CSE 107: Object Oriented Programming Language

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C++ Namespace

- Namespaces allow to group entities like classes, objects (variables) and functions under a name
- Global scope is divided into "sub-scopes", each one with its own name
- Useful in the case that there is a possibility that a global object or function uses the same identifier as another one, causing redefinition errors

C++ Namespace

- The format of namespaces is:

```
namespace identifier {
    entities
}
```

- Identifier is any valid identifier
- Entities is the set of classes, objects and functions that are included within the namespace

C++ Namespace

```
#include <iostream>
using namespace std;
namespace first {
        int var = 5;
}
namespace second {
        double var = 3.1416;
}
int main () {
        cout << first::var << endl;
        cout << second::var << endl;
        return 0;
}
```

C++ Namespace

```
#include <iostream>
using namespace std;
namespace first {
        int x = 5;
        int y = 10;
}
namespace second {
        double x = 3.1416;
        double y = 2.7183;
}
```

```
int main () {
        using first::x;
        using second::y;
        cout << x << endl;
        cout << y << endl;
        cout << first::y << endl;
        cout << second::x << endl;
        return 0;
}
```

C++ Namespace

```
#include <iostream>
using namespace std;
namespace first {
        int x = 5;
        int y = 10;
}
namespace second {
        double x = 3.1416;
        double y = 2.7183;
}
```

```
int main () {
    using namespace first;
    cout << x << endl;
    cout << y << endl;
    cout << second::x << endl;
    cout << second::y << endl;
    return 0;
}
```

C++ Namespace

```
#include <iostream>
using namespace std;
namespace first {
        int x = 5;
        int y = 10;
}
namespace second {
        double x = 3.1416;
        double y = 2.7183;
}
```

```
int main () {
{
using namespace first;
        cout << x << endl;
}
{
using namespace second;
        cout << x << endl;
}
return 0;
}
```

C++ Namespace

- Unnamed namespace
  - Create identifiers that are unique within a file
- The format of unnamed namespaces is:

```
namespace {
    entities
}
```

- Within the file that contains the namespace
  - the members can be used directly, without qualification
- Outside of the file
  - the identifiers are unknown

Acknowledgement

http://faizulbari.buet.ac.bd/Courses.html

http://mhkabir.buet.ac.bd/cse201/index.html

The End

Topic Covered: Sections 13.1