**System Description: Small Loan Application System**

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**Task 1: Description**

The **Small Loan Application System** is designed to streamline the process of providing customers with small loans ranging from **500 to 15,000 EUR** for purchasing products at shops affiliated with an organization. The system ensures efficient loan application and approval processes by incorporating multiple user roles and a well-structured workflow.

**Classes, Attributes, and Relationships**

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| --- | --- | --- | --- |
| **Class** | **Attributes** | **Relationships** | **Actor Operations** |
| **Customer** | - CustomerID  - Identity Code  - Name  - Contact Information  - Gender  - Birthday  - Citizenship  - Occupation | - Can have multiple **Loan Applications** (1..n) | - Provides personal details and signs approved Loan Applications. |
| **Employee** | - EmployeeID  - Experience  - Position  - Shift | - Approves **Loan Applications** (1..n)  - Associated with one **Organization** (1..1) | - Manages manual reviews for applications with a negative DecisionStatus.  - Approves and signs Loan Applications. |
| **Loan Application** | - ApplicationID  - LoanAmount  - LoanPeriod  - Interest Rate  - Decision Status (positive/negative)  - Creation Date  - Product  - Customer  - CustomerSignature  - EmployeeSignature | - Linked to one **Customer** (1..1)  - Linked to one **Product** (1..1)  - Processed at one **Shop** (1..1)  - Approved by one **Employee** (1..1)  - May result in one **Contract** (1..1) |  |
| **Contract** | - ContractID  - Status  - TerminationDate  - Application  - Duration  - Amount  - Shop  - Start Date | - Originates from one **Loan Application** (1..1) |  |
| **Organization** | - OrganizationID  - Name  - Address  - Contact Info | - Owns multiple **Shops** (1..n)  - Employs multiple **Employees** (1..n) | - Facilitates automated loan decisions.  - Provides oversight and governance of Shops and Employees. |
| **Shop** | - ShopID  - Address  - ContactInfo | - Belongs to one **Organization** (1..1)  - Offers multiple **Products** (1..n)  - Facilitates multiple **Loan Applications** (1..n) | - Provides Product Information and Application Form Handling |
| **Product** | - ProductID  - Name  - Price  - Description  - Quantity | - Available at multiple **Shops** (1..n)  - Linked to multiple **Loan Applications** (1..n) |  |

**System Workflow:**

* Customer visits a Shop and selects a Product.
* If interested in financing, a Loan Application is created, incorporating data from the Customer, Product, Shop, and Organization, along with loan amount and period.
* The Loan Application undergoes an automatic decision process by the Organization, resulting in a Decision Status of positive or negative.
* Positive: The application can proceed to become a Contract.
* Negative: The application is blocked from further progression. Its possible to have manual review by Employee
* For a positive decision, both the Customer and an Employee must approve (sign) the Loan Application.
* Once approved by both parties, the Loan Application transitions into a Contract.
* Contract termination is allowed after the selected period or by providing a valid reason

**Use Case 1: Loan Application Creation**

1. A **Customer** visits a **Shop** and selects a **Product**.
2. If financing is required, a **Loan Application** is created. This application includes:
   * Customer details (identity, contact information, etc.).
   * Product details (price, description).
   * Loan details (amount, period, and interest rate).
   * Shop and Organization information.

**Use Case 2: Automatic Loan Decision**

1. The **Loan Application** undergoes an automated review process managed by the **Organization**.
2. Based on predefined criteria, the **DecisionStatus** is marked as:
   * **Positive**: The loan is eligible for approval.
   * **Negative**: The loan application is blocked unless manually reviewed.

**Use Case 3: Approval and Signing**

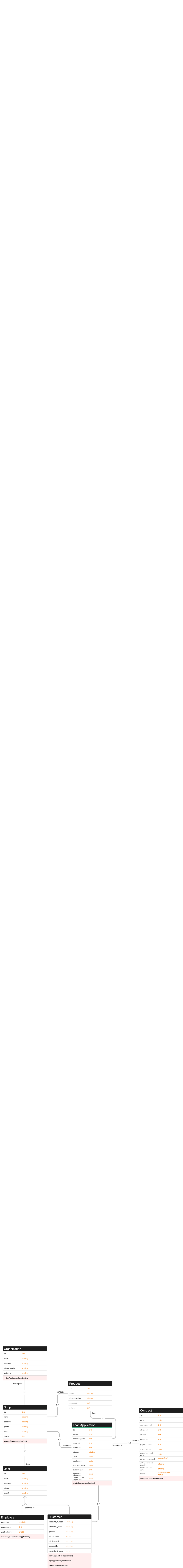
1. If the loan decision is **positive**:
   * The **Customer** provides their signature to confirm the loan.
   * An **Employee** reviews and approves the application, providing their signature.
2. Once both signatures are obtained, the application transitions into a **Contract**.

**Use Case 4: Contract Management**

1. A **Contract** is generated with details from the approved Loan Application.
2. The contract remains active until the loan is fully repaid or terminated.

**Task 2: Class Model**

Link to model: <https://www.figma.com/board/pSn5QPRGnAveXV0f3bPlea/Loan-Application?node-id=0-1&t=xZWbkpfqZ6srQtRz-1>



Interfaz de usuario gráfica, Sitio web

Descripción generada automáticamente

**Task 3:**

**Task 4: Evidence of Teamwork**

Link to Gitlab Repository: <https://gitlab.cs.ut.ee/alejandro1/systems-modelling>

Screenshot of commit history:

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente con confianza media

**Task 5: Explore and document Generetative AI capabilities**