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.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
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.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
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.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers.  
Normally the first step in debugging is to attempt to reproduce the problem.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
 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.  
There exist a lot of different approaches for each of those tasks.  
 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.  
 Programs were mostly entered using punched cards or paper tape.