**Development of a Web Application for Bank**

**Project Abstract:**

This case study focuses on the development of a robust web application for a bank, designed to streamline operations like account management, loan processing, and customer support. The goal is to enhance customer satisfaction, ensure secure transactions, and improve operational efficiency using modern technological solutions.

**Objective:**

To create a user-friendly, secure web application that provides comprehensive banking services, thereby improving customer experience and operational effectiveness.

**Technology Stack:**

* **Frontend**:
  + Angular for a dynamic and interactive user interface.
  + HTML5, CSS3, and Bootstrap or Tailwind for responsiveness and layout.
* **Backend**:
  + ASP.NET Core(Repository Pattern) for server-side logic with necessary UnitTesting (Minimum 4)..
  + Entity Framework Core for database interactions.
  + Role based JWT authentication for secure login.
* **Database**:
  + SQL Server for relational database management.

Any Additional Features (Recommended)

**Modules and Implementation:**

1. **User Module:**
   * **Login/Registration:** Secure access to banking profiles using multi-factor authentication.
   * **Account Management:** Allows users to manage their accounts, view balances, and recent transactions.
   * **Loan Application:** Users can apply for loans and track their application status.
   * **Customer Support:** Enables users to interact with support for assistance and queries.
2. **Banking Staff Module:**
   * **Login:** Secure access for banking staff.
   * **Customer Management:** Provides access to customer profiles for service management.
   * **Transaction Approval:** Authorization for high-value transactions and loan approvals.
   * **Reporting:** Tools to generate various operational and customer activity reports.
3. **Admin Module:**
   * **User Management:** Handles roles and permissions for system users.
   * **Audit Trails:** Keeps track of system activities for security and compliance.
   * **System Configuration:** Manages settings related to operational parameters and security.

**Flow:**

 **Home Page**

* Options: Sign In, Register

 **Registration Process**

* Input: Username, Password, Personal Details
* Actions: Validate Data, Create Account
* Output: Confirmation, Redirect to Login

 **Login Process**

* Input: Username, Password
* Actions: Authenticate User
* Output: Redirect to User Dashboard

 **User Dashboard (After Login)**

* Options: Account Management, Loan Application, Customer Support, Logout

 **Account Management**

* View Account Details: Balances, Recent Transactions
* Modify Account Settings: Update Personal Information

 **Loan Application**

* Input: Loan Type, Amount, Personal Details
* Actions: Validate Loan Application, Submit for Approval
* Output: Loan Status Updates

 **Customer Support**

* Input: Query Type
* Actions: Submit Query, Get Assistance
* Output: Resolution Status, Follow-up Options

 **Banking Staff Module**

* Login for Staff
* Customer Management: Access and Manage Customer Profiles
* Transaction Approval: Review and Approve High-value Transactions
* Reporting: Generate Reports on Demand

 **Admin Module**

* Login for Admin
* User Management: Create/Manage Roles, Audit User Activities
* System Configuration: Set Up System Parameters, Security Settings

 **Security Features Across All Modules**

* Secure Login with Multi-factor Authentication
* Data Encryption for Sensitive Information
* Regular Audits and Compliance Checks