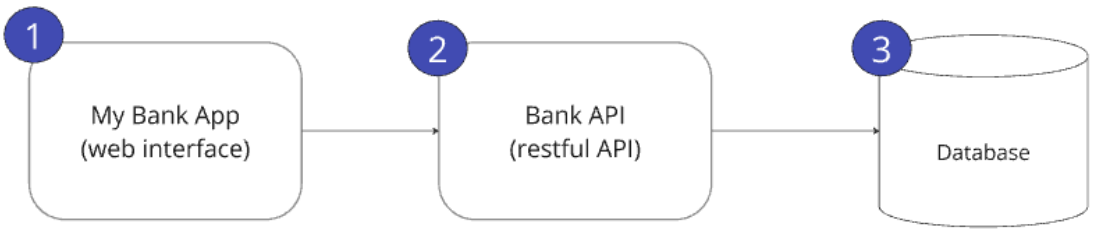
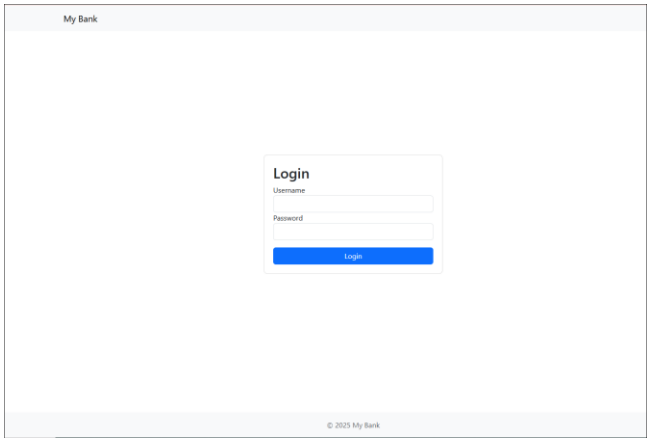
Introduction

This document provides information about a banking application designed to enable users to log in, view their account dashboard, and transfer funds between accounts. The application offers a user-friendly interface for managing bank accounts and transactions, ensuring a seamless and efficient banking experience.

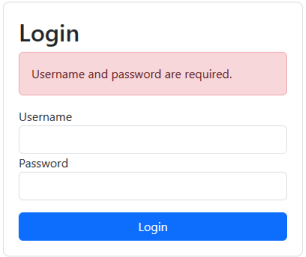
Application Components



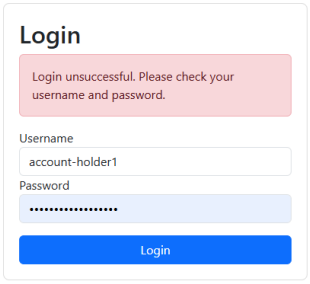
1. My Bank App
   App is developed using React library. It utilizing component based development, state management using Redux store and role based access control.
   a. Key Features
      i. Login



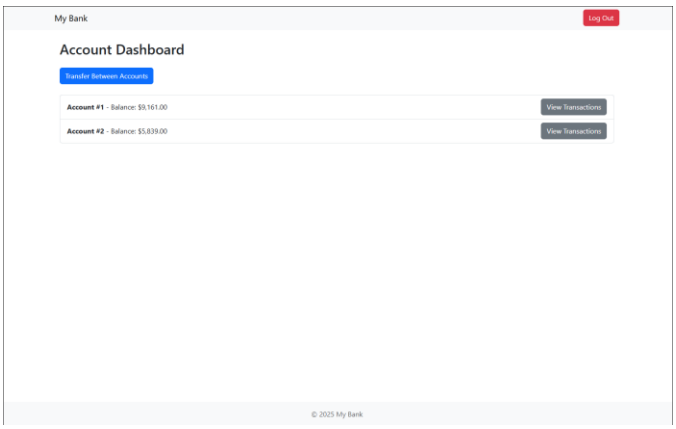
Username/Password Error



Login unsuccessful

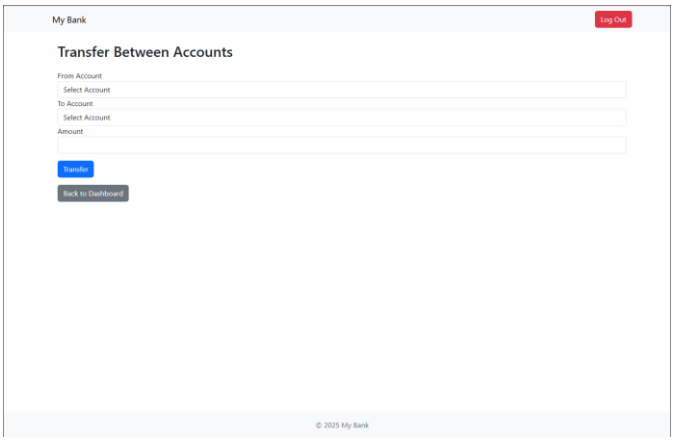


ii. Account Dashboard

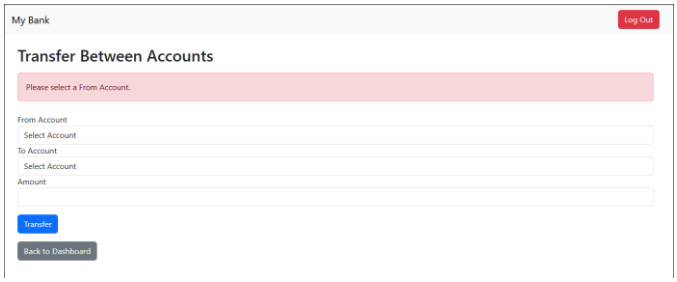


View Transactions

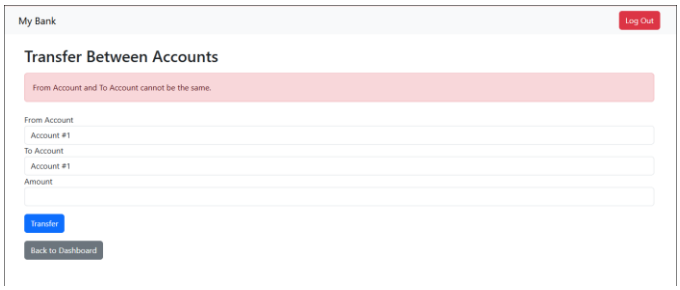
iii. Transfer Between Accounts



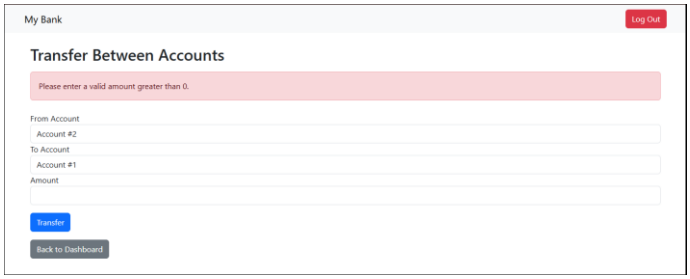
From Account error



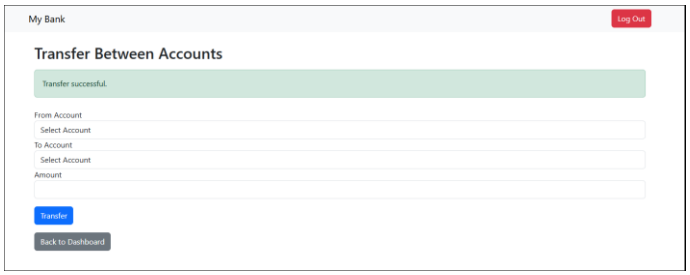
Same Account error



Amount error



Transfer successful



b. Architecture

The app is built using component-based architecture, the main components are:

i. Header Component

Displays the app's navigation links and the "Log Out" button. The "Log Out" button is conditionally shown based on the user's authentication status.

ii. Footer Component

Displays a simple footer with a centered copyright message.

iii. Login Component

Provides the login form for user authentication. Displays error messages if the username or password is missing or incorrect.

iv. AccountDashboard Component

Displays the user's bank accounts and their balances. Allows users to view detailed transactions for each account.

v. Transfer Component
Provides the form for transferring funds between accounts. Validates the transfer details and displays error messages if necessary.

2. Bank API

API is developed using .Net Core 8 Web API. Database used is SQL Server.

a. API Endpoints
   i. api/auth/register - POST
   Allow new users to register.
   ii. api/auth/login - POST
   Allow users to log in.
   iii. api/account/user/{userId} - GET
   Retrieves the account details for a specific user.
   iv. api/account/transfer - POST
   Allows transfer between accounts.

b. Architecture
   The code is separated into various projects to enable separation of concerns and ease the maintainability. Following .Net Core projects are created:
   i. BankDash.API
   Serves as the main entry point for the application's API. It defines the endpoints, routes, and controllers that handle HTTP requests and responses. It acts as the interface between the front-end.
   ii. BankDash.Common
   Common utilities, helper functions, and shared resources that can be used across different projects within the solution.
   iii. BankDash.DB
   Handles database-related operations, including the setup and configuration of the Entity Framework (EF) context, database migrations, and repository pattern implementation. It interacts with the database to perform CRUD operations.
   iv. BankDash.Model
   Defines the data models and DTOs (Data Transfer Objects) used throughout the application. These models represent the structure of data and are used for data exchange between different layers of the application.
   v. BankDash.Service

Contains the business logic and services of the application. It implements the core functionality of the application, including various operations, rules, and validations.

vi. BankDash.UnitTests
Contains unit tests for the application. It ensures that the individual units of the application (such as methods) work correctly.

3. Database