Lab 11 - wb 28 /01/14

This week we are looking at a basic sorting algorithm. Your lab tutor will go through on the board or doc cam how a bubble sort works by dry running the basic idea. They will then implement this in code and talk you through the thought process.

Bubble Sort

```cpp
#include <iostream>
using namespace std;

void bubbleSort(int vals[], int size)
{
      bool swapped;
      cout<<endl<<endl<<endl;
      for (int i = 1; i < size; i++)
      {
         swapped = false;
         for(int j = 0; j < size - i; j++)
         {
              if(vals[j] > vals[j+1])
              {
                 int temp = vals[j];
                 vals[j] = vals[j+1];
                 vals[j+1] = temp;
                 swapped = true;

                     {//show step by step
                         for(int i = 0; i < 15; i++)
                         cout << vals[i] << ", ";
                         cout << endl;
                     }

              }
         }
         if(!swapped)
             break;
     }
     cout<<endl<<endl<<endl;
}
```

```
int main()
{

    int vals[15] = {5,7,3,9,2,0,1,4,8,6,23,1,3,9,5};

    cout << "Array Before sorting" << endl;
    for(int i = 0; i < 15; i++)
        cout << vals[i] << ", ";
    cout << endl;

    bubbleSort(vals, 15);

    cout << "Array After sorting" << endl;
    for(int i = 0; i < 15; i++)
        cout << vals[i] << ", ";
    cout << endl;

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