
   I=I+1
   GO TO 10
150  I=I+1
    WRITE(6,6010) I
6010 FORMAT(' READ ERROR OCCURRED WHILE READING ','14,' RECORDS,~/,'FILES
               1 CLOSED AT THAT POINT')
    GO TO 210
200  WRITE(6,6005) I
6005 FORMAT(' PROCESSING AT END',~/,'15', ' RECORDS READ AND COPIED')
210  END FILE 9
    STOP
END
/ * 
//GO.FT08F001 DD UNIT=TAPE9,DISP=(OLD,KEEP),DSN=VA.SEAFOD 
//GO.FT09F001 DD UNIT=SYSDA,DISP=(OLD,KEEP),DSN=VA.SEAFOD,A50462, 
// DCB=(RECFM=FB,LRECL=7200,BLKSIZE=7200) 
/ *

Program 6
This Program Was Used to Recreate the Directory on the Disk from the Back-up Copy Previously
Stored on the Magnetic Tape.
Program 7
This Program Was Used to Produce an Alphabetical Listing of the Directory by the Company Names.
Program 8
This Program Was Used to Produce a List of Seafood Products and the Companies Which Handled Each.
IF(NUM.NE.99)GO TO 71
X=X+.4
IF(X.LT.50.0)GO TO 202
WRITE(6,200)
X=1.0

202 WRITE(6,73)ICONAME(J),J=1,72),(DESCR(K),K=3,72)
73 FORMAT(/13X,72A1,/13X,70A1/
71 DO 72 I=1,79
72 READ(8,81)Y
81 FORMAT(A1)
GO TO 102

100 REWIND 8
DO 2 I=1,54
IF(I.EQ. 1)X=6.
IF(I.EQ. 7)X=6.
IF(I.EQ.24)X=6.
IF(I.EQ.31)X=6.
IF(I.EQ.41)X=6.
IF(I.EQ.52)X=6.
IF(I.EQ.11)WRITE(6,3)
3 FORMAT(1H1,///,10X,'II. FISH',/11X,'A. FRESH WATER',/12X,'1. CA
XTFISH'
)
IF(I.EQ.2)WRITE(6,4)
4 FORMAT(12X,'2. TROUT')
IF(I.EQ.3)WRITE(6,5)
5 FORMAT(12X,'3. OTHER')
IF(I.EQ.4)WRITE(6,6)
6 FORMAT(11X,'3. SALTMWATER',/12X,'1. FILLETS')
IF(I.EQ.5)WRITE(6,7)
7 FORMAT(12X,'2. WHOLE FISH')
IF(I.EQ.6)WRITE(6,8)
8 FORMAT(12X,'3. OTHER')
IF(I.EQ.7)WRITE(6,9)
9 FORMAT(1H1,///,10X,'III. SHELLFISH',/11X,'A. CRABS',/12X,'1. B
XLE (HARD)
)
IF(I.EQ.8)WRITE(6,10)
10 FORMAT(12X,'2. BLUE (SOFT)')
IF(I.EQ.9)WRITE(6,11)
11 FORMAT(12X,'3. OTHER')
IF(I.EQ.10)WRITE(6,12)
12 FORMAT(11X,'A. OYSTERS',/12X,'1. ATLANTIC OR GULF')
IF(I.EQ.11)WRITE(6,13)
13 FORMAT(12X,'2. OTHER')
IF(I.EQ.12)WRITE(6,14)
14 FORMAT(11X,'C. LOBSTERS',/12X,'1. NORTH ATLANTIC (VIRGINIA-MAINE)
X)
IF(I.EQ.13)WRITE(6,15)
15 FORMAT(12X,'2. FLORIDA (ROCK)')
IF(I.EQ.14)WRITE(6,16)
16 FORMAT(12X,'3. OTHER')
IF(I.EQ.15)WRITE(6,17)
17 FORMAT(11X,'D. CLAMS',/12X,'1. HARD OR QUAHOG')
IF(I.EQ.16)WRITE(6,18)
18 FORMAT(12X,'2. SURF')
IF(I.EQ.17)WRITE(6,19)
19 FORMAT(12X,'3. SOFT SHELL')
IF(I.EQ.18)WRITE(6,20)
20 FORMAT(12X,'4. OTHER')
IF(I.EQ.19)WRITE(6,21)
21 FORMAT(11X,'E. SCALLOPS',/12X,'1. BAY')
IF(I.EQ.20)WRITE(6,22)
22 FORMAT(12X,'2. SEA')
IF(I.EQ.21)WRITE(6,23)
23 FORMAT(12X,'3. OTHER')

Program 8
(Cont'd)
IF(I.EQ.22) WRITE(6,24)
24 FORMAT(11X,'F. SHRIMP','/12X,'1. GULF')
IF(I.EQ.23) WRITE(6,25)
25 FORMAT(12X,'2. OTHER')
IF(I.EQ.24) WRITE(6,26)
26 FORMAT(11X,'//,10X,'IV. MISCELLANEOUS PRODUCTS','/11X,'A. CONCH')
IF(I.EQ.25) WRITE(6,27)
27 FORMAT(11X,'B. MUSSELS')
IF(I.EQ.26) WRITE(6,28)
28 FORMAT(11X,'C. TURTLES')
IF(I.EQ.27) WRITE(6,29)
29 FORMAT(11X,'D. FROGS')
IF(I.EQ.28) WRITE(6,30)
30 FORMAT(11X,'E. CRAWFISH')
IF(I.EQ.29) WRITE(6,31)
31 FORMAT(11X,'F. EELS')
IF(I.EQ.30) WRITE(6,32)
32 FORMAT(11X,'G. OTHER')
IF(I.EQ.31) WRITE(6,33)
33 FORMAT(11H1,'///,10X,'V. CONVENIENCE FOODS','/11X,'A. TYPE PACKAGES X MARKETED')
IF(I.EQ.32) WRITE(6,34)
34 FORMAT(11X,'B. TYPE PRODUCTS MANUFACTURED')
IF(I.EQ.33) WRITE(6,35)
35 FORMAT(12X,'1. FISH')
IF(I.EQ.34) WRITE(6,36)
36 FORMAT(12X,'2. BLUE CRAB')
IF(I.EQ.35) WRITE(6,37)
37 FORMAT(12X,'3. OYSTERS')
IF(I.EQ.36) WRITE(6,38)
38 FORMAT(12X,'4. CLAMS')
IF(I.EQ.37) WRITE(6,39)
39 FORMAT(12X,'5. SCALLOPS')
IF(I.EQ.38) WRITE(6,40)
40 FORMAT(12X,'6. SHRIMP')
IF(I.EQ.39) WRITE(6,41)
41 FORMAT(12X,'7. SPECIALITY DISHES')
IF(I.EQ.40) WRITE(6,42)
42 FORMAT(12X,'8. OTHER')
IF(I.EQ.41) WRITE(6,43)
43 FORMAT(11H1,'///,10X,'VI. INDUSTRIAL AND BY-PRODUCTS','/11X,'A. EXIT')
IF(I.EQ.42) WRITE(6,44)
44 FORMAT(11X,'B. CRAB SHELLS')
IF(I.EQ.43) WRITE(6,45)
45 FORMAT(11X,'C. OYSTER SHELLS')
IF(I.EQ.44) WRITE(6,46)
46 FORMAT(11X,'D. CLAM SHELLS')
IF(I.EQ.45) WRITE(6,47)
47 FORMAT(11X,'E. FISH TANKAGE')
IF(I.EQ.46) WRITE(6,48)
48 FORMAT(11X,'F. CRAB MEAL')
IF(I.EQ.47) WRITE(6,49)
49 FORMAT(11X,'G. SEA WEED')
IF(I.EQ.48) WRITE(6,50)
50 FORMAT(11X,'H. FISH MEAL')
IF(I.EQ.49) WRITE(6,51)
51 FORMAT(11X,'I. FISH SCRAP')
IF(I.EQ.50) WRITE(6,52)
52 FORMAT(11X,'J. FISH PROTEIN CONCENTRATE')
IF(I.EQ.51) WRITE(6,53)
53 FORMAT(11X,'K. OTHER')
IF(I.EQ.52) WRITE(6,54)
54 FORMAT(11H1,'///,10X,'VII. SPECIALIZED EQUIPMENT','/11X,'A. HARRIS

Program 8
(Cont'd)
X CLAW PICKING MACHINE')
IF(I.EQ.53)WRITE(6,55)
55 FORMAT(11X,'9. HARRIS OYSTER STEAM MACHINE')
IF(I.EQ.54)WRITE(6,56)
56 FORMAT(11X,'C. OTHER')
105 READ(8,66,END=109) (OWNAME(J),J=1,72)
READ(8,67)(CONAME(K),K=1,72)
DO 107 JJ=1,9
107 READ(8,70)Y
DO 108 L=1,79
READ(8,65)NUM,(DESCR(K),K=3,72)
IF(NUM.NE.1)GO TO 108
X=X+4.0
IF(X.LT.50.0) GO TO 201
X=1.0
WRITE(6,200)
201 WRITE(6,73)(CONAME(J),J=1,72),(0ESCR(K),K=3,72)
108 CONTINUE
GO TO 105
109 IF(I.EQ.54)GO TO 104
REWIND 8
X=X+2.0
IF(X.LT.50.0) GO TO 2
X=1.0
WRITE(6,200)
200 FORMAT(1H1)
2 CONTINUE
104 WRITE(6,101)
101 FORMAT(1H1,'END OF INPUT DATA')
STOP
END
/*
//LKFD SYSLMOD DD DSN=ETEMP(MAIN)
//GO FTOBFOOl DD DSN=OST,UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=7200),
// DISP=(OLD,KEEP)
/*
Program 9

This Program Was Used to Produce Mailing Labels in Ascending Zip Code Order.