COMP1210 - Lab #6

1. Write a program that uses the following function, the function returns a pointer to the maximum value in the data array. (data[] is an array of integers and n is the size of the array)

```
int *findMax(int data[],int n)
{
   int *max=data;
   int i;
   for(i=1;i < n; i++)
   {
       if(*max<*(max+i))
       {
           *max=*(max+i);
       }
    }
    return max;
}
```

2. Write a program that declares an integer array to store five numbers, create an integer pointer and assign the array to it. Now allow the user to enter the values into each index of the array by using the **cin >>** and the pointer variable. Finally display all the values in the array by using a **for** loop and the pointer variable.

3. Write a program that accepts an integer variable and display same value by pointer.

4. Study the following program and write down what it will display to the screen if the use enters n, n and y. Only run the program after you have written down what you think it will output, then run it and see if you were correct.

```
#include <iostream>
using namespace std;
void love_me()
{
       char c;
       cout << endl << "Do you love me, answer y or n?: ";
       c = ' ';
       while(c!='y' && c!='n') {
              cin >> c;
              if(c!='n' && c!='y')
                     cout <<  endl << "Invalid reply, try again: ";
       }
       if(c=='n') {
              cout << endl << "I hate you ";
              love_me();
       }
       cout << endl << "I love you too!";
}
int main()
{
```

```
        love_me();
        return 0;
}
```

5. Write a function that takes as input a positive integer n and returns the n-th harmonic number. Reminder: the n-th harmonic number is equal to 1+(1/2)+(1/3)+(1/4)+...+(1/n)

6. Given the following main function write the code for the shift_right function such that each element in the given array is shifted to the right by the last parameter of the shift_right function call. DO NOT modify the main function.
   The output of this program should be:

   abcdef
   efabcd

```
int main()
{
    const int size = 6;
    char* ptr;
    char val[] = { 'a','b','c','d','e','f' };
    char temp[size];
    ptr = val;
    for (int i = 0; i < size; i++) {
        cout << *(ptr + i);
    }
    ptr = shift_right(val, temp ,size, 2);
    cout << endl;
    for (int i = 0; i < size; i++) {
        cout << *(ptr + i);
    }
    return 0;
}
```