

# Lab #04

Date: 2014/03/12

# Slide

- <http://goo.gl/hQidlB>

# String

- C strings are character arrays
  - `char array[11]`

I	a	m	a	s	t	r	i	n	g	\0
---	---	---	---	---	---	---	---	---	---	----

- You can input a string by `cin` or the functions provided in `<cstring>`

# <iostream>, <fstream>

- cin.get()
- cin.getline()
- much more... you can find them in
- <http://www.cplusplus.com/reference/iostream/>
- <http://www.cplusplus.com/reference/cstring/>

# Do the practice directly!

- Go for Lab14-04

# Something might be useful

- `#include <cmath>`
  - `floor(2.75) = 2`
  - `pow(x, 5) = x^5`
- After compute the equation, you need to do type conversion by: `M = static_cast<int> result;`
- You can compare and shift a character by its ASCII.
  - ```
char s = 'c';  
s += 1;           //s = 'd'  
if (s == 100) cout << "true";  
//true, A==65, Z==90, a==97, z==122
```

# Functions

- Functions "Encapsulate" a task (they combine many instructions into a single line of code)
- What is it used for ?
  - Easier to debug and reuse
  - Make your code more readable

# Example

```
int add (int a, int b)
{
    return a + b;
}
```

```
int main()
{
    cout << add(1, 2) << endl; //output 3
    return 0;
}
```

# declare? define?

- Remind how to create an integer variable
  - declare by giving type and name: `int a;`
  - if needed (but strongly recommend), initialize them.
  - define its value: `a = 10;`

# declare? define?

- Similar to function

- declare a function: `int add(int, int);`

- define the function:

```
int add(int num1, int num2) {  
    return num1 + num2;  
}
```

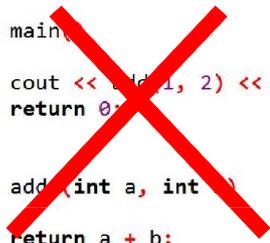
- Or you can just declare and define together!

# When to declare a function?

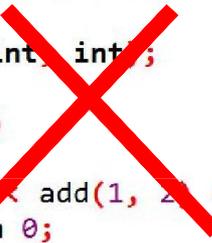
- You **MUST** declare a function before (the line) you use it
- Then you can define the function even after (the line) you call the function

# When to declare a function?

```
function.cpp Solution_hw1.cpp
1 #include <iostream>
2 #include <cstring>
3 using namespace std;
4
5 int main()
6 {
7     cout << add(1, 2) << endl;
8     return 0;
9 }
10
11 int add(int a, int b)
12 {
13     return a + b;
14 }
15
```



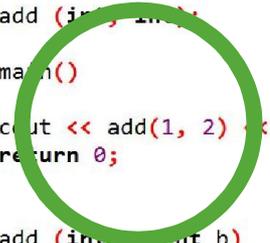
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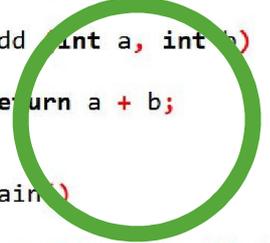
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Any Question?