SNS COLLEGE OF TECHNOLOGY

Coimbatore-36.

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COURSE NAME : 23CST101– PROBLEM SOLVING & C PROGRAMMING

I YEAR/ I SEMESTER

UNIT-II C PROGRAMMING BASICS

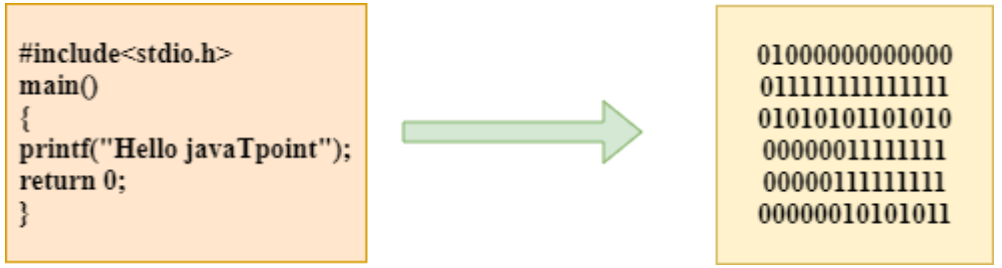
Topic: Compilation and Linking processes

Department of Computer Science and Engineering

Compilation and Linking processes

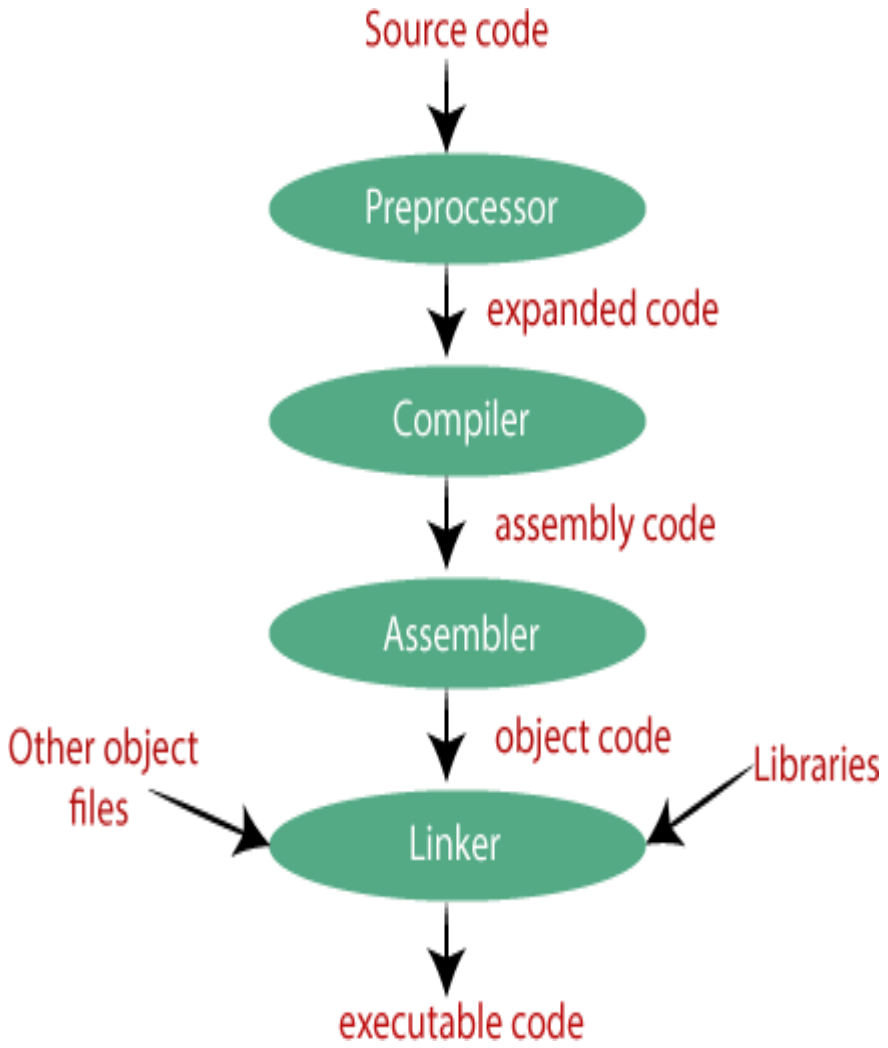
What is a compilation?

- Process of converting the source code into object code.
- It is done with the help of the compiler.
- The compiler checks the source code for the syntactical or structural errors, and if the source code is error-free, then it generates the object code.

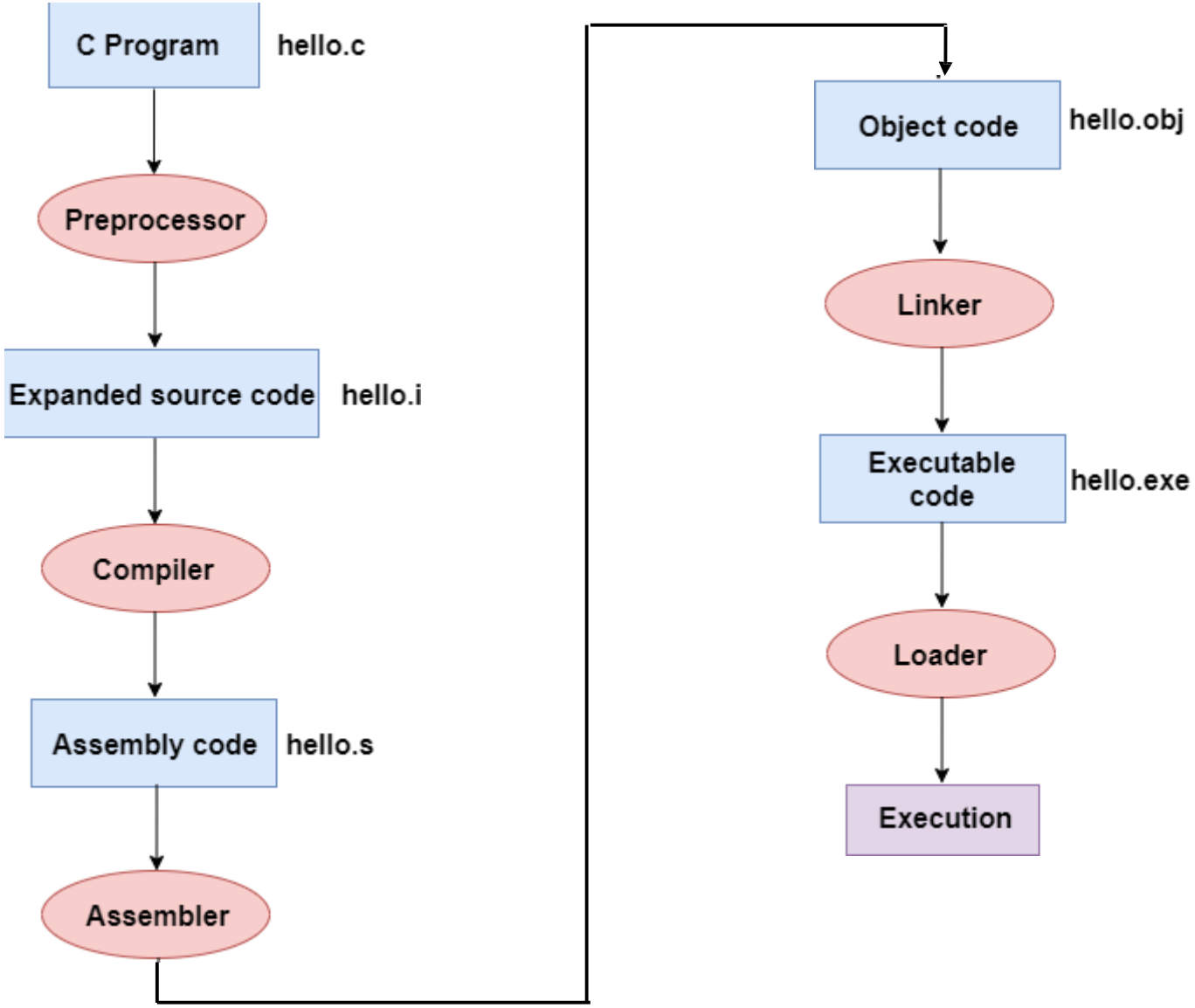


- The C compilation process converts the source code taken as input into the object code or machine code.
- The compilation process can be divided into four steps,
  - Pre-processing
  - Compiling
  - Assembling
  - Linking

Compilation and Linking processes



Compilation and Linking processes



Compilation and Linking processes

In the flow diagram, the following steps are taken to execute a program:

- Firstly, the input file, i.e., **hello.c,** is passed to the preprocessor, and the preprocessor converts the source code into expanded source code.
- The extension of the expanded source code would be **hello.i.**
- The expanded source code is passed to the compiler, and the compiler converts this expanded source code into assembly code.
- The extension of the assembly code would be **hello.s.**
- This assembly code is then sent to the assembler, which converts the assembly code into object code.
- After the creation of an object code, the linker creates the executable file.
- The loader will then load the executable file for the execution.


Thank You!