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1.3) Describe the steps that transform a program written in a high-level language such as C into a representation that is directly executed by a computer processor.

When code is written in a high-level language, it must be converted by the compiler into assembly language. The compiler is part of the system software and is dependent on the high-level language but not the architecture; each language has its own compiler. Once the code is compiled into assembly language, the assembler converts assembly code into binary machine language in a one-to-one line ratio so that the processor can understand it. The assembler is also part of the system software but instead of being language specific, it is architecture specific. Each architecture such as x86 or ARM has their own assembler.