

TECHNICAL INFORMATION SERVICE

Senior Technical Staff Bulletin

STS 2-37
31 March 1967

CONTENTS

SHARE PROGRAMS - Resources for Obtaining.

LANGUAGES

Comparing Cobols.
New Cobol F Manual.
Combined Programming Language Bulletin - SICPLAN NOTICES.

MATHEMATICS OF COMPUTATION

Numerical Analysis and Related Literature for Scientific
Computer Users.
Mathematical Methods for Digital Computers, vol. 2,
Ralston and Wilf.

APPLICATIONS - MEDICINE

Proceedings of the 6th IBM Medical Symposium.

HARDWARE

Four New Small Scale Digital Computers.

TELEPROCESSING

Remote Job Entry Recommendations from SHARE.

REFERENCE SOURCE FOR U. S. GOVERNMENT REPORTS.

SHARE PROGRAMS/IBM PROGRAMS

In response to recent requests regarding the availability of SHARE programs, we are reprinting the following information which appeared in part in the September TIS Bulletin, STS 10-96.

The SHARE Library consists of program packages submitted by membership installations. The programs are deposited with the IBM DP Program Information Department, Hawthorne, New York. Abstracts of Contributed Programs (Type IV) are included in the IBM Catalog of Programs for the various processing systems listed below.

<u>Title</u>	<u>Form No.</u>
Catalog of Programs for IBM System/360	C20-1619-2

(Note: This Catalog has recently been updated (-2) and contains abstracts of many more programs than the first edition. The COBOL Cross Reference Program (File No. 360D-06. 7. 001) may be of interest.)

Catalog of Programs for IBM 1240, 1401, 1420, 1440, and 1460 Data Processing Systems	C20-1601
--	----------

Catalog of Programs for IBM 705, 1410, 7010, 7070, 7072, 7074, 7080, 7740 and 7750 Data Processing Systems	C20-1602
--	----------

Catalog of Programs for IBM 1620 and 1710 Data Processing Systems	C20-1603
---	----------

Catalog of Programs for IBM 704, 709, 7040, 7044, 7090, and 7094 Data Processing Systems	C20-1604
--	----------

Catalog of Programs for IBM 1130 Computer System and IBM 1800 Data Acquisition and Control System	C20-1630
---	----------

SHARE PROGRAMS/IBM PROGRAMS (continued)

The Catalogs of Programs contain abstracts of IBM Type I, II, and III programs in addition to the Type IV (Customer Contributed) programs. Each Catalog has its own KWIC Index. The Catalogs should be in each office library, if applicable.

The IBM Installation Newsletter (described in the last issue of the TIS Bulletin, STS 1-27) carries abstracts of recently made available Type III programs. These programs are contributed voluntarily by IBM employees to aid the programming and system community. They are not a part of the IBM product line, as are Programming Systems (Type I) or Application (Type II). Type III programs have not been subjected to any formal product test. See the IBM Installation Newsletters in your office for more information on Type III programs.

The Catalogs of Programs as well as the programs and their documentation are available through your IBM sales representative and his branch office. They may suggest that you complete a "General Program Request Card" (Form No. 120-1145-1) for programs and send the cards directly to:

DP Program Information Department
International Business Machines Corporation
40 Saw Mill River Road
Hawthorne, New York 10532

LANGUAGES

COBOL

* COMPARING COBOLS by David Shirley. in Data and Control Systems, January 1967, p. 22-28

"After a brief resume of the history of Cobol, this worthwhile article compares the Cobol offered by the three major British suppliers--IBM, Honeywell, and ICT--in terms of the proportion of Cobol 65 implemented, the cost of the minimum configuration needed to use Cobol, the relative speed of compilation, and the quality of the supplier's Cobol manuals. Comparisons according to a fifth and most important criteria, the effectiveness of the resulting object program as determined by compiling and running benchmark programs on several computers, are promised in a future article."

LANGUAGES (continued)

COBOL F GUIDE. New Manual. IBM System/360 Operating System Cobol (F) Programmers Guide. C28-6380. (February 1967).

ACM SICPLAN NOTICES is a new unified programming language bulletin. It incorporates the PL/I Bulletin, Algol Bulletin, and the COBOL Information Bulletin. A Jovial Information Bulletin will also be distributed as a part of the combined bulletin. Christopher J. Shaw is the editor of SICPLAN NOTICES. Send requests for the publication to him at System Development Corp., 2500 Colorado Avenue, Santa Monica, California 90406. Those persons on the mailing list for the PL/I Bulletin will automatically receive the combined language bulletin.

MATHEMATICS OF COMPUTATION

NUMERICAL ANALYSIS AND RELATED LITERATURE FOR SCIENTIFIC COMPUTER USERS, 2d edition. James F. Price, Boeing Scientific Research Laboratories. AD 632 244, March 1966. CFSTI. \$3.00 hard copy.

This compilation of 151 references was prepared for the great numbers of people programming for digital computers who are not specialists in numerical analysis. The author's description of each book includes: (1) the table of contents and (2) his opinions of the relative reading difficulty of various works and of the relative usefulness in computer applications. The references which are particularly valuable and recommended to computer users are marked with a double asterisk.

Numerical Analysis and Related Literature for Scientific Computer Users is recommended for all office libraries as a book selection tool and a reference guide.

MATHEMATICAL METHODS FOR DIGITAL COMPUTERS, vol. 2 Anthony Ralston and Herbert S. Wilf, editors. John Wiley, 1967. \$11.95.

This is an entirely new sequel to Volume One of the same title published in 1960. The editors have tried, in Volume Two, to fill the gaps in subjects from the

MATHEMATICS OF COMPUTATION (continued)

earlier work, and added new advances made in the past five years. New material published in Volume Two includes:

THE QUOTIENT-DIFFERENCE ALGORITHM.

Quotient-Difference Algorithms. Peter Henrici.
p. 37-62.

NUMERICAL LINEAR ALGEBRA. The Solution of Ill-Conditioned Linear Equations. J. H. Wilkinson.
p. 65-93.

NUMERICAL SOLUTION OF EQUATIONS. The Solution of Transcendental Equations. J. F. Traub.
p. 171-184.

APPLICATIONS

MEDICINE

PROCEEDINGS OF 6TH IBM MEDICAL SYMPOSIUM held at Poughkeepsie, New York, and Upton, Long Island, New York, October 5-9, 1964. (Order from IBM, Form No. 320-0918).

Forty-two papers presented at the Medical Symposium sponsored jointly by IBM and the Brookhaven National Laboratory are included in the volume. The papers cover a wide range of computer applications from medical record keeping to utilization in the scientific areas of biology and medicine.

HARDWARE

*NEW SYSTEMS ORIENTED COMPUTERS. Computer Design, December 1966. p. 52, 53, 55-57.

Capsule reviews of the PDP-10, EA1-640, DDP 416 and DDP 516. These computers have been announced since October when Computer Design highlighted 17 small scale digital computers. (STS 11-106, October 1966).

TELEPROCESSING

* REMOTE JOB ENTRY. A joint SHARE/GUIDE report to IBM on their recommendations for the implementation of a software system that will permit the effective use of a central computer by remote locations through communication lines and terminals.

The scope of the recommendations does not include real-time data capture or other application oriented data gathering systems, conversational computing with time sharing concepts, or the real-time maintaining of jobs by remote terminals during execution.

The goal of the recommended system is that the system should permit the line connection, entry of the job, and return of output without the direct participation of the central operation.

Share Secretary Distribution 162, C-4617. 20 February 1967. 37p.

REFERENCE SOURCE FOR
U. S. GOVERNMENT REPORTS

The Technical Information Service subscribes to the basic, unclassified resources for the report literature generated from Government sponsored research and development projects. The reports included in these abstract/index publications represent a large portion of the work being performed under Government contracts in all subject areas, e. g. mathematics, operations research, human factors, man-machine relations, data processing, computers, electrical engineering, all of the social, behavioral, engineering, physical and biomedical sciences.

The Clearinghouse for Federal Scientific and Technical Information (CFSTI), Springfield, Virginia 22151, is the source for many of the reports. Orders should be placed directly with them. Effective January 1, 1967, CFSTI changed its policy from a sliding price scale based on document size to a single price for AD documents. All hard copy (HC) documents, are now \$3.00. Microfiche (MF) copy is \$.65 per document. These prices also apply to documents announced prior to January 1, 1967.

IBM SYSTEMS JOURNAL, vol. 5, no. 4, 1966. (Distributed mid-March. Available in each office).

A Computer Program for the Statistical Analysis of Events. A. W. Lewis. p. 202-225.

Merge-Sort Analysis by Matrix Techniques.
C. E. Radke. p. 226-247.

Kernel Analysis of Elliptic Partial Differential Equations. S. G. Hahn, E. V. Hankam. p. 248-270.

Kernel programs are given for the System/360 and the IBM 7094 in order to compare the performance of the computers.