In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
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Ideally, the programming language best suited for the task at hand will be selected.  
Normally the first step in debugging is to attempt to reproduce the problem.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
One approach popular for requirements analysis is Use Case analysis.  
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.  
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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.  
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Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
To produce machine code, the source code must either be compiled or transpiled.  
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In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.