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be  
entered  
after  
final  
print-  
out)

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## 1. What is a Database

-----

The constantly growing selection of software on the market makes it increasingly difficult for computer owners to make their choice. They are faced with offers of programs for administration of addresses, stockkeeping, article data, personnel data, turnover statistics, etc. Each program requires a different mode of operation which has to be mastered by the user.

What could be better than to develop one single program for all these examples?

Every data management program is made up of various entries. Each entry constitutes one unit. Take the example of a simple address list. Each address or each article could, for example, be made up of the following fields:

	Address file	Stock file
	-----	-----
1.	,Title	Number of article
2.	Surname/name	Name of article
3.	Street	Theoretic stock
4.	Zip code	Actual stock
5.	Town	Location of stock

A Database program makes it possible for us to set up a personal file, based on our own individual requirements. The number of lines and the titles can be chosen by the user. The individual entries can be displayed on the screen at any time. Needless to say, all entries can be printed in any desired layout.

A Database program enables us to solve all data management problems with one single program, thus eliminating the necessity of making difficult choices.

The Monroe Superbase program in particular enables us to transfer any kind of manually operated card index onto the computer.

One diskette contains 320 000 bytes memory. This is equal to approximately 160 sheets of paper, or some 3000 addresses.

The organisation of the card index file can be determined by the user himself. If the memory capacity of one diskette is not sufficient, the data can be distributed onto as many diskettes as may be required. Thus this universal Database program can be

used within a business for the most varied applications imagineable. Sets of data are sorted after any chosen line immediately on being entered, so that, for example, double entries in an address file can be pointed out immediately.

Various search functions enable the user to locate the stored data under various criteria.

Searching, changing, entering new data, etc. are all made easy for even inexperienced personnel, thanks to clearly labelled function keys.

## 2. General information

---

- 2.1. The flashing stroke (cursor) always indicates that the computer expects an entry at this point
- 2.2. Entry of characters or digits must always be concluded with the RETURN key.
- 2.3. Each question asked by the computer is followed by one suggested reply.  
The computer recalls either the latest possibility entered or else recognises a so-called Default value. A Default value is the most commonly used answer to a given question.  
The computer will not necessarily offer only one single character, but might suggest a whole line.  
You can then either accept the computer's suggestion by means of RETURN or override it by entering a reply of your own.
- 2.4. The expression "Function keys" always refers to the 8 keys on the top left.

### ( D I A G R A M )

Each function key can be programmed with 4 functions.

Simple depression of a key executes the functions FAST SEARCH (F1), NEW ENTRY (F2), CHANGE (F3), END FORM (F4), NEXT FIELD (F5), NEXT ENTRY (F6), YES (F7) and NO (F8).

If we depress the keys SHIFT and F1 - F8 at the same time (first SHIFT), we produce the following functions: LINEAR SEARCH (SHIFT/F1), PRINT DATA (SHIFT/F2), DELETE (SHIFT/F3), HELP (SHIFT/F4), PREVIOUS FIELD (SHIFT/F5), PREVIOUS ENTRY (SHIFT/F6) and STOP (SHIFT/F8).

The CTRL key can be regarded as a SHIFT key. The CTRL key is depressed first (do not release), followed by one of the function keys F1 - F8. This produces the following functions: MERGE (CTRL/F2), LAST FIELD (CTRL/F5), LAST ENTRY (CTRL/F6), MAIN PROGRAM (CTRL/F7) and PRINT PROGRAM (CTRL/F8).

If the CTRL key is depressed first (do not release) followed by the SHIFT key (similarly do not release), and lastly one of the function keys F1 - F8, the following functions are produced: 1ST FIELD (CTRL/SHIFT/F5), 1ST ENTRY (CTRL/SHIFT/F6), END DATABASE

(CTRL/SHIFT/F7) and MAIN MENU (CTRL/SHIFT/F8).

## I M P O R T A N T

---

The function keys F7 and F8 are active throughout the entire program. Exceptions are pointed out. The other function keys are active dependent on programme stage (pointed out specifically).

You need not take any notice of the markings F9 - F16.

- 2.5. The entire contents of the screen can be printed out at any point by pressing the key PRINT SCRIN (print screen).
- 2.6. The data type is displayed whenever a new entry or a correction is made. This prevents erroneous entries.

By means of the data type we are able to define the type of entry (e.g. date) for each data field individually. We can thus, for example, ensure that all the articles in a stock file are printed in capitals. Perhaps we have a printer without diphthongs and need to print accordingly. Fields of purely numerical type may not contain any letters or other types of characters.

When you make new entries or changes the computer keeps a continuous check on the data and rejects non-permitted entries immediately by displaying the words "non-permitted data type". Whenever entries or corrections are being made the permitted data type will be displayed on the lower left hand side of the screen.

### 3. Correcting Entries (Editing Functions)

---

All entries can be corrected immediately. For this purpose the following keys are at your disposal:

- (-                    The cursor is moved towards the left. The word itself is not changed.
- >                    The cursor is moved towards the right. The word itself is not changed.
- (arrow up)            The cursor is moved into the previous line of the field. On the top line this key will effect a jump to the first point of the field. The text itself will not be changed.
- (arrow down)         The cursor is moved into the next line of the field. On the bottom line this key will effect a jump to the last point of the field. The text itself will not be changed.
- INSRT/LOCK            If you wish to insert one or more characters into a text, press the key INSRT/LOCK. The red dot on this key will light up. All entries at the point of the cursor will then be inserted into the text. The keys INSRT or RETURN cancel the insertion mode.
- LINE/DEL/CHAR        With the LINE/DEL/CHAR key you can delete the character on top of the cursor. All other characters will be moved up from the right.
- SHIFT/LINE/DEL/CHAR If you press SHIFT/LINE/DEL/CHAR the entire line will be deleted.
- BACKSPACE            When you press the BACKSPACE the character to the left of the cursor (i.e. the last entry) is deleted.
- CTRL/N                If you press CTRL/N the original text of this field will be displayed.

If the cursor is under any character this can be overwritten without first being deleted. However, once you overwrite the first character of a field the computer will automatically delete the rest of this field. It is to be assumed that you wish to overwrite the entire field.

If you wish to change only the first character you have to press first -> and then (-. This will enable you to alter the character without having the entire field deleted.

These methods of correction can be used at every entry.  
Further correction aids are dealt with in the relevant sections.



4. Monroe Superbase - Operating Instructions

- 
- Switch on computer.
  - Slide program diskette into lower floppy disc until it catches.
  - Slide data diskette into upper floppy disc until it catches.
  - The program will now load itself.

After a short time the following question will appear on the screen:

Would you like an acoustic error signal? (yes/no)?

If you reply with key YES (F7), then all incorrect entries will be indicated by means of an aural signal (beep). If you do not want this you should reply with the key NO (F8).

The following will appear on the screen:

MONROE Database

M a i n M e n u

\*\*\*\*\*

FILE = CUSTOMERS

1. How to use the database (Main Program)
2. Printing of a report. Definition of layout and selection.
3. Changing of database or data diskette.
4. Opening of new database
5. Display or printing of definition of current database.
6. Contents of data diskette - display or print.
7. Choice of auxiliary functions.
8. END Database

\*\*\*\*\*

Your choice = 1

This is the key position of the whole program. All processes commence from this point. The contents of the screen at this point will from now onwards be referred to as the Main Menu.

You can now choose one of 8 possibilities. Choose your program and enter the appropriate number and then press RETURN. Your program will now be retrieved.

The description of the first 7 possibilities follows in the sections 4.1 - 4.7.

If you choose number 8 the Monroe Superbase will be discontinued.

#### 4.1. How to use a Database (Main Program)

-----

This program puts a card index at your disposal in exactly the same way as your manual card index.

It enables you to: scan the database, search for particular entries, enter new ones, delete entries and to print any single entry.

You have chosen number 1 from the Main Menu. You will now be asked for the password (this protects you from non-permitted access to data). There are three different passwords:

With the "READ" password one can only read the data, e.g. for printing of addresses

With the "WRITE" password one can only write data, e.g. for new entries.

With the "GLOBAL" password one can read data from the diskette or write. On opening a new file you can determine the name of the password (see section 4.4.).

Enter your password and depress the RETURN key. The first entry in the file will now appear on the screen.

Example:

```
*****      COMPUTER CLIENTS  ell-elec      *****
*****
1   Title_____:Mr.
2  ** Surname/Name_____:JONES M.
3   Spare_____:
4   Street_____~_____:N. CENTRAL PK. 45
5   ZIP CODE_____:60659
6   Place_____~_____:CHICAGO
```

```

7 Selection Code_____ :P
8 Discount Code_____ :Y05
9 Turnover previous year: 27 020.10
10 Turnover current year: 566 600.00
11 Last order_____ :7.09.81

```

-----

Enter command (F6)  
First entry!

By means of the function keys (dark grey keys) you can select the various processes described below. The function last chosen will always be displayed following the request "Enter command". This function will be automatically repeated if you simply press the RETURN key.

It is essential that you make regular security copies of the data following the filing of new entries or of changes. This should be carried out in accordance with section 4.7.2. in order to ensure that none of your valuable working time is lost as a result of such things as electricity breakdowns.

The following functions are permitted:

Key	Operation	Brief description	Section
Scan pages	F6	next entry	4.1.1.
	SHIFT/F6	previous entry	
	CTRL/F6	last entry	
	CTRL/SHIFT/F6	first entry	
Search	F1	fast search	4.1.2.
	SHIFT/F1	linear search	
Change New entry	F3	changing	4.1.3.
	F2	new entry	4.1.4.
Moving field	F5	next field	
	SHIFT/F5	previous field	
	CTRL/F5	last field	
	CTRL/SHIFT/F5	first field	
	HOME	first field	
Delete	F4	end form	4.1.5.
	CLEAR	delete form	
	SHIFT/F8	STOP, discontinue entry	

Print	SHIFT/F2	printing of current entry	4.1.6.
	CTRL/F8	jump to printing program	
	PRINT SCR	printing of screen contents	
Merge	CTRL/F2	integrating a sequential file into the Database	4.1.7.
Other keys	F7	yes	4.1.8.
	F8	no	
	SHIFT/F8	stop	
	CTRL/SHIFT/F8*	return to main menu	
	SHIFT/F4	explanations	
	CTRL E	explanations	
	CTRL/SHIFT/F7*	end of Database	
	CTRL N	rescind correction	
	CTRL/F7*	load main program	
	CTRL/F8*	load printing program	

\* These 4 functions can be used at any time. You will find yourself most appreciative of this additional convenience when you have to make a great deal of use of the Monroe Superbase.

#### 4.1.1. Scanning pages

##### - ----- Turning forwards (F6 and CTRL/F6)

By means of the function key NEXT ENTRY (F6) you can leaf through the card index in its pre-defined order (e.g. alphabetical).

The key LAST ENTRY (CTRL/F6) jumps directly to the very last entry (e.g. Zuberbuehler).

##### - Turning backwards (SHIFT/F6 and CTRL/SHIFT/F6)

The function key PREVIOUS ENTRY (SHIFT/F6) enables you to leaf backwards in the card index (e.g. alphabetically).

The key FIRST ENTRY (CTRL/SHIFT/F6) jumps directly to the very first entry (e.g. Amman).

#### 4.1.2. Searching

-----  
Monroe Superbase offers two different types of searching:

- Fast search by means of the known field (marked on screen with \*\*),
- linear search within any chosen field (slower than fast search).

##### 4.1.2.1. Fast search (F1)

-----

The function key FAST SEARCH (F1) enables the location of existing entries particularly fast. We must point out that this function can only be applied within the key field. You can recognise this field by the 2 stars adjacent to the field number.

Let us say you wish to find a certain Mr. KELLER. First depress the key F1. The following will now appear on the bottom left of the screen:

"Permitted data type = CPS (= and # permitted in first position)"

"Search criterion?"

The permitted data type corresponds to the data definition for the key field (section 4.4.1.).

The next question is what the search criterion is. Now you can enter KELLER or KELLE or KEL, etc. The computer will find the entry under Mr. KELLER. If you enter KELLE the computer can also find KELLENBERGER.

If an entry for Mr. KELLER cannot be found, the computer will reply with "Entry does not exist". The entry immediately following the one that does not exist will now be displayed. For example, in the case of KELLER not being found, the next entry, perhaps KIPFER, will be displayed.

#### IMPORTANT

The search word must be in the key field and start on the left hand side. Although we can enter KELL in order to find KELLER, we cannot find KELLER by entering LER, even though the combination LER is also contained within the word KELLER.

#### 4.1.2.2. Linear searching (SHIFT/F1)

---

If you wish to find an entry under a definition which is not in the key field (e.g. town or zip code), you can use the function key LIN. SEARCH (SHIFT/F1).

It is advisable to first turn back to the beginning of the file by pressing the key FIRST ENTRY (CTRL/SHIFT/F6), since the program only searches from the position in which it is at any given time.

When you press LIN. SEARCH (SHIFT/F1) the computer will ask:

"Search in line (0 = in all)?"

If you now enter 0 the computer will search in all the lines of an entry. However, it can search more quickly if you can specify a definite line number.

The number at the end of the question corresponds to the field number that was last sought. If you press RETURN this value will automatically be incorporated.

The next question is: "Search criterion?"

There are three possible ways in which you can now enter the search criterion.

- If the field has to be absolutely identical with the search word, type an = at the beginning of the search word. Obviously this = does not have to be present in the file - it merely serves to instruct the computer to search for only absolutely identical entries.

When using this method of searching you must bear in mind that the number of spaces between the words must also correspond exactly to those in the criterion you are seeking, since otherwise the computer will not be able to locate the entry.

- If you only know the beginning of an entry you can enter the beginning of the search word. In such a case the computer will check whether the beginning of the search word really is at the beginning of the field and refuse to offer you a choice if it is only to be found in the middle of an entry.

For example, a file entry containing the digits 123456789 can be found via the search word 1234.

It cannot, however, be found via the search word 234, since the line commences with 1 and not with 2.

- If, in the above example, the search word is entered as #234 the computer will be able to find the entry, since if you enter # in front of the search word the computer will search within the field for the first identical combination. In our example, 234 is contained within 123456789. The entry could similarly be located by typing #678, but obviously not by typing #43, since this combination is not contained within 123456789.

This effective choice of search commands enables you to locate the required information out of even a large database file with speed and ease. If you already know in which field the required information is located the additional entry of the field number will facilitate faster location, since this saves the computer having to compare all the fields.

In general we must point out that linear searching takes longer than fast searching. This is because all entries have to be read, compared with the search criterion, and then, if appropriate, be displayed, whereas with fast searching the required criterion can be located by means of the alphanumeric sort order, providing, of course, that you can enter the beginning of the search line.

#### 4.1.3. Updating entries (F3)

---

If you press the function key CHANGE (F3) the following question will appear:

"Update field no. ? 1"

When you press RETURN the cursor will automatically jump to the beginning of the first field or, if you have entered a particular number, to the beginning of the appropriate field.

You can now proceed to correct this entry by means of one of the correction possibilities described in section 3. When you press RETURN the change will be concluded in the relevant field or the computer will jump to the next field without making any change.

If you make a change in a sort field, the computer will automatically correct the sort order, thus ensuring that the filing of the data is always up-to-date. The computer requires a little more time in

which to provide this convenience, but on the other hand it does facilitate the speedy location of a given entry at any time.

You can avoid always going through an entire entry by using any of the following additional functions instead of pressing RETURN:

→ NEXT FIELD	F5	jump to beginning of next field
PREVIOUS FIELD	SHIFT/F5	jump to the beginning of the previous field
LAST FIELD	CTRL/F5	jump to the beginning of the last field
HOME	HOME	jump to the beginning of the first field
FIRST FIELD	CTRL/SHIFT/F5	jump to the beginning of the first field
→ END FORM	F4	terminate entry/correction and store
STOP	SHIFT/F8	abandon entry /correction and do NOT store

When you have completed a change (by pressing either END FORM (F4) or RETURN), the following question will appear on the screen:

→ Form O.K. (Yes/No)?

The computer will not store the change until you press the key YES (F7).

If you press the key NO (F8) the cursor will return to the beginning of the first field. You can now abandon the correction by means of STOP (SHIFT/F8). The old entry will now appear on the screen unchanged. The change will not be registered in the database.



#### 4.1.4. NEW ENTRY (F2)

If you choose the key NEW ENTRY (F2) the computer will receive the command to integrate a new entry. Its first question will be how to deal with double entries.

Display:

( D I A G R A M )

#### Treatment of double entries

- 1 = double entries will not be displayed
- 2 = display only if entire entry is identical
- 3 = display if key field is identical
- 4 = display if key field is identical as far as first space or comma.

Your choice ? 4

Valid data type = N compulsory field

The entry of 1 will result in any existing double entries not being displayed at all.

If you enter 2, there will only a display if the entire entry (all fields) is identical (a very rare case).

If you enter a 3 you will be informed if the key field line is identical (incl. spaces).

The entry of a 4 will instruct the computer to compare the key field only as far as the first comma or space. This is particularly practical for address administration.

After entering 1,2,3 or 4 and the RETURN key you will see an empty form on the screen, which you can now complete field by field.

( D I A G R A M )

\* \* \* \* \*      COMPUTER    CUSTOMERS    ell-elec      \* \* \* \* \*

- .....
1. Title \_\_\_\_\_:
  - 2.\*\* Surname/Name \_\_\_\_\_:
  3. Spare \_\_\_\_\_:
  4. Street \_\_\_\_\_:
  5. Zip code \_\_\_\_\_:
  6. Place \_\_\_\_\_:
  7. Selection code \_\_\_\_\_:
  8. Discount code \_\_\_\_\_:
  9. Turnover previous year \_:
  10. Turnover current year \_\_:
  11. Last order \_\_\_\_\_:
- .....

For each field you will now see the code of the permitted data type (section 4.4.1.) displayed on the bottom left margin of the screen. Non-permitted characters will be refused by the computer. Each line will be concluded with either RETURN or one of the permitted function keys. There are several auxiliary functions available which enable you to make corrections in all fields at any time:

NEXT FIELD	F5	jump to beginning of next field
PREVIOUS FIELD	SHIFT/F5	jump to beginning of previous field
LAST FIELD	CTRL/F5	jump to beginning of last field
HOME	HOME	jump to beginning of first field
FIRST FIELD	CTRL/SHIFT/F5	jump to beginning of first field
RETURN		jump to beginning of next field
END FORM	F4	pass over remaining fields to end of form

CLEAR	SHIFT/HOME	delete entire form
STOP	SHIFT/F8	abandon current entry

When you have completed the new entry (by pressing END FORM (F4) or RETURN in the last field) the following question will appear on the bottom left hand side of the screen:

Form OK (Yes/No)?

If you press the YES KEY (F7) the new entry will be stored. If you press the NO key (F8) the cursor will jump back to the beginning of the first field. At this point you can still make changes and conclude the correction by pressing the key END FORM (F4).

If the computer recognises an entry as a double one, it will display the first entry on the screen and ask:

Discard entry (Yes/No)?

If you do not wish for a double entry you can press the key YES (F7). The new entry will quite simply be ignored. If you press NO (F8), then the computer will search for any further double entries. If none are found, the new entry will be stored.

When you wish to exit out of the New Entry mode you can press the function key STOP (SHIFT/F8) (NOT the red key STOP!). The computer will then forget any incomplete entry and reply with:

"Enter command"

#### 4.1.5. Deleting (SHIFT/F3)

-----

Any entry displayed on the screen can be deleted by means of the function key DELETE (F3). The computer then asks:

Really delete (Yes/No)?

If you press YES (F7) the entry will be deleted. If you press NO (F8) then the entry will remain in the database as it is.

#### 4.1.6. Printing of the screen display (SHIFT/F2)

-----

By means of the key PRINT (SHIFT/F2) the data fields (lines) present on the screen at that point will be printed. If the printer is not yet ready you will be asked to press RETURN. Before pressing RETURN you should check that the printer is in operating order.

You can interrupt the printing process by pressing the key STOP (SHIFT/F8).

If you press the key PRINT SCRNM the entire contents of the screen will be printed.

If you press the key REPORTWRITER (CTRL/F8) the computer will jump directly into the REPORTWRITER program (See Printing of a Report, Section 4.2.).

#### 4.1.7. Merging (CTRL/F2)

---

##### - General

The merging function is used in the main by "specialists". The main object of this function is to integrate into the Database file data which was used in another program.

If you are not a "specialist" you may ignore this section without suffering any loss of information.

A sequential file is required in order to merge. ( The setting up of a sequential file is described in Section 4.2.5). The file must be constructed in such a way that there is exactly one field corresponding to each field in the Database file (even if some fields have nothing on them). The length of the fields and the permitted data type must also correspond.

Merging automatically affects the correct sort order of the database.

If double entries occur the double entry will be displayed on the screen and the computer will give an aural signal (beep). You can then decide whether you wish to merge this double entry or not and reply with YES or NO accordingly. If there is an error in the file (wrong data type or line too long) the incorrect entry will be transferred to a sequential ERROR FILE. If, for example, we wish to merge data into the Database CUSTOMER FILE, the error file will be named:

D\CUSTOMER.ERROR

In order to correct entries from an error file it is advisable to set up a similar database with longer fields. The data type chosen should be "A".

Entries from the error file, as described above, can now be merged into this auxiliary database.

The programmer who created the sequential file will generally provide an auxiliary program to enable processing of the error file.

##### - Operation

When you choose MERGE (CTRL/F2) the computer will receive the command to incorporate entries from a sequential file into the existing database.

Its first question will be how it should deal with double entries.

Display:

#### Treatment of Double Entries

- 1 = double entries will not be displayed
- 2 = display if entire entry identical
- 3 = display if key field is identical
- 4 = display if key field is identical as far as first space or first comma.

Display mode? 4

If you enter 1 then any double entries will not be displayed.

If you enter 2 then the computer will only show a double entry if the entire entry (all fields) is identical (a very rare case).

If you enter 3 you will be informed if the key field (incl. spaces) is identical.

If you enter a 4 the computer will compare the key field as far as the first comma or space - this is particularly practical as far as address administration is concerned.

Following the entry of 1, 2, 3 or 4 and the RETURN key an empty form will appear on the screen.

( D I A G R A M )

\*\*\*\*\* COMPUTER CUSTOMERS ell-elec  
\*\*\*\*\*

```
1 Title_____:  
2** Surname/Name_____:  
3 Spare_____:  
4 Street_____:  
5 Zip code_____:  
6 Place_____:
```

7 Selection Code\_\_\_\_\_ :  
8 Discout Code\_\_\_\_\_ :  
9 Turnover previous year\_ :  
10 Turnover current year\_\_ :  
11 Last order\_\_\_\_\_ :

\*\*\*\*\*

Valid data type = anything permitted compulsory field  
Merging of sequential file NAME ? BX2CUSTOMERS

Question:

"Merge a sequential file from drive ? 0"

You should now enter either an 0 or a 1, depending on whether the  
diskette is in the upper (1) or lower (0) disk drive.

Question:

"Merge a sequential file name of file?"

Enter the name of the file to be merged.

Merging will now take place until the end of the sequential file is  
reached. This can take some time. You can stop the merging  
process if necessary by pressing the STOP key (SHIFT/F8).

Menu. The computer requires some time to execute this order since the program to be loaded is rather long.

#### End Database (CTRL/SHIFT/F7)

-----  
Depression of END PROGR. (CTRL/SHIFT/F7) will end the Superbase program in such a way as to make the computer available for other programs. This is the only legal way of ending the Database program at any time.

#### Loading main program (CTRL/F7)

-----  
You require this function in order to enter a new password.

You can use these function keys to jump into either the Main Program (use of Database) or the Reportwriter Program from any point whatsoever in the Database 8820 program.



#### 4.1.8. Miscellaneous

---

##### YES key (F7)

---

At various points of the program the computer asks a question which requires either a Yes or No as an answer. This function is necessary in order to avoid accidental destruction of data (e.g. deletion of an entry).

##### NO key (F8)

-----  
See YES key (F7)

##### STOP (SHIFT/F8)

---

The STOP key effects the interruption of continuous program processes such as linear searching and causes the computer to return to the display of the previous file entry.

The program should NEVER be interrupted by pressing the RESET key (back right) or by pressing CTRL or STOP (red), since this might cause the destruction of valuable data.

##### Explanations (SHIFT/F4 or CTRL E)

---

If you depress the HELP key (SHIFT/F4) or CTRL/E, a short description of the main commands will appear on the screen. If you press HELP (SHIFT/F4) or CTRL E again, you will receive even more detailed explanations (if available in program).

By pressing the RETURN key you can turn to the next page of explanations.

This part of the program can be ended by pressing STOP (SHIFT/F8), after which the computer will return to its previous screen.

#### 4.1.9. Program Keys

---

##### Return to Main Menu (CTRL/SHIFT/F8)

---

The key MAIN MENU (CTRL/SHIFT/F8) effects a jump into the Main

#### 4.2. Printing of a Report (incl. Selection)

-----  
The purpose of this program is to enable us to present data in any chosen form either on the screen or on paper.

The program also makes it possible for us to print out only certain entries. Perhaps you wish to have a list of all customers in the state of New York who have a turnover of more than 5,000.-- dollars.

The actual printing process is described in Section 4.2.1.

The setting up of formats for presentation on the screen or as a printout is described in Section 4.2.2. At this point you can determine, for example, title, contents and trailer.

The setting up of arithmetic and selection definitions is described in Section 4.2.3. Here you can, for example, add up the turnovers and define for which region you wish the customer list to be printed.

If you do not wish to bother yourself with the definition of formats and arithmetic and selection definitions then all you have to do is have these set up by your dealer.

#### 4.2.1. Printing a report with existing formats and selections

-----  
You can obtain this program either by choosing the number 2 of the Main Menu or by pressing CTRL/F8 (Reportwriter).

#### 4.2.1.1. Database selection of printing program

-----  
( D I A G R A M )

Selection from Database

Volume = Data

.....

CUSTOMERS

STOCK

Disc change

choose with arrow keys, then press RETURN (or terminate with STOP)





Choose with arrow keys then press RETURN (or terminate with STOP)

All arithmetic and selection definitions for the present database will now appear on the screen. The number of definitions and their names will obviously be different from those in this example. Once again move the illuminated yellow field to the definition of your choice with the help of the 4 arrow keys. (CTRL arrow down jumps to AD HOC).

By pressing RETURN you will obtain the selection, whilst you can jump back to the selection of formats by pressing STOP (SHIFT/F8).

If you press the function key END FORM (F4) you can leave out the arithmetic, i.e. you wish to print without arithmetic and selection definitions.

If you choose the field AD HOC the computer will take over whichever definition happens to be in the memory at the time (mostly nothing). This is used mainly for new definitions (Section 4.2.3.) or for taking over definitions from another database.

When you have chosen your arithmetic definition press RETURN.

If you wish to change any of the arithmetic instructions you can press STOP as soon as the computer displays the starting of the printing process. By doing this you will obtain the menu of the printing program. (see Section 4.2.3.)

#### 4.2.1.4. Select start and end of report

-----

( D I A G R A M )

MONROE Database

Reportwriter

FORMAT=STATISTIC ARITHMETIC=STATISTIC OUTPUT=Printer

Database = CUSTOMERS

## Create Report

Start with entry: Anthony B.

End with entry: Eileen O.

Prepare printer.

RETURN = print page by page

A = print automatically

Your chosen formats and the file name of your database are presented on the top of the screen. Should you still wish to make any changes you can obtain the printing menu by pressing STOP (SHIFT/F8).

You will now be asked for the starting value of the report. The smallest or last used value will appear on the screen. If, for example, you wish to start a report with Gubler and not Anthony, you must press the key FAST SEARCH (F1). Delete the word Anthony with the key "SHIFT/LINE DEL" and type in the name Gubler. You can also search for the entry you require by means of the key NEXT ENTRY (F6 in all 4 functions). The change is terminated by means of the RETURN key.

Question:

End at entry: ZOLA S.

The last entry will be displayed. If you wish to end the list at the name Mettler then press the key FAST SEARCH (F1). Delete the name ZOLA by means of the key "LINE DEL" and enter METTLER instead.

You can also enter ZOLA as first entry and ANTHONY as last, in which case the printout will be alphabetically backwards, or in descending sort order.

The computer is now in possession of all the information necessary for printing.

#### 4.2.1.5. Starting the report

-----

If you press RETURN then the computer will stop after each page and wait for you to press RETURN again (for printing on individual sheets of paper).

If you press A the computer will continue to print automatically and without stopping (for continuous forms).

You can make a direct change from printing on individual sheets to continuous forms at any point during the printing process. If, for example, you started the process with RETURN you can now press A, without first having to press STOP, to obtain a printout on continuous forms instead of on individual sheets (or, obviously, vice versa).

You can stop the printing process at any point by pressing the key STOP (SHIFT/F8).

After printing the computer jumps to the printing menu.

#### ( D I A G R A M )

MONROE Database

Reportwriter

FORMAT=STATISTIC

ARITHMETIC=STATISTIC

OUTPUT = Printer

FILE = CUSTOMERS

- 1 = Choice of a different database
- 2 = Choice of a different printing format
- 3 = Correction of printing format or output device
- 4 = Choice of a different arithmetic
- 5 = Correction of arithmetic
- 6 = Starting the report

To obtain the Main Menu , Main Program or End Database press the relevant function keys.

Your choice? .

- If you enter 1 you can select another database (4.2.1.1.).
- If you enter 2 you will obtain the choice of printing formats for the current database (4.2.1.2.)
- If you enter 3 you can change the definition of the chosen printing format (incl. output device).
- If you enter 4 you obtain the arithmetic selection of the current database (4.2.1.3.)
- If you enter 5 you can change the definition of the chosen arithmetic and selections.
- If you enter 6 you can print an additional identical report. "Start with entry" and "End with entry" can be re-entered (4.2.1.5.).

You can also make use of the keys MAIN PROG. (CTRL/F7), MAIN MENU (CTRL/SHIFT/F8) and END DATABASE (CTRL/SHIFT/F7).

#### 4.2.1.6. Copy report formats from one database to another

---

Printing formats and arithmetical definitions can also be taken over from other databases. This can be achieved in the following manner:

1. Selection of the database in which the required definitions are to be found.
2. Selection of printing format and arithmetical definition: proceed exactly as if you wanted to print as far as the point at which the computer asks: "print, start at entry:"  
  
Then you press STOP (Shift/F8) and the printing menu will appear.
3. Enter 1 of the printing menu and then select the database which is to receive the formats you have just chosen.
4. When selecting the printing format, copy the old format,



i.e. that on the other database, by pressing AD HOC.

5. For selecting arithmetic copy the old definition by pressing AD HOC. Change and store as described in point 6.
6. Changing the definition: "Form O.K.? (Yes/No)?" press NO (F8). Now enter a space at the point at which the cursor is and then press END FORM (F4). Now store on diskette.

It is necessary to enter a space because the program can only store after a change has been made.

#### 4.2.1.7. Summary of Printing Process

---

1. Choose either the 2 in Main Menu or the key PRINTPROGR. (CTRL/F8) in another program.
2. Choose the database you require by means of the arrow keys or the function key F5 and RETURN
3. Enter password (if there is one) and press RETURN
4. Choose your printing format by means of the arrow keys (or the function key F5) and press RETURN
5. Choice of arithmetic and selection with the arrow keys (or the function key F5) and RETURN, or pass over the arithmetic with the key END FORM (F4).
6. Enter starting value of the printout or, if O.K., press RETURN. (If you wish to change the printing format or the arithmetic, press STOP).
7. Enter ending value of the printout or, if O.K., press RETURN.
8. Prepare printer for operation
9. Enter either RETURN or A (A = automatic change of pages)
10. Wait until printing process is completed or else interrupt printing by means of the STOP key (SHIFT/F8)
11. Continue in accordance with your choice in the printing menu.



#### 4.2.2. Report Format Definition

-----

The layout of a report on the screen or printer can be chosen in any way we desire. You can store a format definition on the diskette under any name you choose.

You have chosen the 2 of the Main Menu. You then specified your database and were requested to choose your desired format. If you wish for a new format you direct the yellow field to AD HOC and press RETURN. If you wish to change the format you choose the format you desire and press RETURN.

Screen if you choose AD HOC:

R E P O R T W R I T E R 8 8 2 0 P R I N T I N G F O R M A T

Title -----:

Contents -----:

Trailer -----:

Sub total -----:

Total -----:

Length of page ---:            Output (1 = printer, 2 = screen)

Each page of a report is divided into title, contents and trailer.

The T i t l e is printed automatically at the beginning of each new sheet.

After this the computer will print the material contained in the C o n t e n t D e f i n i t i o n. It will continue to print as many lines as there is room for on one full sheet of paper, as defined in the definition of page length.

The printing of the contents will be interrupted early enough to allow the printing of a specified trailer (e.g. Copyright C1982 by Ellenberger Electronic) at the bottom of each page.

By entering the l e n g t h o f p a g e we can print onto forms of various sizes.

The O u t p u t determines whether the Report should be printed on the screen, the printer or the diskete.

The field S u b t o t a l makes it possible for us to define a

subtotal line. The conditions under which a subtotal is released are defined in the arithmetic.

The Total definition is printed at the end of the Report before the last trailer.

The commands for Title, Contents, Trailer, Subtotal and Total are all exactly the same and are described in detail in the following section.

#### 4.2.2.1. Format Commands

---

We now need to know how to achieve these definitions. There are several aids at our disposal for this purpose:

Your database contains a maximum of 20 fields, numbered from 1 - 20. In addition there are also 19 variables at your disposal, numbered from 100 - 118. The definition of the variables themselves is in the arithmetic. When we speak of a field number in the following text, we are referring to the numbers 1 - 20 and 100 - 118.

Codes for Format Definition:

Tx = Set tabulator at position x

If we enter the letter T together with the number 25 as a format command, the computer will tabulate at the 25th position, in exactly the same way as the tabulator of a typewriter. If we enter the letter T without a number following, the computer will choose the nearest value divisible by 8, i.e. 8, 16, 24, 32, etc.

Cx = Carriage return

The letter C has the same effect as the carriage return on a typewriter (i.e. a new line). If we follow the C with a number, the computer will leave the corresponding number of lines free. If, for example, we enter C3, we will obtain a new line preceded by 2 empty lines.

"abc" = Print text abc as it stands

All texts set between the double quotation marks will be printed out by the computer as they stand.

Lx = Print line no. x left justified

If we enter the command Lx then line no. x will be printed left justified. , i.e. the computer will simply continue to print from its position at the time. If x = 1 ... 20 the length of the field will be padded with spaces (as per the definition of the length of the data field). If x = 100 - 118, it will be padded with spaces up to 16 characters.

1x = Print line no. x at left justified

If we enter the command 1x then line no. x will be printed left justified, i.e. the computer will continue to print from its present position. It will only print as many characters as are actually present in the line no. x. This command should generally be used if the report is to be produced on diskette (sequential file).

Rx = Print line no. x right justified

If we enter the command Rx then line no. x will be printed right justified. Where x = 1...20 the length of the field will be padded with spaces (in accordance with the definition of the length of the data field). If numeric, the field will be printed out formatted, i.e. with the decimal point aligned (e.g. 12,244,165.55). Where x = 100 ... 118 the field will be padded with spaces up to 16 characters.

rx = Print line no. x right justified.

If we enter the command rx then line no. x will be printed right justified but unformatted. Where x = 1...20 the length of the field will be padded with spaces (in accordance with the definition of the length of the data field). Where x = 100...118 the field will be padded with spaces up to 16 characters. N.B. numbers will not be formatted.

Uy.z/x = Print line no. x with y positions before and x positions after the comma.

If we enter the command Uy.z/x then line no. x (only numbers) will be printed with y positions in front of and x positions behind the comma. Note that the digits in front of the comma are divided into groups of three, i.e. the space needed must be increased by the number of empty spaces.

Example: U8.2/100 (the variable 100 contains 87656000.5)

Layout: 87 656 000.50

In other words, numbers require space for 13 characters (even smaller numbers). If a number is longer than the definition it will be printed unformatted and preceded by a % sign.

Texts will be printed right justified and with normal field length.

F = Printing of the file name of the chosen database.

We can press F in order to obtain a printout of the file name of the chosen database. (e.g. Customers). This is useful mainly in the title.

S = Printing of arithmetic and selection definition

The file name of the arithmetic and selection definition can be obtained by pressing S. This is useful mainly in the title.

E = Printout of title of database file

The command E obtains the printout of the name of the database file title. This may not be longer than 80 characters. This may be of use in the title or as a trailer.

Px = Number pages starting with x

The pages will be numbered starting with the number x. If no x is entered, numbering will commence with 1.

#x = Printout of field definition (prompt text)

This command obtains the printout of the prompt text of line number x. This is particularly useful for column headings.

'x' = Printing of an ASCII sign

All numbers set between single quotation marks are understood as ASCII code. This is particularly useful with certain printers for obtaining a specific type of print. The list of ASCII codes has to be studied in the instructions of the respective output units (printers). It is possible for several ASCII codes to be featured in one command.

Example:

'27,65'

The printer will first receive the code 27 and then 65 (escape sequence). This will, on an Epson printer, for example, effect a switchover

to upper case characters.

Ix = Entry counter

I contains the starting value x (e.g. 1). After each printed entry x is increased by one numerator.

Example:

I1

The first entry will be numbered as 1, the second as 2, etc.

(x,y) = Print character y x-many times

In this case the x represents the number and the y the ASCII code of a given character.

Example:

(40,45)

The character with the ASCII code 45 (-) will be printed 40 times. In this example underlining will take place.



#### 4.2.2.2. New entry and changing of printing format

-----  
Before you changed to the printing program you had the database definition printed out (main menu 5). This contains all data essential for format definition.

##### - General

-----  
You have chosen the printing program. You then chose the database you require and have now been requested to enter the format you would like. When you have chosen the format you desire press RETURN.

If you require a new format definition guide the yellow field to AD HOC and press RETURN.

If you wish to make a change in an existing format press the NO (F8) key on the question "Form O.K.?".

The cursor is now situated on the line "Title".

The following keys are at your disposal for making corrections:

<-	move cursor one character back
->	move cursor one character further
CTRL <-	jump to first character in field
CTRL ->	jump to last character in field
INSRT	insert character(s)
SHIFT/LINE/DEL	delete whole line
DEL CHAR	delete character over cursor
BACK SPACE	delete character left of cursor
NEXT FIELD (F5)	jump to next field
LAST FIELD (CTRL/F5)	jump to last field (output)
PREVIOUS FIELD (SHIFT/F5)	jump to previous field
1.FIELD (CTRL/SHIFT/F5)	jump to first field (title)
HOME	jump to first field (title)
END FORM (F4)	conclude entry

Changes and new entries will be handled in exactly the same manner. If you wish to make a new entry and there is already something on that line, you can delete the line first by means of the SHIFT/LINE DEL key.

The best way to describe the entries is by means of an example. We have set up the following database:

.....

\*\*\*\*\*

DATABASE DEFINITION

\*\*\*\*\*

Prompt texts *****	Data type *****	Field length *****
1. Title_____	CcPS	5
2. **Surname/First name_____	KCcPS	25
3. Spare_____	CcPS	18
4. Street_____	CcNPS	20
5. Zip code_____	N	4
6. Place_____	CcNS	15
.....		
7. Selection code_____	CP	12
8. Discount code_____	CN	3
9. Turnover previous year_____	F.2	10
10. Turnover current year_____	F.2	10
11. Last order_____	D	8

\*\*\*\*\*

Title of Database:

\*\*\*\* COMPUTER CUSTOMERS ell-elec \*\*\*\*

File name (for storing on diskette): CUSTOMERS

Password READ: none  
 Password WRITE: none  
 Password GLOBAL: none

Option ('U' = USA 'E' = EUROPE): E

(Standardmodus fuer Doublettenanzeige): 4 (to be translated)

\*\*\*\*\*

\* Summary of data types

=====

Combineable data types:

-----

C = Upper case characters (A..Z)	c = Lower case characters (a..z)
U = Diphthongs upper case	u = Diphthongs lower case
N = Numbers (0..9)	P = Punctuation (.,-')
S = Space	- = Minus sign

Non-combineable data types

-----

A = Anything permitted (ASCII)  
F.x = Floating comma numbers (x = number of places after comma)  
can only be combined with minus sign (-)  
D = European date (DD,MM,YY)

\*\*\*\*\*

- Entering title

-----

Example: T7 E T48 "Luxram Ltd." T73 "PAGE" P1 C T7 (36,45) C T7  
#2 T26 #4 T48 #5 T54 #6 T70 "Turnover 1981" C (80,45) C

Effect, if only the title is defined:

****	COMPUTER CUSTOMERS	ell-elec	****	Luxram Ltd.	PAGE 1
Surname/Name	Street	Zip code	Place	Turnover 1981	

-----

T7 Set tabulator at position 7 (position of printing head)  
 E Print title (Customer Database)  
 T48 Set tabulator at position 48  
 "Luxram Ltd." Print name of firm with 1 space between title and  
 name of firm  
 T73 Set tabulator at position 73  
 "PAGE" Print the word "PAGE" (Page + 1 space) at tabulator  
 position 73  
 P1 Print page numbers starting with 1  
 C One carriage return plus one empty line  
 T7 Set tabulator at position 7  
 (36,45) Starting at position 7 print the character 45 (on  
 Epson printer the hyphen - ) 36 times. This will  
 underline the title.  
 #2 Print field name of field no. 2 at tabulator  
 position 7. This is followed by the printing of  
 the field names of fields 4, 5 and 6 at tabulator  
 positions 26, 48 and 54 respectively.  
 T70 Set tabulator at position 70  
 "Turnover 1981" Print the words: Turnover 1981 at position 70  
 C One carriage return plus one empty line  
 (80,45) Print the character 45 eighty (80) times starting  
 at the beginning of the new line.  
 C One carriage return plus one empty line

The title will be printed out at the beginning of each new page.

- Entering Contents  
 -----

Example: I1 T7 12 T26 14 T48 15 " " 16 T68 U8.2/10 C

Effect, if only contents is defined:

1	Austin M.	58 Shepherd Dr.	TX 77007	Houston	12	456.30
2	Ewing R.	2 Summit Rd.	CT 06712	Prospect	9	460.45
3	Gardner P.	103 Wolf Rd.	NY 12205	Albany	3	240.00
4	Hampton L.	36 Paramount Bl.	CA 90712	Lakewood	14	020.40
5	Lucas M.	123 Kirby Ave.	OH 44108	Cleveland	4	527.00
6	Masters R.	815 Santa Fe St.	CA 92109	San Diego	9	360.55
7	Merriman R.	24 Rondell St.	NJ 07950	Morris Plns	2	340.00
8	Monroe A.	78 Third Ave.	NY 10017	New York	20	467.50
9	Pinter Th.	142 W. 50th St.	NY 10020	New York	7	856.00
10	Robins M.	16 Cottage St.	MA 01101	Springfield	6	425.55
11	Rose A.	362 Anderson St.	CA 90033	Los Angeles	6	467.00
12	Sturgis J.	445 Harris St.	IL 60609	Chicago	13	798.50
13	Teacher A.	29 4th Ave. S.	WA 98314	Seattle	14	060.00
14	Zola E.	201 Utah Ave.	CA 94080	S. Francisco	8	424.00

I1 Each field is numbered on the left hand side with starting value of 1  
T7 Set tabulator at position 7  
12 Print field 2 (contains name) starting at position 7  
T26 Set tabulator at position 26  
14 Print field 3 (contains street) starting at position 26  
T48 Set tabulator at position 48  
15 Print field 5 (contains zip code) starting at position 48  
" " Insert one space (to leave room between zip code and place)  
16 Print field 6 (containing place) starting at present position  
T68 Set tabulator at position 68  
( U8.2/10 Print field 10 (contains turnover) formatted with 8 positions before and 2 after the comma.  
C One carriage return

Important: The definition of contents must always be followed by a carriage return (except in the case of special layouts)

Entering trailer  
-----

Example: C " (Confidential. For internal use only)" C

Effect if title, contents and trailer are defined:

\*\*\*\* COMPUTER CUSTOMERS ell-elec \*\*\*\* Luxram Ltd. PAGE 1

	Surname/Name	Street	Zip code	Place	Turnover 1981
1	Austin M.	58 Shepherd Dr.	TX 77009	Houston	12 456.30
2	Ewing R.	2, Summit Rd.	CT 06712	Prospect	9 460.45
3	Gardner P.	103 Wolf Rd.	NY 12205	Albany	3 240.00
4	Hampton L.	363 Paramount Bld	CA 90712	Lakewood	14 020.40
5	Lucas M.	123 Kirby Ave.	OH 44108	Cleveland	4 527.00
6	Masters R.	815 Santa Fe St.	CA 92109	San Diego	9 360.55
7	Merriman R.	24 Rondell St.	NJ 07959	Morris Plns	2 340.00
8	Monroe A.	78 Third Ave.	NY 10017	New York	20 467.50
9	Pinter Th.	142 W. 50th St.	NY 10020	New York	7 856.00
10	Robins M.	16 Cottage St.	MA 01101	Springfield	6 425.55

11	Rose A.	362 Anderson St.	CA 90033	Los Angeles	6	467.00
12	Sturgis J.	445 Harris St.	IL 60609	Chicago	13	798.50
13	Teacher A.	29 4th Ave. S.	WA 98134	Seattle	14	060.00
14	Zola E.	201 Utah Ave.	CA 94080	S Francisco	8	424.00

(Confidential. For internal use only)

One space will be printed, followed by the above text.

The trailer will be printed out at the bottom of each page.

The computer calculates by itself how many lines can be printed on each page without exceeding the prescribed page length.

Entering the Subtotal

-----

Example: (80,45) T7 "Subtotal of group" T68 U8.2/100 C 80,61) C

Effect, if title, contents, trailer and subtotal are defined:

\*\*\*\* COMPUTER CUSTOMERS ell-elec \*\*\*\* Luxram Ltd. PAGE 1

	Surname/Name	Street	Zip code	Place	Turnover	1981
1	Austin M.	58 Shepherd Dr.	TX 77007	Houston	12	456.30
2	Ewing R.	2 Summit Rd.	CT 06712	Prospect	9	460.45
3	Gardner P.	103 Wolf Rd.	NY 12205	Albany	3	240.00
4	Hampton L.	363 Paramount Bld	CA 90712	Lakewood	14	020.40
5	Lucas M.	123 Kirby Ave.	OH 44108	Cleveland	4	527.00
6	Masters R.	815 Santa Fe St.	CA 92109	San Diego	9	360.55
7	Merriman R.	24 Rondell St.	NJ 07950	Morris Plns	2	340.00
8	Monroe A.	78 Third Ave.	NY 10017	New York	20	467.50
9	Pinter Th.	142 W. 50th St.	NY 10020	New York	7	856.00
10	Robins M.	16 Cottage St.	MA 01101	Springfield	6	425.55

-----

Subtotal of the group

90 153.75

11	Rose A.	362 Anderson St.	CA 90033	Los Angeles	6	467.00
12	Sturgis J.	445 Harris St.	IL 60609	Chicago	13	798.50
13	Teacher A.	29 4th Ave. S.	WA 98314	Seattle	14	060.00
14	Zola E.	201 Utah Ave.	CA 94080	S Francisco	8	424.00

(Confidential. For internal use only)

```

(80,45)      Print the character 45 eighty (80) times (the character
              45 is a hyphen on an Epson printer.
T7 "Sub...." Starting at position print "Subtotal of the group".
T68          Set tabulator at position 68
U8.2/100     Print the variable 100 (calculated in the
              arithmetic) formatted with 8 positions before and
              2 after the comma, starting at position 68.
C           One carriage return plus one space
(80,61)     Print the character 61 eighty (80) times (this is
              the equals sign (=) on an Epson printer).
C           One carriage return plus one space

```

In this case we are only dealing with the layout of the subtotal.  
 The actual decision as to when it should be printed takes  
 place in the arithmetic.

- Entering total

Example: (80,45) T7 "Total" T68 U8.2/101 C (80,61) C

Effect, if title, contents, trailer and total are defined:

\*\*\*\* COMPUTER CUSTOMERS ell-elec \*\*\*\* Luxram Ltd. PAGE 1

	Surname/Name	Street	Zip code	Place	Turnover 1981
1	Austin M	58 Shepherd Dr.	TX 77007	Houston	12 456.30
2	Ewing R.	2 Summit Rd.	CT 06712	Prospect	9 460.45
3	Gardner P.	103 Wolf Rd.	NY 12205	Albany	3 240.00
4	Hampton L.	363 Paramount Bld.	CA 90712	Lakewood	14 020.40
5	Lucas M.	123 Kirby Ave.	OH 44108	Cleveland	4 527.00
6	Masters R.	815 Santa Fe St.	CA 92109	San Diego	9 360.55
7	Merriman R.	24 Rondell St.	NJ 07950	Morris Plns	2 340.00
8	Monroe A.	78 Third Ave.	NY 10017	New York	20 467.50
9	Pinter Th.	142 W. 50th St.	NY 10020	New York	7 856.00
10	Robins M.	16 Cottage St.	MA 01101	Springfield	6 425.55
11	Rose A.	362 Anderson St.	CA 90033	Los Angeles	6 467.00
12	Sturgis J.	445 Harris St.	IL 60609	Chicago	13 798.50
13	Teacher A.	29 4th Ave. S.	WA 98134	Seattle	14 060.00
14	Zola E.	201 Utah Ave.	CA 94080	S Francisco	8 424.00
Total					132 903.25

(Confidential. For internal use only)

(80,45) Print character 45 eighty (80) times  
T7 Set tabulator to position 7 and then print  
"Total"  
T68 Set tabulator at position 68  
U8.2/101 Print the variable 101 (calculated in the  
arithmetic) formatted with 8 positions before  
and 2 after the comma starting at position 68  
C One carriage return  
(80,61) Print the character "=" 80 times (underlining)  
C Conclude with one carriage return

In this case we are dealing only with the layout of the total.  
The calculation of the total occurs in the arithmetic. The total  
is always printed out at the end of the whole report before the  
last trailer.

The end is reached either when the last value (print from ... to

Effect, if title, contents, trailer, subtotal and total are  
defined:

\*\*\*\* COMPUTER CUSTOMERS ell-elec Luxram Ltd. PAGE 1

	Surname/Name	Street	Zip code	Place	Turnover 1981
1	Austin M.	58 Shepherd Dr.	TX 77007	Houston	12 456.30
2	Ewing R.	2 Summit Rd.	CT 06712	Prospect	9 460.45
3	Gardner P.	103 Wolf Rd.	NY 12205	Albany	3 240.00
Subtotal of the group					25 156.75
4	Hampton L.	363 Paramount Bld.	CA 90712	Lakewood	14 020.40
5	Lucas M.	123 Kirby Ave.	OH 44108	Cleveland	4 527.00
6	Masters R.	815 Santa Fe St.	CA 92109	San Diego	9 360.55
7	Merriman R.	24 Rondell St.	NJ 07950	Morris Plns	2 340.00
Subtotal of the group					30 247.95
Total					55 404.70

(Confidential. For internal use only)



The following is a summary of all printing instructions necessary if you wish to produce the above result:

R E P O R T W R I T E R 8820 PRINTING FORMAT

Title-----: T7 E T48 "Luxram Ltd." T73 "PAGE" P1 C T7 (36,45)  
C T7 #2 T26 #4 T48 #5 T54 #6 T70 "Turnover 1981" C (80,45) C

Contents----: I1 T7 12 T26 14 T48 15" " T68 U8.2/10 C

Trailer----: C T7 "(Confidential. For internal use only)" C

Subtotal----: (80,45) T7 "Subtotal of the group" T68 U8.2/100 C  
(80,61) C

Total-----: (80,45) T7 "Total" T68 U8.2/101 C (80,61) C

Page length-: 22 Output (1 = printer, 2 = screen): 1

Entry O.K.? (Yes/No)?

In order to simplify reproducing we will illustrate the arithmetical definition belonging to this database. However, we will not go into any details at this point (the arithmetic is described on the following pages).

R E P O R T W R I T E R 8 8 2 0 A R I T H M E T I C

Non-selective arithmetic: V105 = ("xxxxxxxxxxxxxxxx" + D2) : SUB  
= V105 NE V106:

Selective arithmetic----: V100 = V100 + D10 : V101 = V101 + D10

Entry OK? (Yes/No)?

- Length of Page

-----

By entering the length of the page we obtain the possibility of printing onto forms of various sizes. If we do not enter any specific length, the entire report will be printed out without making allowance for this.

To specify the length of a page you must enter the number of lines it contains (screen = 22 lines, continuous form paper A4 vertical = 72 lines).

- Output

-----

The entry of output device is to determine whether the report will be directed to the screen, printer or diskette. We enter a 1 for the printer, and a 2 for the screen. If the output is to be on diskette, the computer will request the file name under which the sequential file is to be stored on the diskette (e.g. CUSTOMERS:). A file created in this manner can be returned to a database by means of the main program function "MIX", since it is a sequential file.

- Storing the format on a diskette

-----

After the entry the computer will ask:

Form OK? (Yes/No)?

If you want to make any changes then you must reply with the NO key (F8) and if the entry is to remain as it is you can reply with the YES key (F7).

Question:

Store format on diskette (Yes/No)?

(this appears only if a change has been made)

You can now store the newly set up or revised format onto the diskette. Reply with the YES key (F7).

Display:

Store format on diskette FILE NAME?

Choose any name you wish for this format (e.g. TURNOVER). The number of characters in the name may not exceed 10, but you may make use of any of the letters and digits you wish.

This particular format can now be recalled from the diskette at any time, by means of its given name.

- Entering new formats (Summary):

-----

(If database definition not yet submitted it must first be printed out: Main Menu 6)

1. Choose the 2 in the Main Menu. In any other program press the key PRINT PROGR (CTRL/F8)
2. Choose your desired database by means of the arrow keys or the function key F5 and RETURN
3. Enter your password (if there is one) and press RETURN
4. Direct yellow field to AD HOC by means of the arrow keys or function key F5 and press RETURN
5. Enter title definition and RETURN
6. Enter contents definition and RETURN
7. Enter trailer definition and RETURN
8. Enter subtotal definition and RETURN
9. Enter total definition and RETURN
10. Enter page length and RETURN
11. Enter output device (1, 2 or name of file) and RETURN
12. Reply to question as to whether form OK with YES (F7)
13. Reply to question as to whether to store on diskette with YES (F7)
14. Enter file name and RETURN
15. For choice of arithmetic press END FORM (F4)
16. Press STOP (SHIFT/F8)

You are now at the Printing Menu

1

2

3

4

5

4.2.3. Arithmetic and Selection

- General:

In this section we deal with all desired mathematical calculations, the calculation of subtotals and the definition for a selected printout.

A selection is a condition for a report. If, for example, we want a report on all customers resident in New York, our selection would be called "NEW YORK".

You have chosen the Printing Program. You then chose your database and your printing format. You will now be instructed to choose the arithmetic. To enter a new arithmetic definition you must direct the yellow field to AD HOC and press RETURN.

Screen on choosing AD HOC:

R E P O R T W R I T E R      8 8 2 0      A R I T H M E T I C

.....

Non-selective arithmetic:

Selective arithmetic----:

.....

Form OK? (Yes/No)?

We differentiate between two different definitions of arithmetic:

- non-selective arithmetic
- selective arithmetic

In order to achieve a better understanding of the above we ought to be acquainted with the order in which the printing process operates:

1. The contents of the card index is read
2. The non-selective arithmetic is calculated
3. The selection condition is tested.  
If the selection condition is not fulfilled, the computer will proceed to read the next entry (return to 1.).
4. The subtotal condition is tested  
If the subtotal condition is fulfilled, (SUB <> "0"), the computer will print the subtotal line (printing of subtotal variables)
5. The selective arithmetic is calculated
6. The contents of the database entry is printed
7. If this was the last entry the total line will be printed, if not then the computer will proceed to read the next entry (return to 1.).

- Non-selective arithmetic  
-----

Under non-selective arithmetic a calculation is carried out following the reading of the database entry, irrespective of whether or not the entry is later to be printed.

Under non-selective arithmetic the following occurs:

- calculation of all entries
- definition of the selection
- definition of subtotal, providing that the entry in question is to be printed a f t e r the subtotal.

- Selective arithmetic  
-----

Under selective arithmetic a calculation will only be made if the particular entry has been selected.

Under selective arithmetic the following occurs:

- calculation of all entries which have been selected
- definition of subtotal, providing that the entry in question is to be printed b e f o r e the subtotal.

#### 4.2.3.1. Arithmetic and selection commands

---

As in the setting up of format definitions there are several signs for helping us in the definition of the arithmetic.

These commands can be tested in a special practice programme (see Section 4.7.4.).

Codes for arithmetic definition:

SEL Selection variable

---

This variable is used for the selection. The card index entry will be printed in accordance with the format definition of the contents only if SEL has the value of NE "0". The starting value of SEL is "-1", i.e. unless there is a special calculation of SEL, all entries will be printed.

Example: SEL = V100 GT V101 ! V100 greater than V101

SUB Subtotal variable

---

This variable is used to specify the subtotal condition. The subtotal will be printed in accordance with the format definition only where SUB has the value of NE "0".

When the subtotal line has been printed the value of all variables which have been printed is deleted. The starting value of SUB is always nothing (not to be confused with "0") i.e. no subtotal is ever printed without the calculation of SUB.

Example: SUB = V102 GT V103 ! V102 greater than V103

Vx Auxiliary variables

---

We have at our disposal 196 variables, where x can take the value of 100 - 118. The starting value of a variable is nothing (not be confused with "0").

Example: V100 = V100 + D9

Dx Data fields

-----

Each card index entry has a maximum of 20 data fields numbered from 1 - 20. These data fields can be called up with the command Dx, where x can take on the value of 1 - 20.

Example: V100 = D9 + D10 ! adds data field no. 9 to data field no. 10. Result in V100

"..."Constants

-----

All digits or letters set between double quotation marks are read as constants.

Examples: V100 = D9 \* "0.1"

V101 = "NY-10020 " + D6 ! If, for example, "New York" is in D6, the addition in V101 will be as follows:

NY-10020 New York

! Comments

-----

Any text preceded by an exclamation mark will be ignored and regarded as having an explanatory function. A second exclamation mark following the text concludes the comments and is read as a colon. Comments are used as personal documentation of arithmetic commands. We must take care to enter neither a colon nor an exclamation mark at the very end of the arithmetic instructions.

Example: V100 = V100 + D9 ! Subtotal of field no. 9

: Separating sign for calculations

-----

If two different calculations are carried out, a colon indicates the end of the first calculation.

Examples:

V100 = V100 + D9: V101 = V101 + D10

or, if you wish to add comments:

V100 = V100 + D9 ! Subtotal of field no. 9 ! V101 = V101 + D10 ! Subtotal of field no. 10



( ) Parentheses  
-----

Parentheses are used to achieve a better overall view and to override left to right calculations. Expressions inside parentheses are calculated first.

Example: V100 = ("6"/("5"- "2")) results in V100 = "2"

+\*/ Arithmetical operators  
-----

Example: V100 = "2"+"6"/"4"\*"2" results in V100 = "4"

The addition of letters ("A"+"B") results in the letters being joined together (AB).

Example: V100 = "NY-" + "10020" results in V100 =  
"NY-10020"

Subtraction, division and multiplication of letters result in Error, as does the division by 0 (zero). Erroneous values are not printed in the report.

AND Boolean operators  
OR  
-----

The effect of the boolean operators is described in detail in Section 5.

Operations using letters as argument result in Error and are not printed in the report.

Example of an "AND" operation: V100 = (D9 GT "10000") AND (D9 LT "20000")

Comparison operators  
-----

We use comparison operators to compare two expressions. A Comparison operation can also be regarded as a proposition. If the proposition is correct we receive the result "-1", if not we receive the result "0" (zero).

EQ	Equal
NE	Not equal
GT	Greater than
LT	Less than
GE	Greater or Equal
LE	Less or Equal
EL	Equal left \$

EI

## Equal instring

### Examples:

EQ V100 = ("5" EQ "2")

The proposition is that 5 is identical with 2. As a result the variable V100 receives a 0, since the proposition was incorrect.

Comparison operators are important particularly for selections and subtotals.

If, for example, we want a report of all the people who come from New York and the place New York is in the database in field 5, the condition would be:

EL SEL = (D6 EL "NEW YORK")

In this case the field no. 6 (Place) is compared with "NEW YORK". The comparison works in such a way that the left part of field 6 is compared with New York. If, however, we use a place like NEW YORK CITY this would appear on the report, since the letters NEW YORK are contained starting on the left of the field. The variable SEL receives an "-1" only if field no. 6 begins with NEW YORK, and, if not it will receive a "0".

EQ V100 = (V101 EQ "5")

V100 will receive the value "-1" as a result if V101 is identical with 5, and if not the result will be "0".

EL SEL = (D2 EL "A")

In this case the field 2 of a database (containing name in our example) is compared with A. The comparison runs in such a way that the left part of field 2 is compared with A. Only if field 2 starts on the left with an A (i.e. all names beginning with A) will the variable SEL receive a "-1". In all other cases it will receive an "0".

In practice we thus receive a report of all customers whose names begin with A. (In our example the name is the sort field. It is therefore simpler to choose the start printing at the first name with A and end at the last name with A.)

EQ SEL = (D5 EQ "10020")

In this case the field no. 5 of a card index (contains zip code) is compared with 10020. A comparison for an

"identical" value will be run. Only if the field 5 contains the number 10020 exactly and nothing else at all (not even spaces) will the variable SEL receive the value "-1". In all other cases it will receive the value "0". In practice we receive a report of all persons in the area of New York with the zip code 10020.

EI SEL = (D3 EI "med")

In this case field no. 5 of a database (contains profession) is compared with "med". A comparison is run based on the criterion "med" being "in the text" In other words, if the word "med" appears anywhere in field 5 of the database, the variable SEL will receive the result "-1", and if not it will receive an "0".

GT V100 = (V101 GT "5")

V100 receives the result "-1" if V101 is greater than 5, and if not it receives an "0"

LT V100 = (V101 LT "5")

V100 receives the result "-1" if V101 is smaller than 5, and if not it receives an "0".

GE V100 = (V101 GE "5")

V100 receives the result "-1" if V101 is either greater or the same as 5, and otherwise it receives an "0".

LE V100 = (V101 LE "5")

V100 receives the result "-1" if V101 is either smaller or the same as 5, and otherwise it receives an "0".

NE V100+ (V101 NE "5")

V100 receives the result "-1" if V101 is not identical with 5, otherwise it receives an "0".

On setting up an arithmetic or selection definition we must always work with variables. Calculations must be co-ordinated with variables (V100=, V104=, SUB=, SEL= etc.).

Arithmetical calculations are always carried out from left to right, expressions in parentheses being calculated first.

Example:

V100 = "2"\*((- "2"+"5")\*( "8"+"2")-"1")

As a result the variable 100 will be co-ordinated with the number

58.

Parentheses also serve to give a clearer overall view:

Example:           SEL= (D7 EL V101)       is the same as  
                  SEL= D7 EL V101

Spaces can be integrated between the commands at any time. They will be ignored. Spaces in the text (" 2") will obviously be treated as spaces.

Example:           V110="2"+"5"           is the same as  
                  V110="2"    +    "5"

Variables can have a maximum length of 16 characters. If we give a variable more than 16 characters the remaining characters on the right hand side will be automatically cancelled out.

An erroneous arithmetic definition will be rejected by the computer for correction.

Examples of arithmetic and selection definitions based on the following database:

\* \* \* \* C O M P U T E R C U S T O M E R S e l l - e l e c \* \* \* \*

\*\*\*\*\*

1.	Title_____:	Mr.
2.	**Surname/Name_____:	Monroe A.
3.	Spare_____:	
4.	Street_____:	78 Third Ave.
5.	Zip Code_____:	NY 10017
6.	Place_____:	New York
7.	Selection Code_____:	F,C
8.	Discount Code_____:	X15
9.	Turnover previous year__:	70 219.80
10.	Turnover current year__:	20 467.50
11.	Last order_____:	6.11.81

\*\*\*\*\*

Enter command with function key (RETURN = last command = F3)

Examples:

```
SEL=      (D6 EL "SEATTLE")
```

We will now receive a printout of all entries in which the word SEATTLE appears on the left hand side of field 6. I.e. we receive a report of all persons who are resident in Seattle.

```
SEL=      (D6 EL "SEATTLE") OR (D6 EL "NEW YORK")
```

We receive a report of all persons resident in Seattle or New York.

```
SEL=      (D6 NE "SEATTLE") AND (D6 NE "BERN")
```

We receive a report of all persons not resident in Seattle or New York

```
SEL=      ((D10 GT "1000") AND (D10 LT "10000")) AND  
          ((D6 EL "SEATTLE") OR (D6 EL "NEW YORK"))
```

We receive a report of all persons whose turnover is more than \$1000.-- and less than \$10000.-- and who live in either Seattle or New York.

```
SUB=      (D10 GT "5000")
```

The subtotal is printed if the turnover is greater than \$ 5000.--.

```
V100=     V100+D10: SUB=(V100 GT "100000")
```

The subtotal is printed as soon as the addition of turnovers exceeds 100 000.-- dollars.

```
SUB=      (D5 NE V101):V101=D5
```

As soon as the zip code changes a subtotal is printed. (This only serves a purpose if the database is sorted according to zip codes.)

```
V100=     "xxxxxxxxxxxxxxxx" + D2 : SUB = (V100 NE V101) : V101  
          = V100
```

In this case we take advantage of the fact that a variable may not have more than 16 characters. We add the data line 2 to 15 characters of any kind. We only add the first letter and the rest is cut off. We then compare the variable 100 with the variable 101 (contains the last of the first letters). If the first letter has changed a subtotal is printed. In this way we obtain an alpha-

betical list and a subtotal is automatically printed out after each change in the first letter.

```
V100=      V100+"1"/ (V100 LE "500")
```

As soon as the variable V100 exceeds 500, the computer registers an error (division by zero) and it will not be printed out.

```
V100=      V101 NE "-1"
```

In this way we produce the boolean operator NOT

```
V109=      -V109 * (V109 LE "10")
```

As soon as the variable 109 exceeds 10 it will be set at 0.

#### 4.2.3.2. New entry and changes in arithmetic definitions

-----  
You have selected the printing program. You then chose your desired database and the printing format and will be asked to choose the arithmetic. For a new arithmetic definition direct the yellow field to AD HOC and press RETURN. For changing choose the arithmetic you require and press RETURN.

The cursor will now be situated on the line "Non-selective arithmetic".

The following keys are at your disposal for correction purposes:

<-	cursor back one character
->	cursor one character further
CTRL<-	jump to first character of field
CTRL ->	jump to last character of field
INSRT	insertion of character(s)
SHIFT/LINE DEL	delete entire line
DEL CHAR	delete character on top of cursor
BACK SPACE	delete character left of cursor
NEXT FIELD (F5)	jump to next field
LAST FIELD (CTRL/F5)	jump to last field (issue)
PREVIOUS FIELD (SHIFT/F5)	jump to previous field
1ST FIELD (CTRL/SHIFT/F5)	jump to first field (title)
HOME	jump to first field (title)
END FORM (F4)	entry ended
STOP (SHIFT/F8)	jump back to choice of arithmetic

Changes and new entries are treated in exactly the same manner. If you wish to make a new entry on a line on which there is already something written, you can delete the line with LINE DEL.

You can now enter the non-selective arithmetic.

When you have completed the entry press RETURN

The cursor will now be situated on the line "Selective arithmetic".

Make your entry and press RETURN.

After the entries the computer will ask:

Form OK? (Yes/No)?

Reply with the key NO (F8) if you still want to change something and with the key YES (F7) if you wish to leave the entry as it stands.

Question:

Store the arithmetic on diskette (Yes/No)?

You can now store the newly set up or revised arithmetic definition on diskette. Reply with the YES key (F7).

Display:

Store arithmetic on diskette FILE NAME?

You should now give the arithmetic any name you wish (e.g. TURNOVER). The name should not contain more than 10 letters or numbers.

This arithmetic can now be recalled at any time from the diskette by using the given name.

Summary of entry of new arithmetic definition:

- 
1. Choose 2 in the Main Menu
  2. Choose desired database by means of arrow keys and press RETURN.
  3. Enter password and press RETURN
  4. Choice of desired format by means of arrow keys and press RETURN.
  5. Move yellow field in choice of arithmetic to AD HOC by means of the arrow keys and press RETURN.
  6. Enter non-selective arithmetic and press RETURN.
  7. Enter selective arithmetic and press RETURN.
  8. Reply to question as to whether or not form OK with YES key (F7).
  9. Reply to question as to whether or not to store arithmetic on diskette with YES key (F7).
  10. Enter file name and press RETURN.
  11. Press the STOP key (SHIFT/F8)
- You are now in the printing menu.



#### 4.2.4. Examples of "Printing of a Report"

---

The three examples which we are going to discuss are all on the demo diskette and refer to the demonstration database named "CUSTOMERS":

##### 4.2.4.1. Example Address Labels

---

Name of the definition on the demo diskette: LABEL

We wish to print the addresses of all customers onto a roll of self-adhesive labels.

Definition of printing format:

R E P O R T W R I T E R   B B 2 0   P R I N T I N G   F O R M A T

Title-----:

Contents-----:      T5L1 c T5L2 cT5L4 c2 T5L5" "L6 c4

Trailer-----:

Subtotal-----:

Total-----:

Length of page-----:      Output (1 = printer, 2 = Screen): 1

All we require for the definition is the contents line. We can by-pass the arithmetic by means of the key END ENTRY (F4).

Effect of the printing format in printing:

Mr.  
Austin F.  
58 Shepherd Dr.

TX 77007 Houston

Mr.  
Adler K.  
561 Wolf Rd.  
NY 12205 Albany

Mr.  
Benjamin S.  
432 Harris St.  
IL 60609 Chicago

#### 4.2.4.2. List of customers

-----

Name of definition on the demo diskette: CUSTOMER LIST

We want a list of all customers with their complete addresses.

In this example we have also defined a title. This title will be printed on each page separately.

Definition of printing format:

### REPORTWRITER 8820 PRINTING FORMAT

Title-----: T7 "Extract from customer list - Luxram Ltd."  
T62 "Page" P1 C T7 (38,61) T10 "(Interest Group C,B or H)" C2 T7  
#2 T27 #4 T47 #5 T53 #6 T73"Group"C T7"-----"T27"  
-----"T47"-----"T73"-----"C2

Contents-----: I T712 T2714 T47 15 T53 16 T69r7 C

Trailer-----: C3

Subtotal-----:

Total-----:

Length of page----: 22 output (1 = printer, 2 = screen): 1

Entry OK? (Yes/No)?

Arithmetic and selection definitions:

REPORTWRITER 8820 ARITHMETIC

Non-selective arithmetic: Sel = ((D7 EI "C") OR (D7 EI "B") OR  
(D7 EI "H"))

Selective arithmetic-----:

Entry OK ? (Yes/No)?

Effect of the printing format in printing:

Extract from Customer list - Luxram Ltd.

Page 8

=====  
(Interest groups C,B,or H)

	Surname/Name	Street	Zip code	Place	Group
317	Ewing B.	65 Santa Fe St.	CA 92109	San Diego	B, S, H, F
318	Ewing F.	426 W 50th St.	NY 10020	New York	F, C
319	Ewing R.	2, Summit Rd.	CT 06712	Prospect	B, F, P
320	Ewing S.	78 Third Ave.	NY 10017	New York	F, C
321	Feiner A.	345 Anderson St.	CA 90033	Los Angeles	B, P
322	Feiner L.	268 Utah Ave.	CA 94080	S Francisco	C, S, B
323	Feiner M.	1474 Price Rd.	TX 78520	Brownsville	C, F, S, B
324	Feiner S.	398 Westholme	TX 77063	Houston	P, B, H, F, C
325	Gardner B.	186 Rutland Dr.	TX 78758	Austin	H, S, C
326	Gardner P.	103 Wolf Rd.	NY 12205	Albany	H, P
328	Gardner MS.	6458 Stearns Ave.	CA 90040	Los Angeles	H, E, S, B
329	Graham W.	1420 Piccard Dr.	MD 20854	Rockville	B

4.2.4.3. Selected customer list with calculation

-----  
Name of the definition on the demo diskette: TURNOVER 1

We want a report of all customers who have the selection code B on line 7. In addition we want a total of all turnovers:

Definition of printing format:

REPORTWRITER 8820 PRINTING FORMAT  
Title-----: T9 "C u s t o m e r s E L L - E L E C with  
turnover total " C(80,45) C "NAME" T28 "PLACE" T59 "PREV YEAR"  
T72 "CRNT YEAR" C (80,45) C  
Contents-----: L2 T28 L6 T54 R9 T69 R10 C  
Trailer-----: C T9 "In the current year the turnover is  
calculated until 15.10.81" C  
Subtotal-----: C T28 "Subtotal = " T52 U9.2/101 T67 U9.2/102  
C T54 (27,45) C  
Total-----: C T28 "Total = " T52 U9.2/103 T67 U9.2/104 C  
T54 (27,61) C  
Length of page----: 22 output (1 = printer, 2 = screen): 1  
Entry OK ? (Yes/No)?

In this case we have also defined the subtotal, total and trailer lines.

Arithmetic and selection definition

R E P O R T W R I T E R   8 8 2 0   A R I T H M E T I C

.....

Non-selective arithmetic: V109= "xxxxxxxxxxxxxxxxx"+D2 ! = auxiliary  
variable for end of subtotal ! SUB = V109 NE V108 : V108= V109 :  
SEL = D7 EI "B"

Selective arithmetic----: !Subtotal prev year! V101=V101+D9  
!Subtot crnt year! V102=V102+d10 !Tot prev year! V103=V103+d9 !  
Tot crnt year! V104=V104+D10

.....

Entry OK ? (Yes/No)?

Variable 100 contains the subtotal of line 9 (turnover of  
previous year).

The variable 102 contains the subtotal of line 10 (turnover  
of current year) and the variable 103 the total of line 10.

The variables are calculated in the selective arithmetic,  
since only those turnovers which are selected and thus  
printed, are to be added.

The report should only be printed if the appropriate code  
is on line 7 of the card index (selection code).

Any change of first letters should be followed by the  
printing of a subtotal.

Effect of format and arithmetic:

C u s t o m e r s E L L - E L E C with turnover total

NAME	PLACE	PREV. YEAR	CRNT. YEAR
Carter R.	Prospect	59 359.10	48 259.20
Carey A.	Chicago	70 066.60	84 009.10
Carey S.	Chicago	93 500.50	98 714.70
	Subtotal =	222 926.20	230 983.00
Denton B.	Houston	96 938.60	59 392.80
Denton R.	New York	65 798.50	30 850.70
Ewing J.R.	Dallas	74 980.20	73 400.20
Ewing R.	Dallas	94 483.30	23 949.70
	Subtotal =	332 200.60	187 593.40
	Total =	555 126.80	418 576.40

In the current year turnover is calculated until 15.10.1981

#### 4.2.5. Setting up a sequential file

With Database 8820 you have the possibility to store either whole files or parts of them on a diskette as a sequential file. This file can then be re-entered into an appropriate database in the main program. We use exactly the same procedure for writing a sequential file as we do for printing a report. First of all the special format must be defined and then, if necessary, an arithmetic or selection instruction.

This enables us to divide files based on certain selection criteria or, for example at the end of the year, to enter all turnovers onto an empty file in the field: "last year", whilst leaving the field "current year" empty. It is further possible to make changes such as a percentage change in selling prices in a stock file.

#### 4.2.5.1. Format instruction for setting up a sequential file

The special thing about the printing instruction is that there may only be text in the contents. The title, trailer, etc. must remain empty.

The individual fields to be taken over to the sequential file must be set up with the layout command "lx" (small l and field number). After each field you must enter a "C" (carriage return).

If you wish to produce empty lines in the new file, you do this by entering one or more additional carriage returns, e.g. C3.

The sequential file must be set up in accordance with the new database (into which it is to be integrated). In other words, you must use the same order and number of fields and of carriage returns.

Example:

Contents: 11 C 12 C 13 C2 15 C 1104 C2

This format instruction is written for a database with 7 fields, whereby fields 4 and 7 of the new file are to remain empty. The field 6 is to contain the variable 104.

When you are asked for the output device you should reply by giving the name which you have given to this sequential file.

You can also define the relevant arithmetic, e.g. if you wish selling prices to be increased by 5%.

#### 4.3. Changing to other databases (Main Menu)

---

This program enables us to change to a different database. If, for example, we want to change from the customer database (name = CUSTOMER) to the stock database (name = STOCK).

Number 3 of the Main Menu was chosen.

A list of all the databases on the diskette will now appear on the screen. The last used database will be displayed with a lighter background.

You can move the marking field to the database you require by means of the arrow keys or the function key F5. When you have made your choice press RETURN.

If the required database is not on the diskette, choose the last field (disc change) and press RETURN.

The program will then request you to change the data diskette.

When you have completed the change of databases the program will automatically return to the Main Menu.

At the beginning of the database program the computer will always take over the last used database.



#### 4.4. Creating new Superbase files

-----

The interesting thing about this program is that you can build up your own personal database files. You will probably want to build up several such files, e.g. a customer file, a stock file, a personnel file or, for private purposes, an address file of all relatives and friends.

The procedure is simple.

Before the program starts the following question will appear on the screen: "Do you want an empty form printed out?" Press the YES key (F7) (for the empty form see next page).

In order to avoid errors fill out the details on this form before typing them into the computer.

We will be discussing the following example of an address database in order to clarify the connection between program instructions and the screen contents:

\* \* \* \* \* C O M P U T E R C U S T O M E R S e l l - e l e c \* \* \* \* \*

\*\*\*\*\*

```
1 Title_____ : Mr.
2** Surname/Name_____ : Benjamin S.
3 Spare_____ :
4 Street_____ : 432 Harris St.
5 Zip Code_____ : IL 60609
6 Place_____ : Chicago
7 Selection Code_____ : C,B
8 Discount Code_____ : X02
9 Turnover previous year_ : 34 213.90
10 Turnover current year__ : 41 250.00
11 Last order_____ : 7.09.81
```

\*\*\*\*\*

Enter command with function key (RETURN = last command = F3)

The database definition of this example is illustrated in Section 4.2.2.2.

Before opening a new database ask the computer to print out an empty form.

\*\*\*\*\*

DATABASE DEFINITION  
\*\*\*\*\*

Prompt texts *****	Data types* *****	Length of field *****
1 .....	.....	..
2 .....	.....	..
3 .....	.....	..
4 .....	.....	..
5 .....	.....	..
6 .....	.....	..
7 .....	.....	..
8 .....	.....	..
9 .....	.....	..
10 .....	.....	..
11 .....	.....	..
12 .....	.....	..
13 .....	.....	..
14 .....	.....	..
15 .....	.....	..
16 .....	.....	..
17 .....	.....	..
18 .....	.....	..
19 .....	.....	..
20 .....	.....	..

\*\*\*\*\*

Title of database:

File name (for storing on diskette): .....

Password READ: .....  
Password WRITE: .....  
Password GLOBAL: .....

Option ('U' = USA 'E' = EUROPE): ..

Standard mode for double display ..

\*\*\*\*\*

\* SUMMARY OF DATA TYPES

=====

Combineable data types:

-----

C = upper case letters (A...Z)	c = lower case letters (a...z)
U = diphthongs upper case	u = diphthongs lower case
N = numbers (0...9)	P = punctuation (.,-')
S = space	- = minus sign

Non-combineable data types:

-----

A =	everything permitted (ASCII)
F.x =	floating comma numbers (x = number of positions after comma), combineable only with minus sign (-)
D =	European date (DD.MM.YY)
d =	American date (mm/dd/yy)

\*\*\*\*\*

4.4.1. Structure of database

-----

- Field Number

-----

For the setting up of your database there are 20 lines at your disposal. These lines are numbered from 1 - 20 and cannot be given different numbers by the user. The data will be later be displayed the screen in the same order. In our example we have used 11 out of the available 20 fields.

- Field name (Prompt Text)

-----

This text is for the guidance of the operating personnel and appears on the screen next to the field number. In this way the operator knows exactly which information should be entered on the corresponding fields of the database.

In an address file, for example, field no. 1 can be used for the title (Mr./Mrs./Miss), field no. 2 for the surname, either with or without first name.

The maximum length of a field name is 38 characters.

- Data type

-----

The data type enables us to define the type of entry (e.g. date) for each entry field individually. In this way we can, for example, ensure that the titles in an address database are all written in capitals. Lines which require a purely numerical entry may not contain any letters or other types of character.

When entering or changing database entries the entries are continuously tested for accuracy and non-permitted characters are immediately rejected by the display of the words "non-permitted data type". During the course of data being entered the permitted data type will be displayed on the bottom left of the screen.

We differentiate between data types which can be combined and those which cannot be combined.

Combineable data types:

C = upper case letters A-Z (without diphthongs). Lower case letters will automatically be changed into upper case.  
c = lower case letters a-z (without diphthongs).  
U = upper case with diphthongs  
u = lower case with diphthongs  
N = numbers 0 - 9  
S = space letters with diphthong  
P = punctuation (.,-')  
- = minus sign (for negative numbers)  
K = key line (sort field)

Non-combineable data types:

-----

A = all printable ASCII characters (decimal from 32-127) are permitted. This covers the entire alphabet including all special characters.  
F.x = Numbers with decimal point  
x = number of positions after the comma  
d = date (MM/DD/YY)  
this is the American way of writing the date (M = month  
D = day, Y = year).  
E.G. the 15th June 1981 would be 6/15/81  
D = Date (DD.MM.YY)  
this is the European way of writing the date.

The 15th June 1981 would be 15.06.81.

It is advisable to give a great deal of thought to the definition of the data type since this cannot be changed once the database has been set up.

If you are not interested in the data type all you need do is enter an A as choice (RETURN key has same effect). However, this might prove dangerous on those fields on which there are only supposed to be digits. In our example the field number 9 is like that. The entry of only one letter instead of a number in this field will result in the computer being unable to continue adding figures (e.g. for a subtotal).

Definitions which are too narrow in nature can also prove to be a hazard later on. In our example we have chosen data type N on field 5. This means that we will never be able to place a letter in front of the zip code (e.g. D-3360 instead of 3360).

Examples:

"CPS" means that only upper case letters without diphthongs (C), spaces and punctuation (P) will be permitted on the line in question. Lower case letters will automatically be changed into upper case.

F.6" means that all numbers (positive or negative) with up to 6 positions after the comma are permitted

"DC" This data type is not possible since D (Date) cannot be combined.

- Length

-----

The entry of length is for the purpose of reserving the maximum number of characters anticipated per line.

For example, the title (Mr., Mrs., Miss) does not really need more than 4 - 5 characters. The name and surname, on the other hand, needs about 30 characters.

In general you should try to keep the line length as short as possible, so that you do not waste space for the storing of data and so that you do not unnecessarily limit the maximum possible number of entries on the diskette. Whatever total length you define (in our example 130 characters) will be reserved for that line even if the new entry does not require so much space.

We would further advise you to take special note of the length of the main sort field. This field is carried constantly in the index file in its entirety. The longer it is the less space there will be on the diskette for entries.

On the other hand, do not define too short a length, since this makes entering more complicated and you will waste time looking for relevant abbreviations.

- Description of the database file (Title)

-----  
The specification enables us to store a description of the contents of the file, as long as it does not exceed 80 characters in length. This specification always appears on the screen as a title when you use that particular file. If the specification has less than 40 characters it will automatically be printed out on the screen in a wider type which makes it easier to read. The title in our example is "COMPUTER CUSTOMERS ELL-ELEC".

- Name of database

-----  
Each database receives a name, the so-called card file name. It contains a maximum of 10 letters (A - Z) and digits (0 - 9). You are free to choose any name you prefer (e.g. Addresses, Customers, Stock, Meyer Ltd., etc.). In our example the card index name is "CUSTOMERS".

- Passwords

-----  
READ password

-----  
With the "Read password" you can define a password, the knowledge of which is absolutely essential if you wish to read the contents of this particular file. However, you cannot carry out changes or make new entries with the knowledge of this password alone.

WRITE password

-----  
With the "Write password" you can define an additional password which only permits new entries.

You cannot use knowledge of this password alone to read the data of this file. You can only make new entries. (no double display either)

GLOBAL password

-----  
With the "Global password" you can define a third password, the knowledge of which enables one to carry out all functions in connection with the file (i.e. read, change, new entry, etc.

Passwords may not exceed 40 characters in length.

By pressing the RETURN key you can by-pass all 3 passwords, with the result that the function(s) in question will remain unprotected.

If, for example, you by-pass the global password with the RETURN key the READ and WRITE passwords will be put out of operation and thus all functions will remain unprotected. In this case you will never be asked for a password.

If, however, you by-pass the password READ, but enter the password SESAM under WRITE and GLOBAL, anyone will be able to read the contents without knowledge of the password, but will not be able to delete or change entries unless they first enter SESAM.

Passwords are an effective protection from non-permitted access to data but are obviously not an absolute guarantee. For this reason we would recommend that you store your diskettes in a safe place (e.g. in a safe).

- Option

-----

If you choose U numbers will be written in the American way (e.g. 99,000.00). If you choose E they will be written in the European fashion (99 000.00).

- Main key

-----

We can choose our own criterion for the sorting order. It is obviously most logical to use the name as the main key in an address database. In a stock file we will perhaps wish to store data under its article number. Since the main key is the only solution if we wish to locate data quickly, you should make sure that you choose as a sort field one which will facilitate easy and fast access to the required data.

When the computer asks for the main key it expects to be informed of the appropriate field number.

The main key field can further be marked by entering "K" as data type.

- Standard mode for double display

-----

In this case you will be asked for the standard value for the

display of double entries. This value can be changed whenever a new entry is made.

If you enter 1 any double entries present will not be displayed.

If you enter 2 the double entry will only be displayed if it is absolutely identical (i.e. all lines) with another entry (this is very rare).

If you enter 3 you will be informed if the main sorting line is absolutely identical (incl. spaces).

If you enter 4 the main sorting line will be compared as far as the first comma or space - this is particularly useful in the case of addresses.

You have now reached the point at which you have set up your own database on the printed form. In the following section we will describe how this information is to be entered into the computer.



#### 4.4.2. Entry of new card index definition

---

You have chosen the 4 in the Main Menu.

The following question will now appear on the screen:

Do you wish to edit an existing file (YES/NO)?

By replying with the YES key (F7) you can take over the definition of an existing database file either entirely or only partly.

If you reply with the NO key (F8) the computer will present an empty form on the screen.

The cursor is on field no. 1 and awaits the entry of the appropriate prompt text. Enter your prepared text and conclude with RETURN.

The cursor jumps to the data type. 'A' will automatically be accepted if you enter only RETURN.

The next thing to be entered is the length.

We now continue until we have entered all necessary information.

We obviously do not need to use all 20 of the card index fields. We can end the entry at any point by pressing the key END FORM (F4).

When the entry has been concluded the computer checks whether or not all entries are permitted. If there any errors the cursor will jump to the field in question and you can make your correction.

If the computer does not find any inconsistencies in the definitions of the data types and lengths of the fields the following question will appear on the screen:

Form OK (Yes/No)?

Check the entry. If there are still errors press the NO key (F8). The cursor will jump back to the beginning of the form and is then ready for your corrections.

There are a few convenient auxiliary functions which will help you to effect your changes:

NEXT FIELD (F5)                    jump to beginning of next entry position  
PREVIOUS FIELD (SHIFT/F5) jump to beginning of last entry position  
LAST FIELD (CTRL/F5)                jump to beginning of field no. 20  
1ST FIELD (CTRL/SHIFT/  
                                      F5)                                    jump to beginning of first field  
HOME                                    jump to beginning of first field  
END ENTRY (F4)                        pass over remaining lines of form  
    thus concluding entry  
CLEAR                                  delete entire form

If you do not wish to make any more changes then press the YES key (F7) when asked "Form OK?".

At this point the entire length of the data lines you have just defined will be calculated and displayed on the screen:

Total length of entry = xxx characters

#### 4.4.3. Example of opening a new Database file

---

CREATION OF A DATABASE FILE	Prompt text	Data type	Length
1	Title	CcPS	5
2	Surname/Name	CcPS	25
3	Spare	CcPS	18
4	Street	CcNPS	20
5	Zip code	N	4
6	Place	CcNS	15
7	Selection code	CP	12
8	Discount code	CN	3
9	Turnover prev year	F.2	10
10	Turnover crnt year	F.2	10
11	Last order	D	8
12	.....	.....	...
13	.....	.....	...
14	.....	.....	...
15	.....	.....	...
16	.....	.....	...
17	.....	.....	...
18	.....	.....	...
19	.....	.....	...
20	.....	.....	...
	Sort based on field number?	2	

The question of the main sort field will now follow, unless you have already entered it under data type with the "K". Enter the relevant number and conclude by pressing RETURN.

At this point you should choose whichever treatment of double entries you consider most applicable to this file.

You will then be asked for the title, file name and the 3 passwords. As option we entered E (Europe).

When you have entered the title and name of the file you can bypass the question as to the passwords by pressing END FORM (F4).

You will now be asked:

( Form OK (Yes/No)?

By pressing the No key (F8) we will be able to make further changes.

If everything is in order we can reply with the Yes key (F7).

If there is already a file with the identical name the computer will ask whether you wish to overwrite the existing file. If you reply with the NO key (F8) the cursor will jump directly to the file name in order for you to change it.

If, however, you use a file name which has already been used the existing file will be entirely deleted ! (format and arithmetic definitions will remain intact).

Yes        all numerical fields (data type F.x) will be displayed on the screen right justified.

No         all numerical fields (data type F.x) will be printed with a decimal point.

The question as to a special layout format will produce the following:

Do you wish for a trial run of the entries for the database file (Yes/No)?

At this point we have the possibility of testing our newly defined database. If we reply with the YES key we set a trial run in motion without the entry being stored.

After the trial run the computer will ask:

Do you still wish to make any changes (Yes/No)?

If you reply with the YES key (F7) you can either change or recheck the whole definition. If you reply with NO (F8), you will receive a display of how many entries per diskette would still have room. This is followed by the following choice:

M O N R O E D a t a b a s e      C r e a t i o n   o f   F i l e  
\*\*\*\*\*

Space required by new file:

Maximum number of entries on diskette DATA: -----:    387  
Optimal number of entries on this diskette -----:    351  
Maximum number of entries on an empty diskette -----: 1 619

- 1 = Everything OK, file can be opened on this diskette
- 2 = Open file on another data diskette
- 3 = Change definition of file

Your choice ?  1

Before finally opening the new file, Database 8820 will inform you of the number of entries there is still space for on the diskette.

By using all available empty spaces you will make use of the maximum number of spaces. If you only use the largest sections of available space you will be making use of the optimal number of spaces.

If you choose 1 the definition will be stored and the file will be opened as it stands.

If you choose 2 you can, if you wish, change the data diskette. You will then be presented once again with the above options.

If you choose 3 you have a chance to change the file definition.

After opening the file the computer will define layout instructions for screen or printer, in accordance with your choice.

The automatically produced Standard Report serves the purpose of printing a list of all fields very quickly. It would be of great advantage to produce such a Standard Report and then make it conform to your particular needs.

MONROE Database Standard Report  
\*\*\*\*\*

FILE = CUSTOMERS 7

This program produces a Standard Report for the current file.  
The format will be stored on the data diskette under the name  
'STANDARD'.

Output device (1 = printer, 2 = screen): 1

Longest line with single space between words: 150 characters  
Longest line with double space between words: 160 characters

Your choice (3 = stop)? 1

Do not forget to obtain a printout of an index of your file by  
choosing program no. 5 in the Main Menu. Furthermore, NEVER  
forget your global password, since this is absolutely essential if you  
wish to make changes in any of the passwords.

The function keys MAIN PROGR. (CTRL/F7), PRINT PROGR. (CTRL/F8),  
END DATABASE (CTRL/SHIFT/F7), STOP (SHIFT/F8) and MAIN MENU  
(CTRL/SHIFT/F8) can be used at any time.

#### 4.5. Printing of the Database file definition

---

This program enables us to print out the existing file definition.

The number 5 of the Main Menu has been chosen.

Display:

M O N R O E D a t a b a s e        F i l e d e f i n i t i o n

.....  
FILE = CUSTOMERS

- 1     =     display file definition on screen
- 2     =     print file definition
- 3     =     print out an empty definition form
- 4     =     return to main menu

Your choice? 1

- 1: If you choose 1 the entire file definition will be displayed on the screen. The interpretation of the information is explained in he Section 4.4.1.
- 2: If you choose 2 the entire file definition will be printed out on the printer. The interpretation of the information is explained in Section 4.4.1.
- 3: An empty form will be printed out (Section 4.4.1.)
- 4: Jump to Main Menu

The function keys MAIN PROGR. (CTRL/F7), PRINT PROGR. (CTRL/F8), END DATABASE (CTRL/SHIFT/F7), STOP (SHIFT/F8) and MAIN MENU (CTRL/SHIFT/F8) can be used at any time. The other function keys are blocked or effect a jump to the Main Menu.

#### 4.6. List of diskette contents

-----

This programm enables us to obtain a display of the contents of the diskette.

You have chosen 6 in the main menu. This will result in the screen display of a secondary menu:

M O N R O E D a t a b a s e

M a i n M e n u

FILE = CUSTOMERS

C o n t e n t s o f d i s k e t t e

- 1 = Index of all format definitions of current file
- 2 = Index of all arithmetic definitions of current file
- 3 = Index of all files on the current database
- 4 = Index of all databases on this diskette
- 5 = Index of all files on this diskette

Your choice ? 3

- 1: We obtain an index of all format definitions we have set up in the printing program for the current file.
- 2: We receive an index of all the selection definitions we have set up for the current file.
- 3: An index of all files that belong to the current database is displayed.
- 4: All databases on the diskette will be displayed (e.g. STOCK, CUSTOMERS, etc.).
- 5: All files on the diskette will be displayed.

The function keys MAIN PROGR. (CTRL/F7), PRINT PROGR. (CTRL/F8), END DATABASE (CTRL/SHIFT/F7), STOP (SHIFT/F8) and MAIN MENU (CTRL/SHIFT/F8) can be used at any time. The remaining function keys are blocked or effect a jump back to the Main Menu.





#### 4.7. Auxiliary Functions

-----

You have chosen the 7 in the Main Menu. The menu of auxiliary functions will now be displayed.

MONROE Database

Auxiliary Functions

\*\*\*\*\*  
FILE = CUSTOMERS

- 1 = Copy data diskette (image copy)
- 2 = Reorganise current database
- 3 = Display free space on the diskette
  
- 4 = Prepare new diskette (formatting)
- 5 = Delete current file or format and/or arithmetic definitions
- 6 = Change password of current file
  
- 7 = Produce Standard Report of current file
- 8 = Change printer parameter
  
- 9 = Back to Main Menu

\*\*\*\*\*

Your choice ? 9

- 1: Copy data diskette (Section 4.7.1.)  
A backup copy of the entire data diskette is produced
  
- 2: Reorganisation of a database (Section 4.7.1.)  
An existing database is relayed onto a new diskette without the data being changed; this facilitates faster access.
  
- 3: Display of free space on the diskette (Section 4.7.3.)  
Before opening a new file we need to make sure that there is sufficient space on the diskette
  
- 4: Preparation of a blank diskette (Section 4.7.6.)  
A new diskette must first be prepared with this program before we can use it as a data diskette for the Database program.

- 5: Deleting of files, as well as arithmetic and printing format definitions (Section 4.7.5.)  
We can use this program to delete old definitions which are no longer required and thus create more space on the diskette.
- 6: Change password (Section 4.7.6.)  
If you no longer wish anyone to have access to the file, you can change the password at this point.
- 7: Standard Report (Section 4.7.7.)  
Automatic production of a printing definition for the current file.
- 8: Changing of printer definition (Baud-rate). (Section 4.7.8.)
- 9: A direct jump to the Main Menu

#### 4.7.1. Copy data diskette

-----

We should get into the habit of making a copy of the data diskette whenever changes are made or new data entered. This copy should be kept separate from the original.

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

You will be instructed to remove the program diskette from drive 0 and replace it with an empty diskette.

#### **I M P O R T A N T !**

The diskette in drive 0 will be entirely overwritten

You can even use a new diskette which has not been formatted for copying. The Database 8820 copying program will format the new diskette automatically.

Just to make sure, you should always confirm your intention of copying by pressing the "ESC" key.

When you have completed the copying, return your program diskette to drive 0.

You can interrupt the copying process by means of the STOP key (SHIFT/F8). However, the partly completed diskette will then be useless.

You can use this copying program to make copies of all data diskettes with the exception of the Database program diskette.

During copying you can put a label on the original diskette in drive 1 with the text: "writing blocked". This label will prevent any data being accidentally written on the original.

#### 4.7.2. Reorganisation of a database

-----  
(N.B. Before reorganising, always make a backup copy)

When you make changes or enter new data the file entries are stored on the diskette one after the other. The data on the diskette is not sorted in accordance with the main key. It can thus happen that the entries are stored on various parts of the diskette and this can make searching very complicated and lead to a great deal of time loss.

The program "Reorganisation" stores a file on a blank diskette in the order specified by the main key. (You can also use a diskette on which there is already a file, as long as there is still enough space on that diskette).

Access to individual entries of the reorganised file is, as a result, much faster.

Reorganisation is to be recommended after entering a great deal of new data or after making a large number of corrections in the key field.

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

You will be instructed to place the file which you wish to reorganise in the upper floppy disk and the empty, formatted diskette on which the reorganised file is to be stored in the lower floppy disk.

You will now be asked for the name of the file which you wish to reorganise (CUSTOMERS, STOCK).

In the case of larger files the reorganisation might take several hours. In an emergency you can interrupt the reorganisation by pressing the STOP key (SHIFT/F8). The started file will, however, be incomplete and will be automatically deleted.

When all the file entries have been written into the new file the

program will ask whether you wish to copy the format and arithmetic definitions onto the new diskette.

If you reply with YES a list of all the files in the database will appear on the screen.

- all printing format files begin with "R%"
- all arithmetic files begin with "A%"

Mark the files to be copied with a C (= copy) and by-pass all the others by pressing RETURN.

You may NOT copy any files other than those mentioned, i.e. the format and arithmetic definition files.

By entering "A" (= abort) you can interrupt the program at any point without anything being copied.

#### 4.7.3. Display of free space onn the diskette

-----  
Before we open a new database we have to make sure that there is sufficient space available on the diskette.

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

Questions:

Floppy No. ? 1

We enter a 1 for the upper disk drive and a 0 for the lower one.

M O N R O E Database

Auxiliary Functions

\*\*\*\*\*  
FILE = CUSTOMERS

Free space on the diskette

Floppy 0 (lower) or 1 (upper) ? 1

Total free space:-----: 71 936 characters

Largest empty block:-----: 69 632 characters

Total free blocks-----: 2

On a blank formatted diskette there are 1280 sectors or 314 368 bytes at our disposal.

The free space available at the given time will be displayed on the screen.

We will also be given a display of the largest block which is free and of the number of free blocks.

Unless the largest free block contains at least 50 sectors there is no point in opening a new database, since access to the individual entries will otherwise be far too slow.

You require approx. 30 sectors purely for the data definition before making even one single entry.

Printing format and arithmetic definition can occupy either 4 or 8 sectors, depending on their size.

The space required for the entries depends on the definition of length, the number of entries and the length of the key field.

#### 4.7.4. Preparation of a blank diskette

---

A new diskette is like a gramophone record without grooves. In this condition it is of no use whatsoever to the computer.

This program enables you to prepare diskettes for use on the Monroe QC 8820. We call this process formatting.

We can also re-format used diskettes; however, the contents of the diskette will then be entirely deleted!

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

First and foremost you will be asked whether you are sure that the diskette in the upper disc drive (1) can be deleted.

In order to ensure that no data which you still require is deleted you should press the "ESC" key.

The program will then ask for the name of the new diskette. You may enter a name containing between 1 and 4 characters, whereby the first character may not be a number.

The new diskette will be ready after about 2 minutes.

If you reply with "NO" to the question "Load program main menu?" you can immediately format a new diskette.

#### 4.7.5. Deleting files and arithmetic and printing format definitions

---

Files and definitions which are no longer required take up valuable space on the diskette.

This program enables us to delete superfluous files and arithmetic and printing format definitions.

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

Having entered the password (if there is one) you can delete either the current file including its arithmetic and format definitions or only individual definitions (format, arithmetic definitions) from this file.

All printing format definitions begin with "RX"

All arithmetic definitions begin with "A%"

With the exception of the "ERROR" file no other names can be deleted.

If you wish to delete the individual definitions of the existing file, you will be shown a list of all the definitions. Mark those you wish to be deleted with a "D" (= delete) and by-pass all the others by pressing RETURN. By pressing "A" (= abort) you can interrupt the program at any time without anything being deleted.

#### 4.7.6. Change password

-----

Passwords sometimes have to be changed in order to deny certain persons access to the data in the file.

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

M O N R O E D a t a b a s e

Auxiliary Functions

.....

FILE = CUSTOMER

#### C h a n g i n g P a s s w o r d s

- 1 = Change password READ
- 2 = Change password WRITE
- 3 = Change password GLOBAL

4 = Return to Main Menu

Your choice ? 1

Entry of new password: ABRACADABRA

Enter either 1; 2 or 3, depending on which password you wish to change.

You will then be required to enter the global password. It is obviously impossible to change anything at all without knowledge of this global password.

If the global password is correct you will be able to enter the

new password.

#### 4.7.7. Standard Report

-----

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

The program called "Standard Report" automatically creates a printing format definition in the same way as this could be set up "by hand". The automatically produced formats are constructed in exactly the same way as those typed in, which means that you can also edit them.

The produced format definition will merely be stored on the diskette in the program "Standard Report" - in other words nothing whatsoever will be printed. If you wish to test the printing format definition you can do so by selecting the printing program (CTRL/SHIFT/F8).

In the current file the formats produced by the "Standard Report" program will be stored under the name "STANDARD". If there is already a file bearing this name you will be warned and the existing file will only be overwritten if you so wish.

The operator of this program will be requested to supply the following information:

- length of page
- output device (1 = printer 2 = screen)

In addition to this you may also choose whether you wish for single or double spacing between the columns.

If the file contains a very large number of lines it is not possible to produce a "Standard Report" (i.e. if printing width is more than 255 characters). If it is not possible to produce a "Standard Report" you will be informed of this on the screen.

M O N R O E D a t a b a s e

Standard Report

\*\*\*\*\*

FILE = CUSTOMERS 7

This program produces a Standard Report for the current file. The format will be stored on the data diskette under the name 'STANDARD'.

Output device (1 = printer, 2 = screen): 1



Longest line with 1 space between words: 150 characters  
Longest line with 2 spaces between words: 160 characters

Your choice ( 3 = stop)? 1

#### 4.7.8. Changing of the printer definition

-----

This part of the program can be obtained by pressing CTRL/SHIFT/F8 for the Main Menu, changing to the auxiliary menu by choosing 7 and then selecting the appropriate number.

The Database program will be delivered to you with a Baud rate, i.e. speed with which data are transferred into print, of 1200 Baud.

This Baud rate refers to the exchange of data between the Monroe DC 8820 and a printer. However, there are certain printers which operate at a different Baud rate.

By means of this program you can adjust the Baud rate of the Monroe DC 8820 to whichever printer you are using.

Screen:

#### C h a n g i n g o f p r i n t i n g p a r a m e t e r

.....

75	Baud	110	Baud	300	Baud	600	Baud
1200	Baud	2400	Baud	4800	Baud	9600	Baud
19200	Baud						

To choose Baud rate use arrow keys, then press RETURN.  
STOP = Discontinue

By means of the 4 arrow keys (rt, lft, up, down) followed by the RETURN key you can select the required Baud rate. This rate will remain in effect until you change it by means of this program.

Note: If your printout contains wrong characters you are using the wrong Baud rate.



## 5. DATABASE 8820 for socialists

---

Those familiar with boolean algebra or programming can make much more intensive use of the Database 8820 program.

In the following section (5.1.) we will give a short introduction to boolean algebra. This can be of particular advantage in the selection in the printing program.

Section 5.2. is mainly for programmers who wish to combine their own program with the Database 8820.

### 5.1. Boolean algebra and comparison operators

---

#### 5.1.1. Introduction to boolean algebra

---

Boolean algebra deals with a special type of mathematics which uses only 2 digits:

TRUE = 1            FALSE = 0 (zero)

This means that any statement is either true or false.

I say: "The sun is shining"

This statement is true if the sun really is shining, but false if it is not shining.

In boolean algebra the computer checks only the correctness of any given statement.

The operators with which we are going to deal are AND and OR.

We will take a Database file with 3 lines as our example:

	1st Entry	2nd Entry	3rd Entry	4th Entry
NAME =	MERTON	ROSE	MERTON	KENT
PLACE =	NEW YORK	CHICAGO	CHICAGO	NEW YORK
BRANCH =	METALS	TRADE	TRADE	TRADE

### 5.1.2. The AND Connection (AND)

---

Take the previous example. We are looking for a person with the name MERTON who also lives in NEW YORK.

Layout: (Name = "MERTON") AND (Place = "NEW YORK")

The choice is best presented in a table of true facts:

	Name = "MERTON"?	Place = "NEW YORK"?	Both yes ?
1st Entry	yes = 1	yes = 1	yes = 1
2nd Entry	no = 0	no = 0	no = 0
3rd Entry	yes = 1	no = 0	no = 0
4th Entry	no = 0	yes = 1	no = 0

Only the first entry fulfils both our conditions and can be answered by yes twice. The other entries either do not live in New York or they are not called Merton.

With an AND connection the result will only be "TRUE" if all the conditions laid down our "TRUE" (mathematically expressed: only where the multiplication of all conditions results in 1).

### 5.1.3. The OR Connection (OR)

---

We are now looking for a person who either lives in NEW YORK or is called MERTON.

Layout: (Name = "MERTON") OR (Place = "NEW YORK")

The choice is once more presented in a table of true facts:

	Name = "MERTON"?	Place = "NEW YORK"?	"MERTON" or "NEW YORK"?
1st Entry	yes = 1	yes = 1	yes = 1
2nd Entry	no = 0	no = 0	no = 0
3rd Entry	yes = 1	no = 0	yes = 1
4th Entry	no = 0	yes = 1	yes = 1

The first, third and fourth entries fulfil our condition. Only in the

second entry is the person neither called Merton nor does he live in New York.

In the case of an OR connection the result is only "TRUE" if at least one of the conditions is true, or, mathematically expressed, if the addition of all the conditions results in more than 0.

#### 5.1.4. Connection of AND and OR

---

We can, of course, combine both operators with each other.

Example:

We are looking for a Mr. Merton in either the metals or trade branch who lives in New York.

Layout:

(Name = "MERTON") AND (Branch = "METALS") OR (Branch = "TRADE") AND (Place = "NEW YORK")

For this purpose we set up two tables of true facts. The parentheses are dealt with first:

1st Table:

	Branch = "METALS"?	Branch = "TRADE"?	"METALS" or "TRADE"?
1st Entry	yes = 1	no = 0	yes = 1
2nd Entry	no = 0	yes = 1	yes = 1
3rd Entry	no = 0	yes = 1	yes = 1
4th Entry	no = 0	yes = 1	yes = 1

2nd Table:

	Name = "MERTON"?	Branch = "MET." or "TRADE"?	Place = "NEW YORK"?	All 3 = 1?
1st Entry	yes = 1	yes = 1	yes = 1	yes = 1
2nd Entry	no = 0	yes = 1	no = 0	no = 0
3rd Entry	yes = 1	yes = 1	no = 0	no = 0
4th Entry	no = 0	yes = 1	yes = 1	no = 0

Only the first entry fulfils all our conditions.

All the other entries failed to fulfil at least one of the 3

conditions.

In general we can say that boolean operators can be combined with each other in any amounts we require.

#### 5.1.5. Comparison operators

---

In addition to the boolean operators we can use comparison operators for the purpose of defining all kinds of boolean combinations. As indicated by the name, comparison operators compare two values. The result is always either 1 (TRUE) or 0 (FALSE).

Comparison operators:

- A EQ B The result is -1 if A is identical with B and 0 if not
- A NE B The result is -1 if A is not equal to B.
- A GT B The result is -1 if A is greater than B.
- A LT B The result is -1 if A is less than B.
- A GE B The result is -1 if A is either larger than or equal to B.
- A LE B The result is -1 if A is less than or equal to B.
- A EL B The result is -1 if B is contained in A reading from the left.  
Example: A = Merton, B = Me A EL B = -1
- A EI B The result is -1 if B is contained in A  
Example: A = Merton, B = er A EI B = -1

#### 5.1.6. Other functions

---

In order to simplify the presentation of boolean connections it is customary to use the functions NOT and XOR. However, these functions will not be included until Version 2. In Version 1 NOT can be produced as follows:

NOT: e.g. V100 = (.....) NE "-1"

5.1.7. AND and OR in the binary system

---

In the AND/OR connection two bytes are compared with each other bit by bit.

Example:

Transformation of a lower case "a" into an upper case "A" and vice versa.

	Binary	Decimal	ASCII Character
	01100001	97	a
AND	01011111	95	
	-----		
=	01000001	65	A

Only if both bits contain a 1 will a 1 be taken over as result.

	Binary	Decimal	ASCII Character
	01000001	65	a
OR	01100001	96	
	-----		
=	01100001	97	A

If at least one of the two bits contains a 1 a 1 will always be taken over as result.

It is thus easy to see that you can undertake a proper manipulation of bits with the logical operands. The possibilities are endless and we leave it to your own imagination to develop them. (Just try, for example, the AND connection of all letters with 95!).