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REFERENCE SERIES

ADDENDUM TO
RETRIEVE

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SECTION 1
INTRODUCTION

RETRIEVE now provides additional command and report options that allow the user to omit selected fields when printing the contents of a data base, to load a data base using the structure of a different data base, to display additional fields to help in the identification process when changing or modifying other fields, and to modify the report form when generating a report.

This addendum documents the new RETRIEVE features without explaining the basics of RETRIEVE; it is intended to be used with the *Tymshare TYMCOM-IX RETRIEVE Reference Manual*. The reader should refer to that manual for information on command forms and the basic concepts of RETRIEVE.

Section 2 of the addendum describes the new components in (1) the BASE and LOAD commands; (2) the LIST, PRINT, and FAST commands; and (3) the CHANGE and MODIFY commands. Section 3 discusses the new report generation options. The last section clarifies some minor points in the *Tymshare TYMCOM-IX RETRIEVE Reference Manual*.

In all examples in this document, everything typed by the user is underlined. The symbol for a user-typed Carriage Return is ↵.

When a general form is presented, lowercase letters describe the information that the user enters. For example, in the command

.**LIST ALL BUT** *field list*↵

the characters *field list* indicate that a field list should be typed at that point.

Square brackets ([]) specify an option. The brackets are not typed as part of the command. For example, the command form

.**[***range list***] REPORT [FOR** *condition***] [FANFOLD]**↵

indicates that the user may, but need not, include any of the three options enclosed in brackets.

Braces ({}) specify that the user must enter one of the items described within the braces. The braces are not typed as part of the command. For example, the command form

.**[***range list***]** { **LIST** / **PRINT** / **FAST** } **[ALL BUT] [***field list***] [FOR** *condition***]**↵

indicates that the user must type LIST, PRINT, or FAST at that point in the command.

SECTION 2
NEW COMMAND OPTIONS

This section discusses the USING clause of the BASE or LOAD command first. Next, the ALL BUT component of the LIST, PRINT, or FAST command is detailed. Finally, the SHOWING clause of the CHANGE or MODIFY command is described.

USING THE STRUCTURE FILE OF ONE DATA BASE FOR ANOTHER DATA BASE

The new USING clause of the BASE or LOAD command allows the user to load a previously created data base and use a structure file associated with a different data base.[1] The data base to be loaded must contain records of the same length as the records in the data base associated with the structure file, and the field lengths and field types must be compatible with the given structure file. Thus, the user's directory may contain several like data bases that require only one structure file, eliminating the need for a structure file for each data base. Also, the same data base can be accessed by two different but consistent structure files.

The USING clause names the structure file to be used with the data base being loaded. The BASE and LOAD commands have the same general form

$$\left\{\begin{matrix}\text{BASE}\\ \text{LOAD}\end{matrix}\right\} \left[\textit{file name}_1 \quad \begin{matrix}\text{[FIXED] [NEW] [}\textit{file type}\text{]}\\ \text{[USING }\textit{file name}_2\text{]}\end{matrix}\right]$$

where *file name*$_1$ is the name of the data base to be loaded and *file name*$_2$ is the name of the structure file to be used. The structure file, *file name*$_2$, must be specified without its 'STR.*x*' extension.[2] The FIXED, NEW, and *file type* modifiers apply only when a new data base is being created; therefore, they are not used with the USING clause.

Example

Two data bases, EMPLOYEES and PERSONNEL, exist in the user's directory. They both conform to the structure file PERSONNEL'STR.*x*'.

```
-TYPE EMPLOYEES↵        The user requests a listing of both data bases. The record lengths, field lengths,
                        and field types are the same.
BOWDEN PAM              468-76-3873   3.20 40      .00
CHASE PHIL              567-88-4907   6.10 40      .00
CUSELLA VINCE           389-55-8902   4.35 40      .00
FARRER DIANE            549-22-9000   3.25 40      .00
GALLAWAY MATT           351-09-4563   5.40 40      .00
HAUG HANS               236-89-8475800.00 -1       .00
LANOIE ARMAND           876-12-2435820.00 -1       .00
SCHIMKE DENISE          777-15-3180   3.75 40      .00
SMITH DEREK             873-21-0087   4.20 40      .00
```

1 - The data base can be created in RETRIEVE or in EDITOR, Tymshare's editing language. Refer to the *Tymshare TYMCOM-IX RETRIEVE Reference Manual* or the *Tymshare EDITOR Reference Manual* for further information on creating data bases.

2 - See the *Tymshare TYMCOM-IX RETRIEVE Reference Manual* for an explanation of structure files and the automatically appended 'STR.*x*' file name extension.

```
-TYPE PERSONNEL↵

ANDREWS KARL          469-20-9531   2.35 44 108.10
BRADFORD SUSAN        202-46-9277   4.90 42 205.80
FRENCH MARK           519-45-6218   7.20 48 345.60
NELSON DONALD         311-61-2629   5.10 48 244.80
PALMER DAVID          357-48-3158450.00 40 410.00
PARKER MARY           351-04-8260   4.10 44 180.40
RODRIGUES MARIA       373-75-7302198.70 40 198.70
WINTON JOHN           421-98-7244   4.25 43 182.75

-RETRIEVE↵

•LOAD EMPLOYEES USING PERSONNEL↵      The user loads the data base EMPLOYEES
                                      using the structure file for PERSONNEL.

9 RECORDS(48)

•STRUCTURE↵      He instructs RETRIEVE to print a description of the structure of EMPLOYEES.


FIELD   TYPE   WIDTH   NAME

    1   C       20     EMPLOYEE
    2   C       11     SOC.SEC
    3   N        6, 2  SALARY
    4   I        3     HRS
    5   N        7, 2  PAY

•
```

EXCLUDING FIELDS FROM THE LISTING

In addition to allowing the user to display the entire data base or only selected records or fields, the LIST, PRINT, and FAST commands now permit the user to specify any fields that are not to be displayed.

The ALL BUT component is used with a field list to specify the field(s) to be omitted from the listing. The LIST, PRINT, and FAST commands all have the same general form

. [*range list*] { LIST / PRINT / FAST } [ALL BUT] [*field list*] [FOR *condition*]↵

where the *field list* consists of one or more field names, separated by commas or spaces, specifying the field(s) to be displayed or excluded. The *range list* and FOR clause are used to select records to be displayed.

The ALL BUT feature of the LIST, PRINT, and FAST commands is particularly useful if, for example, the user has a data base that contains many fields, all of which are to be displayed except for a few. The user, instead of entering the names of all fields to be displayed, can simply enter the names of the fields to be excluded.

Examples

The following data base is used to illustrate the use of the ALL BUT component in the LIST, PRINT, and FAST commands.

```
-RETRIEVE↵

•LOAD PERSONNEL↵
```

The user loads the data base PERSONNEL and requests a listing of the entire data base.

```
8 RECORDS(48)

•LIST↵

 RECNO EMPLOYEE              SOC.SEC      SALARY HRS     PAY

     1 ANDREWS KARL          469-20-9531    2.35  44  108.10
     2 BRADFORD SUSAN        202-46-9277    4.90  42  205.80
     3 FRENCH MARK           519-45-6218    7.20  48  345.60
     4 NELSON DONALD         311-61-2629    5.10  48  244.80
     5 PALMER DAVID          357-48-3158  450.00  40  410.00
     6 PARKER MARY           351-04-8260    4.10  44  180.40
     7 RODRIGUES MARIA       373-75-7302  198.70  40  198.70
     8 WINTON JOHN           421-98-7244    4.25  43  182.75

8 RECORDS

•1:6 LIST ALL BUT PAY,HRS FOR HRS<=44 AND SALARY<5.00↵
```

He requests a listing with headings and record numbers of all fields except PAY and HRS for all records within the range 1 through 6 for which the value of HRS is less than or equal to 44 and the value of SALARY is less than $5.00.

```
 RECNO EMPLOYEE              SOC.SEC      SALARY

     1 ANDREWS KARL          469-20-9531    2.35
     2 BRADFORD SUSAN        202-46-9277    4.90
     6 PARKER MARY           351-04-8260    4.10

3 RECORDS

•PRINT ALL BUT PAY,SALARY FOR HRS>40↵
```

He requests a listing with headings of all fields except PAY and SALARY for all records for which the value of HRS is greater than 40.

```
EMPLOYEE              SOC.SEC      HRS

ANDREWS KARL          469-20-9531   44
BRADFORD SUSAN        202-46-9277   42
FRENCH MARK           519-45-6218   48
NELSON DONALD         311-61-2629   48
PARKER MARY           351-04-8260   44
WINTON JOHN           421-98-7244   43

6 RECORDS
```

```
•FAST ALL BUT PAY↵
```

He requests a listing without headings or record numbers of all fields except PAY for all records.

```
ANDREWS KARL          469-20-9531    2.35   44
BRADFORD SUSAN        202-46-9277    4.90   42
FRENCH MARK           519-45-6218    7.20   48
NELSON DONALD         311-61-2629    5.10   48
PALMER DAVID          357-48-3158  450.00   40
PARKER MARY           351-04-8260    4.10   44
RODRIGUES MARIA       373-75-7302  198.70   40
WINTON JOHN           421-98-7244    4.25   43

8 RECORDS

•
```

DISPLAYING ADDITIONAL FIELDS WHILE CHANGING FIELD VALUES

The CHANGE and MODIFY commands allow the user to change values in selected records or in selected fields within a record. To help the user identify the records or fields being changed, the new SHOWING clause incorporated into the CHANGE and MODIFY commands permits the user to request that the values in selected field(s) from each record be displayed as he changes the data.

Both the CHANGE and MODIFY commands have the same general form

. [*range list*] $\left\{\begin{matrix}\text{CHANGE}\\\text{MODIFY}\end{matrix}\right\}$ [*field list*$_1$] [SHOWING *field list*$_2$] [FOR *condition*]↵

where *field list*$_1$ consists of the name(s) of the field(s) to be changed, separated by commas or spaces, and *field list*$_2$ consists of the name(s) of the field(s) to be displayed, separated by commas or spaces. The *range list* and FOR clause are used to select the records to be altered.

Example

The data base shown on page 5 is used to illustrate the use of the SHOWING clause in the CHANGE and MODIFY commands.

```
•MODIFY PAY SHOWING EMPLOYEE↵
```

The user wants to display the values in the field EMPLOYEE as he changes the values in the field PAY.

```
EMPLOYEE                 :      PAY
```

When the SHOWING clause is used, the field headings are printed.

```
ANDREWS KARL : 94.00↵
BRADFORD SUSAN : 196.00↵
FRENCH MARK : 288.00↵
NELSON DONALD : 204.00↵
PALMER DAVID : 410.00↵
PARKER MARY : 164.00↵
RODRIGUES MARIA : 198.70↵
WINTON JOHN : 170.00↵

8 RECORDS
```

The MODIFY command does not print the old values for PAY.

```
•CHANGE SALARY SHOWING EMPLOYEE FOR 'PALMER' IN EMPLOYEE↵
```

The user changes the value in the field SALARY for the record with the value PALMER in the field EMPLOYEE, displaying the value in EMPLOYEE.

```
SALARY EMPLOYEE                 : SALARY

410.00 PALMER DAVID             : 450.00↵
```

The CHANGE command prints the old value for SALARY.

```
1 RECORDS
```

```
•1:4,6,8 CHANGE PAY,HRS SHOWING EMPLOYEE,SOC.SEC↵
```

The user changes the values in the fields PAY and HRS for records 1 through 4, 6, and 8, displaying the values in the fields EMPLOYEE and SOC.SEC.

```
    PAY HRS EMPLOYEE                SOC.SEC         :      PAY HRS

  94.00  40 ANDREWS KARL            469-20-9531     : 108.10,44↵
 196.00  40 BRADFORD SUSAN          202-46-9277     : 205.80,42↵
 288.00  40 FRENCH MARK             519-45-6218     : 345.60,48↵
 204.00  40 NELSON DONALD           311-61-2629     : 244.80,48↵
 164.00  40 PARKER MARY             351-04-8260     : 180.40,44↵
 170.00  40 WINTON JOHN             421-98-7244     : 182.75,43↵

6 RECORDS

•
```

SECTION 3
NEW REPORT GENERATION OPTIONS

Several new report generation features allow the user to modify RETRIEVE's report form. This section first describes the procedure for substituting the top-of-form Control L for the report top-of-page marker. Next, the specification of report page length is explained. Finally, the use of the up arrow (↑) and semicolon (;) to modify the display of the report subtotals is detailed.

SUBSTITUTING THE TOP-OF-FORM CHARACTER FOR THE TOP-OF-PAGE MARKER

The new FANFOLD component of the REPORT command permits the user to substitute the top-of-form character Control L for each occurrence of the normal top-of-page marker ----. This means that the marker is replaced with a nonprinting Control L and a blank line appears in its place. If the report is being printed with a terminal that has top-of-form control, each occurrence of the top-of-form character causes the report page following it to be printed at the top of the next page or form.

The general form of the REPORT command is

.[*range list*] REPORT [FOR *condition*] [FANFOLD]↵

where the *range list* and FOR clause are used to specify the records to appear in the report.

Example

The user requests that report data from the data base ACCOUNTS be printed with the top-of-form character instead of the normal top-of-page marker.

```
-RETRIEVE↵
•LOAD ACCOUNTS↵

300 RECORDS(55)

•50:250 REPORT FOR RECEIVABLES>500 FANFOLD↵
•
•
•
```

The user requests that all records within the range 50 through 250 for which the value in the field RECEIVABLES is greater than 500 be included in the report.

SPECIFYING PAGE LENGTH

When the user generates a report, the report description interaction allows him to specify the number of lines per page; that is, he specifies the number of lines to be generated between each pair of top-of-page markers or top-of-form characters. The number of lines should allow for requested headings, double spacing, and any other blank lines. RETRIEVE includes a six-line margin at the bottom of the page when a page length of 12 or more lines is specified.

The user requests this feature by typing a period (.), then a Carriage Return, in response to the prompt:

REPORT FORM NAME:

RETRIEVE then requests

LENGTH OF PAGE IN LINES =

to which the user responds by typing an integer that is greater than or equal to 6, followed by a Carriage Return. RETRIEVE then prompts again for the report form name; the user may enter a report form name or a Carriage Return if a name is not desired.[1] Next, RETRIEVE requests

HEADING?

to which the user must respond by typing YES; this response completes the page length specification. If he types NO, the report output is continuous and without defined pages.

NOTE: If the user does not specify a page length by entering an integer, as explained above, RETRIEVE sets the page length at 66 lines per page, provided that the user types YES in response to the HEADING prompt.

Example

```
.
.
.
REPORT FORM NAME: .↵

LENGTH OF PAGE IN LINES = 40↵      The user specifies a page length of 40 lines per page in
                                   the report to be generated.
REPORT FORM NAME:↵                 He does not want to enter a report form name.

HEADING? YES↵
.
.
.
```

1 - For further information on responding to REPORT FORM NAME:, see page 21 of this addendum, as well as the *Tymshare TYMCOM-IX RETRIEVE Reference Manual.*

MODIFYING THE DISPLAY OF SUBTOTALS

Two special characters are available for modifying a report form when subtotals by specified fields are requested. If the user responds with YES to the HEADING, TOTALS, and SUBTOTALS prompts, he can modify the report form by entering an up arrow (↑) and/or a semicolon (;) in response to the BY ITEMS prompt; these are entered in place of or in addition to the comma(s) that separates the fields for which subtotals are to be displayed.

The up arrow allows the user to request that paging occur after the requested subtotals are shown for records that have the same value in a specified field. This permits the user to print report text for different values in a specified field on separate pages. The semicolon allows the user to display the value(s) in a specified field and suppress the subtotals for this field when any value does not occur twice in succession.

Using the Up Arrow

When the user types an up arrow after a field name in the BY ITEMS response, RETRIEVE groups the requested subtotals according to the values in the field specified before the up arrow. This means that each time RETRIEVE encounters a different value in this field, the program skips to the top of the next page or form after displaying the requested subtotals. RETRIEVE skips again when it (1) encounters a new value in this field, (2) encounters a new value in another field specified with an up arrow, or (3) prints the specified number of lines per page.[1]

NOTE: The user should make certain that the records are sorted by the field specified before the up arrow, so that RETRIEVE does not split subtotals for that field.[2]

The up arrow is entered in the BY ITEMS response and is typed immediately after the field(s) to which it is to apply.[3] The following examples show valid uses of the up arrow in response to the BY ITEMS prompt:

BY ITEMS: FIELDNAMEA↑FIELDNAMEB↵

BY ITEMS: FIELDNAMEA↑,FIELDNAMEB↵

BY ITEMS: FIELDNAMEA,FIELDNAMEB↑↵

BY ITEMS: FIELDNAMEA↑FIELDNAMEB↑↵

1 - RETRIEVE prints the report with a page length of 66 lines per page unless the user specifies a page length, as is explained on page 10.

2 - See the *Tymshare TYMCOM-IX RETRIEVE Reference Manual* for information on the SORT command.

3 - See page 17 of this addendum for further information on using the up arrow with the semicolon in the BY ITEMS response.

Example

The field names and records of the data base EXPENSEACCOUNTS are used to illustrate the use of the up arrow in the BY ITEMS response.

```
-RETRIEVE↵

•LOAD EXPENSEACCOUNTS↵

11 RECORDS(59)

•LIST↵
```

RECNO	EMPLOYEE	DATE	REQUESTED	ALLOCATED	ACTUAL
1	CABRALES CARLOS	6/25/73	660.00	700.00	725.10
2	CHAMBERLAIN PARK	11/1/73	350.00	350.00	338.48
3	CHAMBERLAIN PARK	9/23/73	234.00	190.00	189.78
4	CHAMBERLAIN PARK	8/16/73	560.00	560.00	549.65
5	CHAMBERLAIN PARK	7/18/73	450.00	450.00	467.65
6	CHASE PHILLIP	8/17/73	1290.00	1300.00	1245.87
7	CHASE PHILLIP	10/30/73	876.00	900.00	902.73
8	GALLAWAY MATT	9/10/73	2800.00	3000.00	2689.50
9	SKANE WILLIAM	7/8/73	400.00	400.00	378.48
10	SKANE WILLIAM	8/29/73	340.00	350.00	368.34
11	SKANE WILLIAM	10/12/73	750.00	725.00	704.26

```
11 RECORDS

•REPORT↵
```

In the process, the user requests subtotals for the fields REQUESTED, ALLOCATED, and ACTUAL.

```
HEADING? YES↵

DOUBLE SPACE? NO↵

TOTALS? YES↵

SUBTOTALS? YES↵

BY ITEMS: EMPLOYEE↑↵
```

The records and subtotals are to be grouped according to the values in the field EMPLOYEE, which is requested by typing an up arrow after the field name EMPLOYEE.

```
----

PAGE 1
DATE: 12/14 13:41
DATA BASE: EXPENSEACCOUNTS
REPORT FORM:

                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CABRALES CARLOS

CABRALES CARLOS           660.00      700.00       725.10

* TOTAL FOR EMPLOYEE: CABRALES CARLOS
.                         660.00      700.00       725.10
.
.
.
----

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                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CHAMBERLAIN PARK

CHAMBERLAIN PARK          350.00      350.00       338.48
CHAMBERLAIN PARK          234.00      190.00       189.78
CHAMBERLAIN PARK          560.00      560.00       549.65
CHAMBERLAIN PARK          450.00      450.00       467.65

* TOTAL FOR EMPLOYEE: CHAMBERLAIN PARK
.                        1594.00     1550.00      1545.56
.
.
.
----

PAGE 3 12/14

                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CHASE PHILLIP

CHASE PHILLIP            1290.00     1300.00      1245.87
CHASE PHILLIP             876.00      900.00       902.73

* TOTAL FOR EMPLOYEE: CHASE PHILLIP
.                        2166.00     2200.00      2148.60
.
.
.
```

PAGE 4 12/14

EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
* EMPLOYEE: GALLAWAY MATT			
GALLAWAY MATT	2800.00	3000.00	2689.50
* TOTAL FOR EMPLOYEE: GALLAWAY MATT	2800.00	3000.00	2689.50

.
.
.

PAGE 5 12/14

EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
* EMPLOYEE: SKANE WILLIAM			
SKANE WILLIAM	400.00	400.00	378.48
SKANE WILLIAM	340.00	350.00	368.34
SKANE WILLIAM	750.00	725.00	704.26
* TOTAL FOR EMPLOYEE: SKANE WILLIAM	1490.00	1475.00	1451.08

.
.
.

PAGE 6 12/14

EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
** GRAND TOTAL **			
.	8710.00	8925.00	8559.84

.
.

.

Using the Semicolon

When a user types a semicolon after a field specified in the BY ITEMS response, RETRIEVE suppresses the subtotals for that field for all records in which a given value does not occur twice in succession.

The semicolon, like the up arrow, is entered in the BY ITEMS response and must immediately follow the field(s) to which it is to apply.[1] The following examples show valid uses of the semicolon in response to the BY ITEMS prompt:

BY ITEMS: FIELDNAMEA;FIELDNAMEB↵
BY ITEMS: FIELDNAMEA;,FIELDNAMEB↵
BY ITEMS: FIELDNAMEA,FIELDNAMEB;↵
BY ITEMS: FIELDNAMEA;FIELDNAMEB;↵

Example

The field names and records of the data base shown on page 12 are used to illustrate the use of the semicolon in the BY ITEMS response.

By typing the semicolon after EMPLOYEE, the user requests that subtotals for the fields REQUESTED, ALLOCATED, and ACTUAL be omitted from the report for all records in which a value in the EMPLOYEE field does not occur twice in succession.

```
•
•
•
HEADING? YES↵

DOUBLE SPACE? NO↵

TOTALS? YES↵

SUBTOTALS? YES↵

BY ITEMS: EMPLOYEE;↵
•
•
•
```

1 - See page 17 of this addendum for further information on using the up arrow with the semicolon in the BY ITEMS response.

```
----

PAGE 1
DATE: 12/14 14:15
DATA BASE: EXPENSEACCOUNTS
REPORT FORM:

                          REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                  EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CABRALES CARLOS

CABRALES CARLOS             660.00      700.00      725.10

* EMPLOYEE: CHAMBERLAIN PARK

CHAMBERLAIN PARK            350.00      350.00      338.48
CHAMBERLAIN PARK            234.00      190.00      189.78
CHAMBERLAIN PARK            560.00      560.00      549.65
CHAMBERLAIN PARK            450.00      450.00      467.65

* TOTAL FOR EMPLOYEE: CHAMBERLAIN PARK
                           1594.00     1550.00     1545.56

* EMPLOYEE: CHASE PHILLIP

CHASE PHILLIP               1290.00     1300.00     1245.87
CHASE PHILLIP                876.00      900.00      902.73

* TOTAL FOR EMPLOYEE: CHASE PHILLIP
                           2166.00     2200.00     2148.60

* EMPLOYEE: GALLAWAY MATT

GALLAWAY MATT               2800.00     3000.00     2689.50

* EMPLOYEE: SKANE WILLIAM

SKANE WILLIAM                400.00      400.00      378.48
SKANE WILLIAM                340.00      350.00      368.34
SKANE WILLIAM                750.00      725.00      704.26

* TOTAL FOR EMPLOYEE: SKANE WILLIAM
                           1490.00     1475.00     1451.08


 ** GRAND TOTAL **

.                          8710.00     8925.00     8559.84
.
.

----
```

The subtotals are omitted because there is only one consecutive record with a value of CABRALES CARLOS for the field EMPLOYEE.

Again, the subtotals are omitted.

Using the Up Arrow With the Semicolon

The user can enter an up arrow and a semicolon in the same BY ITEMS response. Each can be typed after different fields or after the same field. If these characters are to modify the display of the subtotals of different fields, each is entered in the response as explained on pages 11 and 15 of this addendum. If, however, they are to modify the display of the subtotals of the same field, they are entered consecutively in the response and immediately after the field(s) to which they are to apply. The following examples show valid uses of the up arrow with the semicolon in response to the BY ITEMS prompt:

BY ITEMS: FIELDNAMEA;↑FIELDNAMEB↵
BY ITEMS: FIELDNAMEA↑;FIELDNAMEB↵
BY ITEMS: FIELDNAMEA;↑,FIELDNAMEB↵
BY ITEMS: FIELDNAMEA↑;,FIELDNAMEB↵
BY ITEMS: FIELDNAMEA,FIELDNAMEB;↑↵
BY ITEMS: FIELDNAMEA, FIELDNAMEB↑;↵
BY ITEMS: FIELDNAMEA↑;FIELDNAMEB;↑↵

Example

The field names and records of the data base shown on page 12 are used to illustrate the use of the up arrow with the semicolon in the BY ITEMS response.

The user requests that subtotals for the fields REQUESTED, ALLOCATED, and ACTUAL be grouped according to the value in the field EMPLOYEE and that the subtotals for these fields be omitted from the report when there are not two consecutive occurrences of a value in the field EMPLOYEE.

```
.
.
.
HEADING? YES↵

DOUBLE SPACE? NO↵

TOTALS? YES↵

SUBTOTALS? YES↵

BY ITEMS: EMPLOYEE↑;↵
.
.
.
```

```
----

PAGE 1
DATE: 12/14 14:26
DATA BASE: EXPENSEACCOUNTS
REPORT FORM:

                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CABRALES CARLOS

CABRALES CARLOS           660.00      700.00       725.10
.
.
.
```

There is only one record in the data base for CABRALES CARLOS; no subtotals are printed.

```
----

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                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CHAMBERLAIN PARK

CHAMBERLAIN PARK          350.00      350.00       338.48
CHAMBERLAIN PARK          234.00      190.00       189.78
CHAMBERLAIN PARK          560.00      560.00       549.65
CHAMBERLAIN PARK          450.00      450.00       467.65

* TOTAL FOR EMPLOYEE: CHAMBERLAIN PARK
                         1594.00     1550.00      1545.56
.
.
.

----

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                        REQUESTED   ALLOCATED     ACTUAL
EMPLOYEE                EXPENSES    EXPENSES      EXPENSES

* EMPLOYEE: CHASE PHILLIP

CHASE PHILLIP             1290.00     1300.00      1245.87
CHASE PHILLIP              876.00      900.00       902.73

* TOTAL FOR EMPLOYEE: CHASE PHILLIP
.                         2166.00     2200.00      2148.60
.
.
```

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EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
* EMPLOYEE: GALLAWAY MATT			
GALLAWAY MATT	2800.00	3000.00	2689.50

.
.
.

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EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
* EMPLOYEE: SKANE WILLIAM			
SKANE WILLIAM	400.00	400.00	378.48
SKANE WILLIAM	340.00	350.00	368.34
SKANE WILLIAM	750.00	725.00	704.26
* TOTAL FOR EMPLOYEE: SKANE WILLIAM	1490.00	1475.00	1451.08

.
.
.

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EMPLOYEE	REQUESTED EXPENSES	ALLOCATED EXPENSES	ACTUAL EXPENSES
** GRAND TOTAL **			
	8710.00	8925.00	8559.84

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.
.

SECTION 4
CLARIFICATIONS TO THE RETRIEVE MANUAL

This section clarifies several aspects of RETRIEVE, including the relational operators, the report form name, and the maximum number of words or characters allowed for field names in a structure file.

RELATIONAL OPERATORS

The table below shows the relational operators available in RETRIEVE; either the short or long form may be used.

Short Form	Long Form
< *or* LT	LESS THAN
> *or* GT	GREATER THAN
= *or* EQ	EQUAL TO
# *or* NE	NOT EQUAL TO *or* UNEQUAL TO
<= *or* LE	LESS THAN OR EQUAL TO
>= *or* GE	GREATER THAN OR EQUAL TO

Examples

.1:6 LIST ALL BUT PAY FOR HRS LESS THAN OR EQUAL TO 40 AND SALARY<5↵

.1:6 LIST ALL BUT PAY FOR HRS<=40 AND SALARY LT 5↵

REPORT FORM NAME

When preparing a report, the user may specify a report form name containing as many as 40 characters. Any printing keyboard character, except the space, may be used in the name. If the user wants to include a space in the name, he must enclose the name in slashes (/); the maximum name length then becomes 38, excluding the slashes.

If the user enters a report form name that violates any of these rules, RETRIEVE prints

INVALID REPORT FORM NAME

and prompts again for the report form name.

FIELD NAMES

The combined field names in a structure file may contain a maximum of 250 words or 750 characters if the number of characters in each field name is evenly divisible by 3. Each field name in a structure file requires one word for a pointer and one word for every three or any part of three characters of the field name. For example, if a field name contains seven characters, it requires four words: one word for a pointer, one word for the first three characters, one word for the second three characters, and one word for the seventh character. Thus, the user can create a data base with many fields if he uses short field names.