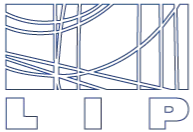
Introduction to Linux and C++

LIP Summer Internships, July 5th 2021



LABORATÓRIO DE INSTRUMENTAÇÃO
E FÍSICA EXPERIMENTAL DE PARTÍCULAS

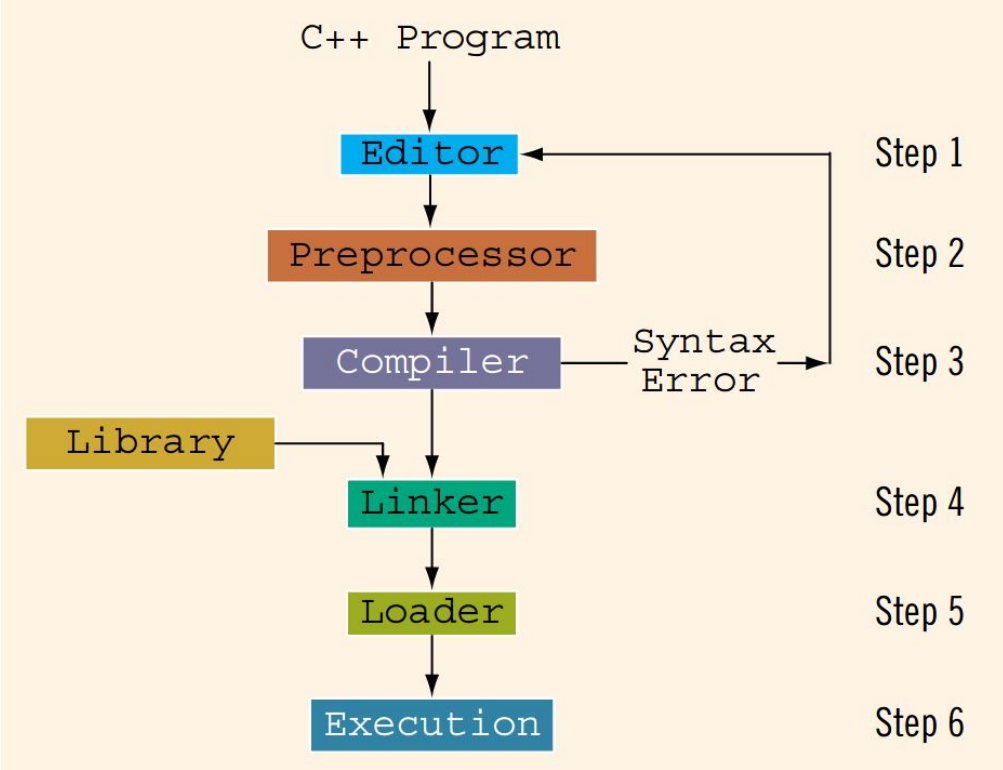
Program of the tutorial

- Very short introduction to processing of a C++ program and demonstration
  - Live, on Zoom
- Hands-on exercises
  - Independent work, following list of exercises which can be found in the agenda
  - Support will be available on slack (join here). There is a specific channel for this tutorial: **c-tutorial**. You can use it to ask any questions about the exercises. LIP researchers/students will be available during the whole afternoon to help you!
  - What do the exercises cover?
    - Working in the terminal
    - Writing, compiling and running basic C++ programs: Hello world!, for loops and printing information to the terminal, working with arrays and conditional statements
- After the introduction and demonstration we will disconnect to allow you to follow the exercises on your own time. The Zoom room is available for 3 hours so you can remain connected if you wish to talk to the other students. I suggest we all connect back at 3:30 pm to discuss the progress. In the meantime, we will be available in slack!

Files available in the agenda

- List of exercises (choose only one to follow according to you setup)
  - If you have access to the pauli machines: C__LinuxTutorial.pdf
  - If you are using Docker in your computer: C__LinuxTutorial__Docker.pdf
- Further C++ references (to use in case you want to learn more)
  - Quick cheat sheets: one page linux manual and C++ quick reference
  - Very complete slides used in previous editions of this tutorial (take you through the basics of C++): CppClass.pdf
- These slides

Processing a C++ code



D.S. Malik, C++ Programming: From Problem Analysis to Program Design

Very simple C++ code | Demonstration

```
#include <iostream>
#include <string>
using namespace std;
int main(){
   string answer;
   cout<<"Please answer yes or no"<<endl;
   cin>>answer;
   if(answer=="yes") cout<<"Hello world"<<endl;
   return 0;
}
```

Include C++ libraries. Give you access to *cout*, *cin* functions and to *string* data type

Create variable of type *string* called answer

Print sentence to terminal

The user must type an answer (yes or no) in the terminal. The value will be stored in the *answer* variable

If the user answers "yes" the program prints "Hello world" to the terminal