Preprocessor Encyclopedia Article

Preprocessor

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Preprocessor

A preprocessor is a program that transforms **data** or a computer language into suitable input for another program or a **compiler**. A preprocessor performs preliminary operations on data, such as organization, formatting, and computation, before that data is passed on for further processing. For example, in the **C programming** language the line #define PI 3.14159 instructs the preprocessor to replace every occurrence of PI with the numerical **value** 3.14159. In the case of a computer program, a preprocessor may be used to transform a program into a simpler or less complete computer language, for example, transforming **C++** into C. This processing **operation** can detect and correct problems in **code** before the compiler can reject them.

Preprocessor operations can be similar to **macro** expansions. Macro expansion replaces an instruction with a sequence of instructions prior to assembly or compiling. However, preprocessors differ from compilers. A compiler translates a **high-level language** into **assembly** or **machine language**. A preprocessor does not translate code into machine language, but transforms into suitable language for the compiler.

Preprocessing may require data or computer programs to be translated twice. The source data or program is inputted into the preprocessor. The preprocessor then passes the modified code to the compiler, which then translates it into **machine code**.