02635 Fall 2016 — Module 12

Homework

- Read pp. 1-9, pp. 20-22, pp. 315-333 in "[Beginning C++](#)"

Exercises

1. Write a "Hello World!" program in C++, i.e., a program that writes a string to the standard output. Compile and run your program.

   Remarks: C++ source files typically have the extension `.cpp` and `.h` for source code and header files, respectively. (Other conventions exist, e.g., `.cc`, `.cxx`, or `.c++` for source files and `.hh`, `.hxx`, or `.h++` for header files.) To explicitly use the GNU C++ compiler within the GCC, use `g++` instead of `gcc`. Similarly, if you use Clang, you may use `clang++` to explicitly invoke the C++ compiler. (On some systems you may also be able to use the generic command `c++`.)

2. Write a program that prompts the user to input his or her name and age, and then writes a suitable welcome message to the user. Use a `string` to store the name and use a integer to store the age.

3. Do exercise 11-1 in "Beginning C++". You may use the following template:

```cpp
#include <iostream>

class Integer {
private:
  int i;               // value
public:
  Integer();           // "constructor"
  void set(int newi);  // "setter"
  int get();           // "getter"
  void print();        // print value
};

Integer::Integer() {
  // insert code here
}

void Integer::set(int newi) {
  // insert code here
}

int Integer::get() {
  // insert code here
}

void Integer::print() {
  // insert code here
}

int main(int argc, const char *argv[]) {

  // insert code here

  return 0;
}
```

4. Do exercise 11-2 in "Beginning C++".

5. Do exercise 11-3 in "Beginning C++".

Optional exercises

- Watch Bjarne Stroustrup, the creator of C++, explain why he created C++.

- Read about [C#](#) (pronounced *C sharp*) and [Objective-C](#) which, like C++, are object-oriented programming languages that are based on C.

  Fun fact: the lead architect of C# is [Anders Hejlsberg](#), a former DTU student.

- Watch [Bjarne Stroustrup](#) explain why he believes that the C language is obsolete.

  As always, there are two sides to every story. Linus Torvalds, the creator of the Linux kernel, is quoted as saying that *"C++ is a horrible language. It's made more horrible by the fact that a lot of substandard programmers use it, to the point where it's much much easier to generate total and utter crap with it. Quite frankly, even if the choice of C were to do nothing but keep the C++ programmers out, that in itself would be a huge reason to use C."*

  Now look at the [Programming Community index](#) that tracks the popularity of programming languages. Click on the different C-based languages (C, C++, C#, Objective C). Is the C language or its object-oriented extensions going to disappear any time soon?