PDS Lab Section 11

Lab Day 8 – January 20, 2021

The top two lines of your programs must contain the following information:
//Roll No.: <Type in your roll no.>
//Name: <Type in your name>

You have to give different names to your C files and upload them in Moodle. Please read the instructions given below.

Document your programs meaningfully using appropriately named variable and sufficient amount of comments as suggested in an earlier email. There will be marks for documentation.

1. Write a C program to achieve the following.

   A super market needs to develop the following software to encourage its regular customers. For this, write the following functions to develop a simple software. You will need to use two arrays of structures (each of maximum size 10) - One for storing customer details and the other for storing details of sales made to customers. Note that, each customer can make more than one purchase through different sales transactions.

   a) **main:** In an infinite loop, display a menu and prompt the user to enter choice. Based on the user choice (viz. 'r', 'l', 's', 'd' and 'a'), call the appropriate function. Terminate, when the user enters 'e'.
   b) **Register customer:** For registration, the customer needs to supply his/her name (upto 20 characters), residence address (upto 20 characters) and mobile number (integer). Each customer who registers for this scheme is assigned a unique integer id (new id=last id+1) called his/her customer number (CN), by the computer. For simplicity, you may treat the index of the array storing the details of a customer as his/her customer number. Display the details of this new registered customer.
   c) **List customers:** Display the details of all the registered customers nicely formatted. Do not display the sales transactions for the customer.
   d) **Sale:** When the customer makes any purchase, he/she reports the CN along with the purchase amount to the check out staff. The value of purchase is stored against his CN.
   e) **Display sale:** This function asks the customer number (CN). It then displays all the individual sales amounts for this customer nicely formatted.
   f) **Award surprise gift:** The supermarket intends to award surprise gifts to two customers who have made the highest total purchase. Display the names and mobile numbers of these two customers along with their total purchase amounts.

   Name your C program file as LD8_1_<roll_no>.c. **[25 Marks]**

Submit your .c file in Moodle against the assignment submission link for Lab Day 8.

[Note: In the next page, an example is given for your understanding of what is expected for this assignment.]

EXAMPLE EXECUTION FLOW OF SUPER-MARKET SOFTWARE

Main Menu Display with available options: ‘r’, ‘l’, ‘s’, ‘d’, ‘a’ and ‘e’. Also, requesting the user to choose an option. Note how CN is automatically incremented from 0, 1, 2, etc.

Enter choice: **r**
Enter Name : **Tom**
Enter Address : **IITKGP**
Enter Mob. number : **9876543210**
The registered customer details are:
Customer Number (CN) : 0
Customer Name : Tom
Customer Address : IITKGP
Customer Mob. number : 9876543210

Enter choice: **r**
Enter Name : **Jerry**
Enter Address : **WB**
Enter Mob. number : **1234567890**
The registered customer details are:
Customer Number (CN) : 1
Customer Name : Jerry
Customer Address : WB
Customer Mob. number : 1234567890

Enter choice: **r**
Enter Name : **Duck**
Enter Address : **IN**
Enter Mob. number : **1111111111**
The registered customer details are:
Customer Number (CN) : 2
Customer Name : Duck
Customer Address : IN
Customer Mob. number : 1111111111

Enter choice: **l**
The detailed list of all customers is:

CN	Name	Address	Mob. number
0	Tom	IITKGP	9876543210
1	Jerry	WB	1234567890
2	Duck	IN	1111111111

Enter choice: **s**
Enter CN : **2**
Enter purchase amount:**2000**

Enter choice: **s**
Enter CN : **0**

Enter purchase amount: **1000**

Enter choice: **s**
Enter CN : **1**
Enter purchase amount: **3000**

Enter choice: **s**
Enter CN : **1**
Enter purchase amount: **1000**

Enter choice: **d**
Enter CN : **0**
The list of all the purchases made by this customer is:
1000

Enter choice: **d**
Enter CN : **1**
The list of all the purchases made by this customer is:
3000
1000

Enter choice: **a**
Congratulations to the following two winners!

Name	Mob. number	Total Purchase Amount
Jerry	1234567890	4000
Duck	1111111111	2000

Enter choice: **e**
Exit safely.