SIBINTER

SIBINTER

```
* * * * * * * * * * * * * * * * * * *
*  N O R D  I N T E R A C T I V E   *
*        I N F O R M A T I O N       *
*          P R O C E S S I N G       *
*                A N D               *
* R E P O R T  G E N E R A T I N G   *
*              S Y S T E M           *
* * * * * * * * * * * * * * * * * * *
```

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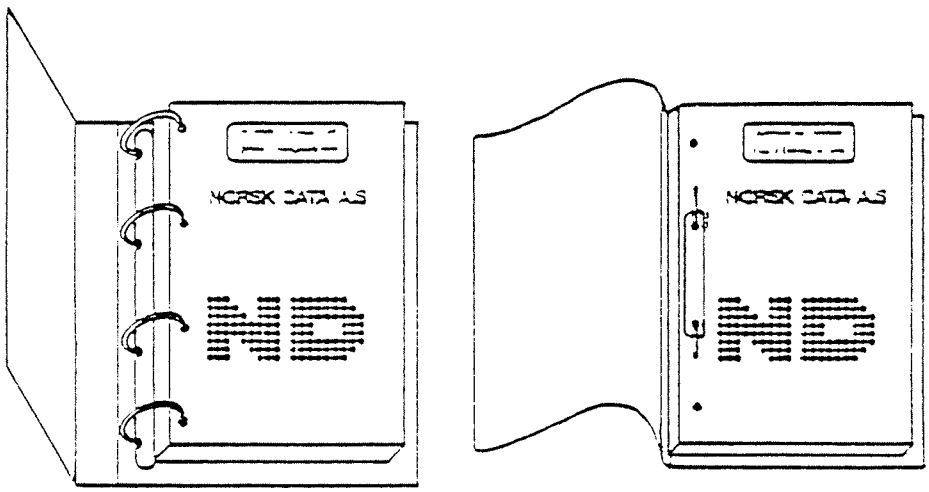

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Preliminary manual

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Forword to the Nord Sibas Interactive, Key to Disk and Report Generating System Manual

The Nord Sibas Interactive, Key to Disk, and Report Generating System, called Sibinter for short, is the first step towards providing non computer professionals with a tool which will enable them to use NORD computer systems for the handling of record oriented data.

Sibinter today

This first version of the system does not pretend to acheive this aim, but what it purports to acheive are the following:

For SIBAS oriented users:

A data base can be used without writing any application programs. Transactions can be defined by creating Command Input Mode files, corresponding to a Job Control language which is SIBAS database oriented. Simple reports can be generated. Those who dare it can get records from serial SIBAS realms the "back way" at least 100 times faster than is possible with SIBAS.

For non SIBAS users:

Record formats for input and output are easily defined, and it takes 1-2 hours to learn how to use the Key to Disk System. For report generating, a knowledge of Fortran Format is really necessary. The same applies for SIBAS users.

The next release

The next release of Sibinter planned for Spring 1977 will be much nearer the non computer professional. As mentioned in chapter 5 of the manual, there will be

* free format definition for record layouts where the user describes how he wants a record printed out in non computer language terms.

* for SIBAS realms containing records, each data element will have a default print or read format defined, so that the user no longer needs to define these.

* free language commands will be used through out Sibinter. For example the command SOPDB will be replaced by OPEN-DATA-BASE which can again be represented by any unique abreviation like O-D-B O--B and so on. There will also be the possibility of changing Command names so that one can replace

Implemented

OPEN-DATA-BASE by
OUVREZ-LE-DATA-BASE
or
ÅPNER-DATA-BASEN
or
OFFEN-DATA-BASISMUS
or
AVATA-DATA-BASAINEN
or
OTKPbBAT-DATA-bACEH

for example.

* A new language for the programming of record oriented transactions will be available (see appendix 2). This is

NOBOL

the NOrd Business Oriented Language.

* The release of Sibinter in September 1977 will contain SUPER NOBOL. The user will then address NORD systems something like as follows:

For Sibas:

For-data-base < data base > get-all-records-in-realm < realm > where-data-item <item name> has-values-between< value1, value2> . Produce-report <report identification>

For non-Sibas:

Get-all-records-in-file < file > where-data-item <name1> has-values-between <value1, value2 > and where-data-item < name2 > is-less-than < value > .
Sort-records-found-using-data-item < name > .
Produce-report <report identification> .

* It will no longer be necessary to program Record Oriented Systems on NORD machines using anything other than Sibinter, NOBOL, and SUPER NOBOL. Application programmed in Fortran, Basic, NPL and MAC will take more space and execute slower.

Finally if ND is to acheive this aim, we need Your Comments, Criticism (constructive or otherwise, the otherwise will be stored on a write only device),. Ideas, so that we can come nearer the desired aims.

Those who do not have SIBAS can still use the Key to Disk and Report Generating part of Sibinter without incurring any obligations with regard to SIBAS.

Comments, etc. should be sent to

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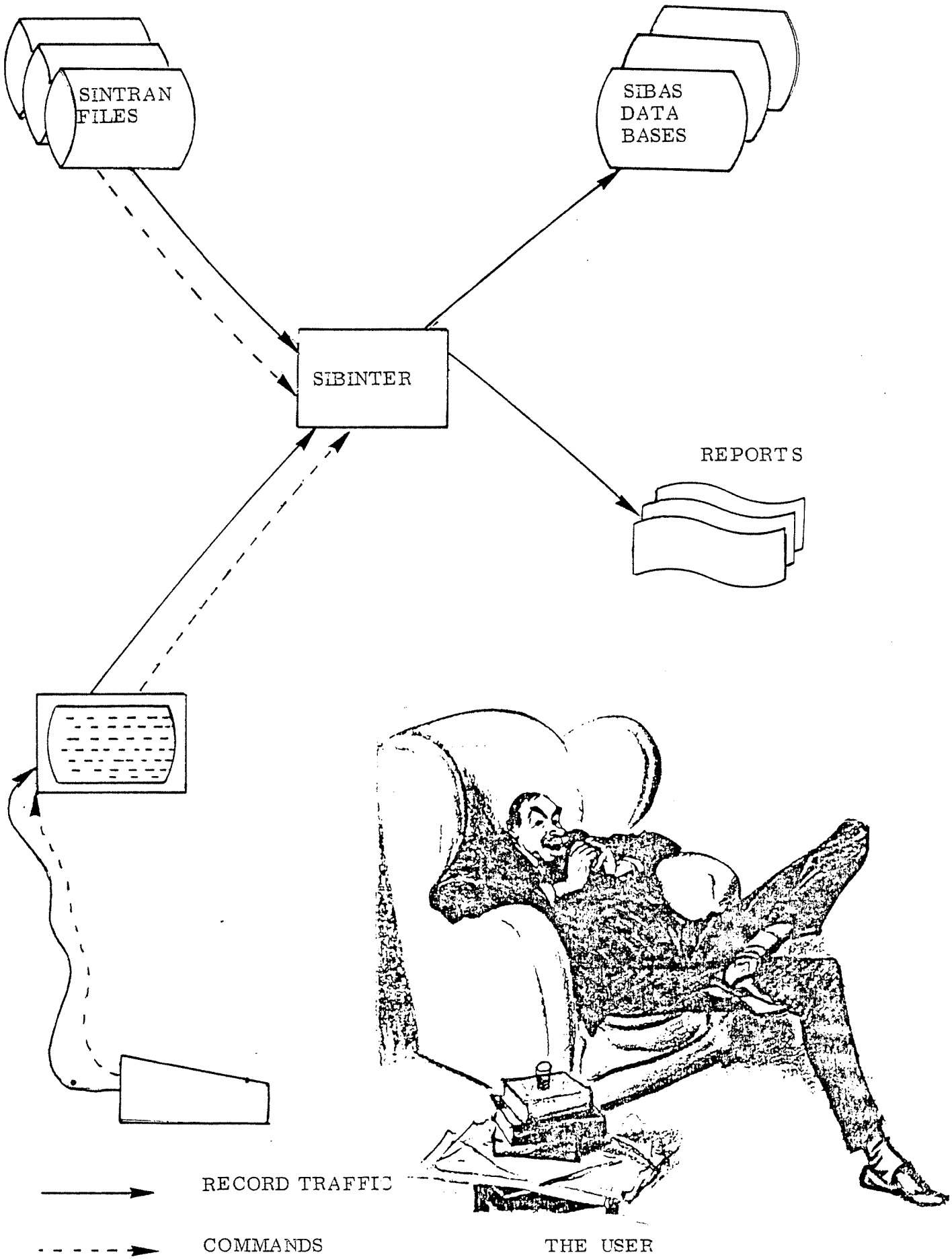

SINTRAN
FILES
SIBAS
DATA
BASES
SIBINTER
REPORTS
RECORD TRAFFIC
COMMANDS
THE USER

1 INTRODUCTION

1.1 Origens of Sibinter

The first version of the program was developed in connection with the use of SIBAS by the Christiania Bank and Kreditkasse in Oslo. Sibinter enabled one to execute SIBAS calls against a SIBAS database without having to write an application program. Sibinter used the SIBAS call names as commands, and then asked the user to give in the various input parameters (SIBAS names, data item values, currency indicators etc), and when all input was complete, it executed the specified call. Because Sibinter prompts the user, it is quite well suited as a teaching aid for those who wish to learn how to use Sibas. In this connection, it was decided to improve the program a bit, a process which got completly out of hand and resulted in the present version of Sibinter.

1.2 Sibinter Now

The present version of Sibinter contains some 70 or so commands of which about 40 are directly concerned with the use of Sibas. These are the various SIBAS Data Manipulation Statement call names, plus some more powerful commands like GETSET and GETSR (get search region), which enable one to access and print out all the records in a given set or search region with one command. Some of the commands are directly concerned with the NORD implementation of SIBAS, and address the Sibas/User interface. The remaining commands are concerned with the specification of record and data item formats, opening and closing of input/output files for both data and commands, the specification of report layouts, and the automation of the use of Sibinter. It is possible to open files for random read, or read and write access, and read in records from an input file and store them in a SIBAS data base, or the other way round, or one can read in records from a terminal item by item and store them on a random access file.

When Sibinter is working on random access files, it always reads or writes 1024 word pages.

1.3 The Aim of Sibinter

The ultimate aim of Sibinter is to enable non programming personel to access and use the data in a Sibas database. The present version is on the right road, but still a long way from this aim. It is hoped that the next release, described in 5 will come closer to this goal. People with a knowledge of programming should be able to learn how to use the key to disk part of the present Sibinter in 2 - 3 hours.

2 THE AVAILABLE COMMANDS

2.1 Introduction

The commands at present are from 3 to 6 characters long. These will be replaced by longer more descriptive command names where abreviations which are unique will also be allowed just as in SINTRAN III or FILE SYSTEM commands. However, at present the 3 to 6 letter commands must be typed in correctly and in full.

34 of the commands are the SIBAS DML (data manipulation) statements. Four of these are not yet described in the SIBAS users manual. These are:

(SCHPO)	TAKE-CHECK-POINT
(SINIT)	INITIATE-TRANSACTION
(STERM)	TERMINATE-TRANSACTION
(SLOG)	LOG-USER-INFORMATION

they are not yet available from SIBINTER.

The remaining DML commands may be found in the SIBAS users manual pp (5.2) 2 - (5.2) 4. Note that some have been slightly changed, see appendix 1. Remember to connect the words defining the DML statements by hyphens. Two examples are given below:

(SOPDB)	OPEN-DATA-BASE
(SFTCH)	FIND-USING-KEY

The DML statements are at present defined by the SIBAS DML call name (in brackets above). They will eventually be replaced by the full names as indicated above.

In SIBINTER, unlike SINTRAN or FILE SYSTEM commands, it is NOT possible to give in command parameter values on the same line as the command identifying string. A command name is terminated by CR (carriage return) and SIBINTER willthen ask for input parameters if it is in manual mode, or execute the command if it is in automatic mode (this is further explained below).

The remaining commands are described below. As for the DML calls described above, the short form of the command at present in use is given in brackets first, followed by the longer descriptive name to be implemented later.

2.2 The Commands

SET-MANUAL-MODE

input parameters: none
purpose: sets SIBINTER in manual mode which means that each command will request its input parameters in turn.

SET-AUTOMATIC-MODE

input parameters: none
purpose: sets SIBINTER in automatic mode which means that each DML command will be executed upon the assumption that the necessary input parameters such as SIBAS name lists, protect codes etc, but NOT key values or data item values, already lie in the SIBINTER input parameter buffer area (see below for SAVE-BUFFER and GET-BUFFER). For DML calls which require data item or key values as input, these will be read from the values input file, likewise DML calls which output values will output these to the values output file (see OPEN-VALUES-INPUT-FILE and OPEN-VALUES-OUTPUT-FILE below).

WRITE-NAME-BUFFERS

input parameters: none
purpose: to write the contents of the SIBINTER name buffers to the command output file. Before executing any DML calls, the command will give the output shown below:

```
GIVE COMMAND : WRITE-NAME-BUFFERS

*DATA BASE   :                *REALMS   :


*USAGE MODES    :     0
*PROTECT MODES :     0

*REALMS FOR CALLS
*FETCH     :                  *READ FIRST IN REALM  :
*STORE     :                  *FETCH BETWEEN LIMITS :
*LOGGING   :
*SET NAME  :                  *SIBAS TRANSACTION    :
*KEY NAMES FOR
*FETCH     :                  *FETCH BETWEEN LIMITS :
*INSERT OR REMOVE FROM MANUAL INDEX                 :

*DATA ITEMS ARE :

GIVE COMMAND :
```

After executing a number of DML calls in manual mode, the command WRITE-NAME-BUFFERS might given the output shown below:

```
GIVE COMMAND :  WRITE-NAME-BUFFERS

*DATA BASE  : COURSE      *REALMS  :

                    COMPANY    STUDENT    INTRESTS  COMMENTS
*USAGE MODES   :      2          2          2          2
*PROTECT MODES :      0          0          0          0

*REALMS FOR CALLS
*FETCH     :                 *READ FIRST IN REALM  :
*STORE     : COMPANY         *FETCH BETWEEN LIMITS :
*LOGGING   :
*SET NAME  :                 *SIBAS TRANSACTION    :
*KEY NAMES FOR
*FETCH     :                 *FETCH BETWEEN LIMITS :
*INSERT OR REMOVE FROM MANUAL INDEX                :

*DATA ITEMS ARE :
 COMPNAME  COMPABNA  COMPADDR  COMPTELP
GIVE COMMAND :
```

(VAL) WRITE-VALUE-BUFFERS

input parameters: none

purpose: to write the contents of the value buffers to the command output file.

Before and after results of the command corresponding to the example given above for WRITE-NAME-BUFFERS might be

Before:

```
GIVE COMMAND :    WRITE-VALUE-BUFFERS

LENGTHS OF VALUE BUFFERS ARE FOR
STORE,,MODIFY,FETCH,AND FEBL :  200 200  10  10
PROGRAM EXECUTION MODE IS : MANUAL
CONNECTED FILE NUMBERS ARE FOR
COMMAND INPUT :    1 COMMAND OUTPUT :    1
VALUES INPUT  :    1 VALUES OUTPUT  :    1
FROM SIBAS    : 128 TO SIBAS        : 129
LAST FORCED CHECK POINT IDENTIFCATION :
    0    0    0    0    0    0    0    0
```

After:

```
LENGTHS OF VALUE BUFFERS ARE FOR
STORE,,MODIFY,FETCH,AND FEBL :  200 200  10  10
PROGRAM EXECUTION MODE IS : MANUAL
CONNECTED FILE NUMBERS ARE FOR
COMMAND INPUT :    1 COMMAND OUTPUT :    1
VALUES INPUT  :    1 VALUES OUTPUT  :    1
FROM SIBAS    : 128 TO SIBAS        : 129
LAST FORCED CHECK POINT IDENTIFCATION :
    0    0    0    0    0    0    0    0

DATA ELEMENT VALUES ARE :
     2     PAN

KEY VALUE IS :
SIDIS    :        1
```

(COMINP) OPEN-COMMAND-INPUT-FILE

input parameters: < file name and type >
purpose: to open the given file for command input. The command input file should be symbolic, e.g. produced using QED, and should contain one command name per line. Note that saved buffer names may also be used as commands. (see SAVE-BUFFERS and GET-BUFFERS)

(COMOUT) OPEN-COMMAND-OUTPUT-FILE

input parameters: < file name and type >
purpose: to open the given file for command output. This applies to the output from the commands
WRITE-NAME-BUFFERS
WRITE-VALUE-BUFFERS
HELP
WRITE-INFORMATION

(VALINP) OPEN-VALUES-INPUT-FILE

input parameters: < file name and type>
purpose: to open the given file for values input. The values referred to are key values or data item values, and should be in symbolic form as for COMMAND-INPUT-FILE.

(VALOUT) OPEN-VALUES-OUTPUT-FILE

input parameters: < file name and type> , <mode>
purpose: to open the given file for values output. The file can be opened for sequential write (first record to beginning of file or sequential write append.

(SAVE) SAVE-BUFFERS

input parameters: <name >. < description >
purpose: to save the contents of all name buffers and some of the value buffers on a named area on a file. The file must be predefined and have the name SIBINTER:DATA. Each saved area requires 1K (1024 words), and the first 1K of the file is reserved by SIBINTER. The parameter description is a 78 character description of the saved buffers contents.

(GETBUF) GET-BUFFERS

input parameters: <name>
purpose: to replace the contents of the SIBINTER name and value buffers by the contents of the named buffer area. The name and description of the buffers read in are printed out. Buffer names at present must be 8 characters, this will be replaced by an abreviated look up name system like that used for the SIBINTER commands. Note that buffer names can also be used as commands, and this is the same as using the GET-BUFFERS command.

(RECINP) OPEN-RECORD-INPUT-FILE

input parameters: <file name and type>,<record length>, <start word number>,<start record number>

purpose: to open the values input file for record input. The start word number is > or = 1 and indicates where the first record begins on the file. The start record number is > or = 1 and indicates which record one wishes to begin reading out. (the first, second, third etc.)

(RECOUT) OPEN-RECORD-OUTPUT-FILE

input parameters: <file name and type>,<record length> <start word number>,<start record number>.

purpose: to open the values output file for record output

(GET) GET-RECORD

input parameters: none

purpose: to retrieve the next record from the values input file and write out its contents on the command output device.

(PUT) PUT-RECORD

input parameters: none

purpose: to write the present record to the values output file, OR if the command input file is the teletype, to read in data values to the present record from the teletype and write the record to the values output file.

(PRINT) PRINT-RECORD

input parameters: none

purpose: to print the contents of the data items value buffer on the command output file.

(READ) READ-RECORD

input parameters: none
purpose: to read values for data items to the value buffer from the command input file.

(INFO) WRITE-INFORMATION

input parameters: none
purpose: to write information about SIBINTER to the command output file.

(HELP) HELP

input parameters: none
purpose: to write a list of defined command names and the names of saved buffers on the command output file.

(FORMN) DEFINE-FORMAT-FOR-ITEMS

input parameters: < number of items> ,< names> , < format>
purpose: to read in a list of item names and the format of their values.

In manual mode this command is automatically invoked in other commands which read in values for data items, or if no format has been defined.

(FORMK) DEFINE-FORMAT-FOR-FIND-KEY

input parameters: < key name>, < format>
purpose: to read in a key name for FIND-USING-KEY, and the format of the key value.
In manual mode this command is automatically invoked when executing the command FIND-USING-KEY.

NOTE: In both manual and automatic mode the format defining function or the name defining function will be automatically invoked if no names or no format exists for those commands requiring value input.

(DHEAD) DEFINE-HEADING

input parameters: <number of data words>,<format>,
<number of records per page>,<clear screen character>

purpose: to define a heading for a printpage. Up to 256 data words can be printed out in a heading. These must be moved from the data item value buffer to the heading buffer using the MOVE-TO-HEADING-BUFFER command. The clear screen character value depends upon the terminal type in use, and for eventual line printer output should be 12 decimal.

(MTHEAD) MOVE-TO-HEADING-BUFFER

input parameters: none

purpose: to move the first 256 words from the data items value buffer to the heading value buffer.

(PHEAD) PRINT-HEADING

input parameters: none

purpose: to write the heading to the values output file.

(SLENG) SET-LENGTHS-OF-VALUE-BUFFERS

input parameters: <length for FIND-USING-KEY key value>
<length for FIND-BETWEEN-LIMITS key value>
<length for STORE values>,<length for MODIFY values>

purpose: to set the number of data words to be transferred to SIBAS from the value buffers for the various calls.

(GETSET) GET-SET

input parameters: <set name> (in manual mode)

input parameters: none (in automatic mode)

purpose: to retrieve and write out the contents of all the records in a set on the values output file
The set owner must be current record when GET-SET is used. If all records in the set are accessed, the current record will be the set owner when the command is completed.

(GETSR) GET-SEARCH-REGION

input parameters: none
purpose: to retrieve and write out the values from all the records in a search region on the values output file.

The search region must be the current search region. The values of the current record will be written out first, and this current record must therefore be a member of the search region (the first if all records are required).

(SETDEV) SET-SIBAS-COMMUNICATION-DEVICES

input parameters: < device set code>
purpose: to set the SINTRAN internal device numbers in the user side of the SIBAS interface.

(UTBLK) WRITE-LOG-BLOCK

input parameters: none
purpose: to force the SIBAS side of the SIBAS interface to write the current block for logging of DML call input to the log file.

(EXIT) EXIT

input parameters: none
purpose: to terminate SIBINTER.

(COPY) COPY-RECORDS

input parameters: none
purpose: to copy records from the values input file to the values output file. At least one must be opened for record input or output.

(CLOSE) CLOSE-FILE

input parameters: < connected file number>
purpose: to close the file with the given number.

(SETWCN) SET-WRITE-CONDITION

input parameters: < condition >, < no. of words to be compared >, < start word in record >
purpose: to set a condition for the writing of records

(DELWCN) DELETE-WRITE-CONDITION

input parameters: none
purpose: to remove a write condition

(STEPST) STORE-WITH-STEP

input parameters: < maximum number of records >
purpose: to step the first word of the first data item value in the value buffer by 1, and execute the SIBAS DML call STORE.

(STEPGT) GET-WITH-STEP

input parameters: < maximum number of times >
purpose: to execute the SIBAS DML call SGET the given number of times.

(NEXTNR) NEXT-N-RECORDS

input parameters: < N >
purpose: to COPY the next N records.

(SIBOFF) SWITCH-SIBAS-OFF

input parameters: none
purpose: Sibas calls will be simulated only, and a status of 1 always returned.

(SIBON) TURN-SIBAS-ON

input parameters: none
purpose: to anull the effect of SWITCH-SIBAS-OFF

(GOLOAD) GO-TO-LOADER

input parameter: none
purpose: to call the loader.

(GOUSER) GO-TO-USER-SUBROUTINE

input parameters: none
purpose: to call a user defined subroutine.

NOTE: GO-TO-LOADER and GO-TO-USER-SUBROUTINE are described in appendix 3. To return from the loader to SIBINTER, give the command RUN. All SINTRAN III and FILE SYSTEM commands are available from the loader if one writes @ .

(TUSED) TIME-USED

input parameters: none
purpose: to print out the total elapsed time for the previous call.

(CC) COMMENTS

input parameters: none
purpose: to enable the user to write a comment, terminated by CCC.

RENAME-COMMAND

input parameters: < old command name> < new command name, parameters>
purpose: to enable the user to rename, or translate all commands.

SET-NUMBER-OF-LINES-PER-PAGE

input parameters: < number of lines> (>0 and >73), < new page character>
purpose: to alter the number of lines/page of a report. Setting to 0 will suppress the report.

SET-BACKSPACE-CHARACTER

Input parameters: < new backspace character >
purpose: to give in the backspace character appropriate to the terminal being used.

2.3 Comments on the Commands and Command Input

Sibinter attempts to make things as convenient as possible for the user. Throughout CR (carriage return) implies a default value where this is applicable. Depending on the type of parameter asked for, the default value can be

0 - zero

equivalent to the answer NO

equivalent to typing in the same as you typed in the first time you "answered" the question.

Note that this does NOT apply to the reading in of VALUES. Moreover, if Sibinter does not accept your answer, it will repeat the question.

One source of confusion may be that between the commands VALOUT and RECOUT, and VALINP and RECINP. VALINP and VALOUT open the values input and values ouput files for sequential read and write respectively. RECINP and RECOUT open the values input file and the values output file for random read and write respectively; the records are nevertheless always read sequentially. This possible stumbling block will be removed in the next version.

Note also that Sibinter expects to find a SINTRAN file called SIBINTER:DATA, and will use this file to store name-buffers on.
It is not possible to use the command SAVE-BUFFERS if nore than one termianl is using Sibinter under the same SINTRAN user name. This will be fixed the next release.

3 EXAMPLES OF HOW THE SYSTEM MAY BE USED

Below is the direct print out on a Decwriter from a session with Sibinter.

```
Aold-sibinter

        * * * * * * * * * * * * * * * * * * *
        *                                     *
        *              N O R D                *
        *  SIBAS INTERACTIVE,KEY TO DISC,     *
        *              A N D                  *
        *     REPORT GENERATING SYSTEM        *
        *                                     *
        * VERSION 1985-A            760928   *
        * * * * * * * * * * * * * * * * * * *

IF YOU WANT INFORMATION TYPE 'Y':
GIVE COMMAND : cc

all user input to sibinter is in small letters,all output from sibinter
is in capital letters ccc
GIVE COMMAND : info
```

Note: the version of Sibinter to be used on the course is the development version. It has free language command format. If the fixed format commands in the example following are replaced by their free language equivalents, the example still applies.

```
THIS PROGRAM ALLOWS YOU TO INTERACT DIRECTLY WITH A
SIBAS DATA-BASE, BY TYPING  A DML-STATMENT.
EACH DML-STATMENT WILL COLLECT NECESSARY PARAMETERS.
YOU MAY ALSO USE THE COMMANDS:
 SLENG   : READS IN THE LENGTHS OF THE VALUE BUFFERS
 GETSR   : GETS ALL RECORDS IN A SEARCH REGION
 GETSET  : GETS ALL RECORDS IN A SET
 FORMK   : READS IN THE FORMAT FOR A KEY
 FORMN   : READS IN THE FORMAT FOR ITEMS
 NAMES   : TYPES OUT THE CONTENT OF THE NAME BUFFERS
 VAL     : TYPES THE CONTENT OF THE VALUE BUFFERS AND THE EXECUTION MODE
 HELP    : TYPES A LIST OF AVAILABLE COMMANDS
 SAVE    : SAVES THE CONTENTS OF ALL BUFFERS ON A FILE
 MAN     : SETS EXECUTION MODE TO MANUAL
 AUTO    : SETS EXECUTION MODE TO AUTOMATIC
 EXIT    : TERMINATES THE SIBAS INTERACTIVE PROGRAM
 GETBUF  : GETS THE CONTENTS OF ALL BUFFERS FROM A FILE
 COMINP  : OPENS FILE FOR COMMAND INPUT
 COMOUT  : OPENS FILE FOR COMMAND OUTPUT
 VALINP  : OPENS FILE FOR VALUES INPUT
 VALOUT  : OPENS FILE FOR VALUES OUTPUT
 SETDEV  : SETS INTERNAL DEVICE NUMBERS
 UTBLK   : WRITES CALL INPUT LOG BLOCK
 DHEAD   : DEFINES A PAGE HEADING
 PHEAD   : WRITES PAGE HEADING
 MTHEAD  : MOVES 256 WORDS FROM VALUE BUFFER TO HEADING BUFFER
 RECINP  : OPENS A FILE FOR RECORD INPUT
 RECOUT  : OPENS A FILE FOR RECORD OUTPUT AND INPUT
 GET     : WRITES A RECORD TO THE VALUE BUFFER
 PUT     : WRITES A RECORD FROM THE VALUE BUFFER
 PRINT   : PRINTS THE VALUE BUFFER ON THE COMMAND OUTPUT DEVICE
 CLOSE   : CLOSES A FILE WITH THE GIVEN CONNECTED NUMBER
 COPY    : COPIES RECORDS FROM VALUE INPUT FILE TO VALUE
           OUTPUT FILE.AT LEAST ONE FILE MUST BE OPENED
           FOR RECORD INPUT OR OUTPUT
 SETWCN  : SETS WRITE CONDITION
 DELWCN  : DELETES WRITE CONDITION
 STEPST  : EXECUTES STORE A GIVE NUMBER OF TIMES
           STEPPING IVBUF(1) BY 1 EACH TIME
 STEPGT  : EXECUTES GET A GIVE NUMBER OF TIMES
 NEXTNR  : COPIES THE NEXT 'N' RECORDS
 READ    : READS VALUES FROM THE COMMAND INPUT DEVICE
 INFO    : PRINTS OUT INFORMATION ABOUT SIBINTER.
 SETWCN  : SETS A WRITE CONDITION
 GOLOAD  : GOES TO THE NORD LOADER.THE USER CAN THEN
           LOAD HIS OWN MODULE.ALL SINTRAN AND FILE
           SYSTEM COMMANDS ARE AVAILABLE FROM THE
           LOADER.RETURN TO SIBINTER BY USING "RUN"
 GOUSER  : CALLS THE USER DEFINED MODULE
 CC      : ENABLES THE USER TO WRITE A COMMENT TERMINATED WITH CCC
           (IN MANUAL MODE ONLY)
 SIBOFF  : TURNS OFF SIBAS CALLS
 SIBON   : TURNS ON SIBAS CALLS

TRANSACTION NAMES CAN ALSO BE USED AS COMMANDS.
AFTER THE EXECUTION OF EACH DML-STATEMENT,THE STATUS
CODE (IF DIFFERENT FROM 1) IS DISPLAYED.IF THE STATUS
IS NEGATIVE,THE DATABASE REGISTERS AND THE ERROR CODE
ARE DISPLAYED.
GIVE COMMAND : cc
```

```
lets now go to the loader and see what the time is  ccc
GIVE COMMAND : goload
*üdatcl
?
*üdatcl
?
*run

GIVE COMMAND : cc

this decwriter does not have a curly "a" character!!  ccc
GIVE COMMAND : cc

lets now read the symbolic code for sibinter,write it out on a
record oriented file with fixed record length.Then we can pick
out all the comment statements using "setwcn".
ccc
GIVE COMMAND : valinp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : sibo-sibi:symb
GIVE COMMAND : recout
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : "sibo-sibi:data"

FOR RECORD OUTPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 40,1,1,1
NO SUCH PAGE

IF SAME FILE FOR INPUT RECORDS TYPE "Y":
GIVE COMMAND : nextnr

HOW MANY MORE RECORDS ? : 200
NUMBER-OF-ITEMS:1
ITEM-NAME( 1):text
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : TEXT
TYPE (1-6) ?: 6
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN : 40
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
TEXT
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT)   80 CHARACTERS:
(40a2)
NO SUCH PAGE
NO SUCH PAGE
NO SUCH PAGE
NO SUCH PAGE
NO SUCH PAGE
NO SUCH PAGE
NO SUCH PAGE

MAX NUMBER  OF RECORDS READ/WRITTEN!!
GIVE COMMAND : cc
```

Sibinter reads in each 1K page, and then places a record in the correct position in the page. The page is written back to disc for each record written.

```
we can now look at the connected file numbers  ccc
GIVE COMMAND : val

LENGTHS OF VALUE BUFFERS ARE FOR
STORE,,MODIFY,FETCH,AND FEBL :  200 200  10  10
PROGRAM EXECUTION MODE IS : MANUAL
CONNECTED FILE NUMBERS ARE FOR
COMMAND INPUT :    1 COMMAND OUTPUT :    1
VALUES INPUT  :   46 VALUES OUTPUT  :   58
FROM SIBAS    : 128 TO SIBAS        : 129
LAST FORCED CHECK POINT IDENTIFCATION :
    0    0    0    0    0    0    0    0
RECORD OUTPUT CONNECTED FILE NUMBER :    58 RECORD LENGTH      :    40
              NEXT RECORD NUMBER    :   202 MAX RECORD NUMBER :   201
              NEXT WORD IN 1K PAGE  :   873

DATA ELEMENT VALUES ARE :
    -        IFLOGBF/22*0/,NO /0/,NORLMS/0/,
GIVE COMMAND : cc

lets now define a report for the print out of the file sibo-sibi:data
ccc
GIVE COMMAND : dhead
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN :
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
HEADING
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT)   80 CHARACTERS:
(///,20x,'s i b i n t e r  c o d e',///)
GIVE NUMBER OF RECORDS PER PRINT PAGE (<OR=70) : 30
GIVE IN DECIMAL VALUE FOR CLEAR SCREEN CHARACTER: 12
GIVE COMMAND : cc

we must now change the format for output ccc
GIVE COMMAND : formn
NUMBER-OF-ITEMS:
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : TEXT
TYPE (1-6) ?: 6
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN : 40
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
TEXT
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT)   80 CHARACTERS:
(1x,40a2)
GIVE COMMAND : close
GIVE CONNECTED FILE NUMBER : 58
GIVE COMMAND : recinp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : sibo-sibi:data

FOR RECORD INPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 40,1,1,201
GIVE COMMAND : cc

we first print out all code  ccc
```

GIVE COMMAND : copy

S I B I N T E R C O D E

```
C OLD-SIBINTER  28/9/76  SYMBOLIC TAPE FOR SIB-1985A
      PROGRAM SIBINTER
C ---------------------------------------------------------------------
C       PROGRAM FOR INTERACTIVE USAGE OF A  S I B A S  DATA-BASE
C       FROM A TERMINAL.
C       USER MAY EXECUTE ANY DML-STATMENT, AND RECEIVE AN IMEDIATE
C       RESULT.
C
C ---------------------------------------------------------------------
C       COMMON-AREA:
C
        COMMON /CFBUF/
     -                          LFB1,LMAXV1,LREC1,IFBUF,
     -                          LFB2,LMAXV2,LREC2,IFKBUF,
     -                          LFB3,LMAXV3,LREC3,IFHILOBF,
     -                          LFB4,LMAXV4,LREC4,IFLOGBF,
     -                          LFB5,LMAXV5,LREC5,IFHEAD,
     -                          LBF6,LMAXV6,LREC6,IFCONBF
        COMMON /CLBUF/ LBUF
        COMMON /CNBUF / NBUF,NKEYBUF,NFBLKBF
        COMMON /CDBASE/ DBNAME,RUNID,PSWORD,SIBTRAN
        COMMON /CREALM/ NORLMS,RLMNAME,USAGE,PROTECT,FTCHRLM,RFIRRLM,
     -                          STORRLM,FEBLRLM,LOGRLM,NLOG
        COMMON /CTEMP / CRUI,CSRI,SETNAME,INSRKEY,CODE,NO,ITRANS,NPPAGE,
     -                          ICON,ICONFLG,ISTART,IVCONBF(20)
        COMMON /CDEV/ IDEVS(4),IFSDV,ITSDV
        COMMON /CIST  / IST,ICALL,MODE,ITRDESC(39)
        COMMON /CREC/ LREC(2),NWPOS(2),NREC(2),NMAX(2),NPAG(2)
        COMMON /CFILL / IFILL
        COMMON /CTRANS/ NTRANS,SIBINT,NAMES
IF YOU WISH TO STOP TYPE "Y" CR : y
GIVE COMMAND : cc

when a report is beins taken out on the users terminal ,the program
stops after each page of the report   ccc
GIVE COMMAND : setwcn
GIVE CONDITION (LT,LE,EQ,NE,GE,GT) : eq
GIVE NUMBER OF WORDS TO BE COMPARED (<21) : 1
GIVE START WORD IN VALUE BUFFER (<1025) : 1
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : CONDVALU
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 2
MORE THIS ITEM ?:
GIVE VALUES FOR CONDVALU
UPTO   2 CHARACTERS: c
GIVE COMMAND : cc

we must now re-open the file sibo-sibi:data.
ccc
GIVE COMMAND : recinp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : sibo-sibi:data

FOR RECORD INPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 40,1,1,1
GIVE COMMAND : nextnr
```

200

- HOW MANY MORE RECORDS ? :200

S I B I N T E R C O D E

```
C OLD-SIBINTER  28/9/76  SYMBOLIC TAPE FOR SIB-1985A
C ------------------------------------------------------------------
C       PROGRAM FOR INTERACTIVE USAGE OF A  S I B A S  DATA-BASE
C       FROM A TERMINAL.
C       USER MAY EXECUTE ANY DML-STATMENT, AND RECEIVE AN IMEDIATE
C       RESULT.
C
C ------------------------------------------------------------------
C       COMMON-AREA:
C
IF YOU WISH TO STOP TYPE "Y" CR :
```

S I B I N T E R C O D E

```
C ------------------------------------------------------------------
C -DECLARATIONS:
IF YOU WISH TO STOP TYPE "Y" CR :
```

S I B I N T E R C O D E

```
C ------------------------------------------------------------------
C -DATA INITIATIONS:
IF YOU WISH TO STOP TYPE "Y" CR :
```

S I B I N T E R C O D E

```
IF YOU WISH TO STOP TYPE "Y" CR :
```

S I B I N T E R C O D E

```
IF YOU WISH TO STOP TYPE "Y" CR :
```

S I B I N T E R C O D E

```
IF YOU WISH TO STOP TYPE "Y" CR : y
```

```
GIVE COMMAND : cc

the reason why no comment lines are printed on some of the pases
is that we defined 20 lines per report pase,and that particular set
of 20 lines of code contained no comments (uff da!!)  ccc
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :       0 RECORDS FOR COMMAND : CC
WAS         87420 MILLISECONDS
GIVE COMMAND : cc

we can now simulate the interactive use of sibas ccc
GIVE COMMAND : siboff
GIVE COMMAND : soiped

* SOIPED   *  UNKNOWN COMMAND OR TRANSACTION
GIVE COMMAND : sopdb
DATA-BASE-NAME:demon
GIVE RUN MODE (0=RETRIEVAL,1=LOAD/UPDATE) : 1
PASSWORD:
GIVE COMMAND : srrlm
NO-OF-OCCURENCES:2
NAME-OF-REALM:manfile
USAGE-MODE(0=RETRIEVAL,1=LOAD,2=UPDATE):2
PROTECT-MODE(0=NON-PROTECT,1=EXCLUSIVE):
NAME-OF-REALM:girlfile
USAGE-MODE(0=RETRIEVAL,1=LOAD,2=UPDATE):2
PROTECT-MODE(0=NON-PROTECT,1=EXCLUSIVE):
GIVE COMMAND : names

*DATA BASE   : DEMON       *REALMS   :

                  MANFILE    GIRLFILE
*USAGE MODES    :     2          2
*PROTECT MODES :     0          0

*REALMS FOR CALLS
*FETCH     :              *READ FIRST IN REALM   :
*STORE     :              *FETCH BETWEEN LIMITS :
*LOGGING   :
*SET NAME  :              *SIBAS TRANSACTION     :
*KEY NAMES FOR
*FETCH     :              *FETCH BETWEEN LIMITS :
*INSERT OR REMOVE FROM MANUAL INDEX              :

*DATA ITEMS ARE :
 TEXT
GIVE COMMAND : store
NAME-OF-REALM:manfile
NUMBER-OF-ITEMS:2
ITEM-NAME( 1):mannumb
ITEM-NAME( 2):manname
NEW FORMAT WANTED (Y FOR YES) ?: y
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MANNUMB
TYPE (1-6) ?: 1
NO.OF THIS TYPE ?: 1
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : MANNAME
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 30
MORE THIS ITEM ?:
GIVE VALUES FOR MANNUMB
INTEGER: 1
```

```
GIVE VALUES FOR MANNAME
UPTO 30 CHARACTERS: tom thumb
GIVE COMMAND : values

* VALUES    *  UNKNOWN COMMAND OR TRANSACTION
GIVE COMMAND : val

LENGTHS OF VALUE BUFFERS ARE FOR
STORE,,MODIFY,FETCH,AND FEBL :  200 200  10  10
PROGRAM EXECUTION MODE IS : MANUAL
CONNECTED FILE NUMBERS ARE FOR
COMMAND INPUT :    1 COMMAND OUTPUT :    1
VALUES INPUT  :   57 VALUES OUTPUT  :    1
FROM SIBAS    :  128 TO SIBAS       :  129
LAST FORCED CHECK POINT IDENTIFCATION :
    0    0    0    0    0    0    0    0
RECORD INPUT  CONNECTED FILE NUMBER :     57 RECORD LENGTH      :     40
              NEXT RECORD NUMBER    :    181 MAX RECORD NUMBER :    201
              NEXT WORD IN 1K PAGE  :     33

DATA ELEMENT VALUES ARE :
MANNUMB   :         1
MANNAME   : TOM THUMB
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :       0 RECORDS FOR COMMAND : VAL
WAS         26140 MILLISECONDS
GIVE COMMAND : srfir
NAME-OF-REALM:manfile
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :       1 RECORDS FOR COMMAND : SRFIR
WAS          5840 MILLISECONDS
GIVE COMMAND : auto
GIVE COMMAND : setsr


                S I B I N T E R  C O D E


IF YOU WISH TO STOP TYPE "Y" CR :


                S I B I N T E R  C O D E


IF YOU WISH TO STOP TYPE "Y" CR : y
GIVE COMMAND : scldb
GIVE COMMAND : cc_
GIVE COMMAND : man
GIVE COMMAND : cc

the comments command does not work in automatic mode.Lets lock at
the name buffers now  ccc
GIVE COMMAND : names
```

```
*DATA BASE   : DEMON        *REALMS   :

                    MANFILE    GIRLFILE
*USAGE MODES    :     2           2
*PROTECT MODES :     0           0

*REALMS FOR CALLS
*FETCH      :                 *READ FIRST IN REALM   : MANFILE
*STORE      : MANFILE         *FETCH BETWEEN LIMITS  :
*LOGGING    :
*SET NAME   :                 *SIBAS TRANSACTION     :
*KEY NAMES FOR
*FETCH      :                 *FETCH BETWEEN LIMITS  :
*INSERT OR REMOVE FROM MANUAL INDEX                  :

*DATA ITEMS ARE :
 MANNUMB    MANNAME
GIVE COMMAND : cc

we can now save the contents of the name buffers for later use  ccc
GIVE COMMAND : save
FILE ALREADY OPENED


TRANSACTION FILE NOT SUCCESSFULLY REOPENED
GIVE COMMAND : cc

there is a bug here!!    ccc
GIVE COMMAND : exit
030524 STOP     0
Acont

GIVE COMMAND : save
GIVE TRANSACTION NAME (MAX 8 CHARS.) : demons
DESCRIBE TRANSACTION (MAX 78 CHARACTERS):
buffer contents used for demonstration
GIVE COMMAND : cc

if we give the command help then we also see which buffers are saved.
ccc
GIVE COMMAND : help

THE FOLLOWING COMMANDS ARE IMPLEMENTED:
SFTCH   SFEBL   SRFIR   SRFSM   SRLSM   SRPSM   SRNSM   SRNIS   SRSOW   SGET
SMDFY   STORE   SRASE   SCONN   SCONB   SCONA   SDCON   SINSR   SREMO   SREMB
SFORG   SLOCK   SUNLK   SCHPW   SRRLM   SFRLM   SOPDB   SCLDB   SDBEC   SEREL
SAVE    GETSR   GETSET  FORMK   FORMN   SLENG   HELP    NAMES,  VAL     EXIT
GETBUF  MAN     AUTO    COMINP  COMOUT  VALINP  VALOUT  SETDEV  UTBLK   SCHPO
SINIT   STERM   SLOG    DHEAD   PHEAD   MTHEAD  RECINP  RECOUT  GET     PUT
PRINT   READ    INFO    CLOSE   COPY    SETWCN  DELWCN  STEPST  STEPGT  NEXTNR
GOLOAD  GOUSER  CC      SIBOFF  SIBON

DEFINED TRANSACTIONS ARE :
 ZERO OUT   STORCOMP   STORSTUD   STORINTR   DEMONS
GIVE COMMAND : cc

we can now look at the   contents of some of these buffers.
```

```
ccc
GIVE COMMAND : zero out
PRESENT TRANSACTION DESCRIPTION IS
BLANKS OUT THE NAME BUFFERS
GIVE COMMAND : names

*DATA BASE  :              *REALMS  :


*USAGE MODES   :     0
*PROTECT MODES :     0

*REALMS FOR CALLS
*FETCH     :              *READ FIRST IN REALM  :
*STORE     :              *FETCH BETWEEN LIMITS :
*LOGGING   :
*SET NAME  :              *SIBAS TRANSACTION    :
*KEY NAMES FOR
*FETCH     :              *FETCH BETWEEN LIMITS :
*INSERT OR REMOVE FROM MANUAL INDEX             :

*DATA ITEMS ARE :

GIVE COMMAND : storstud
PRESENT TRANSACTION DESCRIPTION IS
LAGRER REC. I STUDENT
GIVE COMMAND : names

*DATA BASE  : COURSE     *REALMS  :

                  COMPANY   STUDENT   INTRESTS  COMMENTS
*USAGE MODES   :     2         2         2         2
*PROTECT MODES :     0         0         0         0

*REALMS FOR CALLS
*FETCH     :              *READ FIRST IN REALM  :
*STORE     : STUDENT      *FETCH BETWEEN LIMITS :
*LOGGING   :
*SET NAME  :              *SIBAS TRANSACTION    :
*KEY NAMES FOR
*FETCH     :              *FETCH BETWEEN LIMITS :
*INSERT OR REMOVE FROM MANUAL INDEX             :

*DATA ITEMS ARE :
 STUDNAME  STUDABNA  COMPABNA
GIVE COMMAND : storcomp
PRESENT TRANSACTION DESCRIPTION IS
LAGRER REC. I COMPANY
GIVE COMMAND : save
GIVE TRANSACTION NAME (MAX 8 CHARS.) : storcomp

THE TRANSACTION STORCOMP ALREADY EXISTS,
DO YOU INTEND TO CHANGE IT? (Y FOR YES) : y
WILL YOU CHANGE THE DESCRIPTION ?(Y FOR YES) : y
DESCRIBE TRANSACTION (MAX 78 CHARACTERS):
stores a new company record
GIVE COMMAND : storcomp
PRESENT TRANSACTION DESCRIPTION IS
STORES A NEW COMPANY RECORD
```

```
GIVE COMMAND : cc

lets now make a key to disk system for nocus
ccc
GIVE COMMAND : formn
NUMBER-OF-ITEMS:5
ITEM-NAME( 1):membname
ITEM-NAME( 2):membcomp
ITEM-NAME( 3):compaddr
ITEM-NAME( 4):remarks
ITEM-NAME( 5):machconf
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MEMBNAME
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 30
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : MEMBCOMP
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 30
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : COMPADDR
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 40
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : REMARKS
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?:    60
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : MACHCONF
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 60
MORE THIS ITEM ?:



GIVE COMMAND : recout
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : "nocus-autumn-1976:data"

FOR RECORD OUTPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 11Q,1,1,1
```

```
NO SUCH PAGE

IF SAME FILE FOR INPUT RECORDS TYPE "Y":
GIVE COMMAND : put
NEW FORMAT WANTED (Y FOR YES) ?:
GIVE VALUES FOR MEMBNAME
UPTO  30 CHARACTERS: jeremy salter
GIVE VALUES FOR MEMBCOMP
UPTO  30 CHARACTERS: norsk data elektronikk
GIVE VALUES FOR COMPADDR
UPTO  40 CHARACTERS: larenveien 57,oslo 5,norway.
GIVE VALUES FOR REMARKS
UPTO  60 CHARACTERS: this is fantastic
GIVE VALUES FOR MACHCONF
UPTO  60 CHARACTERS: n10.169,64k,3ttys,two modems,1 l-p,f-rdr,t-r,big disk
GIVE COMMAND : print
MEMBNAME : JEREMY SALTER
MEMBCOMP : NORSK DATA ELEKTRONIKK
COMPADDR : LARENVEIEN 57,OSLO 5,NORWAY.
REMARKS  : THIS IS FANTASTIC

MACHCONF : N10.169,64K,3TTYS,TWO MODEMS,1 L-P,F-P,T-R,BIG DISK

GIVE COMMAND : cc

lets now initiate a data base and use sibas.
ccc
GIVE COMMAND : exit
030524 STOP    0
A
```

Note the program described in chapter 4 now also has free language commands. The "one letter" commands in what follows no longer apply. See chapter 4.

```
Asibas-da-de

GIVE OUTPUT FILE NAME : "demon"
FILE ALREADY EXISTS

GIVE OUTPUT FILE NAME : "demon:symb"
FILE ALREADY EXISTS

GIVE OUTPUT FILE NAME : demon:s
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: d
DATABASE NAME ?: demon

SUPPRESS DOCUMENTATION OF
REALMS ?:
RECORD LAYOUT ?:
ITEMS/GROUP ITEMS ?:
SETS ?:
INDEX TABLES ?:
SIBAS SYSTEM REALM SIZE (WORDS) ?: 6000
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: r
REALM NAME ?: system
SYSTEM (1),SERIAL (2),OR CALC (3) ?: 1
PAGE SIZE ?:
MAX WORDS ?: 20000
IS REALM TO BE ALLOCATED ITS OWN SINTRAN FILE ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: r
REALM NAME ?: manfile
SYSTEM (1),SERIAL (2),OR CALC (3) ?: 2
PAGE SIZE ?:
MAX NR. OF RECORDS ?: 20000
RECORD LENGTH ?: 32
MAIN SYSTEM REALM NAME ?: system
NEXT SYSTEM REALM NAME ?:
IS REALM TO BE ALLOCATED ITS OWN SINTRAN FILE ?: y
ABBREVIATED DIRECTORY NAME(4 CHARS) ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: r
REALM NAME ?: girlfile
SYSTEM (1),SERIAL (2),OR CALC (3) ?: 3
PAGE SIZE ?:
NR. OF RECORDS/MAIN BUCKET ?: 12
NR. OF MAIN BUCKETS ?: 113
NR. OF RECORDS/OVERFLOW BUCKET ?: 4
NR. OF OVERFLOW BUCKETS ?: 20
RECORD LENGTH ?: 32
MAIN SYSTEM REALM NAME ?: system
NEXT SYSTEM REALM NAME ?:
IS REALM TO BE ALLOCATED ITS OWN SINTRAN FILE ?: y
ABBREVIATED DIRECTORY NAME(4 CHARS) ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?: manfile
ITEM OR GROUP ITEM NAME ?: mannumb
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: i
CALC KEY ?:
INDEX KEY ?: y
MEMBER SET ITEM ?:
DUPLICATES ILLEGAL ?: y
MANUAL INDEX KEY ?:
OWNER SET ITEM ?: y
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 1
LAST BIT ?:
NEXT WORD IS NO.   2
```

```
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?:
ITEM OR GROUP ITEM NAME ?: manname
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: c
CALC KEY ?:
INDEX KEY ?:
MEMBER SET ITEM ?:
DUPLICATES ILLEGAL ?:
MANUAL INDEX KEY ?:
OWNER SET ITEM ?:
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 15
LAST BIT ?:
NEXT WORD IS NO.  17
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?:
ITEM OR GROUP ITEM NAME ?: manabra
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: c
CALC KEY ?:
INDEX KEY ?: y
MEMBER SET ITEM ?:
DUPLICATES ILLEGAL ?: y
MANUAL INDEX KEY ?:
OWNER SET ITEM ?:
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 3
LAST BIT ?:
NEXT WORD IS NO.  20
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: r
REALM NAME ?: girlfile
SYSTEM (1),SERIAL (2),OR CALC (3) ?: 1
PAGE SIZE ?:
MAX WORDS ?: 1
IS REALM TO BE ALLOCATED ITS OWN SINTRAN FILE ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?: girlfile
ITEM OR GROUP ITEM NAME ?: mannumb
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: i
CALC KEY ?: y
INDEX KEY ?:
MEMBER SET ITEM ?: y
DUPLICATES ILLEGAL ?:
MANUAL INDEX KEY ?:
OWNER SET ITEM ?:
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 1
LAST BIT ?:
NEXT WORD IS NO..  2
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?:
ITEM OR GROUP ITEM NAME ?: girlname
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: c
CALC KEY ?:
INDEX KEY ?:
MEMBER SET ITEM ?:
DUPLICATES ILLEGAL ?:
MANUAL INDEX KEY ?:
OWNER SET ITEM ?:
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 15
LAST BIT ?:
NEXT WORD IS NO.  17
```

```
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: i
REALM NAME ?:
ITEM OR GROUP ITEM NAME ?: sirlabna
INTEGER(I),FLOATING(F),CHARACTER(C),PRIVACY(P),OR GROUP(G) ?: c
CALC KEY ?:
INDEX KEY ?: y
MEMBER SET ITEM ?:
DUPLICATES ILLEGAL ?: y
MANUAL INDEX KEY ?:
OWNER SET ITEM ?:
START WORD IN RECORD ?:
ITEM LENGTH (OR FIRST BIT) ?: 3
LAST BIT ?:
NEXT WORD IS NO.  20
GIVE CARD TYPE (D,R,I,G,S,T,E) ?:
```

```
                                    w
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: s
SET NAME ?: mansirl
NR. OF MEMBER RECORD TYPES ?: 1
SINGLE CHAIN ?:
MANUAL SET ?:
OWNER REALM NAME ?: manfile
SET OWNER ITEM NAME ?: mannumb
SET MEMBER ITEM NAME ?: mannumb
(NEXT) MEMBER REALM NAME ?: sirlfile
(NEXT) MEMBER REALM NAME ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: t
INDEXED REALM NAME ?: manfile
INDEXED ITEM/GROUP ITEM NAME ?: mannumb
INITIAL NR. OR LEVELS ?: 1
PACKING DENSITY (1-9) ?: 7
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?: 20
SYSTEM REALM NAME THIS LEVEL ?: system
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: t
INDEXED REALM NAME ?: manfile
INDEXED ITEM/GROUP ITEM NAME ?: manabna
INITIAL NR. OR LEVELS ?: 1
PACKING DENSITY (1-9) ?: 7
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?: 20
SYSTEM REALM NAME THIS LEVEL ?: system
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: t
INDEXED REALM NAME ?: sirlfile
INDEXED ITEM/GROUP ITEM NAME ?: sirlabna
INITIAL NR. OR LEVELS ?: 1
PACKING DENSITY (1-9) ?: 7
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?: 20
SYSTEM REALM NAME THIS LEVEL ?: system
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?: 20
SYSTEM REALM NAME THIS LEVEL ?: system
NR. OF ENTRIES/TABLE FIRST/NEXT LEVEL ?:
GIVE CARD TYPE (D,R,I,G,S,T,E) ?: e
001755 STOP    1
A
```

```
Acc lets look at the cards we have generated

Acopy tele demon

DEFBAS DEMON              6000
NREALM SYSTEM  1 256                20000
NREALM MANFILE 2 256                20000  32SYSTEM                          1
NREALM GIRLFILE3 256  12   113   4   20  32SYSTEM                          1
NITEM  MANFILE MANNUMB 1       1 1 1   1   1
NITEM  MANFILE MANNAME   1              2  15
NITEM  MANFILE MANABNA   1     1 1     17   3
*NREALM GIRLFILE1 256                    1   *
NITEM  GIRLFILEMANNUMB 1      1 1        1   1
NITEM  GIRLFILEGIRLNAME  1               2  15
 ITEM  GIRLFILEGIRLABNA  1     1 1      17   3
NSET   MANGIRL  1     MANFILE MANNUMB MANNUMB GIRLFILE
NTABLE MANFILE MANNUMB  17  20SYSTEM      0            0            0
NTABLE MANFILE MANABNA  17  20SYSTEM      0            0            0
NTABLE GIRLFILEGIRLABNA 17  20SYSTEM    20SYSTEM      0            0
ENDBAS

END OF FILE

A
```

* Edited out using QED

```
Acr-file system:data,0
Acr-file manfile:data,0
Acr-file girlfile:data,0
Asibas-76-init

DO YOU WANT ADVICE ? IF YES TYPE 'Y' RETURN
IF NOT,TYPE' ANY OTHER CHARACTER' RETURN:
CHOOSE PAGE SIZE FOR SIBAS SYSTEM REALM ,1,2,3,4 FOR 32,64,128,256: 2
INPUT FILE: demon
LIST FILE: list
001015 STOP    0
A
```

```
                    * * * * * * * * * * * * * * * * * * * *
                    *                                     *
                    *  S I B A S   DATABASE DEFINITION    *
                    *           28 - 9 -  1976            *
                    * * * * * * * * * * * * * * * * * * * *

 .. WARNING .. FOR REALM MANFILE : TOTAL DEFINED SPACE  :     23 WORDS
                                   UNDEFINED SPACE      :      9 WORDS
                                   DEFINED RECORDLENGTH :     32 WORDS
 .. WARNING .. FOR REALM GIRLFILE: TOTAL DEFINED SPACE  :     23 WORDS
                                   UNDEFINED SPACE      :      9 WORDS
                                   DEFINED RECORDLENGTH :     32 WORDS
END OF DATABASE DEFINITION
--------------------------

          NUMBER OF WARNINGS =      2
          NUMBER OF ERRORS   =      0

          SIZE OF THE RESIDENT PART    =    300
          SIZE OF RECORD-DESCRIPTIONS =     90

THE DATABASE IS INITIATED

          **********

    ************************************************************
                REALM NAMED DEMON     IS DEFINED
    ************************************************************
    MAXIMUM NUMBER OF     64 WORD PAGES=      94


    ************************************************************
                REALM NAMED SYSTEM    IS DEFINED
    ************************************************************
    MAXIMUM NUMBER OF     64 WORD PAGES=     313
```

```
**************************************************
          REALM NAMED MANFILE  IS DEFINED
**************************************************
RECORD LENGTH IN NUMBER OF WORDS              =      32

MAXIMUM NUMBER OF    256 WORD PAGES=    2501

          ********************************************************
               RECORDLAYOUT FOR REALM MANFILE
          ********************************************************


   FIRST WORD NO      CONTENTS      LAST WORD NO
          **************************
            1   *  MANNUMB                  *   1
            2   *  MANNAME                  *  16
           17   *  MANABNA                  *  19
           20   *  01NGIRL                  *  23
          **************************

**********************************
 DEFINED ITEMS IN THE REALM MANFILE
 **********************************

 ITEM/     ITEM-        ACCESS-  ITEM-  CALC    INDEX   SET-   UNIQUE AUTO-    SET-
 GROUP     TYPE          LOCK    GROUP ACCESS  ACCESS MEMBER   KEY  MATIC     OWNER
01NGIRL
MANABNA    CHARACTER                            X              X      X
MANNAME    CHARACTER
MANNUMB    INTEGER                              X              X      X       X

    **************************************************
          REALM NAMED GIRLFILE IS DEFINED
    **************************************************
    RECORDS ARE STORED VIA CALC

    RECORD LENGTH IN NUMBER OF WORDS              =      32

    NUMBER OF RECORDS PER BLOCK IN PRIMARY AREA   =      12

    NUMBER OF BLOCKS IN PRIMARY AREA              =     113

    MAXIMUM NUMBER OF RECORDS IN PRIMARY AREA     =    1356

    NUMBER OF RECORDS PER BLOCK IN OVERFLOW AREA  =       4

    NUMBER OF BLOCKS IN OVERFLOW AREA             =      20

    MAXIMUM NUMBER OF RECORDS IN OVERFLOW AREA    =      80

    MAXIMUM NUMBER OF    256 WORD PAGES=     184
```

```
**************************************************
     RECORDLAYOUT FOR REALM GIRLFILE
**************************************************

FIRST WORD NO      CONTENTS      LAST WORD NO
          **************************
        1   *  MANNUMB                 *   1
        2   *  GIRLNAME                *  16
       17   *  GIRLABNA                *  19
       20   *  O2NGIRL                 *  23
          **************************
**********************************
 DEFINED ITEMS IN THE REALM GIRLFILE
**********************************
```

ITEM/ GROUP	ITEM-TYPE	ACCESS-LOCK	ITEM-GROUP	CALC ACCESS	INDEX ACCESS	SET-MEMBER	UNIQUE KEY	AUTO-MATIC	SET-NER
O2NGIRL					X		X	X	
GIRLABNA	CHARACTER								
GIRLNAME	CHARACTER								
MANNUMB	INTEGER			X		X			

```
**************************************
D E F I N E D  I N D E X - T A B L E S
**************************************
```

REALM	ELEMENT	LEVELS	FILLING %	*	LEVEL	TABLE ENTRIES WHERE STORED	
MANFILE	MANNUMB	1	70	*	1	39	SYSTEM
MANFILE	MANABNA	1	70	*	1	23	SYSTEM
GIRLFILE	GIRLABNA	1	70	*	1	23	STEM

DEFINED SETS IN THE DATABASE

NAME OF SET	TYPE OF SET	OWNER-REALM	OWNER ITEM	MEMBER ITEM	REALM(S
MANGIRL	DOUBLE CHAIN AUTOMAT	MANFILE	MANNUMB	MANNUMB	GIRLFILE

```
**************************************************
DATABASE NAMED DEMON     CLOSED 28- 9-1976 AT  7-12-33
**************************************************
```

```
* * * * * * * * * * * * * * * * * * *
*                                     *
*              N O R D                *
*  SIBAS INTERACTIVE,KEY TO DISC,     *
*              A N D                  *
*     REPORT GENERATING SYSTEM        *
*                                     *
* VERSION 1985-A            760928    *
* * * * * * * * * * * * * * * * * * *
```

```
IF YOU WANT INFORMATION TYPE "Y":
GIVE COMMAND : cc

we will now use the database demon.   ccc
GIVE COMMAND : sordb
DATA-BASE-NAME:demon
GIVE RUN MODE (0=RETRIEVAL,1=LOAD/UPDATE) : 1
PASSWORD:
GIVE COMMAND : srrlm
NO-OF-OCCURENCES:2
NAME-OF-REALM:manfile
USAGE-MODE(0=RETRIEVAL,1=LOAD,2=UPDATE):2
PROTECT-MODE(0=NON-PROTECT,1=EXCLUSIVE):
NAME-OF-REALM:sirlfile
USAGE-MODE(0=RETRIEVAL,1=LOAD,2=UPDATE):2
PROTECT-MODE(0=NON-PROTECT,1=EXCLUSIVE):
GIVE COMMAND : cc

we now use stepst (store-with-step) to load the database
ccc
GIVE COMMAND : read
NUMBER-OF-ITEMS:2
ITEM-NAME( 1):mannumb
ITEM-NAME( 2):manname
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MANNUMB
TYPE (1-6) ?: 1
NO.OF THIS TYPE ?: 1
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : MANNAME
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 30
MORE THIS ITEM ?:
GIVE VALUES FOR MANNUMB
INTEGER: 1
GIVE VALUES FOR MANNAME
UPTO  30 CHARACTERS: ram
GIVE COMMAND : stepst

GIVE MAXIMUM NUMBER OF EXECUTIONS : 100
NAME-OF-REALM:
NAME-OF-REALM:manfile
NUMBER-OF-ITEMS:
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :     100 RECORDS FOR COMMAND : STEPST
WAS         87080 MILLISECONDS
GIVE COMMAND : cc

here  we had to allocate pages as required for both the records to
be stored and the index tables to be builtup via the nord file system.ccc
```

```
GIVE COMMAND : save
GIVE TRANSACTION NAME (MAX 8 CHARS.) : storemen
DESCRIBE TRANSACTION (MAX 78 CHARACTERS):
stores man records in the man file.
GIVE COMMAND : cc

now lets store some girls.
ccc
GIVE COMMAND : formn
NUMBER-OF-ITEMS:2
ITEM-NAME( 1):mannumb
ITEM-NAME( 2):girlname
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MANNUMB
TYPE (1-6) ?: 1
NO.OF THIS TYPE ?: 1
MORE THIS ITEM ?:
SPECIFY FORMAT FOR : GIRLNAME
TYPE (1-6) ?: 4
NO.OF THIS TYPE ?: 30
MORE THIS ITEM ?:
GIVE COMMAND : read
NEW FORMAT WANTED (Y FOR YES) ?:
GIVE VALUES FOR MANNUMB
INTEGER: 1
GIVE VALUES FOR GIRLNAME
UPTO  30 CHARACTERS: brit
GIVE COMMAND : stepst

GIVE MAXIMUM NUMBER OF EXECUTIONS : 100
NAME-OF-REALM:girlfile
NUMBER-OF-ITEMS:
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :     100 RECORDS FOR COMMAND : STEPST
WAS        192680 MILLISECONDS
GIVE COMMAND : cc

worst case storing of records in a hashing file.Each new record hashes
to a different block!!
ccc
GIVE COMMAND : read
NEW FORMAT WANTED (Y FOR YES) ?:
GIVE VALUES FOR MANNUMB
INTEGER: 1
GIVE VALUES FOR GIRLNAME
UPTO  30 CHARACTERS: liv and Jane and sally
GIVE COMMAND : stepst

GIVE MAXIMUM NUMBER OF EXECUTIONS : 50
NAME-OF-REALM:
NUMBER-OF-ITEMS:
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :      50 RECORDS FOR COMMAND : STEPST
WAS        147920 MILLISECONDS
GIVE COMMAND : cc

now lets generate some reports using the data we have loaded.
ccc
GIVE COMMAND : save
GIVE TRANSACTION NAME (MAX 8 CHARS.) : storgirl
DESCRIBE TRANSACTION (MAX 78 CHARACTERS):
not big girl,but store new girl record!!
GIVE COMMAND : srfir
NAME-OF-REALM:manfile
```

```
GIVE COMMAND : dhead
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN :
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
HEADING
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT)   80 CHARACTERS:
(///,20x,'m a n  r e c o r d s',///)
GIVE NUMBER OF RECORDS PER PRINT PAGE (<OR=70) : 40
GIVE IN DECIMAL VALUE FOR CLEAR SCREEN CHARACTER: 12
```

```
GIVE COMMAND : formn
NUMBER-OF-ITEMS:2
ITEM-NAME( 1):mannumb
ITEM-NAME( 2):manname
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MANNUMB
TYPE (1-6) ?: 6
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN : 16
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
MANNUMB  MANNAME
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT)   80 CHARACTERS:
(1x,i6,10x,15a2)
GIVE COMMAND : setsr
```

M A N R E C O R D S

```
     2            PAN
     3            PAN
     4            PAN
     5            PAN
     6            PAN
     7            PAN
     8            PAN
     9            PAN
    10            PAN
    11            PAN
    12            PAN
    13            PAN
    14            PAN
    15            PAN
    16            PAN
    17            PAN
    18            PAN
    19            PAN
    20            PAN
    21            PAN
    22            PAN
    23            PAN
    24            PAN
    25            PAN
    26            PAN
    27            PAN
    28            PAN
    29            PAN
    30            PAN
    31            PAN
    32            PAN
    33            PAN
    34            PAN
    35            PAN
    36            PAN
    37            PAN
    38            PAN
    39            PAN
    40            PAN
    41            PAN
IF YOU WISH TO STOP TYPE "Y" OR : y
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :      40 RECORDS FOR COMMAND : GETSR
WAS         84060 MILLISECONDS
GIVE COMMAND : cc

most of the elapsed time has gone to the print out on the decwriter ccc
GIVE COMMAND : valout
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : list:s
SEQUENTIAL WRITE APPEND ? ("Y" FOR YES) :
GIVE COMMAND : auto
GIVE COMMAND : srfir
GIVE COMMAND : getsr
```

```
STATUS-CODE=     0
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :     100 RECORDS FOR COMMAND : GETSR
WAS        185700 MILLISECONDS
GIVE COMMAND : cc
GIVE COMMAND : man
GIVE COMMAND : cc

we can now close the data base and so the back way!!
ccc
GIVE COMMAND : scldb
GIVE COMMAND : recinp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : manfile:data

FOR RECORD INPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 32,257,1,1
GIVE COMMAND : valout
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : list:s
SEQUENTIAL WRITE APPEND ? ("Y" FOR YES) :
GIVE COMMAND : nextnr

HOW MANY MORE RECORDS ? : 99

MAX NUMBER  OF RECORDS READ/WRITTEN!!
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :     100 RECORDS FOR COMMAND : NEXTNR
WAS          6860 MILLISECONDS
GIVE COMMAND : cc

we can maybe set it to so quicker if we cut out    fortran i/o.
ccc
GIVE COMMAND : recinp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : manfile:d

FOR RECORD INPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 32,257,1,100
GIVE COMMAND : recout
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : "list:data"

FOR RECORD OUTPUT GIVE
RECORD LENGTH (>0 AND <1025),START WORD NUMBER (>= 1)
START RECORD NUMBER (>= 1),AND MAX NUMBER OF RECORDS (>= 1)
IN THAT ORDER : 32,1,1,100
NO SUCH PAGE

IF SAME FILE FOR INPUT RECORDS TYPE "Y":
GIVE COMMAND : copy

MAX NUMBER  OF RECORDS READ/WRITTEN!!
GIVE COMMAND : tused

TOTAL ELAPSED TIME FOR :     101 RECORDS FOR COMMAND : COPY
WAS          5900 MILLISECONDS
```

Finally, the use of a "Job Control File"is illustrated.

```
 qed

QED 3.5
*e
set men
auto
sordb
srrlm
srfir
setsr
scldb
exit
*w"trans"
28 WORDS WRITTEN
*f

Äold-sibinter
```

```
                    * * * * * * * * * * * * * * * * * * *
                    *                                     *
                    *                N O R D              *
                    *  SIBAS INTERACTIVE,KEY TO DISC,     *
                    *                A N D                *
                    *     REPORT GENERATING SYSTEM        *
                    *                                     *
                    * VERSION 1985-A              760928  *
                    * * * * * * * * * * * * * * * * * * *
```

```
IF YOU WANT INFORMATION TYPE "Y":
GIVE COMMAND : storemen
PRESENT TRANSACTION DESCRIPTION IS
STORES MAN RECORDS IN THE MAN FILE.
GIVE COMMAND : siboff
GIVE COMMAND : srfir
NAME-OF-REALM:manfile
GIVE COMMAND : names

*DATA BASE   : DEMON        *REALMS   :

                  MANFILE    GIRLFILE
*USAGE MODES    :    2          2
*PROTECT MODES :    0          0

*REALMS FOR CALLS
*FETCH     :              *READ FIRST IN REALM   : MANFILE
*STORE     : MANFILE      *FETCH BETWEEN LIMITS  :
*LOGGING   :
*SET NAME  :              *SIBAS TRANSACTION     :
*KEY NAMES FOR
*FETCH     :              *FETCH BETWEEN LIMITS  :
*INSERT OR REMOVE FROM MANUAL INDEX              :

*DATA ITEMS ARE :
 MANNUMB    MANNAME
```

```
GIVE COMMAND : formn
NUMBER-OF-ITEMS:
FORMAT TYPES ARE:
1: INTEGER, 2: DOUBLE INTEGER, 3: REAL, 4: CHARACTER, 5: OCTAL 6: FORTRAN
SPECIFY FORMAT FOR : MANNUMB
TYPE (1-6) ?: 6
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN : 10
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
MANNUMB  MANNAME
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT) _80 CHARACTERS:
(1x,i6,5x,9a2)
GIVE COMMAND : dhead
GIVE NUMBER OF DATA WORDS TO BE READ/WRITTEN :
ONLY SINGLE WORDS CAN BE HANDLED.A,I,OR Z FORMAT
GIVE FORTRAN FORMAT FOR
HEADING
MAX :  300  CHARACTERS.START WITH (
GIVE (NEXT) _ 80 CHARACTERS:
(///,10x,'m a n  r e c o r d s',//)
GIVE NUMBER OF RECORDS PER PRINT PAGE (<OR=70) : 10
GIVE IN DECIMAL VALUE FOR CLEAR SCREEN CHARACTER: 12
```

```
GIVE COMMAND : save
GIVE TRANSACTION NAME (MAX 8 CHARS.) : set men
DESCRIBE TRANSACTION (MAX 78 CHARACTERS):
sets all records in the manfile
GIVE COMMAND : sibon
```

```
GIVE COMMAND : cominp
GIVE FILE NAME AND TYPE (MAX 19 CHARS) : trans:s
COMMAND : GET MEN
PRESENT TRANSACTION DESCRIPTION IS
GETS ALL RECORDS IN THE MANFILE




COMMAND : AUTO
COMMAND : SOPDB
COMMAND : SRRLM
COMMAND : SRFIR
COMMAND : GETSR


          M A N  R E C O R D S


      2      FAN
      3      FAN
      4      FAN
      5      FAN
      6      FAN
      7      FAN
      8      FAN
      9      FAN
     10      FAN
     11      FAN
IF YOU WISH TO STOP TYPE "Y" CR :


          M A N  R E C O R D S


     12      FAN
     13      FAN
     14      FAN
     15      FAN
     16      FAN
     17      FAN
     18      FAN
     19      FAN
     20      FAN
     21      FAN
IF YOU WISH TO STOP TYPE "Y" CR : Y
COMMAND : SCLDB
COMMAND : EXIT
030524 STOP    0
```

User Guide for SIBAS database definition card image generator (DBDCIG)

This chapter appears here because the DBDCIG program will be eventually available as a command from SIBINTER.

4.1 Introduction

The SIBAS database definition module requires fixed format card images as input (see chapter 4 of the SIBAS Users Manual). If a card punch is available, one can punch the cards directly, but it is very easy to make mistakes, and one must often repeat the same realm names and card type names on successive cards. On NORD machines there is also the possibility of using the text editor QED, but anyone who has tried generating a database definition card deck of any length using QED will know that this can be a frustrating job.

The pupose of the SIBAS database definition card image generator (DBDCIG) is to make the job of producing the required card images easier. The DBDCIG can be used for the production of the initial card images, and any changes to the resulting card image file can be made using QED, (see 4.3).

4.2 Use of DBDCIG

The program is interactive, and starts by asking the user to type in an output file name. This file should be of type SYMB as the SIBAS database definition module requires an input file of type SYMB. If the output file name given is accepted, the program continues by asking the user to give in a letter describing the type of card image to be generated. The possible types* are:

Type	Description	SIBAS form identification
D	Data base Definition	DEFBAS
R	Realm Definition	NREALM
I	Item Group Item Definition	NITEM
G	Group Item Constituents Definition	NGROUP
S	Set Type Definition	NSET
T	Index Storage Definition	NTABLE
E	End of Schema	ENDBAS

The program works on one card at a time, and writes each card image to the output file as soon as it is completed, and then requests the next card type. The exception to this is the ENDBAS card, which results in the termination of the program. The input required to generate each card is requested interactivly. The answers to some of the questions are optional, in which case just CR need be typed.

The program as a whole checks for unlikely values, and in certain cases takes default values if no input (i.e. just carriage retrun CR) is given. For questions requiring a Y (yes) or N (no) answer, CR only is equivalent to no.

Additional comments on some of the card types are given below.

*Note: free language card type identifiers are used in the code. These, with their single letter equivalent are shown below.

```
GIVE CARD TYPE : HELP
LIST-KNOWN-CARD-TYPES
HELP ,LISTS LEGAL CARD TYPES
DATA-BASE                          D
SYSTEM-REALM  }
SERIAL-REALM  }                    R
CALC-REALM    }
ITEM-OR-GROUP-ITEM                 I
GROUP                              G
SET                                S
INDEX-TABLE                        T
END-DATA-BASE-DEFINITION           E
REPEAT-PREVIOUS-CARD-TYPE
```

4.2.1 NREALM, Type R

Page size:
If zero or no input is given, a default value of 256 will be allocated. If values $\geq$ 1024 or $\leq$ 0 are given, the page size will be re-requested.
Minimum size:
For system realms or serial realms only the maximum size in words or records is requested as the SIBAS DDL on NORD machines ignores the minimum size fields.
Sintran files:
The mapping of SIBAS realms to Sintran files can be done in various ways. See the explanation printed upon request by the SIBAS DDL module.

4.2.2 NITEM, Type I

Realm name:
The realm name need be given only when typing the first NITEM card for a given realm. For the following NITEM cards belonging to the same realm only CR need by typed.
Start word in record:
This is set to one each time a realm name is typed in to an NITEM card, and automatically stepped by each new items length in words. Thus CR is the only input required.
Definition of group items does not step "start word in record", neither does the definition of packed data items. When defining packed data items, the user must set the "start word in record" to allow for each word containing packed data items.

4.2.3 NGROUP, Type G

Number of items in group:
The program does not allow for group items consisting of more than 6 data elements.

4.2.4 NSET, Type S

Number of member record types:
The program does not allow for more than 4 member record types.

4.3 Final Comments

Card image files generated by DBDCIG can be read into QED and edited. Remember to give the QED command M^ TO (Ø) before writing back to the card image file. Otherwise the blanks on the card images will be compressed by QED giving a format not accepted by the SIBAS DDL module.

Another way of "changing" the contents of card images is to use DBDCIG to generated the new cards, writing them singly to scratch files. One then reads in the complete card image file using QED, deletes the cards to be changed, and then reads in the new cards to their correct positions.

Note that the first line written to a file by the DBDCIG contains an extra "line-feed" character. This should be removed using QED.

SIBAS - INTERACTIVE MODULE

5 THE NEXT RELEASE

The following features will be included in the next release, which should be available by Easter 1977.

5.1 As mentioned in chapter 2, the next release of Sibinter will use commands of the abreviated look up type employed by SINTRAN III and the NORD file system.

5.1.2 A Sibas transaction definition language, which can also be used to define record handling independently of Sibas, will also be available. This language is described in appendix 2.

5.1.3 It will be possible to specify that record fields be accumulated, so that sums and averages can be generated by running through a number of records.

5.1.4 A sibas fast sequential read of user realms will be implemented. This should enable a realm to be processed at least 100 times faster than with READ-FIRST-IN-REALM followed by GET and READ-NEXT-IN-SEARCH-REGION. as they are in Sibas.

5.1.5 A free format definition for both input and output will be available where the user van specify leader texts, allowed limits, and format for data fields in a record using more day to day terms rather than (10X, F16.3, 'WHATS NEXT ?:' for example.

5.1.6 Final Comment

This next release of Sibinter should make it no longer necessary to write Sibas application programs in any other language than that available from Sibinter. Moreover, this new Sibinter will execute Sibas calls faster than is possible from FORTRAN programs.

APPENDIX 1

NEW DML SYNTAX FOR SIBAS DML STATEMENT NAMES

THIS NEW SYNTAX IS THAT USED BY NORSK DATA ELEKTRONIKK IN THEIR SIBAS INTERACTIVE,KEY TO DISC,AND REPORT GENERATING SYSTEM.

IT IS MORE CONSISTENT THAN THE PRESENT SYNTAX,MAINLY IN THAT IT AVOIDS THE USE OF THE WORD RECORD THROUGHOUT.

THE OLD SYNTAX IS LISTED BESIDE THE NEW BELOW.IT IS SUGGESTED THAT THE NEW SYNTAX SHOULD BE CONSIDERED AS A REPLACEMENT FOR THE OLD IN THE SIBAS USERS MANUAL.ND WILL IN THE MEANWHILE ADOPT THE NEW SYNTAX.

O L D	N E W
FIND-RECORD-USING-KEY	FIND-USING-KEY
FIND-RECORD-USING-KEY-BETWEEN-LIMITS	FIND-FIRST-BETWEEN-LIMITS-USING-KEY
FIND-FIRST-RECORD-IN-REALM	FIND-FIRST-IN-REALM
FIND-FIRST-IN-SET	FIND-FIRST-IN-SET
FIND-LAST-IN-SET	FIND-LAST-IN-SET
FIND-PRIOR-IN-SET	FIND-PRIOR-IN-SET
FIND-NEXT-IN-SET	FIND-NEXT-IN-SET
FIND-NEXT-IN-SEARCH-REGION	FIND-NEXT-IN-SEARCH-REGION
FIND-OWNER	FIND-SET-OWNER
GET	GET
MODIFY	MODIFY
STORE	STORE
ERASE	ERASE
CONNECT	CONNECT
CONNECT-BEFORE	CONNECT-BEFORE
CONNECT-AFTER	CONNECT-AFTER
DISCONNECT	DISCONNECT
INSERT	INSERT
REMOVE	REMOVE
REMEMBER	REMEMBER
FORGET	FORGET
LOCK	LOCK
UNLOCK	UNLOCK
CHANGE-PASSWORD	CHANGE-PASSWORD
READY-REALMS	READY-REALMS
FINISH-REALMS	FINISH-REALMS
OPEN-DATA-BASE	OPEN-DATA-BASE
CLOSE-DATA-BASE	CLOSE-DATA-BASE
ACCEPT	ACCEPT
ERASE-ELEMENT	ERASE-ELEMENT
TAKE-CHECK-POINT	TAKE-CHECK-POINT
INITIATE-TRANSACTION	INITIATE-TRANSACTION
TERMINATE-TRANSACTION	TERMINATE-TRANSACTION
LOG-USER-INFORMATION	LOG-USER-INFORMATION

APPENDIX 2

AN EXAMPLE OF THE PROPOSED SIBAS TRANSACTION DEFINITION LANGUAGE

THE SYNTAX FOR STATEMENTS IS AS FOLLOWS:

<LINE NUMBER>,<SIBINTER COMMAND NAME>,[<OPTIONAL PARAMETERS>]>,
<OBLIGATORY PARAMETERS>,<LINE NUMBER 1,LINE NUMBER 2,LINE NUMBER 3>.
EACH PARAMETER MUST BE SEPERATED FROM THE PREVIOUS BY AT LEAST ONE SPACE, OTHERWISE THE FORMAT IS COMPLETELY FREE.CONTINUATION LINES REQUIRE THAT THERE IS A CHARACTER IN COLUMN SIX,AND COMMENTS ARE INDICATED BY A "C" IN COLUMN 1.

<LINE NUMBER>	AN INTEGER,EQUIVALENT TO BASIC LINE NUMBERS
<SIBINTER COMMAND NAME>	ALL THE SIBINTER COMMANDS ARE ALLOWED
<OPTIONAL PARAMETERS>	THESE ARE THE PARAMETERS READ IN BY SIBINTER WHEN IT IS IN MANUAL MODE,IF THEY ARE NOT GIVEN ,THEN THEY MUST BE READ IN BY THE TRANSACTION USING A GET-BUFFERS COMMAND.
<OBLIGATORY PARAMETERS>	THESE WILL BE SPECIFIED IN THE NEXT MANUAL.
<LINE NUMBERS 1,2,3>	THE LINE NUMBERS ONE WISHES TO GO TO IF THE STATUS RETURNED BY SIBAS IS <0, =0, OR >0.

TWO EXAMPLES OF TRANSACTIONS ARE GIVEN BELOW:

EXAMPLE 1 : WITHOUT USING OPTIONAL PARAMETERS:

```
C       THIS TRANSACTION WILL READ A WHOLE SIBAS FILE AND WRITE
C       THE SPECIFIED DATA ITEMS OUT TO A FILE.
C
10      GET-BUFFERS <BUFFER-NAME>                       110,110, 15
15      OPEN-VALUES-OUTPUT-FILE                         120, 20, 20
20      OPEN-DATA-BASE                                  100, 30, 30
30      READY-REALMS                                    100, 40,40
40      READ-FIRST-IN-REALM                             100,100, 50
50      GET-SEARCH-REGION                               100,110,110
100     ACCEPT                                          110,110,110
110     CLOSE-DATA-BASE                                 120,120,120
120     EXIT
```

EXAMPLE 2 : WITH THE USE OF OPTIONAL PARAMETERS:

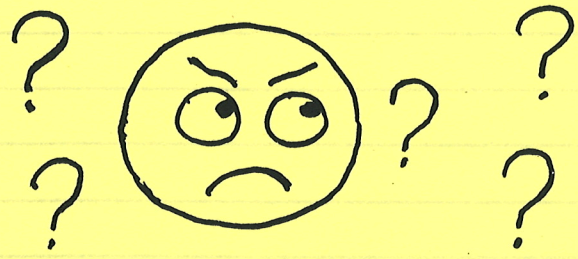
```
C       THIS TRANSACTION WILL READ A WHOLE SIBAS FILE AND WRITE
C       THE SPECIFIED DATA ITEMS OUT TO A FILE.
C
10      GET-BUFFERS <BUFFER-NAME>                       110,110, 15
15      OPEN-VALUES-OUTPUT-FILE [<FILE NAME>]           120, 20, 20
20      OPEN-DATA-BASE [<DATABASE>] FOR-ENQUIRY-USING-PASSWORD [<SECRET>]
      - 100, 30, 30
30      READY-REALMS [<USEREALM>] FOR-READ-NON-PROTECTED 100, 40, 40
40      READ-FIRST-IN-REALM [<USEREALM>]                100,100, 50
50      GET-SEARCH-REGION                               100,100, 10
.00     ACCEPT                                          110,110,110
110     CLOSE-DATA-BASE                                 120,120,120
120     EXIT
```

N.B. ALL WORDS JOINED BY HYPHENS ARE EITHER COMMANDS OR RESERVED COMBINATIONS USED BY THE SIBAS TRANSACTION COMPILER. THESE CAN ALWAYS BE REPLACED BY UNIQUE ABBREVIATIONS.

APPENDIX 3

```
      SUBROUTINE NOTGOUSER
C
C THIS SUBROUTINE HAS NO INPUT PARAMETERS,AND IS CALLED WHEN THE USER
C GIVES THE GOUSER COMMAND IN SIBINTER.IT MUST BE LOADED AT 106000.
C
C
C THE FOLLOWING COMMON DECLARATION SHOULD BE IN THE PROGRAM NOTGOUSER
C
      COMMON /CVBUFF/ IVBUF(1024),KEEPOFF(2048),
     -                IVKBUF(20),IVLOBUF(20),IVHIBUF(20),
     -                IVLOGBF(256),IVCHPBF(8),IVHEDBF(256)
C
C     THE USER IS ADVISED TO KEEPOFF KEEPOFF IF HE DOES NOT WISH
C     TO DAMAGE RECORD INPUT AND RECORD OUTPUT.OTHEWISE HE MAY USE
C     KEEPOFF FOR HIS OWN PURPOSES.
C
C THE OTHER COMMON ARRAYS ARE AS FOLLOWS:
C
C IVKBUF     CONTAINS THE VALUE OF THE FIND-USING-KEY KEY
C IVLOBUF
C IVHIBUF    CONTAINS THE LOWER AND UPPER KEY VALUES FOR THE
C            FIND-BETWEEN-LIMITS KEY
C IVCHPBF    CONTAINS THE LATEST CHECKPOINT VALUES.
C IVLOGBUF   CONTAINS THE INFORMATION THE USER WISHES TO LOG VIA THE
C            SIBAS CALL SLOG.
C IVHEDBF    CONTAINS THE VALUES WHICH THE USER WISHES TO PRINT
C            OUT IN A HEADING.
C
C
C THE USER MUST NOT GO OUTSIDE THESE ARRAYS
C
C
C THIS PROGRAM HEADING FOR "NOTGOUSER" IS SUPPLIED AS THE FIRST PART
C OF THE SIB-1895A TAPE.
C
```

* * * * * * * * * * SEND US YOUR COMMENTS!!! * * * * * * * * * *



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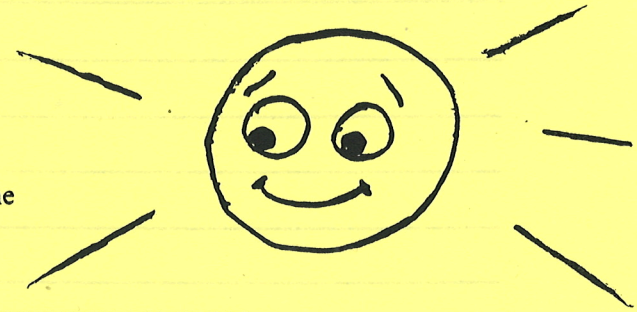

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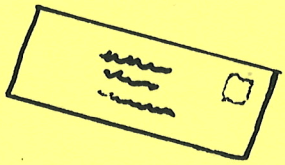

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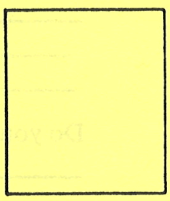

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