

Project Proposal: ATM Machine Simulation Using C with stdio.h

Introduction

This project aims to develop an **Automated Teller Machine (ATM)** simulation using **C** and **stdio.h**. The simulation will include basic ATM functionalities like **account login, balance inquiry, withdrawals, deposits**, and **transaction logging**. The system will be implemented as a **console-based application**.

Objective

The objective of this project is to develop an ATM system that will:

- Allow users to authenticate using their **Account ID** and **PIN**.
 - Provide the ability to **check account balance, withdraw funds**, and **deposit money**.
 - **Log transactions** in a file for future reference using **file handling**.
-

Features

User Authentication:

- Users will log in using their **Account ID** and **PIN**.
- After **three failed attempts**, the system will lock the account.

Account Management:

- Users can **check their balance**.
- Users can view **transaction history** (deposits and withdrawals).

Withdrawal and Deposit:

- Users can **withdraw** funds from their account if the balance is sufficient.
- Users can **deposit** money into their account, updating the balance immediately.

Transaction Logging:

- Every transaction (deposit or withdrawal) will be recorded in a log file using **file handling**.

Security:

- **PIN authentication** ensures that only authorized users can access the system.

Exit and Logoff:

- Users will be able to **log out** after completing their transactions.
-

Technical Requirements

- **Language:** C (using **stdio.h** for standard input/output functions)
 - **Platform:** Windows/Linux/Mac OS (console-based)
 - **File Handling:** For storing transaction logs.
 - **Header File:** **stdio.h** for standard input and output operations.
-

System Design

Classes:

1. **ATM:** Manages operations such as **authentication** and **transaction handling**.
 2. **Account:** Stores the user's **account ID**, **PIN**, and **balance**.
 3. **Transaction:** Logs transaction details (deposit and withdrawal) to a file.
-

Deliverables

1. **Source Code:** Complete, well-documented C code implementing ATM functionality.
 2. **Transaction Log:** A file **transaction_log.txt** recording deposits and withdrawals.
 3. **Report:** A detailed report explaining the system design, code structure, and operations.
-

Project Timeline

Phase	Timeframe
Requirement Analysis	2 days
Design and Planning	3 days
Coding Phase	10 days
Testing and Debugging	5 days
Documentation and Final Report	2 days
Total Project Duration	22 days

Conclusion

The ATM simulation using **C** and **stdio.h** provides a great opportunity to learn about **file handling, user authentication, and transaction management**. It replicates key functions of a real-world ATM and is a useful tool for understanding how basic banking operations can be simulated programmatically.

Let me know if you need more details or adjustments to the proposal!