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..  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
 Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code.  
Use of a static code analysis tool can help detect some possible problems.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
Scripting and breakpointing is also part of this process.  
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.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
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.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
Many applications use a mix of several languages in their construction and use.