

C++ Programming

Builtin Functions

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Builtin functions

```
1 #include<iostream>
2 #include<cmath>
3 #include<cstdlib>
4 using namespace std;
5
6 int main() {
7     cout<<abs(-2)<<"\n";           // 2
8     cout<<fabs(-2.4)<<"\n";         // 2.4
9     cout<<ceil(2.4)<<"\n";          // 3
10    cout<<floor(2.4)<<"\n";          // 2
11    cout<<round(2.4)<<"\n";          // 2
12    cout<<round(2.5)<<"\n";          // 3
13    cout<<round(2.6)<<"\n";          // 3
14    cout<<round(-2.6)<<"\n";         // -3
15    cout<<round(-2.4)<<"\n";         // -2
16    cout<<ceil(-2.4)<<"\n";          // -2    ** TRICKY
17    cout<<floor(-2.4)<<"\n";         // -3    ** TRICKY
18    cout<<sqrt(16)<<"\n";            // 4
19 }
```

Explore Much more: <https://en.cppreference.com/w/cpp/header/cmath>

Builtin functions

```
cout<<isalpha('A')<<"\n";           // 1024 = true
cout<<isalpha('#')<<"\n";           // 0
cout<<isdigit('3')<<"\n";           // 1 = true
cout<<isdigit('A')<<"\n";           // 0
cout<<isupper('A')<<"\n";           // 256 = true
cout<<isupper('a')<<"\n";           // 0
cout<<(char)tolower('X')<<"\n";      // x
cout<<(char)toupper('x')<<"\n";      // X

cout<<max(5, 9)<<"\n";               // 9
cout<<pow(2, 4)<<"\n";               // 16
cout<<pow(2, 4.1)<<"\n";             // 17.1484
cout<<log2(16)<<"\n";               // 4
cout<<log10(1000)<<"\n";            // 3

cout<<(double)rand() / RAND_MAX<<"\n"; // 0.840188
```

Function: Is lower string? again!

```
1  #include<iostream>
2  #include<cstdlib>
3  using namespace std;
4
5  bool is_lower(const string &str) {
6      for (int i = 0; i < (int) str.size(); ++i)
7          if (!islower(str[i]))
8              return false;
9
10     return true;
11 }
12
13 int main() {
14     cout << is_lower("abc") << "\n";
15     cout << is_lower("aBC") << "\n";
16
17     return 0;
18 }
19
```

Your turn

- We can make a lot of mistakes when using functions
- Create as much mistakes as u can
 - E.g. mistake in function names, forget to return, call with wrong data types, call function doesn't exist, etc
- Read the compilation error and understand it

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”