ATM Simulation Project - Presentation

Problem Statement

Students often need to understand how basic banking transactions such as checking balance, depositing money, withdrawing money, and keeping a transaction history work in real life. Performing such operations practically in banks is not possible for beginners. Hence, a simple simulation program is required to demonstrate ATM functionalities in a safe and educational environment.

Proposed Solution

The project is a Python-based ATM Simulation that allows a user to: - Enter a PIN for authentication. - Perform basic banking operations like Balance Inquiry, Deposit, Withdrawal, and Transaction History. - Maintain a daily withdrawal limit. - Provide simple error handling for invalid inputs. This simulation helps students learn programming concepts like loops, conditionals, functions, and exception handling while demonstrating a real-life use case of banking systems.

Key Features

- PIN Authentication
- Balance Inquiry
- Deposit Functionality
- Withdrawal with Limit
- Transaction History (Last 5 Records)
- Error Handling for invalid inputs

Flow of Execution

1. Start program and enter PIN
2. If PIN is correct, show ATM Menu
3. User selects an option (Balance, Deposit, Withdraw, Transaction History, Exit)
4. Perform the selected operation
5. Update balance and transaction history accordingly
6. Repeat until user selects Exit

Code Explanation (High-Level)

- The program starts with PIN authentication using an 'if' condition. - The main loop displays the menu until the user chooses Exit. - 'if-elif-else' statements handle menu options. - Deposits and Withdrawals update the balance and log the transaction. - Exceptions (like invalid input) are handled using try-except blocks. - Transaction history shows the last 5 operations performed.

Conclusion

This ATM Simulation Project demonstrates how simple banking operations can be simulated using Python programming. It is easy to understand, covers fundamental programming concepts, and is highly suitable as a mini-project for beginners.