Islamic University of Technology

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BankSolid Report

SWE 4304- Software Project Lab 1

BankSolid- A SOLID Oriented Bank Management App

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Chapter 1

Overview of the Project 'BankSolid'

1.1 Introduction

BankSolid is a comprehensive bank management application developed for the Software Project Lab 1. Adhering strictly to the SOLID principles of Object-Oriented Programming, the application ensures modularity, flexibility, and extensibility. In this project, we tried to implement the basic operations of a real-world bank system in the console.

1.2 Scope of the Project

BankSolid's scope extends beyond immediate functional requirements, embracing the SOLID principles to establish a foundation for long-term success. The modular design allows for seamless updates and additions without compromising existing functionalities. This scope empowers future developments, ensuring that BankSolid remains agile in adapting to changes. The application's design fosters maintainability and scalability, providing a resilient design for customizations.

Chapter 2

Key Functionalities

User Functionalities:

- **User Registration:** The application provides a secure and seamless user registration process, incorporating advanced password encryption for heightened security measures.

- **User Login:** Registered users can effortlessly log in, accessing their accounts with ease.

- **Account Creation:** Users have the flexibility to create different account types, including Current, Savings, and Islamic accounts, offering a diverse range of financial services.

- **Transaction Operations:** BankSolid facilitates account management through operations such as withdrawals,deposits and transfer ensuring a smooth and transparent financial experience.

- **Loan Request:** Users can initiate loan requests, streamlining the borrowing process within the application.

- **Change Password:** As an added layer of security, users have the option to change their passwords at their convenience.

- **Transaction History:** A comprehensive transaction history feature allows users to track and analyze their financial activities over time.

Admin Functionalities:

- **Admin Login:** The admin is equipped with a secure login portal, providing exclusive access to the application's administrative functionalities.

- **Customer Management:** Admins have the ability to view and manage all customer information, ensuring efficient customer relationship management.

- **Search Functionality:** A robust search mechanism enables administrators to locate specific customers based on their National ID, facilitating quick and precise information retrieval.

- **Account Categorization:** Admins can categorize accounts based on type, differentiating between Current, Savings, and Islamic accounts for streamlined account management.

- **Account Freeze/ Unfreeze:** Administrators wield the authority to freeze or unfreeze accounts using account numbers, enhancing security and control measures.

- **Approve/ Deny Loan Request:** Based on admin's decision, they can approve or deny a loan request done by a customer.

- **View All Loan Requests:** Admin can see the pending loan requests that are requested by the account holders.

Chapter 3

Tools,Technologies and Principles:

3.1   Tools and Technologies:

- Language: C Sharp

- Database: MS Access

- IDE: Visual Studio
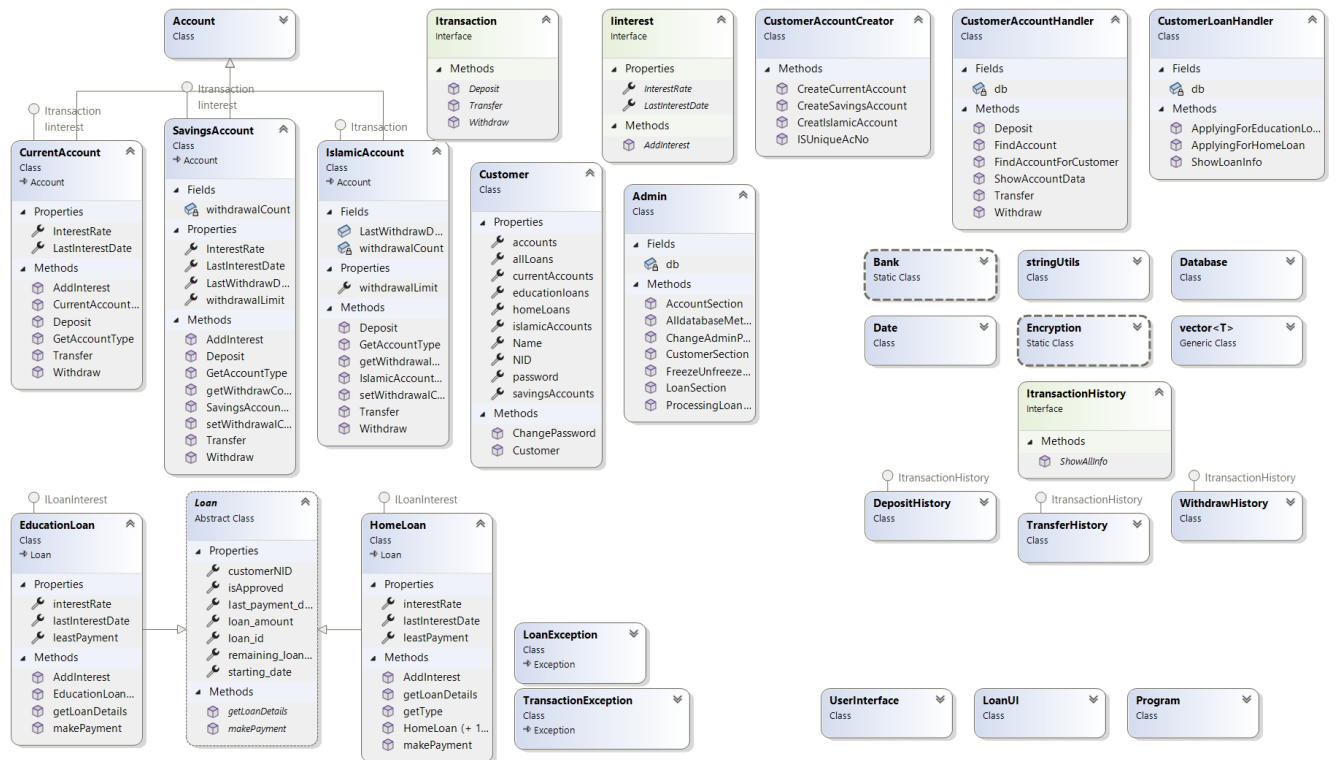
- Version Control: Git and Github

3.2   Adherence to SOLID Principles:

BankSolid's commitment to SOLID principles ensures a software foundation that is not only reliable and secure but also primed for seamless future scalability and maintenance.

Chapter 4

UML Class Diagram

Chapter 5

Basic ERD