Assignment 1: Banking System Project(ATM)

Objective

Develop a console-based banking system that allows users to register, log in, deposit, withdraw, and view their transaction history. Your system should utilize data persistence to save user information and transactions.

Requirements

1. **User Login**
   - Users must log in using their account number and password.
   - Implement error handling for incorrect login attempts.
2. **Account Operations**
   - Allow users to perform the following operations:
     - **Deposit**: Users can deposit money into their account.
     - **Withdraw**: Users can withdraw money from their account, ensuring they do not exceed their balance.
     - **Check Balance**: Users can view their current balance.
   - Each operation should update the user's balance and save the updated information to Array or JSON file (Optional)
3. **Transaction History**
   - Maintain a record of all transactions (deposits and withdrawals) for each user.
   - Users should be able to view their transaction history.
4. **Menu System**
   - Create a clear menu system for user interaction, guiding users through options for registration, login, and account operations.
5. **Error Handling**
   - Implement error handling for all user inputs (e.g., invalid account numbers, non-numeric input for amounts).
   - Provide informative error messages to guide the user.
6. **Data Persistence**
   - Use Array to save and load user data and transaction history.
   - Ensure data is written to the file after each transaction.

Deliverables

- Source code for the banking system.
- A README file containing (Optional):
  - Instructions on how to run the program (Screenshots).
  - A brief description of the design and architecture.
  - Any assumptions made during development.

Evaluation Criteria

- **Functionality (40%)**: The system meets all functional requirements outlined above.

- **Code Quality (30%)**: Code is well-organized, readable, and follows Python coding conventions. Includes appropriate comments and documentation.
- **Error Handling (20%)**: Robust error handling and user input validation.
- **User Experience (10%)**: The interface is user-friendly, and the menu system is intuitive.

Submission Guidelines

- Submit your project as a zip file containing all source code and the README file.
- Ensure that the code runs without errors in a Python environment.

See code demo next page

```
**********
Welcome Data Bank
**********
Please enter your card number: 54321
Please enter your PIN: passwd
Password is wrong
Please enter your correct password: passwd
Password is wrong
Please enter your correct password: Passwd
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 3
  Account Number  Current Balance
0          54321             3000
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 1
Enter the amount: 4000
Insufficient balance
  Account Number  Previous Balance  Withdraw Amount  Remain Balance
0          54321              3000             4000            3000
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 2
Enter the amount: 200
  Account Number  Previous Balance  Deposit Amount  Remain Balance
0          54321              3000             200            3200
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 2
Enter the amount: 213
  Account Number  Previous Balance  Deposit Amount  Remain Balance
0          54321              3200             213            3413
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 1
Enter the amount: 15
  Account Number  Previous Balance  Withdraw Amount  Remain Balance
0          54321              3413               15            3398
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 1
Enter the amount: 20
  Account Number  Previous Balance  Withdraw Amount  Remain Balance
0          54321              3398               20            3378
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 3
  Account Number  Current Balance
0          54321             3378
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 4
```

```
********************
   Transaction  Withdraw
0            1        15
1            2        20
********************
   Transaction  Deposit
0            1      200
1            2      213
Select your Option (Withdraw[1] Deposit[2] Balance[3] Transaction[4] Quite [5]): 5
Good by
```