

ECE 150 Fall 2020

Assignment 1

Logistics and academic conduct

1. Give two examples of how you could assist a peer of yours on projects without violating the academic conduct policies for this course.

Statements

1. Explain how you would determine if a statement is a preprocessor statement?
2. In the following program, mark every line that is identified by the compiler as a preprocessor statement or a comment.

```
// This is a simple program that does nothing useful.
#include <iostream>
#include <cmath>
//#include <algorithm>

int main();

int main() {
    std::cout << "#include <iostream>" << "allows me to print to console" << std::endl;
    //cout << "#include <algorithm> gives me algorithms" << std::endl;

    return 0;
}
/* This is the end of file.*/
```

3. Will this compile? Why or why not?

```
// This is a simple program that does nothing useful.
#include <iostream>
#include <cmath>
//#include <algorithm>

int main();

int main() {
    std::cout << "#include <iostream>" << "allows me to print to console"
                << std::endl;
    std::cout << "b";

    return 0;
} {
    std::cout << "a";
    std::cout << '1';
    std::cout << 2;

    return 0;
}
```

Functions

1. Explain the purpose of a function declaration and its function definition.
2. Explain why the purpose of the `main(...)` function is in C++.

Literals

1. How is an integer literal different than a floating-point literal?
2. Explain the difference between a statement that prints to the console `"1"`, `'1'`, and `1`.
3. Write the statement to print the following text to the console where the first character printed is the apostrophe (that is, no leading spaces). There are three spaces before the "W" and a single space everywhere else.
`' '_/_\ Welcome to ECE 150! \\\\' '`

Variables and initializations

1. Why does one need to use variables in a program?
2. What are the differences in the following two local variable declarations?

```
int n;  
char ch;
```

3. Write a single statement to initialize a local variable of integer type to the value 150.
4. What are the differences between the following three statements?

```
int n;  
int n{};  
int n{1970};
```

5. Write a program that has two statements. The first statement declares a local variable of integer type initialized to the value 10, and the second statement assigns 150 to the local variable. Your program should then print out the sum of these two variables.