Banking System Project Report

Introduction

This project implements a console-based Banking System using Python. The system provides basic functionality such as creating accounts, logging in, performing transactions, viewing balances, and admin functionalities for monitoring purposes.

Technologies Used

- Python 3
- Object-Oriented Programming (OOP)
- Regex for password validation
- Random for account number generation
- Datetime and Time modules for timestamps

Features Implemented

- Account types: Checking, Savings, and Loan
- Transaction handling: deposit, withdraw, transfer
- Password validation using regex
- Admin panel for viewing user details
- Unique account numbers generated for each account
- Transaction history with timestamps

Object-Oriented Design

The design follows principles of Object-Oriented Programming.

- An abstract class Account is created, and the CheckingAccount, SavingsAccount & Loan classes inherit from it. This promotes code reuse and clarity.
  - Parent class: Account
  - Child classes: CheckingAccount, SavingsAccount, and Loan
- Abstract methods: get_account_balance & transaction_history_
- Association b/w classes: Customer and Bank.
- Composition b/w classes:
  - Account, Customer → Bank.
  - Administrator, Customer →User
- FileSaver class also inherits the functions & variables of classes: Customer, CheckingAccount, SavingsAccount, and Loan.

Conclusion

This Python-based banking system serves as a solid foundation for further development. Its modular and object-oriented structure makes it easy to expand with more features.