

# Computer Science

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Cédric Lemaître  
c.lemaitre58@gmail.com

*Université de Bourgogne*



## ① Computer Science : C++

C++ Language : introduction

Comments

Type

variable definition

instruction

fonction

Our first binary



## Objectives of the module

### Objectives

- ▶ learn C++ language
- ▶ learn Object Programmation Concept
- ▶ learn Optimized compilation chain



## C++ introduction

### Chronology

- ▶ first version 1983 by Bjarne Stroustrup
- ▶ first standardized version 1998
- ▶ last standardized version 2017



## C++ introduction

### What is C++?

- ▶ most used language for software dev
- ▶ object oriented language



## C++ introduction

### Advantages C++

- ▶ high perf (vs python)
- ▶ cross-platform
- ▶ object representation : increase dev flow
- ▶ many object in standard lib



## Comments

```
// this is a inline comment  
CStash intStash; // you could comment like this  
/* this is block comment  
int i;  
char* cp;  
ifstream in;  
*/
```



## Standard type

### integer

- ▶ char
- ▶ short
- ▶ int
- ▶ long

Each one could be unsigned or not.





## Standard type

### real

- ▶ float
- ▶ double
- ▶ long double

Each one could be unsigned or not.



## Standard type

### integer

Be carefull : exact size of type variables depend of the compiler manufacturer



## variable definition

- ▶ definition
- ▶ affection and assignment



## instruction

- ▶ all instruction finish with ;



## operator

- ▶ maths
- ▶ logical



## function

- ▶ Definition
- ▶ Call



## function

- ▶ where place the definition?
- ▶ overloading a function



## Our first binary

- ▶ code structure
- ▶ compilation : `gcc -Wall -o labs1.o -c labs1.c`
- ▶ linking : `gcc -o labs1 labs1.o`
- ▶ run binary `./labs1`