There exist a lot of different approaches for each of those tasks.  
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.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
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.  
Programming languages are essential for software development.  
The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem.  
The source code of a program is written in one or more languages that are intelligible to programmers, rather than machine code, which is directly executed by the central processing unit.  
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.  
Normally the first step in debugging is to attempt to reproduce the problem.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
 The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.