

Online Banking System - Project Documentation

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Project Title: Online Banking System

Project Description

Online Banking System is a Java-based desktop application that simulates online bank transactions. The system is capable of allowing users to perform fundamental banking operations such as account management, transactions, and fund transfers through a simple graphical user interface. The project employs object-oriented programming principles and ensures data security with appropriate authentication and verification processes.

Project Objectives

The goal of this project is to use Java to create a safe and useful online banking application. Important Object-Oriented Programming (OOP) ideas including abstraction, polymorphism, inheritance, and encapsulation will be included. The system will have a user-friendly graphical user interface (GUI) that makes use of Swing or JavaFX. Users will be able to safely make deposits, withdrawals, and transfers, and their data will be permanently kept in a database, CSV file, or JSON format. In order to avoid improper transactions and unauthorized access, appropriate error handling and validation procedures will also be put in place.

Target Users

Individual bank customers who need a simple and safe method to handle their bank accounts are the system's main users. This project can also help banks that are searching for a desktop-based banking solution. Additionally, this approach will be helpful to developers and students who want to comprehend banking apps that employ Java.

Main Functionalities: The system will include essential features to enhance user experience and security. These functionalities include:

- **User Authentication:** A secure registration and login with password encryption for user accounts.
- **Account Management:** The users will have access to account information and balances, and be able to open and manage multiple bank accounts.
- **Transactions:** The system will support deposits, withdrawals, and money transfers between accounts, with a provision for transaction history.
- **Admin Panel (if applicable):** Administrators are able to manage user accounts, track transactions, and view system logs.
- **Error Handling & Security:** Invalid transactions will be prevented and unauthorized access will be restricted, with exception handling for graceful operation.

Expected Outcomes

By the end of this phase, the project will have a working prototype of the online banking system with GUI. Secure transaction processing with proper error handling will be in place, along with a robust and efficient banking system. The project will have a user and transaction history persistent store based on OOP concepts and Java best practices while implementing.