Many applications use a mix of several languages in their construction and use. For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. 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). Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. It is very difficult to determine what are the most popular modern programming languages. Techniques like Code refactoring can enhance readability. Following a consistent programming style often helps readability. Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language. 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. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. Many applications use a mix of several languages in their construction and use. Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL). Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. Unreadable code often leads to bugs, inefficiencies, and duplicated code. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Many applications use a mix of several languages in their construction and use. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.