

065542

Dbase III+ Programming Course

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Introduction

Assumptions - Basic knowledge of database creation/modification commands, full screen editing commands, listing

Important principle : RTFM

Scope of course - Data organization
dBASE III+ Databases
Writing programs
Memory variable usage
Creating customized data entry forms
Linking more than one database

Data Organization

headers vs changing data
separating into master lists and data
linking with a common key

master list, code list headers

dBASE III+ Databases

field types
indexes

Select Areas

dbf, ndx, alias
specifying field names with alias

index

→

Memory Variables

assignment
vs field names
types (C, N, L, D, M, U)

*in memory but not stored beyond time of that job - in
lost when computer turned off*

Expressions

Combination of memory variable and/or fields using operators → single value

consistency in types, date exceptions
numeric - +, -, *, /, functions
character - concatenation C+C
date - +
logical - numeric comparison vs assignment
- string comparison, SET EXACT ON/OFF
- date comparison

*eg A=3, B=A+3
must be of the required type*

hierarchy of operators
conversion between types - VAL(), STR(), CTOD(), DTOC() etc.
FOR, WHILE clauses

Displaying Information

?, ??

SET PRINT ON/OFF

@ say ...

PICTURE clause

SET DEVICE TO PRINT/SCREEN

@ clear and box commands

Entering Information

ACCEPT
QGET
PICTURE
READ

Program Flow Statements

repetitive execution of statements DO WHILE logical expression
LOOP
EXIT
ENDDO

conditional execution of statements IF logical expression
ENDIF
QUIT
RETURN

Procedures, Subroutines, Functions, Passing Parameters

DO myproc [WITH par1,...]

PARAMETERS

.

.

RETURN

functions

Using a procedure file - PROCEDURE myproc1
RETURN
PROCEDURE myproc2
RETURN

SET PROCEDURE TO

Scope Of Memory Variables

Releasing memvars at end of program
PRIVATE
PUBLIC

Writing A Program

MODIFY COMMAND

debugging

- interrupting with Esc
- SET STEP ON/OFF
- SET ECHO ON/OFF
- RESUME

Programming Exercises

Creating A Database System

```
set default to a
select 1
create census
```

Field Name	Type	Length	Decimals
ID	C	3	0
SURNAME	C	20	0
INITIALS	C	10	0
MARRIED	L	1	0
DOB	D	8	0
OTHER	M	10	0

```
append from census.asc sdf
index on id to cen_id
```

- index key expressions can be numeric, character or date type

```
display structure
list
```

```
select 2
create taxpaid
```

Field Name	Type	Length	Decimals
ID	C	3	0
INCOME	N	8	2
FYEAR	N	4	0
TAXPAID	N	8	2
SWIM	N	8	2

```
append from taxfile.asc sdf
index on id to tax_id
display structure
display status
close databases
```

Instead of typing all above do the following :

```
do make
do load
select 1
browse
select 2
browse
```

Do disptax

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Program 1 - List tax paid to screen for a given ID or all ID's

modify command disptax

```
*      Name      : DISPTAX.PRG
*      Author    : Paul Gioia
*      Date      : 8/12/87
*      Purpose   : Show how much tax these rich bourgeois capitalists pay
*                  while we proletariat struggle back on the farm.

private id_val, lorder
set talk off
set exact on
clear
select 1                                && open database with
use taxpaid index tax_id                && taxpaid index

*      Alternatively - use taxpaid
*                  set index to tax_id

do while .t.                            && set up a repetitive loop

    accept "Enter ID (blank = all ID's, E to exit) " to id_val

    id_val = upper(trim(id_val))
    if "E" = id_val                       && This will work no matter what
        exit                             && EXACT is set to
    endif

    if "<>" = id_val                        if id_val not empty
        seek id_val                      -- must have open index file otherwise - error message
        if eof()                         if end of file then return to which means that no record found
            ? chr(7), "That ID doesn't exist." && Check that id_val exists
            loop                          && If not then start again
        endif
    else
        go top                           && If all ID's then start at top
    endif                                && of file

do while .not.eof()

    ? id, income, taxpaid, swim, "(" + str(swim*100/income, 6, 2) + "%)"
    skip moves record pointer down through file.

    if "<>" = id_val .and. id_val <> id - to next command when finished dealing
        exit                             with records of that particular id value
    endif
enddo
?
wait
enddo

close databases in all select areas.
clear
```

Quit = exit from DBase although

Program 2 - List tax paid to screen for a given ID or all ID's using full screen display and editing commands.

modify command disptax1

```
* Name      : DISPTAX1.PRG
* Author    : Paul Gioia
* Date      : 8/12/87
* Purpose   : Show how much tax these rich bourgeois capitalists pay
*             while we proletariat struggle back on the farm.
```

```
private id_val
set talk off
set exact on
clear
select 1                                && open database
use taxpaid index tax_id
id_val=space(3)

* Alternatively - use taxpaid
*               set index to tax_id

do while .t.                            && set up a repetitive loop

    set color to bg/n,r/w
    clear
    @12,20 say "Enter ID (blank = all ID's, Esc to exit) " get id_val :
    picture "!!!"
    read
    if readkey()=12                      && Quit if Esc key pressed
        exit
    endif

    if id_val<>" "
        seek id_val
        if eof()
            set color to r
            @15,20 say "That ID doesn't exist." && Check that id val exists
            @14,18 to 16,30                  && Print box
            ? chr(7)                          && Sound bell
            wait ""
            loop                               && If not then start again
        endif
    else
        go top                             && If all ID's then start at top
    endif                                && of file

clear
do while .not.eof()
    @row()+1,0 say id
    @row(),col()+2 say income
    @row(),col()+2 say taxpaid
    @row(),col()+2 say swim
    @row(),col()+2 say "("+str(swim*100/income,6,2)+"%)"
    if row()>=23
```

```
        wait  
        clear  
    endif  
    skip  
  
    if id_val<>" " .and. id_val<>id  
        exit  
    endif  
enddo  
wait  
enddo  
  
close databases  
clear
```

Program 3 - List tax paid to screen for a given ID or all ID's using full screen display and editing commands, illustrating the use SET RELATION TO.

modify command disptax2

```
*      Name      : DISPTAX2.PRG
*      Author    : Paul Gioia
*      Date      : 8/12/87
*      Purpose   : Show how much tax these rich bourgeois capitalists pay
*                  while we proletariat struggle back on the farm.

private id_val
set talk off
set exact on
clear

select 1                                && open databases
use census index cen id
select 2
use taxpaid index tax id
set relation to id into census

id_val=space(3)

do while .t.                            && set up a repetitive loop

    set color to bg/n,r/w
    clear
    @12,20 say "Enter ID (blank = all ID's, Esc to exit) " get id_val ;
    picture "!!!"
    read
    if readkey()=12                      && Quit if Esc key pressed
        exit
    endif

    if id_val<>" "
        seek id_val
        if eof()
            set color to r
            @15,20 say "That ID doesn't exist." && Check that id_val exists
            @14,18 to 16,30 && Print box
            ? chr(7) && Sound bell
            wait ""
            loop && If not then start again
        endif
    else
        go top && If all ID's then start at top
    endif && of file

clear
do while .not.eof()
    @row()+1,0 say trim(census->surname)+" "+trim(census->initials)+", "
    @row(),25 say income
```

```
@row(),col()+2 say taxpaid
@row(),col()+2 say swim
@row(),col()+2 say "("+str(swim*100/income,6,2)+"%)"
if row()>=23
    wait
    clear
endif
skip

if id_val<>" " .and. id_val<>id
    exit
endif
enddo
wait
enddo

set relation to
close databases
clear
```

Program 4 - List tax paid to screen for a given ID or all ID's using full screen display and editing commands, illustrating the use SET RELATION TO and printer commands.

modify command `disptax3`

```
*      Name      : DISPTAX3.PRG
*      Author    : Paul Gioia
*      Date      : 8/12/87
*      Purpose   : Show how much tax these rich bourgeois capitalists pay
*                  while we proletariat struggle back on the farm.

private id_val,page,repname,en,ef
set talk off
set exact on

select 1                                && open databases
use census index cen_id
select 2
use taxpaid index tax_id
set relation to id into census

id_val=space(3)
en=chr(27)+"E"
ef=chr(27)+"F"
repname=en+"Tax Paid By Rich People"+ef

do while .t.                            && set up a repetitive loop

    page=0
    set device to screen
    set color to bg/n,r/w
    clear
    @1,0 to 24,79 double                && Draw a box
    @10,32 say "P r o g r a m 4"
    @12,18 say "Enter ID (blank = all ID's, Esc to exit) " get id_val ;
    picture "!!!"
    read
    if readkey()=12                      && Quit if Esc key pressed
        exit
    endif

    if id_val<>" "                      && Id_val exists?
        seek id_val
        if eof()
            set color to r
            @15,24 say "That ID doesn't exist. Press any key..."
            @14,22 to 16,62              && Print box
            ? chr(7)                     && Sound bell
            wait ""
            loop                          && If not then start again
        endif
    else
        go top                          && If all ID's then start at top
```

```

endif                                     && of file

@15,15 say "Please check that printer is online. Press a key..."
wait ""
set device to print

do while .not.eof()
  do cheader with 56,repname
    @prow()+1,0 say trim(census->surname)+" "+trim(census->initials)+", "
    @prow(),25 say income
    @prow(),pcol()+2 say taxpaid
    @prow(),pcol()+2 say swim
    @prow(),pcol()+2 say "("+str(swim*100/income,6,2)+"%)"
    skip

    if id_val<>" " .and. id_val<>id
      exit
    endif
  enddo
  eject
enddo

set relation to
close databases
clear

*      Name      : CHEADER.PRG
*      Author    : P. Gioia
*      Date      : 15/12/87
*      Purpose   : Printer a page header, conditionally

parameters erow,rname

if prow()>erow .or. page=0               && Shall we do a header?
  if prow()<>0                           && Do we need to eject?
    eject
  endif

  page=page+1
  set date british
  @0,0 say "Date : "+dtoc(date())
  @0,23 say "Department Of The Friends Of A. Bond"
  @0,66 say "Page : "+str(page,4)
  @2,40-len(rname)/2 say rname
  @4,0 say "      Taxpayer          Yearly      Tax Paid  Bubble Bubble"+
    "      (vs Income)"
  @5,0 say "      Income"
  @6,0 say ""
endif
return

```