Week 13 Lab: Array

Question 1:

Write a program that has a function that returns the index of the smallest element in an array of integers. If there are more than one such elements, return the smallest index. Use {1,2,4,5,10,100,2,-22} to test the function.

Question 2:

SCJ1013 College needs a program that can handle its student fee management process. You are required to draw a **structure chart** and write a complete **C++ program** that computes and displays the total fees paid by the student of SCJ1013 College. The program consists of 4 user-defined functions as listed below.

1. `showMenu` function

   This function is used to display a menu for the administrator to choose whether the student lives in a hostel or outside college as shown in Figure 1.

```
Student Fee Management Menu

   I.   Inside Student
   O.   Outside Student
   E.   Exit from Program
```

Figure 1

   This function will not return any values from it.

2. `calculateTotalFee` function

   This function accepts the following 3 arguments for the students live in a hostel data:

   - The amount of school fee.
   - The amount of hostel fee.
   - Charges for college services

   This function calculates the total fees based on data received. The function returns the value of the total fees.

3. `calculateTotalFee` function

   This function accepts the following 2 arguments for the students live outside the college data:

   - The amount of school fee.
   - Charges for college services.

This function calculates the total fees based on data received. The function returns the value of the total fees.

4. `int main()`
    a. to call `showMenu()` function
    b. to get an input from the administrator (whether the student lives in a hostel or outside the college).
        i. If the student lives in a hostel, the following data should be entered:
            - The amount of school fee.
            - The amount of hostel fee.
            - The amount of college service charges.
        ii. If the student lives outside the college, the following data should be entered:
            - The amount of school fee.
            - The amount of college service charges.

    c. to call respective `calculateTotalFee` function. The amount returned must be stored inside the **`inStudent` array** (if the students live in a hostel) or **`outStudent` array** (if the students live outside the college).

    d. to print the total fees collected from the students live in a hostel.
    e. to print the total fees collected from the students live outside the college.
    f. to print the total fees collected.
    g. to print "Thank You" message before the program ends.

Your program must allow the administrator to enter as many students data as possible until he choose to terminate.

Sample Output:

```
Student Fee Management Menu
 I: Hostel Student
 O: Outside Student
 E: Exit from Program
I
Enter School Fee: 555.50
Enter Hostel Fee: 450.00
Enter Service Charge: 50.00
More entry?  Y

Student Fee Management Menu
 I: Hostel Student
 O: Outside Student
 E: Exit from Program
I
Enter School Fee: 750.00
Enter Hostel Fee: 450.00
Enter Service Charge: 50.00
More entry? y

Student Fee Management Menu
 I: Hostel Student
 O: Outside Student
 E: Exit from Program
O
Enter School Fee: 650.00
Enter Service Charge: 40.00
More entry?
N
Total Fee from Students Staying Hostel: 2305.50
Total Fee from Students Staying Outside: 690.00
Total Fee: 2995.50
Thank You
```

Instruction:

1. This lab MUST be submitted by **Tuesday (27/12/11)** before 4 p.m. at my office.
2. For all exercises, you are required to submit a **PRINTED hardcopy** for each.
3. For all exercises, you are required to **print a sample output** for each
4. Failure to submit this lab on time will cost you **5 marks/day**.