**SOFTWARE REQUIREMENT SYSTEM FOR APT-LOAN APPLICATION WEB APPLICATION API**

**Introduction:**

The Loan Application Web API is a RESTful web service that provides functionality for managing loan applications and related processes. It enables users to submit loan applications, track their application status, make payments, and retrieve loan-related information. The APT-LOAN-API is built using ASP.NET Core, thereby providing a secure and scalable solution for loan application management.

**Purpose:**

The purpose of this Software Requirements Specification (SRS) document is to define the functional and non-functional requirements of the Loan Application Web API.

**Scope:**

The APT-LOAN-WEB-API will consist of the following modules:

1. User Management Module
2. Loan Application Management Module
3. Loan Status Management Module
4. Payment Management & Payment Status Management Module

**Functional Requirements:**

**3.1 User Management Module:**

The APT-LOAN-WEB-API shall support user registration, authentication, and authorization.

Users shall be able to register by providing their name, email, password, and contact details.

Users shall be able to log in using their registered credentials.

Authorization shall be enforced to restrict access to certain API endpoints based on user roles.

**3.2 Loan Application Management Module:**

The APT-LOAN-WEB-API shall allow users to submit loan applications by providing necessary details such as loan amount and purpose.

Upon successful submission, the API shall generate a unique application ID and assign an initial status (e.g., "Pending") to the loan application.

Users shall be able to retrieve their submitted loan applications along with the current status.

The APT-LOAN-WEB-API shall support updating loan application details, such as modifying the loan amount or purpose, before it is approved.

**3.3 Loan Status Management Module:**

The APT-LOAN-WEB-API shall enable loan officers to review and process loan applications.

Loan officers shall be able to view the list of pending loan applications and their details.

Loan officers shall have the ability to approve or reject loan applications, updating the application status accordingly.

Upon approval, the APT-LOAN-WEB-API shall provide loan officers with options to set the approved loan amount, interest rate, and repayment terms.

Loan officers shall have the ability to request additional documentation or information from applicants during the approval process.

**3.4 Payment Management & Payment Status Management Module:**

The APT-LOAN-WEB-API shall support payment processing for approved loans.

Users shall be able to make loan payments by providing the loan ID, payment amount, and payment method.

Upon successful payment, the APT-LOAN-WEB-API shall update the payment status and provide a payment confirmation to the user.

Users shall be able to view their payment history, including details such as payment dates and amounts.

**Non-Functional Requirements:**

**4.1 Performance:**

The APT-LOAN-WEB-API shall be designed to handle concurrent requests efficiently and provide optimal performance even under heavy load.

Database queries and operations shall be optimized for speed and scalability.

Caching mechanisms shall be implemented to improve response times for frequently accessed data.

**4.2 Security:**

The APT-LOAN-WEB-API shall implement secure authentication and authorization mechanisms to protect user data and restrict unauthorized access.

Passwords shall be securely hashed and stored in the database.

Sensitive data transmitted over the network shall be encrypted using secure protocols (e.g., HTTPS).

**4.3 Scalability**

The APT-LOAN-WEB-API architecture shall support horizontal scalability by allowing for the deployment of multiple instances to handle increased traffic and load.

Load balancing mechanisms shall be implemented to distribute incoming requests across the available instances.

**4.4 Documentation**

The APT-LOAN-WEB-API shall be thoroughly documented, including endpoints, request/response formats, authentication mechanisms, and error handling.

Documentation shall be provided in a user-friendly format (e.g., Swagger/OpenAPI specification) to facilitate integration with client applications.

**Constraints:**

**5.1 Technology:**

The APT-LOAN-WEB-API Loan Application Web API shall be developed using ASP.NET Core framework.

The APT-LOAN-WEB-API shall utilize a relational database management system (e.g., SQL Server, MySQL) for data storage.

The APT-LOAN-WEB-API shall comply with applicable security and privacy regulations (e.g., GDPR, PCI-DSS) to ensure the protection of user data.

**5.2 Timeframe:**

The APT-LOAN-WEB-API application should be developed within a reasonable timeframe, with

project deadlines and milestones set in place.

**5.3 Internet Access:**

It is assumed that users of the APT-LOAN-WEB-API application will have internet access to use

the system.

**Conclusion:**

The APT-LOAN-WEB-API application system is an essential tool for financial institutions, loan managers, Compliance officers, Auditors and even customer support officers to manage applicants’ information effectively. This SRS document has outlined the functional and non-functional requirements of the system, as well as any constraints and assumptions. The successful development and deployment of this system will greatly improve loan management and enhance the overall financial management experience.