

Lab 01

CPSC 2280

January 7, 2020

1 Unassessed exercises

1.1 Printing

Consider the following C++ code, which will print out “Hello world”:

```
1 #include <iostream>
2
3 int main()
4 {
5     std::cout << "Hello_world!" << std::endl;
6     return 0;
7 }
```

Make sure to compile it and run it. Use Ctrl-F5 in Visual Studio to run it and keep the window open. Some things to note:

- The include at the top will bring into scope such important items as `cout` and `endl`
- `main` must have a return type of `int`. Return 0 in the case of success (typical program execution) and 1 in the case of failure (something went wrong).
- `main` may either have 0 parameters or 2. If it has 2, it should look like `int main(int argc, char **argv)`
- `std` is a *namespace*. All standard objects, class and methods in C++ belong to the `std` namespace. Use two colons (`::`) after a namespace name.
- `cout` is an object used to print values to standard output. (Its name is a contraction of *character out*)
- `<<` is used to separate items to be printed out.
- `endl` is the newline character (and flushing the output stream). It is equivalent to `'\n'`. Do not assume that a line has been printed until it reaches an `endl`

1.2 Reading

Consider the following C++ code, which will print out a number n squared:

```
1 /*
2  * A program to calculate and output the square of a number.
3  * Michael Burrell
4  */
5
6 #include <iostream>
7
8 using namespace std;
```

```

9
10 int main() {
11     cout << "Please enter an n" << endl;
12     double n;
13     cin >> n;
14     cout << (n * n) << endl;
15     return 0;
16 }

```

Some things to note:

- `/* ...*/` introduces comments in C++. A line beginning with `//` can also be used as a comment.
- `using namespace` allows a namespace to be used implicitly for an entire scope. By saying this, we remove the burden of having to write `std::` in the `main` function below. Using it too much can cause confusion, so we will learn how to use this judiciously in the future.
- `cin` is the counterpart to `cout` and is used for reading in values.
- `>>` is used with `cin`.

2 Deliverables

Create a C++ console application which:

- Asks the user for a (`double`) temperature, in Fahrenheit.
- Prints out that temperature converted into Celsius. Hint: $F = 32 + \frac{9C}{5}$

Your code must include a comment at the top with a short description and your name.

For this lab, please submit only your `.cpp` file. Future labs may ask you to submit your entire project.