If Statements and While Loops

May 2, 2020

0.1 If Statements

C++ `if` statements work very similarly to if statements in other languages. In C++, the boolean condition is contained in parentheses (and), and the body of the statement is enclosed in curly brackets { and }.

Try executing the cell below. Once you have done that, initialize the variable `a` to `true` and execute the cell again:

```cpp
In [ ]:  #include <iostream>
         using std::cout;

         int main()
         {

             // Set a equal to true here.
             bool a = true;

             if (a) {
                cout << "Hooray! You made it into the if statement!" << "\n";
             }
         }
```

Compile & Execute

Explain
Loading terminal (id_9bkwqcd), please wait...

0.2 While Loops

The syntax for a `while` loop looks very similar to the syntax for the `if` statement:

```cpp
In [ ]:  #include <iostream>
         using std::cout;

         int main()
         {
             auto i = 0;
```

1

```
    while (i < 5) {
      cout << i << "\n";
      i++;
    }
}
```

Compile & Execute

Explain
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0.3 Practice

In the following code cell, you will combine a `while` loop with an `if` statement to print every other number. Write a while loop to iterate over the integers from 1 to 10. If the integer is even, print it out.

Hint: you can tell if an integer is even by looking at its remainder after dividing by two. In C++, the remainder operator is %. In other words, for a given `int i`, you have `remainder = i % 2`. If `remainder` equals 0, the number is even.

```
In [ ]: #include <iostream>
        using std::cout;

        int main()
        {
            // Write your code here.
            int i = 1;
            while(i<=10){
                if(i%2 == 0){
                    cout << i <<" ";
                }
                i++;
            }
            cout<<"\n";
        }
```

Compile & Execute

Show Solution
Loading terminal (id_s8niqzl), please wait...