

Many applications use a mix of several languages in their construction and use. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Many applications use a mix of several languages in their construction and use. It affects the aspects of quality above, including portability, usability and most importantly maintainability. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Computer programmers are those who write computer software. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. Normally the first step in debugging is to attempt to reproduce the problem. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Different programming languages support different styles of programming (called programming paradigms). There are many approaches to the Software development process. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages.