

Functions

May 2, 2020

0.1 Functions

In the cell below, there is a simple function to add two numbers and return the result. Test the code below, and click the button for a more in-depth explanation.

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

        // Function declared and defined here.
        int AdditionFunction(int i, int j)
        {
            return i + j;
        }

        int main()
        {
            auto d = 3;
            auto f = 7;
            cout << AdditionFunction(d, f) << "\n";
        }
```

Compile & Execute

Explain

Loading terminal (id_doqs3ky), please wait...

0.1.1 Practice

Now that you've seen how to define and call a function, try this yourself in the cell below with a slightly more complicated example. Your function should accept a vector of ints as its argument and return the sum of all the ints in the vector. If you get stuck, click the solution button for help.

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

        // Define a function "AdditionFunction" here.
        // Instead of just two ints, this function should accept a vector<int>
```

```

// as the argument, and it should return the sum of all the ints in the vector.
int AdditionFunction(const vector<int> &v){
    int sum = 0;
    for(const int &i: v){
        sum = sum + i;
    }
    return sum;
}

int main() {
    vector<int> v {1, 2, 3};
    // Uncomment the following line to call your function:
    cout << AdditionFunction(v) << "\n";
}

```

Compile & Execute

Show Solution

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0.2 Void Return Type

Sometimes a function doesn't need to return anything. For example, a function might simply modify an object that is passed into it, or it might just print to the terminal. If a function doesn't need to return a value, the void type can be used for the return type. Using the function syntax provided above, write a function PrintStrings that takes two strings as arguments and prints both of them. If you are having trouble, click the solution button for help.

```

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

        // Write the PrintStrings function here.
        void PrintStrings(const string &s1, const string &s2){
            cout<<s1<<" "<<s2<<"\n";
        }

        int main()
        {
            string s1 = "C++ is ";
            string s2 = "super awesome.";

            // Uncomment the following line to call your function:
            PrintStrings(s1, s2);
        }

```

Compile & Execute

Explain

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