

Jean E. Sammet

Born March 23, 1928, New York, N. Y; member of the CODASYL Cobol committee, chairman of the Short Range Subcommittee, which developed all the statements of the language; originator and developer of FORMAC, one of the earliest formula manipulation languages; leader in language systematization and historian of computer languages.



Education: BA, mathematics, Mount Holyoke College (magna cum laude, Phi Beta Kappa), 1948; MA, mathematics, University of Illinois, 1949.

Professional Experience: teaching assistant, mathematics, University of Illinois, 1948-1951; dividend technician, Metropolitan Life Insurance Co., 1951-1952; teaching assistant, mathematics, Barnard College, Columbia University, 1952-1953; engineer, Sperry Gyroscope Co., 1953-1958; Sylvania Electric Products: section head, MOBIDIC Programming, 1958-1959, staff consultant, Programming Research, 1959-1961; IBM Corp.: manager, Boston Advanced Programming, 1961-1965, Programming Language Technology manager, 1965-1968, manager, Programming Technology Planning, 1968-1974, manager, Programming Language Technology, 1974-1979, Software Technology manager, Federal Systems Division, 1979-1983, manager, Programming Language Technology, 1983-1986, senior technical staff member, 1986-1988.

Honors and Awards: IBM Outstanding Contribution Award, 1965; Mount Holyoke College Alumnae Association Centennial Award, 1972; member, National Academy of Engineering, 1977; honorary doctor of science, Mount Holyoke College, 1978; ACM Distinguished Service Award, 1985; Augusta Ada Lovelace Award, the Association for Women in Computing, 1989; ACM Fellow (initial group), 1994.

Miss Sammet organized and supervised the first scientific programming group for Sperry Gyroscope Company, 1955-1958. She worked at Sylvania Electric Products, 1958-1961, first as section head for MOBIDIC Programming, and then as staff consultant for Programming Research.

She joined IBM in 1961 to organize and manage the Boston Programming Center in the IBM Data Systems Division to do advanced development work in programming. She initiated the concept, and directed the development, of the first FORMAC (FORMula MANipulation Compiler), for which she received an IBM Outstanding Contribution Award in 1965. (FORMAC was the first widely used general language and system for manipulating nonnumeric algebraic expressions.) She also started and directed work on other language projects.

In 1965 she became programming language technology manager in the IBM Systems Development Division to enable her to write a book on programming languages. In 1969 her book *Programming Languages: History and Fundamentals* was published by Prentice-Hall and has been described by others as "the standard work on programming languages" and an "instant computer classic."

Between 1968 and 1978 she held various positions in the IBM Federal Systems Division (FDS) involving planning, internal consulting, and lecturing on programming languages. In 1978 she became the divisional program manager for Ada, with responsibility for coordinating the strategy and actions for IBM's Federal Systems Division to start the use of Ada. She initiated the concept of, and managed the development of, PDL/Ada and its usage in the division. In 1981 she was also assigned corporate responsibility for IBM's activities in Ada standardization.

In 1979 she became software technology manager for FSD; in that capacity she continued her general and Ada language responsibilities and also managed a department to assess and advise on software technology for the division. In 1983, she returned to the position of programming language technology manager to concentrate on programming languages; she continued her involvement with Ada standardization, both internally and externally. In 1986 she was named senior technical staff member, a title she retained until her formal retirement from IBM in December 1988. She is doing consulting and also working on the second edition of her programming languages book.

She taught mathematics at the University of Illinois and Barnard College, and programming courses at Adelphi College, Northeastern University, UCLA, Mount Holyoke College, and IBM's Systems Research Institute. She organized and directed a two-week Programming Technology Symposium for IBM customers under the auspices of the IBM System Sciences Institute in September 1972.

She has given numerous lectures and talks on the subjects of nonnumerical mathematics, symbolic computation, and programming languages (general, specific, and historical). She has published over 50 papers on these subjects.

She has been very active in the Association for Computing Machinery and was the ACM president from June 1974 to July 1976. From 1972 to 1974 she served as ACM vice president. In those positions she played a key role in restoring ACM to a healthy financial condition. Prior to that time she was involved in numerous ACM activities: She organized and was the first chairman of the ACM Special Interest Committee on Symbolic and Algebraic Manipulation (SICSAM), 1965-1968. She served as conference and program chairman for the very successful Symposium on Symbolic and Algebraic Manipulation, held in March 1966. She was elected Northeast regional representative (and therefore ACM Council member) 1966-1968. She served as an ACM lecturer from 1967 to 1968 and again in 1972. From August 1968 to September 1970 she served as chairman of the ACM Committee on Special Interest Groups and Committees, responsible for coordinating activities of 26 technical committees organized by the members. In June 1971 she was elected chairman of the ACM Special Interest Group on Programming Languages (SIGPLAN). After finishing the term as ACM president in 1976, she was chairman of the ACM Awards Committee and the Fellowship Investigation Subcommittee for a year. She conceived the idea and served as both general and program chairman for the very successful ACM SIGPLAN History of Programming Languages Conference (HOPL) held June 1978. From January 1979 to January 1987 she was editor-in-chief of *ACM Computing Reviews* and of the *ACM Guide to Computing Literature*. She was the program chairman for the ACM SIGPLAN Second History of Programming Languages Conference (HOPL-II) held in April 1993.

She has also been active in various other professional organizations and committees in the language and standards areas. She was a key member of the group which first developed Cobol in 1959, serving as chairman of the Statement Language Task Group and the Editing Committee. She was a member of the CODASYL Language Structure Group from 1960 until its dissolution in 1964. She was a charter member of USASI X3.4 Committee on Programming Languages from its formation in 1960, and was a member of USASI X3.4.2 Committee on Language Specifications, until the dissolution of each in 1969. She was a consultant to the ANSI X3K5 (Vocabulary) Committee. She was a member of the first DOD-organized Ada Distinguished Reviewers group throughout its existence and was an original member of the DOD-organized Ada Board (a federal advisory committee) from its inception until her resignation in 1989. She organized and chaired the ACM SIGAda Policy Committee for several years. She was a member of the ISO Working Group on Ada for many

years.

She has been involved in various other activities involving computing history. Her book *Programming Languages: History and Fundamentals* contained a description of the histories of many languages, as well as significant technical material. In her work on preparing a second edition of that book she is concentrating heavily on the histories of the more modern languages. Her work on the two ACM SIGPLAN Conferences on the History of Programming Languages (1978 and 1993) is mentioned above.

From 1977 to 1979 she organized, and served as first chairman of, the AFIPS History of Computing Committee. In that capacity she initiated numerous projects, including major concerns with archiving material. She assisted in creating the AFIPS journal, *Annals of the History of Computing* in 1978, and was on its editorial board for many years. She initiated and produced the Self-Study Department in that journal through 1991.

From 1983 to 1993 she was on the board of directors of the Computer Museum. She is also on its collections committee. She served on the original executive committee of the Software Patent Institute (1991-) and was its education committee chairman, 1992-1993.

Miss Sammet has voluminous historical files on programming languages, including material from the mid-1950s. Her files have been characterized by two museums as the best in the world for that subject. She also has other files of historical, computer-related material.

QUOTATION

". . . I do not consider an assembly language (even a sophisticated one) to be a programming language. This view differs from that held by some people who maintain that *anything* [Emphasis added.] in which programs are written is a programming language." (Sammet 1969)

BIBLIOGRAPHY

Biographical

Sammet, Jean E., "The Early History of Cobol," in Wexelblat, Richard L., ed., *History of Programming Languages*, Academic Press, New York, 198 1.

Sammet, Jean E., "The Beginning and Development of FORMAC," *ACM SIGPIAN Notices*, Vol. 28, No. 3, 1993, pp. 209-230.

Significant Publications

Sammet, Jean E., "A Method of Combining Algol and Cobol," *Proc. JCC*, Vol. 19, 1961, pp. 379-387.

Sammet, Jean E., "Survey of Formula Manipulation," *Comm. ACM*, Vol. 9, No. 8, 1966, pp. 555-569.

Sammet, Jean E., "Formula Manipulation by Computer," in Alt, F.L., and M. Rubinoff, eds., *Advances in Computers*, Academic Press, New York, Vol. 8, 1967, pp. 47-102.

Sammet, Jean E., "Revised Annotated Descriptor Based Bibliography on the Use of Computers for Non-Numerical Mathematics," in Bobrow, D.G., ed., *Symbol Manipulation Languages and Techniques, Proc. IFIP Working Conf.*

Symbol Manipulation Languages, North-Holland, Amsterdam, 1968, pp. 358-484.

Sammet, Jean E., *Programming Languages: History and Fundamentals*, Prentice-Hall, Englewood Cliffs, NJ., 1969.

Sammet, Jean E., "Software for Non-Numerical Mathematics," in Rice, J.R., ed., *Mathematical Software*, Academic Press, New York, 1971.

Sammet, Jean E., "Roster of Programming Languages," *ACM SIGPLAN Notices*, Vol. 13, 1978, pp. 56-85.

Sammet, Jean E., "The Early History of Cobol," in Wexelblat, Richard L., ed., *History of Programming Languages*, Academic Press, New York, 1981.

Sammet, Jean E., "Why Ada is Not just Another Programming Language," *Comm. ACM*, Vol. 29, No. 8, Aug. 1986, pp. 722-732.

Sammet, Jean E., "Some Approaches to, and Illustrations of, Programming Language History," *Ann. Hist. Comp.*, Vol. 13, No. 1, 1991, pp. 33-50.

Sammet, Jean E., "Software History," in Ralston, Anthony, and Edwin D. Reilly, Jr., eds., *Encyclopedia of Computer Science and Engineering*, 3rd ed., Van Nostrand Reinhold, New York, 1993, pp. 1224-1229.

Sammet, Jean E., "Key High-Level Languages," in Ralston, Anthony, and Edwin D. Reilly, Jr., eds., *Encyclopedia of Computer Science and Engineering*, 3rd ed., Van Nostrand Reinhold, New York, 1993, pp. 1471-1477.

Sammet, Jean E., "The Beginning and Development of FORMAC," *ACM SIGPLAN Notices*, Vol. 28, No. 3, 1993, pp. 209-230.

Sammet, Jean E., and E. Bond, "Introduction to FORMAC," *IEEE Trans. Electronic Computers*, Vol. EC-13, No. 4, 1964, pp. 386-394.

UPDATES

Jean Sammet has also been the recipient of two additional awards. In 2001 she was made a Fellow of the Computer History Museum and in 2009 she received the IEEE Computer Society Computer Pioneer Award (MRW, 2012). Portrait changed (MRW, 2013).

[PDF version](#)

Original content Copyright © 1995 by the Institute of Electrical and Electronics Engineers Inc.

New content Copyright © 2013-2015 by the IEEE Computer Society and the Institute of Electrical and Electronics Engineers Inc.

All rights reserved. This material may not be reproduced or redistributed without the express written permission of the copyright holder.