INTRODUCTION TO C++

LESSON 1: Introduction

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1 Introduction

C++ is widely used, from embedded systems to system programming, banking or even Python reference implementation.

2 Modern C++

- static type safety
- resources safety
- abstraction
- encapsulation, invariants
- generic programming
- simplicity for most developers
- multiparadigm programming

3 C(++): a compiled language

With both C and C++, source code needs to be compiled into assembly language (through *compilation*), which will then be translated (during *assembly*) to machine code (binary).

4 Syntax - Delaration and instruction

4.1 Declare variables

```
int capacity;
float height;
```

4.2 Declare and initialize variables (adivsed!)

```
int capacity = 1;
float height = 0.5F;
```

4.3 Instructions

```
letter = 'a';
height = 0.5F*height + 1.0F;
++capacity;                  // See difference with capacity++
```

Note that all variables have a static type, and that the delimiter expression is ';'.

5 Base types

The floating point precision is not uniform.

6 Type conversion