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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
There exist a lot of different approaches for each of those tasks.  
Integrated development environments (IDEs) aim to integrate all such help.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).  
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.  
 Code-breaking algorithms have also existed for centuries.  
There are many approaches to the Software development process.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
  
 Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
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).