

Lab 8 - wb 06/01/14

This week we are looking at Compound data types. This includes Structs, and the more commonly known Classes.

Structs

```
#include <iostream>
#include <string>

using namespace std;

struct battleship //here is a struct, i will use it to store data
{
    int size;
    int x;
    int y;
    bool horizontal;
};

int main()
{
    battleship myShip; //declare an instance
    battleship yourship;

    myShip.size = 3;
    myShip.horizontal = true;
    myShip.x = 0;
    myShip.y = 0;

    yourship.size = 5;
    yourship.horizontal = false;
    yourship.x = 4;
    yourship.y = 4;

    cout<<"My ship is "<<myShip.size<<" squares big, and located at x:"<<myShip.x<<" y:"<<myShip.y;
    if (myShip.horizontal == true) cout<<" , The ship is Horizontal!"; else cout<<" , The ship is Verticle!";

    cout<<endl<<endl;

    cout<<"Your ship is "<<yourship.size<<" squares big, and located at x:"<<yourship.x<<" y:"<<yourship.y;
    if (yourship.horizontal == true) cout<<" , The ship is Horizontal!"; else cout<<" , The ship is Verticle!";

    cin.get();
    return 0;
}
```

Classes

```
#include <iostream>
#include <string>

using namespace std;

class Message
{
    string message;

public:
    Message(){} //Constructor - You need this here, we will go through this next week
    void SetMessage(string str){message = str;} // the SetMessage function is declared inline here
    void Display();
};

int main()
{
    Message myMessage; //declare an instance of message, much like you would a string or integer
    myMessage.SetMessage("Hello World");//set the message

    Message yourMessage; //declare a message for the user to set
    string userMessage;
    cout<<"Please enter a message: ";
    cin>>userMessage;
    yourMessage.SetMessage(userMessage);

    cout<<"My Message: ";
    myMessage.Display(); // Display my message
    cout<<endl<<"Your Message: ";
    yourMessage.Display(); //Display your message

    cin.ignore();
    cin.get();

    return 0;
}

void Message::Display() //You can also declare a function of a class below the class
{
    cout<<message;
}
```

Have A Go - Test Your Knowledge!

Challenge 1

Create a struct to store an entry for a contact book. eg name, address, phone number

Challenge 2

Create a class for a contacts book that stores names. You should be able to add up to 15 names, and also be able to display either all the names, or one particular name based on the users decision.

Next Week - More classes