Requirement managment

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1. Questions for Conducting User Interviews

General Questions:

- What are the main issues with the current credit processing system that you want to address?

- Which communication channels with clients are prioritized (chat, SMS, email, social media)?

- How is integration with external systems (government agencies, other banks) handled?

- Which regulatory requirements (GDPR, AML, Federal Law 152-FZ) must be considered?

- What success metrics for the system do you consider key (e.g., application processing speed, fraud reduction)?

For Clients:

- What actions should clients perform in their personal account?

- Is support for a mobile version or application required?

- How do clients prefer to receive notifications (SMS, email, push)?

For Employees:

- What tools for assessing creditworthiness are currently in use?

- How should the notification system for managers operate?

- Are role-based access models needed within teams?

Technical Aspects:

- What are the system response time requirements (e.g., application loading 2 sec)?

- What level of system availability is required (e.g., 99.9% uptime)?

2. Functional and Non-Functional Requirements

Functional Requirements (FR):

Module 1: Application Processing

- **FR1.1**: The client can fill out an online application by providing personal information, the purpose of the credit, and sources of income.

- **FR1.2**: Integration with NBKI for credit history verification via API.

- **FR1.3**: Automatic verification of data completeness (validation of email, TIN, passport).

Module 2: Scoring

- **FR2.1**: Calculation of credit scoring based on credit history, income, and demographic data.

- **FR2.2**: Generation of recommendations for the specialist ("Approve", "Reject", "Manual Review").

Module 3: Document Management

- **FR3.1**: Uploading documents in PDF, JPEG, PNG formats (max. 10 MB).

- **FR3.2**: Verification of document authenticity via OCR and comparison with registries (FNS).

Module 4: Communication

- **FR4.1**: Chat support via Telegram and WhatsApp API.

- **FR4.2**: Automatic notifications regarding the application status (SMS, email, push).

Non-Functional Requirements (NFR):

- **Performance**:

  - Application processing in 3 minutes under 5000 concurrent sessions.
  - User account loading in 1.5 sec.

- **Security**:

  - Data encryption using TLS 1.3.
  - Two-factor authentication for employees.

- **Scalability**:

  - Support for horizontal scaling (Kubernetes).

- **Reliability**:

  - Backups every 6 hours.
  - System recovery in 15 minutes after a failure.

- **Compatibility**:
  - **Mobile OS**:
    * Android: version 10 and above (with support for WebView 85+).
    * iOS: version 14 and above.
  - **Browsers**:
    * Google Chrome: version 90+.
    * Mozilla Firefox: version 88+.
    * Safari: version 14+.
    * Microsoft Edge: version 91+.
  - **Screen Resolutions**:
    * Support for responsive design for resolutions from 320px (mobile devices) up to 3840px (4K monitors).
  - **API**:
    * Compatibility with RESTful API (version 2.0).
    * Support for data formats: JSON, XML.

3. User Stories and Use Cases

User Stories:

- **As a client**, I want to sign documents using an electronic signature so that I do not have to visit the bank in person.

- **As an administrator**, I want to configure access rights for new employees to minimize the risk of data breaches.

- **As an analyst**, I want to export data to Excel to build forecasts for the credit portfolio.

- **As a legal advisor**, I want to automatically generate contracts based on approved applications to save time.

- **As an IT specialist**, I want to monitor server load in real time to prevent system failures.

- **As a client**, I want to withdraw an application before it is processed so that I can change the credit terms.

Use Case: Updating the Scoring Model

- **Actors**: Analytics Department, System.

- **Steps**:

  1. Analysts upload a new version of the ML model.
  2. The system performs A/B testing on 10% of the applications.
  3. If the test is successful (accuracy >90%), the model is deployed for all applications.
  4. The old model is retained as a backup for 30 days.

Use Case: Processing a GDPR Request

- **Actors**: Client, System, Administrator.

- **Steps**:

  1. The client submits a data deletion request through their personal account.
  2. The system verifies that there are no active credits.
  3. Data is anonymized within 72 hours.
  4. The administrator confirms the completion of the request.

Use Case: Integration with GIS GMP

- **Actors**: System, GIS GMP (state system).

- **Steps**:

  1. Upon credit approval, the system generates an electronic receipt.
  2. The data is automatically sent to GIS GMP via API.
  3. The system checks the payment processing status every 15 minutes.
  4. In case of an integration error, a manual verification process is initiated.

4. Error Handling Scenarios

Scenario 1: NBKI Integration Error

- **Condition**: API is unavailable for more than 30 seconds.

- **Actions**:

  1. Save the application with the status "Pending".
  2. Notify technical support.
  3. Retry the request after 5 minutes (up to 3 attempts).
  4. If all attempts are exhausted, notify the client: "The verification is taking longer than expected."

Scenario 2: Invalid Document

- **Condition**: An unreadable file has been uploaded.

- **Actions**:

  1. Reject the document.
  2. Send a message to the client requesting to re-upload the file.

5. Regulatory Requirements

- **GDPR**:

    - Explicit client consent for data processing.
    - Data deletion upon request within 72 hours.

- **AML/KYC**:

    - Client verification against sanctions lists (OFAC, EU).
    - Audit log of employee actions.

- **Federal Law 152-FZ (RF)**:

    - Data storage on servers located within the Russian Federation.
    - Encryption when transmitting data outside the bank.

- **PCI DSS**:

    - Prohibition on storing CVV/CVC codes.
    - Annual security audit.

6. Analysis of Requirements Completeness

Strengths:

- Key roles (clients, employees, administrators) have been considered.

- Detailed modules (scoring, documents, communication).

- Regulatory requirements (GDPR, Federal Law 152-FZ) are covered.

Weaknesses:

- No requirements for auditing changes to applications.

- Data recovery scenarios in case of hardware failures are not described.

Recommendations:

- Add an audit log to track employee actions.

- Clarify integration with messaging apps (e.g., via WhatsApp Business API).

- Include an SLA for external APIs (maximum response time — 2 sec).

Final Document

Application Value:

- Accelerating application processing by 40% through automation.

- Reducing fraud risks via integration with AML services.

- Ensuring compliance with GDPR and Federal Law 152-FZ for operations in the Russian Federation and the EU.