History of programming languages

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This panel session will provide information on the planning, problems and results of a conference sponsored by ACM SIGPLAN held June 1-3, 1978, and entitled "History of Programming Languages". This conference is intended (1) to initiate the preservation of a historical record for some major current languages and to give impetus to others to continue adding to this record, and (2) to provide information from one or two key contributors to the early technical development of the selected languages.

Thirteen languages were selected for presentation and discussion at this conference, based on the characteristics that the languages (1) were created and in use by 1967, (2) are in use in 1977, and (3) have had considerable influence on the field of computing. The actual criteria for choosing the languages were: usage, influence on language design, overall impact on the environment, novelty, and uniqueness. This is not a conference on the entire history of programming languages, nor even a conference on the entire history of the selected languages; it covers primarily their early developments, with emphasis on the technical aspects of the language design. The languages selected are: ALGOL 60, APL, APT, BASIC, COBOL, FORTRAN, GPSS, JOSS, JOVIAL, LISP, PL/I, SIMULA, SNOBOL.

The organization of this conference was unusual in several ways. The invited speakers were assisted in preparing high quality papers by giving them about 13 pages of questions which applied to all languages, and which it was hoped would be answered in many of the papers. In addition to that, specific questions pertaining to individual languages were sent to each speaker. Examples of the general questions are "What languages were known to you when you started work on your language and what influence did they have?" and "What class of users was your language designed to help?" and "To what extent did concerns about compilation efficiency affect the design?" Examples of specific questions are "In COBOL why is there a COMPUTE verb allowing formulas, as well as ADD, SUBTRACT, MULTIPLY and DIVIDE verbs to do arithmetic" and "Why wasn't there any input/output included in ALGOL 60?"

The problems of having contemporary technical history written by people who were personally involved but are not trained historians are formidable. They include the difficulty of resisting the temptation to use only memory rather than written documents for some material, of avoiding insults to people still living and actively working, of making sure that proper credit is given to co-workers and in general the problem of handling delicate issues involving interpersonal conflicts.

The preprints of the papers are being produced as the August 1978 issue of ACM SIGPLAN Notices. Following the conference, a book is planned which will include these papers (which may be revised in the light of experience and comments on the presentation) and the commentary from the audience since the entire conference will be audiotaped for future listening by anyone.