Bank loan management

Introduction

Project Title: Bank Loan Management System

Course: programming in c

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Overview

Scope of the Project:

Loan application
EMI calculation
EMI schedule generation
Installment payment tracking
Payment history display

1. Problem Definition

What Problem Does This Project Solve?

Manual loan processing is slow and error-prone.

Tracking EMI payments manually is difficult.

Customers need a transparent system to view loan status.

Why Is It Important?

Banks handle thousands of loans every day.

Automation reduces human error and improves accuracy.

Helps customers understand EMI, interest, and payment history.

2. Solution Approach

Methodology

Implemented using **C programming**

Uses **file handling** to store loan details and payment history

EMI calculated using mathematical formula

Menu-driven interface for easy navigation

System Architecture

Input Module: User details, salary, credit score

Processing Module: Eligibility check, EMI calculation

Storage Module: loan.txt, payments.txt

Output Module: EMI schedule, payment history

✅ **check Eligibility():-**

Validates salary and credit score

✅ **calculate EMI():-**

Computes EMI using formula

$$EMI = \frac{P \cdot r \cdot (1+r)^n}{(1+r)^n - 1}$$

✅ **apply Loan():-**

Takes user input

Approves/rejects loan

Stores data in loan.txt

✅ **generate Schedule():-**

Displays month-wise interest, principal, and balance

✅ **pay Installment():-**

Marks an installment as "paid"

✅ **show History():-**

Shows paid and pending installments

```
===== BANK LOAN MANAGEMENT SYSTEM =====
1. Apply Loan
2. Generate EMI Schedule
3. Pay Installment
4. View Loan History
5. Exit
Enter choice: 3
Enter installment number to pay: 10

Γ£à Installment 10 marked as PAID!
```

3. Working Code Demonstration

Live Demo Requirements

Show file structure

Show code execution

Demonstrate each menu option

```
===== BANK LOAN MANAGEMENT SYSTEM =====
1. Apply Loan
2. Generate EMI Schedule
3. Pay Installment
4. View Loan History
5. Exit
Enter choice: 1
Enter your name: kaisar
Enter monthly salary: 200000
Enter credit score: 700
Enter loan amount: 1000000
Enter annual interest rate: 4
Enter tenure (months): 12

Γ£à Loan Approved! EMI = 85149.98

===== BANK LOAN MANAGEMENT SYSTEM =====
1. Apply Loan
2. Generate EMI Schedule
3. Pay Installment
4. View Loan History
5. Exit
Enter choice:
```

creens to Show

Loan Application

EMI Schedule

Installment Payment

Payment History

EMI Schedule Output

Displays month-wise breakdown

Shows interest, principal, and remaining balance

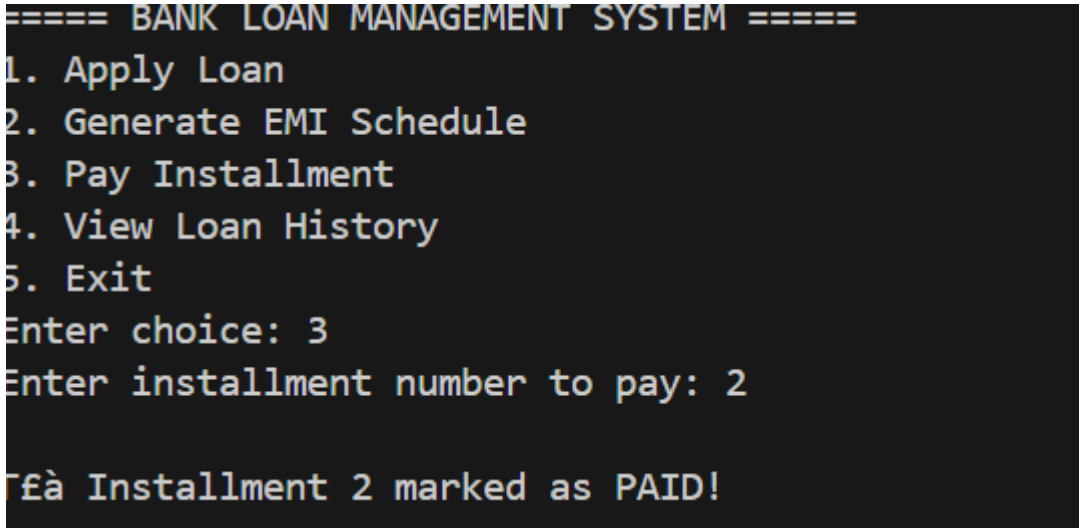
Helps user understand repayment structure

Month	Interest	Principal	Balance
1	3333.33	81816.64	918183.38
2	3060.61	82089.37	836094.00
3	2786.98	82363.00	753731.00
4	2512.44	82637.54	671093.44
5	2236.98	82913.00	588180.44
6	1960.60	83189.38	504991.06
7	1683.30	83466.67	421524.38
8	1405.08	83744.90	337779.47
9	1125.93	84024.05	253755.42
10	845.85	84304.13	169451.30
11	564.84	84585.14	84866.16
12	282.89	84867.09	-0.93

Installment Payment Tracking:-

-User selects installment number

-System marks it as paid



Loan History:-

-Shows all installments

-Displays paid and pending

-Summary: total paid vs pending

```
Installment Status:
Month 1 : pending
Month 2 : pending
Month 3 : pending
Month 4 : pending
Month 5 : pending
Month 6 : pending
Month 7 : pending
Month 8 : pending
Month 9 : pending
Month 10 : pending
Month 11 : pending
Month 12 : pending

Total Paid: 0
Pending: 12
```

Questions & answers

Invite questions from the audience.

•Tutorials on file handling
•EMI calculation formula resources
•Classroom notes and faculty guidance

Resources

List the resources you used for your research:

C Programming Textbooks

Online C documentation

Tutorial on file handling

EMI calculation formula ressources

Classroom notes and faculty guidance