Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. Also, specific user environment and usage history can make it difficult to reproduce the problem. 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. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. Scripting and breakpointing is also part of this process. Computer programmers are those who write computer software. Use of a static code analysis tool can help detect some possible problems. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. 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). A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. Programs were mostly entered using punched cards or paper tape. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. There exist a lot of different approaches for each of those tasks. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). 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). This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.