COMPILATION STAGES

- **Compilation process devided into four parts:**

1) Preprocessor
2) Translator
3) Assembler
4) Linker

Preprocessor

- **Preprocessor is first stage in compilation process.**
- **In this stage we will get pure c file or extended c file from our source file.**
- **Preprocessor tasks are:**

1) Include hesder file
2) Remove comments
3) Replace macros
4) Do conditional compilation

Preprocessor

- **Command to compile program upto preprocessor stage:**

  cc -E filename.c -o filename.i

- **To check the result of the preprocessor stage:**

  vi filename.i

Translator

- **Translator is second stage in compilation process.**
- **In this stage preprocessed code is translated to assembly instructions.**
- **Translator tasks are:**

1) Generate assembly code

2) Checking for syntactical error

Translator

- **Command to compile program upto Translator stage:**

  cc -S filename.i -o filename.s

- **To check the result of the preprocessor stage:**

  vi filename.s

Assembler

- **Assembler is third stage in compilation process.**
- **In this stage assembly program get converted into machine understandable code.**
- **Command to compile program upto Translator stage:**

  cc -c filename.s -o filename.o

- **To check the result of the preprocessor stage:**

  vi filename.o

Disassemble

- **The contents of this file (**vi filename.o**) are in binary formate(machine understandable).**
- **To make this file user understandable we need to disassemble it.**
- **Command to disassemble file:**

  objdemp -D filename.o

Linker

- **Linker is fourthand last stage in compilation process.**
- **In this stage it generates executable code.**
- **Linker tasks are:**

1) Linking with library

2) Searching function definition.

- **Command to compile program upto Translator stage:**

  cc filename.o

- Single command to compile source code upto translator stage:

```
cc -S filename.c
```

- Single command to compile source code upto assembly stage:

```
cc -c filename.c
```