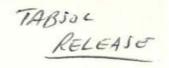


DEPARTMENT OF THE NAVY BUREAU OF SHIPS WASHINGTON 25, D. C.



IN REPLY REFER TO

Ser 732 COD-7 29 December 1959

JAN 4150

Mr. Burt Grad General Electric Company Room 2409 517 Lexington Avenue New York, New York

Dear Mr. Grad:

Charlie Katz, who is a member of the Intermediate Range Task Force, Committee on Data Systems Languages, has told me about your advanced programming system, ''Structure Table''. Roy Goldfinger has indicated he will discuss this with you by phone. I would like to have you make a presentation on this system at our next meeting in Los Angeles, 22 January 1960. We can allow about an hour for this item on the agenda. Possibly you could talk for 30 or 40 minutes and leave the rest of the time for a discussion. I believe Roy mentioned that you might be able to send copies of the write up on ''Structure Table'' to the members before the meeting. I am sending a list of the membership in case you can do this. Please let me know as soon as possible whether or not you will be able to be with us in Los Angeles. Thank you.

Sincerely yours,

ALBERT E. SMITH

LIST OF MEMBERS

OF THE INTERMEDIATE RANGE TASK FORCE OF THE COMMITTEE FOR DATA SYSTEMS LANGUAGES

Mr. Donald Bradley Chesapeake and Ohio Railway 400 Terminal Tower Cleveland 1, Ohio

Mr. Robert Bozak Systems Development Corporation 2500 Colorado Santa Monica, California

Mr. Carl L. Byham Assistant to Comptroller Southern Railway Company Accounting Department Washington 13, D. C.

Mr. Les Calkins United States Steel Corporation 525 William Penn Place Building Pittsburgh 30, Pennsylvania

Mr. B. F. Cheydleur Radio Corporation of America Industrial Electronic Products Camden 2, New Jersey

Dr. Richard F. Clippinger Datamatic Division Minneapolis Honeywell Regulator Company Room 0135 Main Navy Building 151 Needham Street Newton Highlands 61, Massachusetts

Mr. Gregory Dillon Assistant Manager Methods Treasury Department DuPont Corporation Wilmington 98, Delaware

Lt. William Fell U. S. Army Signal Engineering Agency Arlington Hall Station Arlington, Virginia

Mr. Walter Frese Graduate School of Business Administration Harvard Business School Boston 63. Massachusetts

Mr. Kenneth A. Foster Sylvania Electric Products Inc. 5700 West Genessee Street Camillus, New York

Mr. Roy Goldfinger International Business Machine Corp. 112 East Post Road White Plains, New York

Dr. A. D. Hestenes General Motors 8-102 General Motors Building Detroit 2, Michigan

Mr. Donald B. Houghten The Franklin Institute 20th and the Parkway Philadelphia 3, Pennsylvania

Mrs. Renee Jasper Navy Management Office Washington 25, D. C.

Mr. John L. Jones Data Systems Plans Division Headquarters, Air Material Command Wright-Patterson Air Force Base Dayton, Ohio

Mr. Charles Katz Computer Department Black Canyon Plant General Electric 13430 North Black Canyon Highway Phoenix, Arizonia

Members

Mr. William Keating National Cash Register Company Dayton, Ohio

Mr. George M. Perry Data Processing Department Travelers Insurance Company 700 Main Street Hartford 15, Connecticut

Mr. H. E. Robinson
Data Systems Plans Division
Headquarters, Air Material Command
Wright-Patterson Air Force Base
Dayton, Ohio

Mr. Robert Rossheim Remington Rand UNIVAC 1900 W. Allegany Avenue Box 51616 Philadelphia 29, Pennsylvania

Mr. John R. Smith
Operations Central Department
Aeroneutronic
Ford Road
Newport Beach, California

Mr. Jack Strong
Integrated Data Processing
North American Aviation, Inc.
International Airport
Los Angeles 45, California

Mr. Dick Utman Ramo-Woolridge P.O. Box 267 Sierra Vista, Arizonia To: SHARE :

SHARE Executive Board H. N. Cantrell - GS

Subject: Possible Agenda Items for the February SHARE Meeting

GS has two contributions which we would like to present at the next SHARE meeting if they can be fitted into the agenda. These are:

- 1. Discussion of the use of structure tables or a tabular language for expressing computer programs. Structure tables were first used for programming in G. E. by our Manufacturing Services people on the 702. We expect that they have been used in this way by a few people outside of G. E. but we have never heard them discussed at a SHARE meeting. We have tried to develop their use in GS and have written and used a structure table to SAP compiler which we will send to SDA soon. Structure tables essentially replace detailed flow charts as a definition of the problem. They are easier to compose than flow charts and can be executed directly without further coding. This appears to be a development of major importance in the programming field. It should be worth discussing at a SHARE meeting. We would like to present our ideas and find out what other people have done in this area. Jane King GS would present our part of the story.
- 2. We have recently designed and written a business language compiler for the 704. This was designed to be used by our own people in programming business problems for our 704. It was designed to be as good a language as possible with the restriction that the compilers had to be written, debugged and running in one man year (actually three girls for four months). This schedule was met and the system is now compiling actual programs.

Recently we had an opportunity to study the Honeywell business language and the proposed COBOL language. We were somewhat surprised to find that our language, although it is a lot simpler, is not particularly inferior to either of these. Its processing statements are similar to FORTRAN which we think is a lot easier to write than the pseudo-English used in COBOL and the Honeywell language. We think that the contribution here is that it is possible to design a good simple business language which can be implemented in one man year. Our language is an example of what can be done here. We didn't write it with the expectation that it would be used by anyone else, but we will try and get it documented and submit it to SHARE. A discussion of this language would be given by Betty Gurka and Jane King both of GS.

I hope that you will be able to find a place in the agenda for these two discussions.

H. N. CANTRELL,

Harry N. Cantel
MANAGER - OMPUTATIONAL RESEARCH

LARGE STEAM TURBINE-GENERATOR DEPARTMENT

BLDG. 273/59-244 Tel. FR 4-2211, ext. 5-3453

GENERAL @ ELECTRIC

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MANUFACTURING SERVICES
MATERIALS SERVICE
NEW YORK OFFICE

December 21, 1960

cc: H. F. Dickie

Mr. C. W. Bryant, Manager Materials Service OFFICE

As discussed in your office this morning, we are requesting permission to release appropriate material describing the TABSOL concept. This would pertain specifically to the use of Decision Structure Tables as a tabular systems-oriented language.

Specifically, we should like to request that the following steps be taken:

1. Intermediate range task force, CODASYL committee --

A presentation should be made to the appropriate sub-committees and full committee of the TABSOL material in an effort to influence their planning for standardization of automatic business languages. It is suggested that this presentation be made by Tom Kavanagh at the meeting to be held January 19-22.

To maximize the impact of this presentation, it would be desirable to release advance copies for personal use to members of the committee and other influential experts in this field. These copies should probably be distributed within the next week.

2. AIEE

Burt Grad has a paper scheduled for the January 30-February 2 meeting of the AIEE. This paper was intended to discuss in greater detail some of the previously released material on the Integrated Systems Project. It is now felt that it would be useful to mention as part of that speech the basic idea of TABSOL and to illustrate its use through a simple structure table. Advantages of this TABSOL approach would also be given.



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3. Association for Computing Machinery Communications

It is proposed that a professional, non-refereed article be submitted to the Association for Computing Machinery monthly magazine. This joint article would describe the TABSOL-702 program. We would hope this material could be published by February or March.

4. Western Joint Computer Conference

It is suggested that we try to arrange for Tom Kavanagh to give a professional paper at this WJCC meeting to be held in early May, 1960. The subject matter of the paper would be Decision Structure Tables -- a user oriented language. It is also likely that Mr. Cantrell would give a paper at this same meeting on the 704 LOGTAB. It is also expected that Mr. Evans (Hunt Foods) will present his material at this meeting.

5. AHE

It is further proposed that a presentation be made by Burt Grad at the annual meeting of the AHE to be held in late May 1960. The subject matter of this presentation would be the Integrated Systems Project's use of the TABSOL concept. It is also hoped that presentations might be given by Mr. Nidenberg and Mr. May concerning the application of the TABSOL concept to Manufacturing Engineering problems.

6. In addition to these immediate areas, further analysis will be required to determine the course of action in regards to general publications (Business Week, Wall Street Journal), trade publications (Datamation, Control Engineering) and professional journals Page 3 C. W. Bryant December 21, 1959

(Management Science, Journal of Operations Research Society of America). In addition, plans will be made with each of the participants in the Integrated Systems Project and the various other users of the TABSOL material to insure that they achieve appropriate professional recognition for their contributions.

Burton Grad, Technical Counselor Production Control Service Office

T. F. Kavanagh, Specialist Production Control Service Office

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AERONUTRONIC

A DIVISION OF

Ford Motor Company

STFK DEC 2 4 1959

COMPUTER OPERATIONS

December 21, 1959

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AIR MAIL SPECIAL DELIVERY

Mr. Burton Grad General Electric Company Production Control Services 570 Lexington Avenue New York, New York

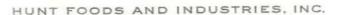
Dear Burt:

Enclosed herewith second copies of the Hunt Foods and Industries material you had requested. Apparently the first set (which we sent Airmail Special Delivery) was short-circuited someplace in Phoenix. I trust you will receive these in time for your purposes.

Per your telecon with Roger, I will arrange for invitations to Joe Weisenbaum and Tom Kavanaugh for the Western CODASYL meetings of January 8 and January 19-21, respectively. We are looking forward to receiving your manuals and hearing the experiences and advice of your people.

Yours very truly,

JS:ms attch.



1747 West Commonwealth Avenue, Fullerton, California, Trojan 1-2100

December 21, 1959

VIA AIR MAIL

Mr. Burton Grad General Electric Company 570 Lexington Avenue New York 22, New York

Dear Mr. Grad:

I enjoyed talking with you last week. Since this is an initial draft of a paper, I have not made many copies. I have managed to obtain one for you though.

We are making several slight revisions in the forms. The appendix instructions will be revised extensively in the final draft.

It is very gratifying to know someone else is working along these lines and have already proven the value of the technique. Your support at the next CODASYL meeting should lend a heavy emphasis toward the national data processing language.

There is one point of our approach at Hunt Foods I would like to make. The use of the data rules is the most important single factor but it is supported with the elements, sets, files, process flow charts, systems flow chart and many cross-reference listings. They all contribute to a total package.

I am looking forward to examining your material and to meeting you personally.

Open 76 vans

Orren Y. Evans

Manager

Electronic Data Processing HUNT FOODS AND INDUSTRIES, INC.

OYE DJR

Enclosure

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TO: The Members of the Intermediate Range Task Force CODASYL Committee

FROM: J. A. Strong, Chairman

SUBJECT: Summary of Western Regional Systems Language Committee Meeting

DATE: December 11, 1959

The Western contingent of this committee convened a 2-day meeting, Thursday, December 3, 1959 at 9:00 a.m. at the General Offices of North American Aviation, Inc. Those present were:

Mr. Orren Evans Hunt Foods Company Fullerton, California

Mr. David Helson Lockheed Aircraft Corporation Sunnyvale, California

Mr. John Smith Aeronutronics - A Division of the Ford Motor Company Newport Beach, California

Mr. J. Laurence Nelson Worton Air Force Base San Bernardino, California

Mr. Roy Mutt Computer Sciences Corporation Los Angeles, California

Mr. Jack Mayes Dept. 892

Mr. Irvin Marshall Dept. 892

Mr. Jack Strong Dept. 892

on the character of a systems language. This seemed necessary since there were several persons in attendance who had not previously participated in this

been compiled were gone over item by item to decide which appeared desirable in a systems language. At the conclusion of this examination it seemed to be the sense of the group that any attempt at the present time to effect substantial improvement in the quality of present compiler languages would be futile. The committee generally agreed that the primitive verb hists specified for various compilers were adequate. It was further believed that those effective terms which we had discussed and which we described as being sophisticated verbs or macros, were of such a nature that they could be accommodated by present compiler specializations — if properly organized. It was felt that an acceptable compiler must be an INTEGRATED entity, possessing the ability to utilize in a natural way all of those facilities necessary to produce an information precessing machine language program, e.g., it must be recursive, have report writing, sort merge, and input-output features. It is assumed that a tool of the above description will be available.

In view of the foregoing conclusions, alternate courses of action to facilitate the implementation of an information business processing system were discussed. Mr. Orren Evans described a method employed by his company for documenting systems in tabular form. Examination of this scheme resulted in the suggestion that it be further explored with the idea in mind that it might be used to provide all necessary information to a compiler. A cursory examination reveals there is a high probability that this method of presentation will allow all of the systems flexibility, the understandability by management and detailed information for the compiler that we have been seeking. It further seems likely that a relatively simple translator would allow for the transfer of programs from compiler to compiler (assuming it possesses the general characteristics described above) with ease. It is well to point out that Mr. Evans' method could be used to describe any system whether it be manual, EAM, or EDF in nature. An integral part of this system includes elements of data description

which possesses all information required for machine implementation.

The committee decided that it would spend the next four weeks examining the system and that it would hold a second meeting on January 8, 1960 to discuss its findings. As soon as possible information will be duplicated and distributed to the entire committee for its inspection and it is hoped that the subject can be discussed in detail at our joint meeting on January 19, 1960. The committee feels that its meeting was highly educational, and is enthusiastic about the possibilities of this new approach. Happy holiday season to all.

Best regards.

Inco A Strong, Chairman Intermediate Range Language Committee

Publication Plan for Dee Ste Joble & Jobne processor. AIEE - Jan 30 ATTE - may. Communication of ACM Data (voc Digest TIMS ORSA WJCC Kavang h Keily? May Cantill King his den berg - Comeron Mins integreter Log Ho.