**Assignment 3**

Attention: All the programs should be able to compile and run under visual C++ 2010; otherwise, no marks will be given.

1. Write a program, using %s to read a string and then find and print out the English letters only. Assume the number of chars in the string is less than 50 and the string does not include spaces.
2. There is an array with sorted values {3, 10, 15, 30, 55, 77}. Please write a program to read an integer from keyboard, insert this value into proper place of the array and output the updated sorted array values.
3. Write a program to calculate 2*n1*+2*n2*+2*n3.* Write a function *int Power2(int n)* to calculate *2n*. The values of *n1*, *n2* and *n3* are inputted in the main function. It is required that the program should include two cpp file (one for main function, one for sub-function) and one hpp file (for the prototype of sub-function).
4. Write a program to read a sequence of integers (assume that the total number of integers is less than 20) and store the integers in an array ***a****.* Then sort the integers in this array in descending order. More requirements are as follows:
   * 1. The main function will be responsible for inputting integers and outputting ordered integers.
     2. The sub-function **sort** will be responsible for sorting the integers in an array.
5. There is a sequence of numbers *a1, a2, a3, …, an where an = 3an-1+2,* *a1 = 2*. Please write a program to find *a16*. Please use recursive function.

**Submission requirements:**

Compress cpp and hpp files and submit the compressed file into iSpace before

11:55 pm, 7 May 2018.