# COMPILATION PROCESS OF CODE

A small piece of code ( for e.g. Helloworld program) which runs in matter of milliseconds of goes through several entities to give us the output.

A c’s program building process involves four stages and utilizes different tools such as pre-processor , compiler , assembler , linker . At the end there should be a single executable file .

# 1.Preprocessing:-

The first step of compilation of c coded . It processes include-files , conditional compilation instructions and macros.

# 2.Compilation:-

It is the second step. It takes output of the preproccesor , and the source code and generates assembler source code.

# 3.Assembly:-

The third stage of compilation . It takes the assembly source code and produces an assembly listing with offsets. The assembler output is stored in an object file(filename.obj).

4.Linking**:-**

At this stage if some pieces of program is out of order or missing then , to provide an executable program , the existing pieces have to rearranged and the missing ones filled in,the linker will arrange the pieces of object code so that functions in some pieces can successfully call functions in other ones . This process is called linking.

# Compiling And Linking

**Step I** : **- Create a ‘.h’ file.**

**Step II : - Create a ‘.c’ file which implements the functions of ‘.h’ file.**

**Step III : - Compile our library code.**

**“ Cl /LD library.c “ (after giving that command the following output will be shown on screen)**

**/out::library.dll**

**/dll**

**/implib : library.lib**

**Library.obj**

**Here , the dll and .obj file will be generated.**

**Step IV : - Write code to consume function i.e, defined in ‘.c’ file .**

**Step V : - Compile this ‘.c’ file to get ‘.exe’ file.**

**“ Cl hello.c library.obj “ (library.obj is used to tell the compiler where to find implementation of function.)**

**/out : hello.exe (exe file will be generated here after giving above mentioned command.)**

**Hello.obj**

**library.obj**

**Step VI :- Execute the ‘.exe’ file to get output.**

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