Assignment- VIII

Submit all the programs separately against each assignment in the Moodle System. Provide the result in a separate output file (named, result_<assgn><no>.txt). Use standard output redirection feature to generate the output file.

Hints. If you run the program with the following command

./a.out >result.txt

Output of your program (generated by printf(.) function) will be written in the file result.txt. You need to provide input from your keyboard, by remembering the sequence of inputs to be given or writing them in a text file in the same sequence.

Otherwise you may use the redirection for the standard input file, such as,

./a.out <input.txt

For the above all your printing by printf(.) function would be displayed on your monitor.

For both reading from a file and writing to a file use the following.

./a.out <input.txt >result.txt

If you execute the program multiple times, you may concatenate the outputs in a single file by using the following redirection command:

./a.out >>result.txt

or

./a.out <input.txt >> result.txt

(a) Write a program which reads first name and family name of a person, and forms a string containing the full name of the person in the following format.
The first letter of the first name (in uppercase) followed by a (.), a space and the family name, first letter of which should be in uppercase.

For example, given the input “Santanu” and “John”, it should form a string “S. John”.

Print the string containing the full name in the above format, and also print the number of vowels, and consonants in it.

Provide the output for following inputs.

(i) Amritananda, Krishnamoorthy
(ii) Aloukik, Lokpal
(iii) Mohammed Saifuddin
(iv) Joseph Disouza
(v) Samar Tamang

(b) Write a function named *convertRealNumber(.)* which converts a string representing a real number in the decimal format followed by a space and its unit (either in cm or in ft), into a floating point number in meter. For example, "123.25 cm" is converted as 1.2325, and "3.5 ft" as 1.2192.

Define a structure containing the following records of a student:
Name: a string
Height: a sting representing a number in cm or ft as mentioned above.

For example, records of student is given in the following form in an input data file.

```
5
Prananjoy Kumar Bhowmick
 5.8 ft
Reshmi Khatun
 160.2 cm
Michael Adams
  6.1 ft
Mathew Sangma
  140 cm
Saraswati Halder
   5.8 ft
```

Note that
(i) the number of student is given in the first line for the data file, followed by records of students.
(ii) For each record, the full name and height of a student are given in two separate and consecutive lines.

Write a main program, which reads records of N (to be read) students in an array, and print the data. The program also prints the names of students and their heights in meter, who are the tallest and the shortest, respectively. Use the function *convertRealNumber(.)* for converting respective units to meter.

Provide output for the following input data.

(i)

```
       8
   Tanmoy Kumar Pramanik
     4.8 ft
   Akhil Anant Aggarwal
    5.4 ft
  Prananjoy Bhowmick
    5.8 ft
   Reshmi Khatun
    160.2 cm
   Michael Adams
     6.1 ft
   Ujwal Kaur
     153 cm
   Mathew Conrad Sangma
     140 cm
   Saraswati Halder
      5.8 ft
```

(ii)

```
          10
   Tanmoy Pramanik
     4.8 ft
   Akhil Aggarwal
    5.4 ft
  Prananjoy Bhowmick
    5.8 ft
   Reshmi Khatun
    160.2 cm
   Michael Adams
     6.1 ft
   Ujwal Kaur Chopra
     153 cm
   Mathew Sangma
     140 cm
   Saraswati Halder
      5.8 ft
   Bangalore Gour Sundaram
       4.9 ft
   Arif Hussain
        6.4 ft
```