



A USER ORIENTED EDUCATIONAL COMPUTING NETWORK

By

Jesse C. Lewis
Director of Computing Center
Jackson State University
Jackson, Mississippi 39217

This paper covers the cooperative activities of eight four-year colleges and universities and four junior colleges, seven of which are state supported and five which are private. The Network began operation with an IBM 360/40 and is currently using an IBM 370/145. Jackson State University is the central site for the Network. The Network is supported by NSF Grant EC-39578.

The purpose of the Network included providing appropriate equipment with accompanying educational effort, so as to allow each participating institution to become more aware of the academic implementation of computers, with the ultimate goal of profoundly affecting basic curricula. Most participating institutions have indicated that they are planning to continue Network activities at their own expense when all grant funds are expended. Several institutions have purchased or are planning to purchase additional terminals in order to expand their Network activities.

Hence, the Network will continue on a self-sustaining basis. The staff of the Jackson State University Computing Center and the faculty of the Department of Computer Science will remain available to Network participants for consultation and assistance.

The McGill University System for Interactive Computing is used to enhance problem-capabilities. MUSIC is a high-performance, multi-access, timesharing system that offers many languages and features normally found in larger systems. By combining the full functions of multiple languages and interactive capabilities with demonstrable dependability, MUSIC has proven to be particularly suitable for the educational

environment due to its ease of use. MUSIC operates in a virtual machine under VM/370 (without the need for DOS or OS), and takes advantage of many of the Control Program functions, thereby reducing the total system overhead and making the facilities very responsive to the several users. The system can support up to 250 concurrent terminal users, including a local batch capability, with the ability to create and maintain library files of programs or data and to compile and execute programs in several languages. The following language processors are available in the standard program:

FORTRAN G1
BASIC
APL
ANS COBOL
ASSEMBLER F

In addition, the MUSIC Statistical System STATPAK, is available to allow the user to solve his statistical problems conversationally on a terminal. This system is programmed so that students with a minimal knowledge of computer operation or programming experience will be able to make use of applications such as analysis of variance, factor analysis, multiple regression, and exponential smoothing.

A text processing facility, MUSIC/SCRIPT, is also included with the system. MUSIC/SCRIPT is useful in the publication and updating of documents. It can perform left and right margin adjustment of text entered from a terminal, card reader, or produced by a program. Output from this program may be printed directly on the terminal or batch printer or may be directed to a user data set or save library file.

Additional languages and application packages are being made available to MUSIC users by the several users who have implemented the system. Those capabilities that are available, in addition to the standard offering, are ALGOL-W, PL/C (an on-line PL/I processor designed for student use), WATFIV (the well known student FORTRAN compiler developed at the University of Waterloo), SPSS (Statistical Package for the Social Sciences), COGO (the civil engineering program that solves coordinate geometry problems), and GPSS (General Purpose Simulation System).

Since the development philosophy of MUSIC was to be able to service non-programmers, the command language was designed with ease of use as a key criterion. No Job Control Language is involved in using the system. The command language is conversational and English language oriented. The system also has a deductive. This means that if a user inputs a command which the system does not recognize, it assumes the characters presented are the name of a program; a search is made of the Save Library for a program with that name (which applies to that terminal user's code); the program is loaded and executed.

Abbreviations are optional and commands can be as brief as a single character. As long as the system can recognize the string as unique, the command can be recognized and executed.

The same command language is used for batch processing so even when a user needs to input jobs through a card reader, he need not use Job Control Language. (In the batch mode, files in the Save Library may not be updated from the batch terminal). With this capability available to student users, it is anticipated that a large number of student batch jobs will be run under MUSIC, thereby reducing the total load on the production batch (DOS/VS) virtual machine.