

Programming Language (630203)
Fall 2010/2011 – Lecture Notes # 1

An Overview of Computers and Programming Languages

Objectives of the Lecture

- Evolution of programming languages.
- Examine a C++ program.
- Discover what a compiler is and what it does.
- Explore how a C++ program is processed.

Evolution of programming languages

- **Machine language:** Early computers were programmed in machine language:
- **Assembly language** instructions are mnemonic.
 - Assembler: translates a program written in assembly language into machine language.
- **High-level languages** include Basic, FORTRAN, COBOL, Pascal, C, C++, C#, and Java.
 - Compiler: translates a program written in a high-level language machine language

Processing a C++ Program

```
#include <iostream>
using namespace std;
int main()
{
    cout << "My first C++ program." << endl;
    return 0;
}
```

Sample Run:

My first C++ program.

To execute a C++ program:

- Use an **editor** to create a source program in C++.
- **Preprocessor** directives begin with # and are processed by the preprocessor.
- Use the **compiler** to:
 - Check that the program obeys the rules
 - Translate into machine language (object program)
- **Linker:**
 - Combines object program with other programs provided by the SDK to create executable code
- **Loader:**
 - Loads executable program into main memory
- The last step is to **execute** the program.

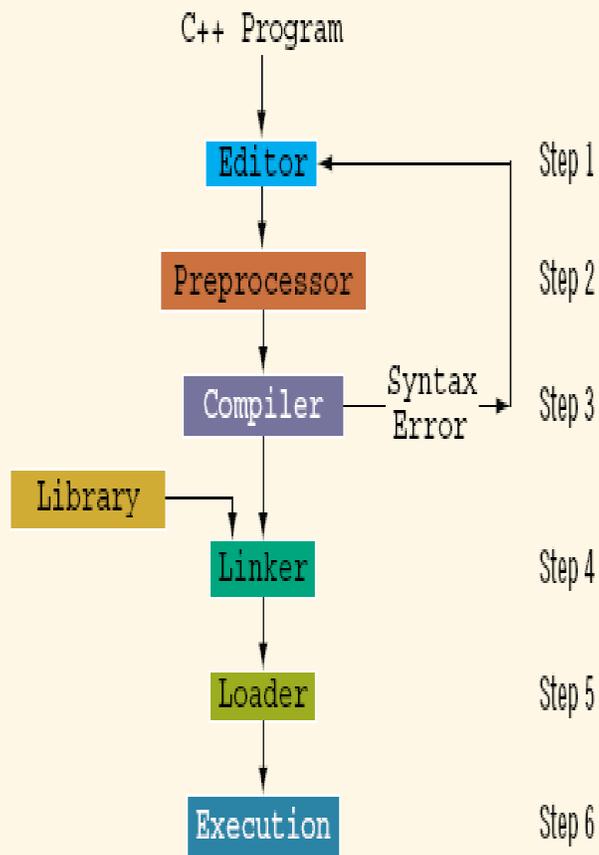


FIGURE 1-3 Processing a C++ program