PES UNIVERSITY
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100 Ft. Road, BSK III Stage, Bengaluru – 560 085

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Course Title: Problem Solving with C Laboratory		
Course code: UE19CS152		
Semester : II sem	**Section: G**	**Team Id: G07**
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PROJECT REPORT

Problem Statement

Building a credit/ debit management system, where we can add new customers and there are several different ways to find old customer details. We also generate a monthly report.

Description

- As this is a credit management system, we have functions to **add details of a new customer in a structure**. The details are written in the form of a structure to an external text file.

- The details include: Name, age, annual income, employment status, residential status, major loan, loan amount, mortgage amount, car loan emi, collateral and no of late payments.

- We have an **eligibility criteria** to see if the customer can get a loan or not- done through an algorithm and also based on employment and collateral status.

- For the old customers, we can **see their details s**tored in a structure in another file **based on**:

- Customer **name**

- **Date** of transaction

- All transactions of a customer for a **particular cause**- for ex, all the instances where a customer has paid mortgage bill.
- We can **add multiple transactions** for various customers.
- We have a function that gives you all the details of a transaction that is due. It's basically a **reminder to make the transaction**.
- The last function is to generate a **monthly report for the customers**. This gives you the total they've spent in a particular month.

C-concepts used
- We've used an **array of structures** to add the details of old customers
- Created a structure for **storing new customer details**
- Used the **file operations** fopen and fclose and written data (structures) to another external file using **file pointers.**
- Read information from the text file- "f.txt"
- Used a **switch case** for choosing what action you want to perform.
- Used **break** statements in switch cases.
- Used printf statements to **format the front page**.
- Created a **function** for determining if a customer is **eligible for a loan** based on an algorithm
- Created functions for various **search options**- for searching by name, date and cause. Passing search information taken from the user as **parameters to the function**.
- To compare the strings, we use the function **strcmp()** from the header file **<string.h>**
- To add transaction, we use the **file pointer** to open the file "f.txt" and **write a structure** containing new transaction details and close the file using **fclose**(). We use the **append mode(a+)** for the **fopen** function.
- Created a **function** for giving you a reminder which uses the standard function **strcmp**() to check if **paidyet="no"**.
- Created a function to calculate the monthly total of a customer, using **for loops, strcmp()**, **reading information from structures** and **add the sum of amounts** if the month matches the desired month.
- Used a **while loop** to ensure that all menu options are available and the program only exits when a certain option (7) is pressed.

Learning Outcome

- **Self learning:** Learnt about C structures, array of structures, file operations such as writing to a file and reading and appending the file, creating functions to search for data in the file, and creating algorithms.

- **Problem Analysis:** Identify, formulate, and analyse solutions to problems.
- **Individual and team work:** Function effectively as an individual and as a team and learn about the importance of teamwork.

- **Communication:** Communicate effectively, being able to comprehend and write effective reports, make effective presentations, and give and receive clear instructions during teamwork.

- **Project management and finance:** Since the project is based on Credit/ Debit management system, we learnt about mortgage and savings and risks of loan/credit, as well as eligibility criteria for getting a loan.

Name and Signature of the Faculty

OUTPUT SCREENSHOTS:

1. The front page and new customer details added and tells you if you're eligible for a loan or not

```
[Ishita@Ishitas-MacBook-Air C % gcc ishi.c
[Ishita@Ishitas-MacBook-Air C % ./a.out




                **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**

                    =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
                    =                   WELCOME                 =
                    =                   TO OUR                  =
                    =                   CREDIT                  =
                    =                   MANAGEMENT              =
                    =                   SYSTEM                  =
                    =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
                **-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**-**



                    By Ishita, Priyanka, Asmitha, Sarayu :)

Do you want to see details of old customer(enter O) or add a new customer(enter N)?
N
How many do customers do you want to add?
2
Enter the customer details to determine if you're eligible for a loan/credit.

Name, age, annual income, employment status, residential status
Aelin
34
500000
employed
rentedhouse
Enter major loan, loan amout, mortgage amount, car loan emi:
Nil
0
3000
2340
Enter collateral, no of credit cards, times late payments(if any)
House
3
1


Youre eligible. Welcome.
Enter the customer details to determine if you're eligible for a loan/credit.

Name, age, annual income, employment status, residential status
Dorian
39
35000
parttime
rented
Enter major loan, loan amout, mortgage amount, car loan emi:
nil
0
2300
1780
Enter collateral, no of credit cards, times late payments(if any)
nil
3
3


Not eligible.
```

```
Do you want to see details of old customer(enter O) or add a new customer(enter N)?
O

********* MENU ************

Decide what you want to do.


Press 1 for seeing all the details of a customer.

Press 2 for seeing transactions of a particular day.

Press 3 to see a particular transaction of a customer.

Press 4 to add a transaction.

Press 5 for getting a reminder about payments due.

Press 6 for getting a monthly report.

Press 7 to exit.

1


Enter the customer name.
Tia
Name = Tia
Cause = carEMI
Amount = 4500.000000
Paid Yet = yes
Paid on = 50420
Last pay date = 90420
Payment method = bank
Reccuring = yes



Name = Tia
Cause = personal
Amount = 6000.000000
Paid Yet = yes
Paid on = 40320
Last pay date = 260320
Payment method = creditcard
Reccuring = no


Name = Tia
Cause = healthcare
Amount = 2000.000000
Paid Yet = yes
Paid on = 220320
Last pay date = 260320
Payment method = bank
Reccuring = no



Name = Tia
Cause = creditcardbill
Amount = 5000.000000
Paid Yet = yes
Paid on = 220420
Last pay date = 240420
Payment method = bank
Reccuring = no



Name = Tia
Cause = mortgage
Amount = 8500.000000
Paid Yet = yes
Paid on = 100320
Last pay date = 200320
Payment method = bank
Reccuring = yes
```

2. View customer details by searching by name

```
2

Enter the date you want to see all transactions for.
40420
Name=Ted
Cause=personal
Amount=45000.000000
Paid Yet=yes
Paid on=40420
Last pay date=290420
Payment method=creditcard
Reccuring=no



********* MENU  ************


Decide what you want to do.


Press 1 for seeing all the details of a customer.

Press 2 for seeing transactions of a particular day.

Press 3 to see a particular transaction of a customer.

Press 4 to add a transaction.

Press 5 for getting a reminder about payments due.

Press 6 for getting a monthly report.

Press 7 to exit.

3


Enter the customer name and the cause of payment you want to see.
Val
mortgage
Name = Val
Cause = mortgage
Amount = 8000.000000
Paid Yet = yes
Paid on = 140420
Last pay date = 240420
Payment method = bank
Reccuring = yes

Name = Val
Cause = mortgage
Amount = 8000.000000
Paid Yet = yes
Paid on = 210320
Last pay date = 240320
Payment method = bank
Reccuring = yes
```

3. Seeing the customer details based on the date

4. Seeing the customer details based on name and cause

5. Adding a transaction record

```
fo ********* MENU  ************
m1
no Decide what you want to do.


 Press 1 for seeing all the details of a customer.

 Press 2 for seeing transactions of a particular day.

 Press 3 to see a particular transaction of a customer.

 Press 4 to add a transaction.

 Press 5 for getting a reminder about payments due.

 Press 6 for getting a monthly report.

 Press 7 to exit.

 4


 How many transactions do you want to add?1
 Enter the details: name, cause, amount, paid yet(Y/N), pay date, last day to pay, payment method and if its a reccuring transaction(Y/N).
 Give NEW LINE between each.
 Manon
 creditcardbill
 2000
 yes
 90420
 29420
 bank
 no


 Transaction succesful. Showing the invoice.
 Name = Manon
 Cause = creditcardbill
 Amount = 2000.000000
 Paid Yet = yes
 Paid on = 90420
 Last pay date = 29420
 Payment method = bank
 Reccuring = no


 ********* MENU  ************
```

6. Showing the payments due reminder and monthly report

```
5

REMINDER!        REMINDER!        REMINDER!

 The transactions due are:

Name = Val
Cause = carEMI
Amount = 25000.000000
Paid Yet = no
Last pay date = 180520
Reccuring = yes

Name = Dexter
Cause = personal
Amount = 4500.000000
Paid Yet = no
Last pay date = 300420
Reccuring = no

Name = Ted
Cause = mortgage
Amount = 3000.000000
Paid Yet = no
Last pay date = 300420
Reccuring = yes

PLEASE PAY BEFORE THE DUE DATE IN ORDER TO AVOID LATE PAYMENT CHARGES.
```

```
6
This is to see the monthly report. Enter the month(apr/mar).
apr


The total for the customer Val is Rs 7890.000000


The total for the customer Dexter is Rs 22790.000000


The total for the customer Ted is Rs 34290.000000


The total for the customer Tia is Rs 83790.000000


*********  MENU   ************

Decide what you want to do.


Press 1 for seeing all the details of a customer.

Press 2 for seeing transactions of a particular day.

Press 3 to see a particular transaction of a customer.

Press 4 to add a transaction.

Press 5 for getting a reminder about payments due.

Press 6 for getting a monthly report.

Press 7 to exit.

7
```