codecademy

Getting Started with C++

Why C++?

- C++ is developed by Bjarne Stroustrup at Bell Labs in 1979.
- C++ adds object-oriented programming and many other new features to C.
- C++ is fast, flexible, and well-supported across multiple platforms.
- Being one of the most popular languages today, C++ has a wide range of applications across many fields.

C++ Style Guide

Style is what we call the conventions that govern our C++ code. These rules exist to keep the code base manageable and readable.
Here are some basic tips from Google's C++ Style Guide:

- `#include` statements are mostly written **at the beginning** of any C/C++ program.
- Names can never start with a digit or be the same as a predefined C++ keyword.
- Types, variable, operators, and literal values should be separated by **one space horizontally**.
- Classes, functions, and global variables should be separated by **one space vertically**.
- All indentations should be **two spaces** at a time.

```
#include <iostream>
#include <string>
using namespace std;

// This program print out "Hello World!"
int main() {
  string message = "Hello World!\n";
  cout << message;
  return 0;
}
```

C++ Compile and Execute

C++ a compiled language, which means a compiler needs to first translate your C++ *source code* into *machine code* before it can be run. There are two common ways for running C++ programs: using the command line or an IDE.

- On the command line, type `g++` and the filename to compile your program, then execute it with `./` and the name of the executable.
- On an IDE, explore external resources because the process is different depends on which IDE is being used.

```
g++ hello.cpp -o hello
./hello
```