**Requirements**

**Functional requirements**

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| **Req#** | **Requrement** | **Description** | **Comments** | **Rete** | **SME Reviewed/Approved** |
| **FR\_01** | Loan Application Processing | Capture and store applicant information such as personal details, financial history, etc. | Essential for basic functionality. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_02** | Loan Eligibility Calculation | Calculate loan eligibility based on predefined criteria and algorithms. | Core functionality for decision-making. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_03** | Approval/Rejection Mechanism | Approve or reject loan applications based on specified rules and criteria. | Critical for the loan application process. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_04** | Account Management | Create and manage loan accounts, record disbursements, repayments, etc. | Fundamental for tracking financial activity. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_05** | Risk Assessment | Conduct credit checks and risk assessments based on credit scores, collateral, etc. | Key for ensuring responsible lending. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_06** | Payment Processing | Process loan disbursements, repayments, and manage interest calculations. | Crucial for financial transactions. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_07** | Reporting and Analytics | Generate reports on loan portfolios, delinquencies, and financial trends. | Important for strategic decision-making. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_08** | Compliance Monitoring | Monitor and ensure compliance with regulatory requirements and internal policies. | Essential for legal and regulatory adherence. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_09** | Data Analytics and Decision Support | Use analytics to aid in decision-making related to loan approvals and risk assessment. | Enhances decision-making processes. | High | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_10** | Loan Product Management | Maintain a catalog of available loan products with varying terms, rates, etc. | Important but not as critical as core features. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_11** | Communication and Notifications | Send notifications to applicants about application status, reminders for payments, etc. | Enhances user experience and communication. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_12** | Documentation Generation | Generate loan agreements, disclosures, and other necessary documentation. | Important for legal and record-keeping purposes. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_13** | Collateral Management | Track and manage collateral information associated with loans. | Important for secured loan processes. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_14** | Customer Service Tools | Provide tools for customer service representatives to handle inquiries and issues. | Enhances customer support capabilities. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_15** | Workflow Automation | Automate loan approval processes, reminders, and other workflow tasks. | Improves operational efficiency. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |
| **FR\_16** | Mobile Accessibility | Provide mobile-friendly interfaces for loan applications and account management. | Enhances accessibility for users on mobile devices. | Medium | A.Nushi,  E.Xhavara,  M.Spaho |

## **Non-Functional Requirements**

Non-functional requirements specify criteria that can be used to judge the operation of a system as a whole rather than specific behaviors. They describe emergent properties like security, performance, and availability and, unlike the functional requirements that can be worked around, are essential to fulfill for a usable system. The estimation of whether the product fulfills the non-functional requirement or not usually reduces to a boolean answer: yes or no.

### **Product Requirements**

#### Security Requirements

* + Encryption of sensitive customer data at rest and in transit.
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  + Role-based access controls to restrict unauthorized access to sensitive information.

#### Performance Requirements

* + Response time for critical functions like loan approval, typically within X seconds/minutes.
  + System availability of at least 99.9% during regular business hours.

#### Reliability Requirements

* + Backup and recovery procedures to ensure minimal data loss in case of system failure.
  + Redundancy measures to maintain service availability in the event of hardware or software failures.

### **Organizational Requirements**

1. **Training and Documentation:**
   * Comprehensive user manuals and documentation for system users and administrators.
   * Training programs for employees to ensure efficient utilization of the loan management system.
2. **Change Management:**
   * Procedures for implementing updates, patches, or modifications to the system while minimizing disruption to operations.
   * Version control and rollback plans in case of unsuccessful updates or changes.

#### Environmental Requirements

1. **Technologies that will be used:**

Java for the system backend.

JavaScript and HTML/CSS for potential front-end componenets.

Spring Framework for building and managing the backend.

1. **Infrastructure and Hardware:**

Specify the minimum and recommended hardware specifications for servers and client machines.

Ensure compatibility with existing IT infrastructure and equipment.

Define any environmental conditions (temperature, humidity) required for server rooms or data centers.

1. **Software Dependencies:**

Identify and document the required software components, including operating systems, databases, and middleware.

Specify versions and configurations of software dependencies to ensure compatibility.

1. **Network Requirements:**

Define network protocols and communication standards to be used.

Specify bandwidth requirements to ensure smooth data transfer.

Address any security measures needed for network communication, such as firewalls and intrusion detection systems.

1. **Data Storage and Management:**

Specify storage capacity requirements based on anticipated data volume.

Define backup storage locations and procedures.

Ensure compatibility with data storage and management systems that comply with security and regulatory standards.

1. **Environmental Security:**

Implement physical security measures for server rooms or data centers, including access controls and surveillance.

Ensure that environmental factors (e.g., temperature, humidity) are within acceptable ranges for hardware.

1. **Integration with External Systems:**

Identify and document external systems or services that the loan management system will integrate with.

Specify integration protocols, data formats, and security measures for seamless communication.

1. **Scalability Testing Environment:**

Set up a testing environment that simulates increased load and scalability scenarios to verify the system's performance under varying conditions.

Define procedures for conducting scalability tests regularly.

1. **Regulatory Compliance Monitoring:**

Establish mechanisms for monitoring and ensuring ongoing compliance with industry regulations and standards.

Implement alerts or notifications for any deviations from compliance requirements.

1. **Usability Testing Environment:**

Create a testing environment for usability testing, involving both customers and internal staff.

Conduct usability testing regularly to identify and address any issues with the user interface and experience.

1. **Training Facilities:**

Identify locations and resources for conducting training sessions for staff.

Ensure that training facilities have the necessary equipment and connectivity for effective training.

### **External Requirements**

1. **Integration:**
   * Ability to integrate with credit bureaus and financial data providers for credit checks and verification processes.
   * Compatibility with external banking systems or networks for fund transfers and transactions.
2. **Regulatory Compliance:**
   * Adherence to Albanian financial regulations and standards related to lending, data protection, and consumer rights.
   * Compliance with international standards such as ISO/IEC 27001 for information security management.

#### Ethical Requirements

1. **Fair Lending Practices:**
   * Implement policies to prevent discriminatory lending practices based on race, gender, religion, or other protected characteristics.
   * Transparency in loan terms and conditions to ensure customers make informed decisions.
2. **Responsible Use of Customer Data:**
   * Ethical handling of customer data, ensuring it's only used for legitimate business purposes and with explicit consent.

#### Legislative Requirements

1. **Data Protection and Privacy:**
   * Compliance with Albania's Personal Data Protection Law to safeguard customer data.
   * Adherence to the Law on the Protection of Consumers for transparent loan terms and conditions.
2. **Financial Regulations:**
   * Compliance with the Bank of Albania's regulations on lending practices, interest rates, and loan disclosures.
   * Adherence to anti-money laundering (AML) and counter-terrorist financing (CTF) laws.
   * Specific Regulations for Financial Institutions Providing Loans: Financial institutions providing loans in Albania may also be subject to additional regulations, such as consumer lending laws, anti-money laundering (AML) regulations, and lending practice guidelines set forth by the ASD or other regulatory bodies. These regulations often govern interest rates, loan terms, customer disclosures, risk management, and compliance protocols.
   * Tax Laws: The tax system in Albania includes corporate income tax, value-added tax (VAT), personal income tax, and other taxes and duties. Corporate income tax in Albania is set at a flat rate of 15% for most businesses. However, specific tax regulations, exemptions, deductions, and reporting requirements may vary based on the type of financial institution and its operations. Consulting with a tax professional or legal advisor well-versed in Albanian tax law is essential for accurate compliance.
   * GDPR Compliance: The GDPR is a comprehensive data protection regulation in the European Union (EU) that governs the handling of personal data. It applies not only to EU-based organizations but also to entities outside the EU that handle EU residents' data. Financial institutions collecting and processing customer data (including loan applicants) must comply with GDPR standards when dealing with personal data, ensuring transparency, consent, data security, and individuals' rights concerning their data. It's crucial for financial institutions to have robust data protection measures and procedures in place to comply with GDPR requirements.
   * Albanian Supervisory Authority (ASD): In Albania, the Albanian Financial Supervisory Authority (AMF) oversees and regulates financial institutions, including banks, insurance companies, and other financial entities. AMF sets guidelines, regulations, and supervisory measures to ensure compliance with laws and standards, safeguarding the stability and integrity of the financial sector. Financial institutions offering loans must adhere to the regulations imposed by the ASD to operate legally and ethically.

## **Domain Requirements**

1. **Regulatory Compliance:**
   * The system must comply with financial regulations and laws imposed by governing bodies (e.g., Central Bank, regulatory authorities) regarding lending practices, interest rates, consumer protections, data privacy (e.g., GDPR, local data protection laws), and anti-money laundering (AML) regulations.
2. **Credit Risk Assessment:**
   * Capability to perform credit checks, assess creditworthiness, and manage risk associated with lending. Compliance with credit scoring methodologies and algorithms specific to the financial industry.
3. **Loan Product Diversity and Flexibility:**
   * Ability to manage various loan products with different terms, interest rates, repayment options, and eligibility criteria. The system should accommodate changes and new loan products introduced by the financial institution.
4. **Security and Data Protection:**
   * Implementation of robust security measures to protect sensitive customer information, including encryption, access controls, and secure data transmission protocols. Compliance with industry standards and best practices to prevent data breaches and ensure data integrity.
5. **Scalability and Performance:**
   * The system should be scalable to handle increasing volumes of loan applications, account management, and transaction processing without compromising performance. It should maintain responsiveness even during peak load times.
6. **Integration with External Systems:**
   * Ability to integrate with external systems such as credit bureaus, financial data providers, banking networks, and regulatory reporting systems for seamless data exchange, compliance reporting, and information retrieval.
7. **Audit and Reporting Capabilities:**
   * Comprehensive audit trails and reporting functionalities to track user activities, system changes, and generate reports for compliance audits, risk management, and regulatory requirements.
8. **Customer Experience and Service:**
   * User-friendly interfaces for customers and staff, providing easy navigation, clear instructions, and responsive customer service tools. This includes accessibility through multiple channels (web, mobile) and self-service options for customers.
9. **Workflow and Process Automation:**
   * Automation of loan application processing, approval workflows, notifications, and other routine tasks to streamline operations, reduce errors, and improve efficiency.
10. **Documentation and Training:**

* Provision of comprehensive documentation, user manuals, and training materials for staff to ensure efficient utilization of the system, adherence to procedures, and compliance with regulations.