

C++ Namespaces

Namespaces Example:

Use namespaces to avoid name conflicts

```
1 #include <iostream>
2
3 namespace fun {
4 int GetMeaningOfLife(void) { return 42; }
5 } // namespace fun
6
7 namespace boring {
8 int GetMeaningOfLife(void) { return 0; }
9 } // namespace boring
10
11 int main() {
12     std::cout << boring::GetMeaningOfLife() << std::endl
13               << fun::GetMeaningOfLife() << std::endl;
14     return 0;
15 }
```

Avoid using namespace <name>:

```
1 #include <cmath>
2 #include <iostream>
3 using namespace std; // std namespace is used
4
5 // Self-defined function power shadows std::pow
6 double pow(double x, int exp) {
7     double res = 1.0;
8     for (int i = 0; i < exp; i++) {
9         res *= x;
10    }
11    return res;
12 }
13
14 int main() {
15     cout << "2.0^2 = " << pow(2.0, 2) << endl;
16     return 0;
17 }
```

pow() is pre-defined function in <cmath> inside std namespace. So this gives error.

Only use what you need:

```
1 #include <cmath>
2 #include <iostream>
3 using std::cout; // Explicitly use cout.
4 using std::endl; // Explicitly use endl.
5
6 // Self-defined function power shadows std::pow
7 double pow(double x, int exp) {
8     double res = 1.0;
9     for (int i = 0; i < exp; i++) {
10         res *= x;
11     }
12     return res;
13 }
14
15 int main() {
16     cout << "2.0^2 = " << pow(2.0, 2) << endl;
17     return 0;
18 }
```