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Assignment 2
C Program Compilation Process

The c compilation process converts the source code taken as input into the object code or machine code. The compilation process can be divided into four steps, i.e., Pre-processing, Compiling, Assembling, and Linking. So we take one Jayesh.c file

1. Pre-processing: The first step in C compilation is pre-processing. The preprocessor reads the source code and performs operations such as expanding macros, including header files, and removing comments. After preprocessing jayesh.c file is converted to Jayesh.i file.

2. Compilation: Once pre-processing is complete, the compiler reads the preprocessed source code and translates it into assembly language, which is a low-level representation of the program. So jayesh.i is converted into jayesh.s

3. Assembly: The assembly code is then translated into machine code by an assembler. This produces an object file, which contains the machine code and other data required by the linker. Then jayesh.s in converted into jayesh.o

4. Linking: The linker combines the object file with other necessary libraries to create an executable file. The linker resolves external references, such as function calls and variable declarations, and generates the final binary executable. At last jayesh.o is converted to a.out file

In preprocessor step it will remove all comments instead of including header file it will expand it. Also it will expand macros also
In next step the compiler will convert preprocessed code into assembly language. i.e. sample.i to sample.s the complete code will be in assembly language.
Then the same compiler will convert the assembly code in object code i.e. sample.s to sample.o .
            Finally in last step our object code will create executable with linking.