



## C program 'Execution Phases'

First of all Execution or executing a program refers that we are now checking program for errors and then for output

C program goes under 6 phases for execution

- (1) Edit, (2) preprocess, (3) Compile, (4) Link  
(5) Load (6) Execute

(i) EDIT : In this phase we edit (type) a program with an editor program. We basically have C of Borland in Windows operating System which is console based i.e. output comes on black screen.

Now we also have Microsoft Visual Studio.

(ii) preprocess :- In this C preprocessor executes before a program is compiled. It performs

Some actions like

- (a) Inclusion of other files in the file being compiled
- (b) Symbolic Constant and Macros
- (c) Conditional compilation of program code
- (d) Conditional execution of preprocessor directives.

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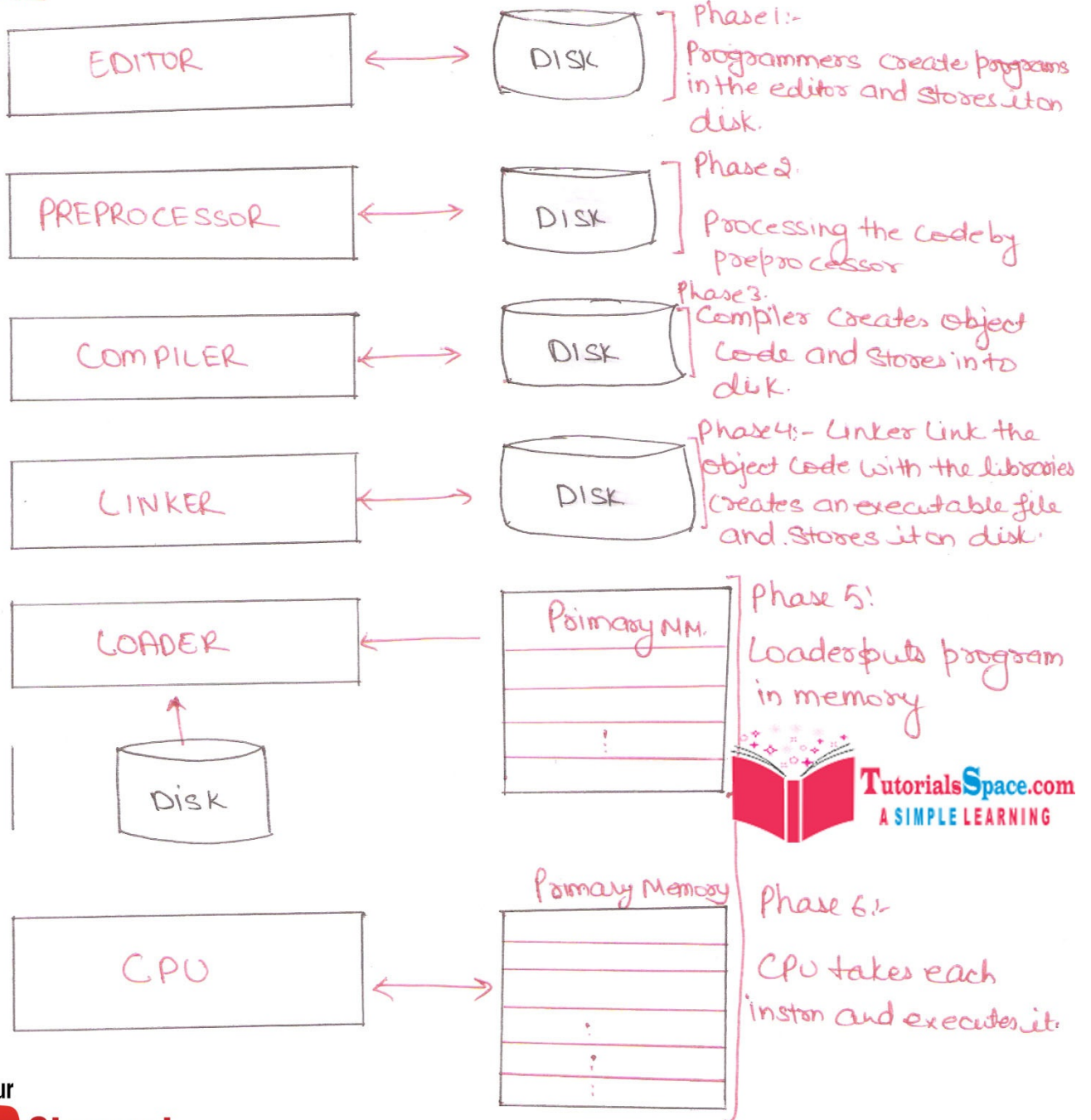
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(iii) Compiling :- In phase 3 Compiler translates the C program into machine language code. It issues an error message to locate and fix the incorrect statement

# Computer Science Lectures by Er. Deepak Garg

So a Syntax error Occurs when Compiler cannot recognize a statement as it is not according to rules of the language

Syntax errors are also 'Compile errors' or 'Compile-time errors'.



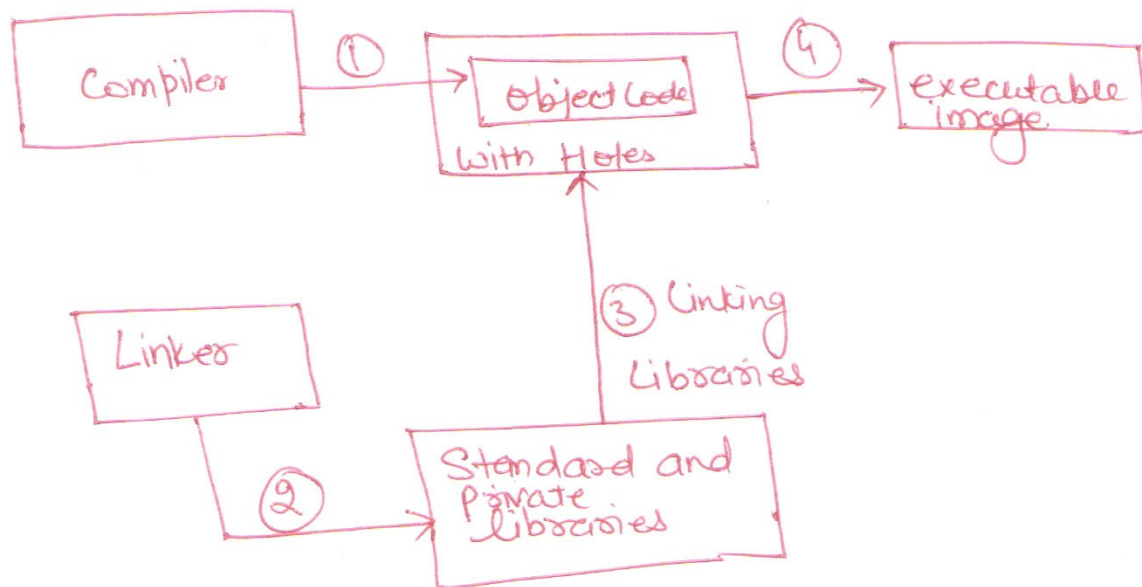
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## C Development Environment

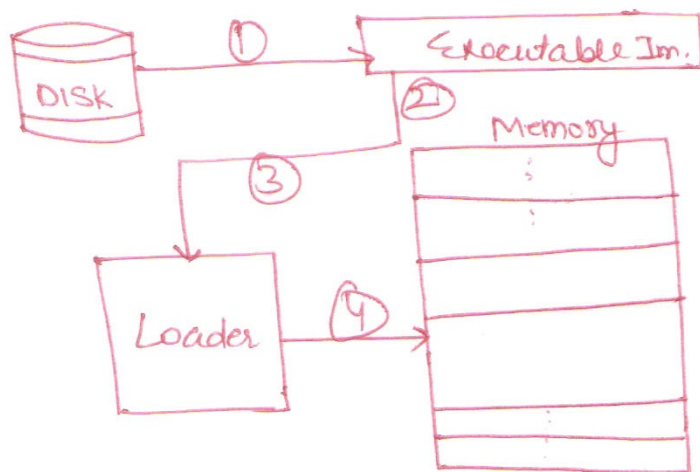
4) Linking :- C program basically contains references to function defined elsewhere such as in the standard libraries or private libraries of group

of programmers working on a particular project. Object code produced by C compiler typically contains "HOLES" due to this missing parts.



So linker link the object code with standard libraries or missing codes to produce an executable image.

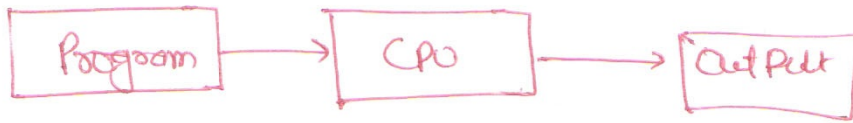
(5) Loading :- Before a program can be executed, the program has to be placed in memory. This is done by 'Loader', which takes the executable image from disk and transfers it to memory.



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6) Execution : Now CPU executes the program one instruction at a time.



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