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SPLA CONTROL NUMBER: 181

This form should be completed and submitted with the program package to the SHARE Program Library Agency at the address shown above. Standards and instructions for submitting programs are in the "SHARE Reference Manual".

(1) Program Number (to be filled in by SPLA)..... 360.D-06.7.027

(2) System Type (machine)..... S/360, S/370

(3) Search Key..... Baylor Information Analysis System (BIAS)

(4) Programming Systems/Languages..... 360 Assembler (F) and PL/I

(5) Author's Name and Address..... Alan Beale
Institute of Computer Science
Baylor College of Medicine

(6) Direct Technical Inquiries to Name & Address (if different than Author) 1200 Moursund Avenue
Houston, TX 77025

(7) Title of Program..... Baylor Information Analysis System

(8) Submitter's Installation Membership Code..... BAU

(9) Submitter's Own Program Identification and Suffix(Optional)..

(10) Primary Subject Code..... 06 7

(11) Minimum System Requirements See Abstract

(12) New or Revision Code (if revision, show prior Program Number in Item 1) R

(13) Year Completed..... 1975

(14) Date of Submittal..... 11/19/75

(15) Documentation (number of original pages submitted).....

(16) Abstract (should contain sufficient information for a reader to determine the value of the program). Listed on the reverse side of this form are subjects which may serve as a guide for a descriptive abstract.

Revised 4/74

SHARE PROGRAM LIBRARY SUBMITTAL FORM

Subject Guide:

a. Purpose
b. Programming Language used
c. Version and modification level or release number
d. Field of application
e. Type of routine (main program, subroutine, etc.)
f. Specific description of machine requirements

ABSTRACT

BIAS, the Baylor Information Analysis System, is a versatile data base system. It allows access to any number of data bases, containing records of varying length, complexity and indexing structure, by any number of users, both in batch and interactively. Components of the system are:

1. The BIAS Filer. This component makes all additions, deletions and updates to BIAS data. Because this activity is concentrated in one task, various synchronization and reliability problems are avoided.

2. The BIAS TP program. This is a multi-user interactive program to retrieve, modify, delete and add individual data records.

3. The BIAS table assembler. This is a batch program used to define to BIAS the layout and indexing structure of the records of a data base. It also provides data passwords and the degree of protection desired.

4. The BIAS retrieval program (BOOLRET). This is an interactive program allowing a data base to be searched for records that satisfy

(Please attach additional pages if necessary).....Total pages attached 3

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(17) **Signature of Submitter and Date** Alan R. Beale 11/19/75

(18) **Signature of Installation Addressee** F. Mateo Jr.

one or more properties, gathering statistics and frequency counts on selected items in the process. The properties are expressed in the form of "boolean questions", using an ALGOL-like language.

5. Various utilities, both system and user. User utilities include a loader, to load data into the system, and an interactive password modification utility. System utilities include a file recovery program and a system accounting routine.

6. All features of BIAS are available to programs written in PL/I, through use of several libraries of interface routines. These include record modification and retrieval routines, password verification routines, and conversion routines.

Important features of the system are:

1. All data is stored in one OS data set, thereby reducing overhead and the need to provide room for growth for each data base independently. Data stored on this file is generally stored in "blank-suppressed" form, so that no space is occupied by missing data. The filer is the only task in the BIAS system that can use the BIAS data file for output. Even though all data is stored in the same data set, a user can only retrieve or modify data for which he provides the correct password. Further, passwords may be easily (and interactively) changed at any time.

2. A data class may be redefined after creation, if appropriate. The indexing structure may not be changed, but data items may be added, removed or changed in characteristics. The record size may also be increased or decreased. However, any record whose meaning is changed by this process should be refiled.

3. File reorganization is periodically necessary. However, the reorganization process (called "dataspace reclamation") is performed by the filer, and does not inhibit the complete use of the system, other

than by fractionally increasing response time.

4. File integrity is preserved, even if the filer abends, or the operating system crashes. Additionally, the system may be generated to record all update transactions. If the data file is harmed or lost, it may be restored from a backup, and brought up to date through application of the recorded transactions, using a system utility.

5. In most cases, the filer will continue to run after I/O errors. Additionally, a system utility is provided for the recovery of affected blocks.

System characteristics of BIAS are:

1. The interactive parts of BIAS were written to run under BEST (the Baylor Executive System for Teleprocessing), which is in the Share Program Library. The system is adaptable to other TP systems (e.g., TSO), and suggestions are included in the documentation for conversion.

2. BIAS runs exclusively as a problem program. It makes use of one user SVC (type II or III) for inter-region communication.

3. BIAS is currently running under OS/MFT, release 21.8. It should run without change under MVT, but this has not been tested. BIAS should also run under VS1, provided the TP interfaces were changed to use a VS1-supported system. It should also run under VS2 with an appropriate TP system, if the communications SVC were rewritten.

4. BIAS is written in assembly language and PL/I. The critical system components, such as the filer and the TP program, are written in assembly language. The PL/I components were written for use with the PL/I Optimizing Compiler. However, they will compile and run using PL/I (F). Also, the interface routines may be generated for use with either version of the PL/I compiler.

5. No special access methods or appendages are needed for BIAS. All I/O is performed through QSAM, BSAM, BPAM and BDAM.

6. The amount of core required for BIAS depends on generation parameters, such as maximum record size and maximum number of simultaneous users. Practical minima are 52K each for the filer and TP program, and 100K for BOOLRET.

About 350 pages of documentation (machine-readable), both user and system, is provided with BIAS.

BIAS has been running for production at Baylor for a year and a half. There are currently about 30 data classes in use, totalling 200,000 records and 24,000,000 bytes of data.

Magnetic Tape Key

This volume (externally labelled) contains 18 files and 18 tape marks arranged as follows:

FILE 1 - BIAS System Programmer's Guide

EBCDIC
RECFM=VBA,LRECL=125
BLKSIZE=7000
5293 logical records, 38 blocks
T/M

FILE 2 - BIAS SYSGEN Macros

EBCDIC
2120 card images, blocked 50 per block
43 blocks of 4000 characters each
T/M

FILE 3 - BIAS General Macro Library

EBCDIC
2588 card images, blocked 50 per block
52 blocks of 4000 characters each
T/M

FILE 4 - BIAS TP Program Source

EBCDIC
10,768 card images, blocked 50 per block
216 blocks of 4000 characters each
T/M

FILE 5 - BIAS Filer Source

EBCDIC
8992 card images, blocked 50 per block
180 blocks of 4000 characters each
T/M

FILE 6 - BIAS Interfaces Source

EBCDIC
5560 card images, blocked 50 per block
112 blocks of 4000 characters each
T/M

FILE 7 - BOOLRET PL/I Macros

EBCDIC
971 card images, blocked 50 per block
20 blocks of 4000 characters each
T/M

FILE 8 - BOOLRET Source

EBCDIC
10,393 card images, blocked 50 per block
208 blocks of 4000 characters each
T/M

FILE 9 - Table Assembler PL/I Macros

EBCDIC
97 card images, blocked 50 per block
2 blocks of 4000 characters each
T/M

FILE 10- Table Assembler Source

EBCDIC
3269 card images, blocked 50 per block
66 blocks of 4000 characters each
T/M

FILE 11- Utility PL/I Macros

EBCDIC
208 card images, blocked 50 per block
5 blocks of 4000 characters each
T/M

FILE 12- Utility Source

EBCDIC
13,463 card images, blocked 50 per block
270 blocks of 4000 characters each
T/M

FILE 13- BIAS User Documents

EBCDIC
5 user manuals
RECFM=VBA,LRECL=125
BLKSIZE=7000
14,031 logical records, 100 blocks
T/M

FILE 14- BIAS Sample Programs

EBCDIC
3 Sample BIAS Jobs
965 card images, blocked 91 per block
11 blocks of 7280 characters each
T/M

FILE 15- BIAS Catalogued Procedures

EBCDIC
267 card images, blocked 50 per block
6 blocks of 4000 characters each
T/M

FILE 16- BEST Macros Used by BIAS

EBCDIC
1963 card images, blocked 50 per block
40 blocks of 4000 characters each
T/M

FILE 17- BEST PL/I (F) Macros Used by BIAS

EBCDIC
206 card images, blocked 50 per block
5 blocks of 4000 characters each
T/M

FILE 18- BEST PL/I (X) Macros Used by BIAS

EBCDIC
206 card images, blocked 50 per block
5 blocks of 4000 characters each
T/M

See the SYSGEN portion of the System Programmer's Guide for instructions on how to use IEBUPDTE to generate BIAS from the tape. The documentation files (files 1 and 13) are standard OS print files, and can be printed using the OS utility IEBPTPCH or IEBGENER. Use of the TN print train with these documents is recommended. With the exception of the documentation and sample files, all files on the tape are intended to be SYSIN input to the IEBUPDTE utility.