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..  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
 The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
Scripting and breakpointing is also part of this process.  
 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.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se.  
  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
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.