BASIC - Beginner's All-purpose Symbolic Instruction Code

Origin

The original BASIC language was released on May 1, 1964 by John G. Kemeny and Thomas E. Kurtz and implemented under their direction by a team of Dartmouth College students.

The acronym BASIC comes from the name of an unpublished paper by Thomas Kurtz. BASIC was designed to allow students to write mainframe computer programs for the Dartmouth Time-Sharing System. It was intended specifically for less technical users.

The language was based on FORTRAN II, with some influences from ALGOL 60 and with additions to make it suitable for timesharing. Initially, BASIC concentrated on supporting straightforward mathematical work with character string functionality being added by 1965. Wanting use of the language to become widespread, its designers made the compiler available free of charge. In the following years, as other dialects of BASIC appeared, Kemeny and Kurtz's original BASIC dialect became known as Dartmouth BASIC.

Spread on minicomputers

Knowledge of the relatively simple BASIC became widespread for a computer language, and it was implemented by a number of manufacturers, becoming fairly popular on newer minicomputers* such as the DEC PDP series. A version was a core part of the Pick operating system from 1973 onward, where a compiler renders it into bytecode, able to be interpreted by a virtual machine.

During this period a number of simple computer games were written in BASIC, most notably Mike Mayfield's Star Trek. A number of these were collected by DEC employee David H. Ahl and published in a newsletter he compiled. He later collected a number of these into book form, 101 BASIC Computer Games, published in 1973 During the same period, Ahl was involved in the creation of a small computer for education use, an early personal computer. When management refused to support the concept, Ahl left DEC in 1974 to found the seminal computer magazine, Creative Computing. The book remained popular, and was re-published on several occasions.

MSX BASIC version 3.0

The introduction of the first microcomputers in the mid-1970s was the start of explosive growth for BASIC. It had the advantage that it was fairly well known to the young designers and computer hobbyists who took an interest in microcomputers. Despite Dijkstra's famous judgement in 1975, "It is practically impossible to teach good programming to students that have had a prior exposure to BASIC: as potential programmers they are mentally mutilated beyond hope of regeneration", BASIC was one of the few languages that was both high-level enough to be usable by those without training and small enough to fit into the microcomputers of the day, making it the de facto standard programming language on early microcomputers.

One of the first BASICs to appear was Tiny BASIC, a simple BASIC variant designed by Dennis Allison at the urging of Bob Albrecht of the Homebrew Computer Club. How to design and implement a stripped-down version of an interpreter for the BASIC language was covered in articles by Allison in the first three quarterly issues of the People's Computer Company newsletter published in 1975 and implementations with source code published in Dr. Dobb's Journal of Tiny BASIC Calisthenics & Orthodontia: Running Light Without Overbyte.

Almost universally, home computers of the 1980s had a ROM-resident BASIC interpreter, which the machines booted directly into. When the Apple II, PET 2001, and TRS-80 were all released in 1977, all three had BASIC as their primary

programming language and operating environment. Upon boot, a BASIC interpreter in immediate mode was presented, not the command-line interface used on systems running CP/M or MS-DOS. Commodore Business Machines included a version of Microsoft BASIC. The Apple II and TRS-80 each had two versions of BASIC, a smaller introductory version introduced with the initial releases of the machines and a more advanced version developed as interest in the platforms increased. As new companies entered the field, additional versions were added that subtly changed the BASIC family.

As the popularity of BASIC grew in this period, computer magazines published complete source code in BASIC for video games, utilities, and other programs. Given BASIC's straightforward nature, it was a simple matter to type in the code from the magazine and execute the program. Different magazines were published featuring programs for specific computers, though some BASIC programs were considered universal and could be used in machines running any variant of BASIC (sometimes with minor adaptations). Many books of type-in programs were also available, and in particular, Ahl published versions of the original 101 BASIC games converted into the Microsoft dialect. The book reached the stores in 1978 and it became the first million-selling computer book. Later packages would also have gaming as an introductory focus. On the business-focused CP/M computers which soon became widespread in small business environments, Microsoft BASIC (MBASIC) was one of the leading applications.

Visual Basic

In 1991 Microsoft introduced Visual Basic, an evolutionary development of QuickBasic. It included constructs from that language such as block-structured control statements, parameterized subroutines, and optional static typing, as well as object-oriented constructs from other languages. An important driver for the development of Visual Basic was as the new macro language for Microsoft Excel, a spreadsheet program. To the surprise of many at Microsoft who still initially marketed it as a language for hobbyists, the language came into widespread use for small custom business applications. While many advanced programmers still scoffed at its use, VB met the needs of small businesses efficiently wherever ease of development was more of a concern than processing speed.

By that time, computers running Windows 3.1 had become fast enough that many business-related processes could be completed "in the blink of an eye" even using a "slow" language, as long as large amounts of data were not involved. Eventually, during the lengthy lifetime of VB3, knowledge of Visual Basic had become a marketable job skill. Microsoft also produced VBScript in 1996 and Visual Basic .NET in 2001. The latter has essentially the same power as C# and Java but with syntax that reflects the original Basic language.

Three modern Basic variants: Mono Basic, OpenOffice.org Basic and Gambas

Post-1990 versions and dialects

Many other BASIC dialects have also sprung up since 1990. Modern commercial incarnations include PureBasic, PowerBASIC, Xojo, Monkey X and True BASIC (the direct successor to Dartmouth BASIC from a company controlled by Kurtz). Several web-based simple BASIC interpreters also now exist. Versions of BASIC have been showing up for use on smartphones and tablets. Applications for some mobile computers with proprietary OS (CipherLab) can be built with programming environment based on BASIC.