

Read the following brief history of computer languages and use the information to complete the table of programming languages

## A short history of programming languages

The only language computers really understand is machine code, i.e. a series of binary digits. Assembly languages which use abbreviations such as ADD and MOV to represent instructions were developed to make things easier. A special program called *assembler* then translates the abbreviations or mnemonic codes into machine code.

During the fifties and early sixties a number of new, so-called high-level languages, as opposed to the earlier low-level languages, were designed. Problem rather than machine

oriented, programs in these languages are easier to write and are not restricted to just one type of computer. Known as source programs, they are converted into machine code using a compiler generating the object program. Examples are COBOL (= Common Business Orientated Language), FORTRAN (= FORMula TRANslation), developed for scientific programming and BASIC (= Beginner's All Purpose Symbolic Instruction Code) which was originally designed for teaching programming. Pascal, a third generation language designed for the development of structured applications, appeared relatively late in 1968.

Various languages had brief walk-ons during the sixties and seventies (Logo, Prolog, APL, PL1, ADA), but it was the programming language C in 1972 which took and was able to hold center stage with the development of C++, an OOPL (= Object Oriented Programming Language) in the early 80's. Designed for systems programming, it is an efficient hardware controller and is portable, i.e. programs written in C++ can easily be changed to run on many different types of systems.

Turbo Pascal introduced an Integrated Development Environment (IDE) in the mid-eighties that allowed you to edit the code while running the compiler which made the language very popular on the PC platform.

In the mid-nineties a row of new programming language entered the scene. Java is a stand-alone programming language originally designed for programming small electronic devices and to create applets for web pages.

Simpler in design and use is Javascript which is embedded in HTML documents and allows authors to incorporate some functions inside web pages.

Visual Basic is a programming environment which uses the language BASIC and predefined objects chosen from a toolbox to write general purpose programs for Window applications. Derived from Turbo Pascal, Delphi first appeared in 1995. It is a powerful, object oriented Windows and Linux development tool with very fast compilation and execution.

The development of the Unified Modeling Language (UML) also began at this time. It is used to construct and document the artifacts of software systems, as well as for business modeling and other non-software systems. As the name implies, UML represents the best engineering practices for the modeling of large and complex systems.

