

C++ Programming

Functions 3

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Function with no parameter or no return

```
3
4 int lucky_number() {
5     return 13;
6 }
7
8 int main2() {
9     return 0;
10 }
11
12 void print_sum(int a, int b) {
13     cout << a + b << "\n";
14 }
15
16 int main() {
17     cout << lucky_number() << "\n";
18     print_sum(2, -5);
19
20     return 0;
21 }
22
23
```

- Sometimes, we don't need to send parameters
- Sometimes we don't return something
 - We use void
 - Common mistake: expecting return
- So what was main() ?

Function with default values

```
4 int our_pow(int n, int p = 3) {  
5     int result = 1;  
6  
7     while (p--)  
8         result *= n;  
9  
10    return result;  
11 }  
12  
13 int main() {  
14     cout << our_pow(2) << "\n";  
15     cout << our_pow(2, 3) << "\n";  
16     cout << our_pow(2, 4) << "\n";  
17  
18     return 0;  
19 }  
20
```

Console Problems Tasks Properties

<terminated> ztemp [C/C++ Application] /home/mc

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16
|

- $\text{Pow}(2, 4) = 2 * 2 * 2 * 2$
- P has default value 3
 - Means if u did not send it, 3 will be used
- Mistake
 - Can't use variable without default value after a default value
 - `Int solve(int a, int b = 2, int c);` wrong
 - `Int solve(int a, int b, int c = 3);` correct
- We can have several defaults
 - `Int solve(int a, int b = 2, int c = 3);`

Be careful: Parameter casting

```
5 int add(int a, int b)
6 {
7     return a+b;
8 }
9
10 int main() {
11     cout << add(2, 3) << "\n";
12     cout << add(2, 3.5) << "\n";
13
14     return 0;
15 }
16
```

Console Problems Tasks Properties

<terminated> ztemp [C/C++ Application] /home/mc

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- What happens is:
 - Int b = 3.5
 - Which is 3 as integer
- When using function, notice carefully the casting

Function overloading

- We can define several functions with SAME name **BUT different parameters** (types or their count)
 - Return is not considered

```
4 int add(int a, int b) {  
5     return a + b;  
6 }  
7  
8 double add(double a, double b) {  
9     return a + b;  
10 }  
11  
12 int add(int a, int b, int c) {  
13     return a + b + c;  
14 }  
15  
16 int main() {  
17     cout << add(2, 3) << "\n";  
18     cout << add(2.0, 3.5) << "\n";  
19  
20     return 0;  
21 }
```

Console Problems Tasks Properties

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5.5

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”