

# Online banking

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# **SDD**

## **Overview**

### **Purpose:**

- To develop a security.
- user-friendly online platform for banking services.

### **Objective:**

- Provide customers with convenient access to account information, transactions, withdrawals, and asking for a loan.
- Ensure the security and privacy of customer data.
- Enhance user experience through intuitive design and functionality.

## **Scope**

### **In-scope:**

- Account registration and login functionality.
- Update account information
- Account dashboard with balance summary and recent transactions.
- Check Balance.
- Fund transfer between accounts(internal) and external accounts.
- Donate to any place you want.
- Bill payment services.
- Change currency.

### **Out-of-scope:**

- In-person banking services.
- Investment management.
- loan applications.

## **Deliverables**

- **Fully functional online banking website accessible via web browsers and mobile devices.**
- **User documentation including user guides and FAQs.**
- **Training materials for bank staff on using the website.**

## **Requirements**

### **Functional Requirements:**

- **User registration and login.**
- **Update account**
- **Check balance.**
- **Fund transfer.**
- **Donation.**
- **Loan**
- **Bill payment system.**
- **Change currency.**
- **Secure messaging system.**

### **Non-functional Requirements:**

- **Security: SSL encryption, multi-factor authentication.**
- **Performance: Response time < 2 seconds, concurrent user support.**
- **Usability: Intuitive user interface, accessible design.**
- **Compatibility: Cross-browser compatibility, mobile responsiveness.**

## Architecture and Design

### **System Architecture:**

Client-server architecture with a web-based front end and a secure backend (springboot) database.

### **Database Design:**

Entity-relationship diagram (ERD) detailing the database schema for user accounts, transactions, donations, withdrawals, and contacts.

### **User Interface Design:**

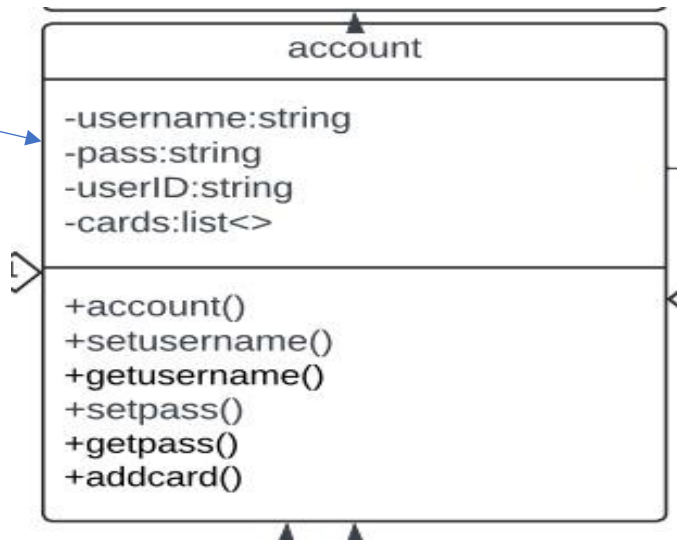
Mockups and wireframes illustrating the layout, navigation, and visual elements of the website.

## Risk Management Plan

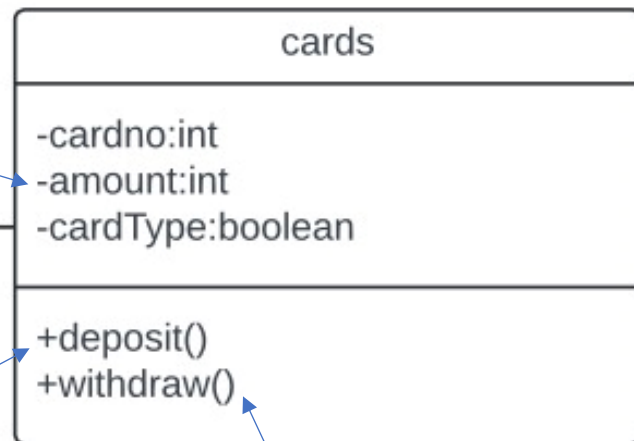
- Identify potential risks such as security breaches, technical issues, or regulatory compliance.
- Hack the personal information and make transactions.
- Assess the likelihood and impact of each risk and develop mitigation strategies.

# OCL

**Context= account**  
**Invariant:**  
**Pre self.checkpass=true**



**Context= cards**  
**Invariant: self.amount>=0**

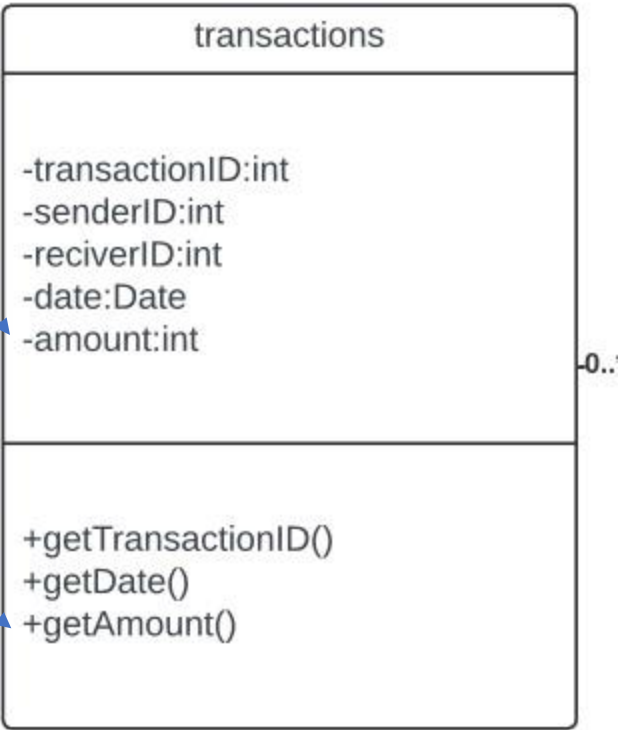


**Context= cards**  
**Pre :**  
**self.amount>=0 and i>0**  
**Post:**  
**self.amount=self.amount@pre-i**

**Context= cards**  
**Pre :**  
**self.amount>=0 and i>0**  
**Post:**  
**self.amount=self.amount@pre-i**

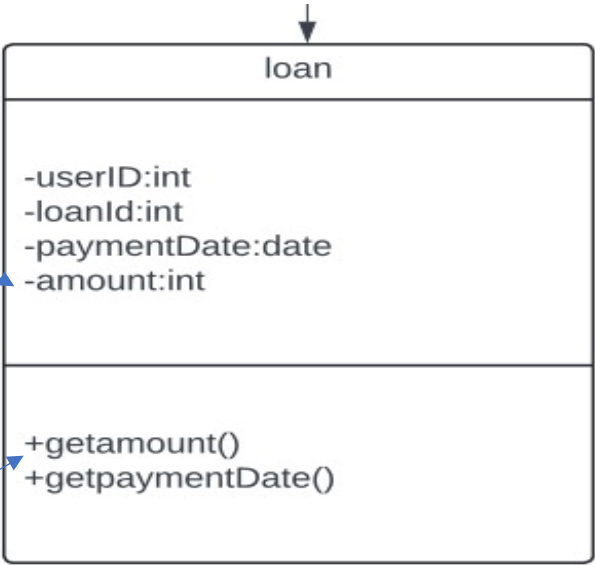
**Context= transaction**  
**Invariant: self.amount>=0**

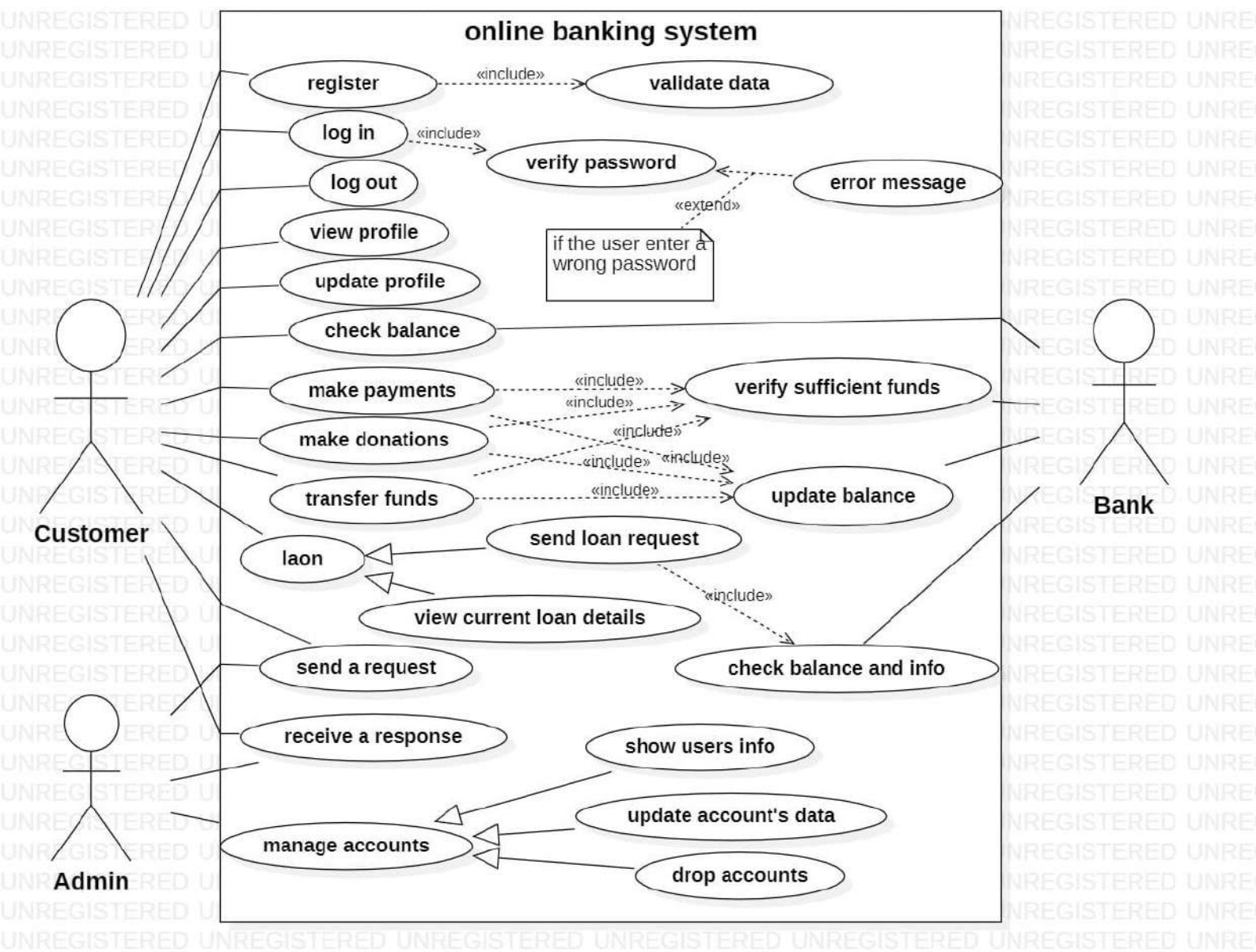
**Context= transaction**  
**Pre :**  
self.amount>=0 and i>0  
**Post:**  
self.amount=self.amount@pre-i



**Context= loan**  
**Invariant: self.amount>=0**

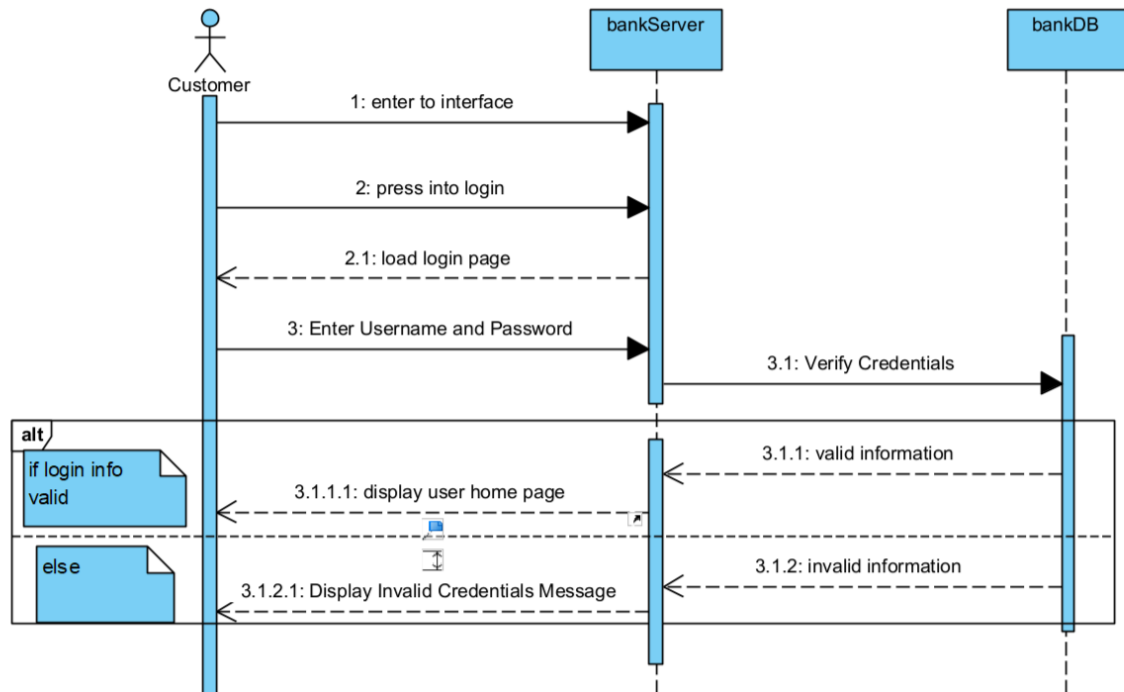
**Context= loan**  
**Pre :**  
self.amount>=0 and i>0  
**Post:**  
self.amount=self.amount@pre-i





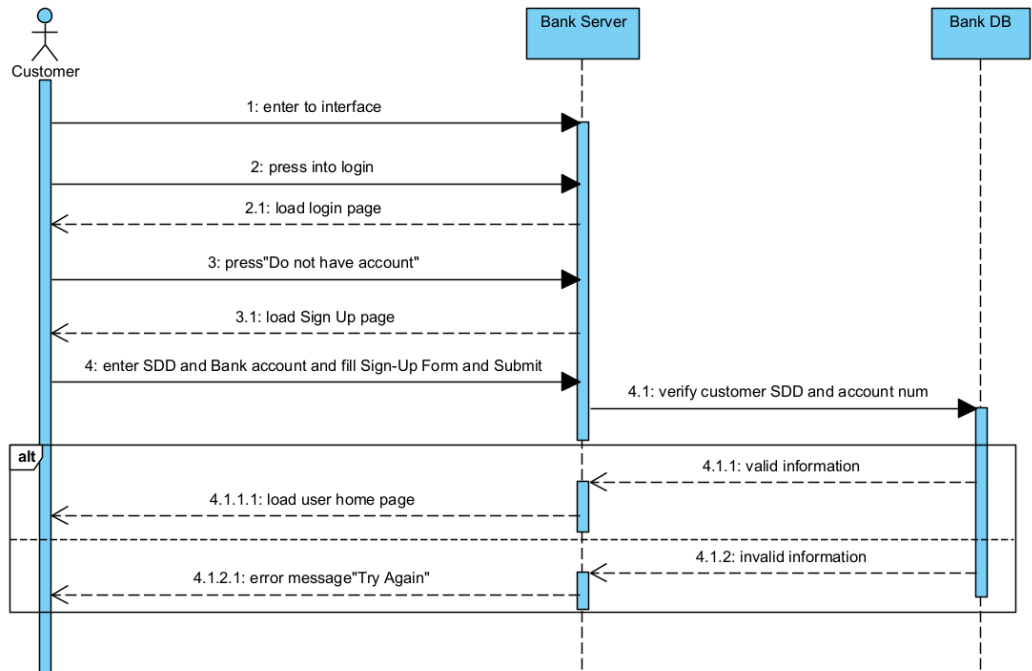
# Sequence Diagram

- Login

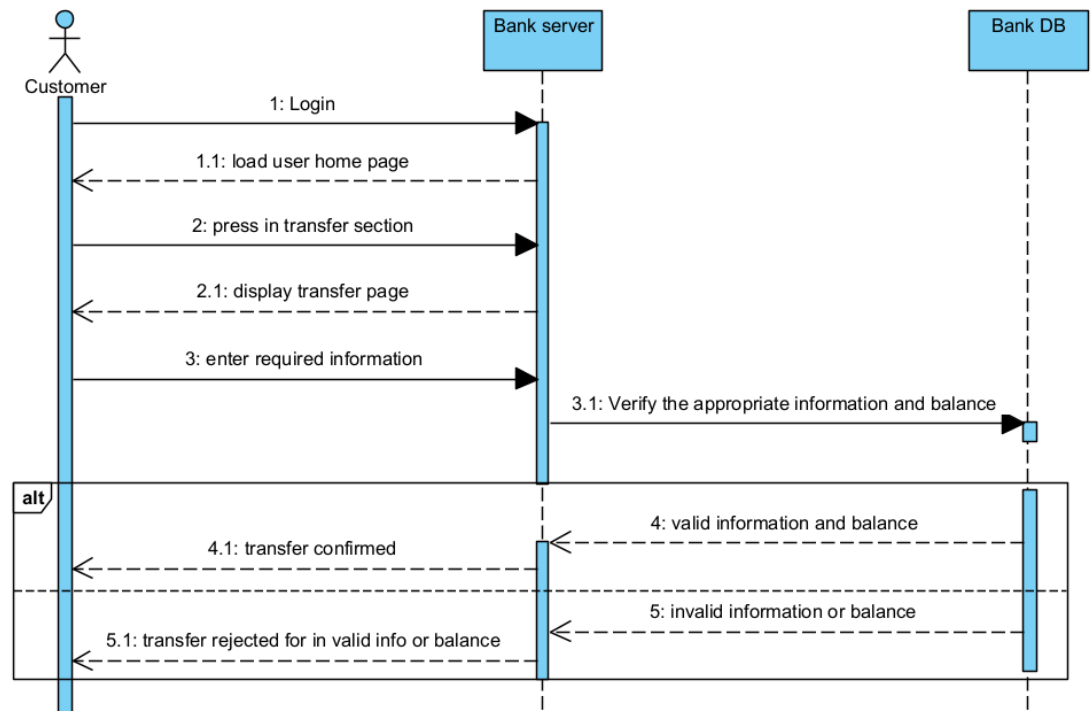




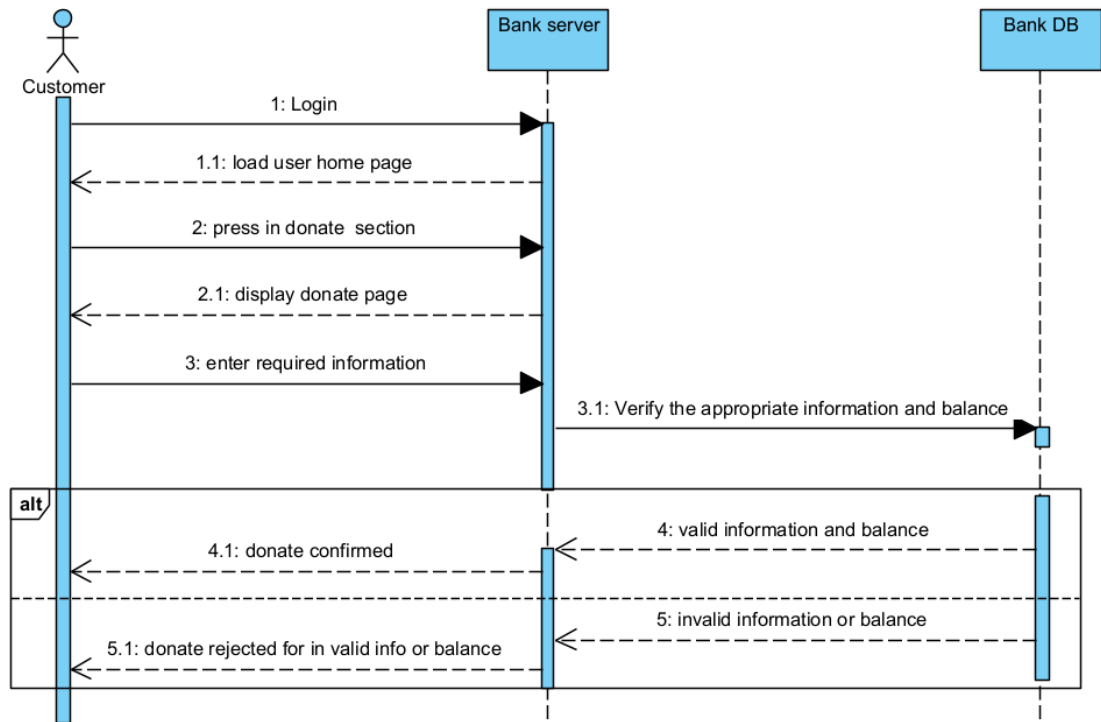
- Sign up



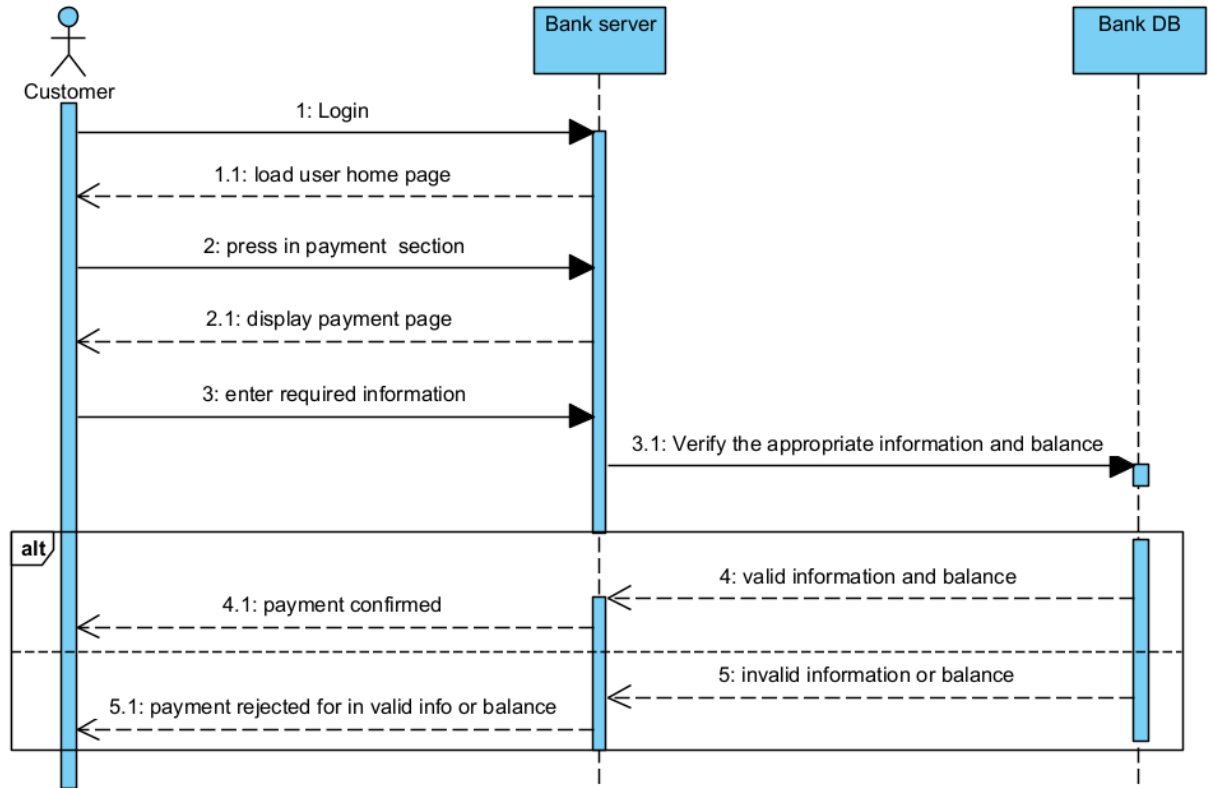
- Transfer



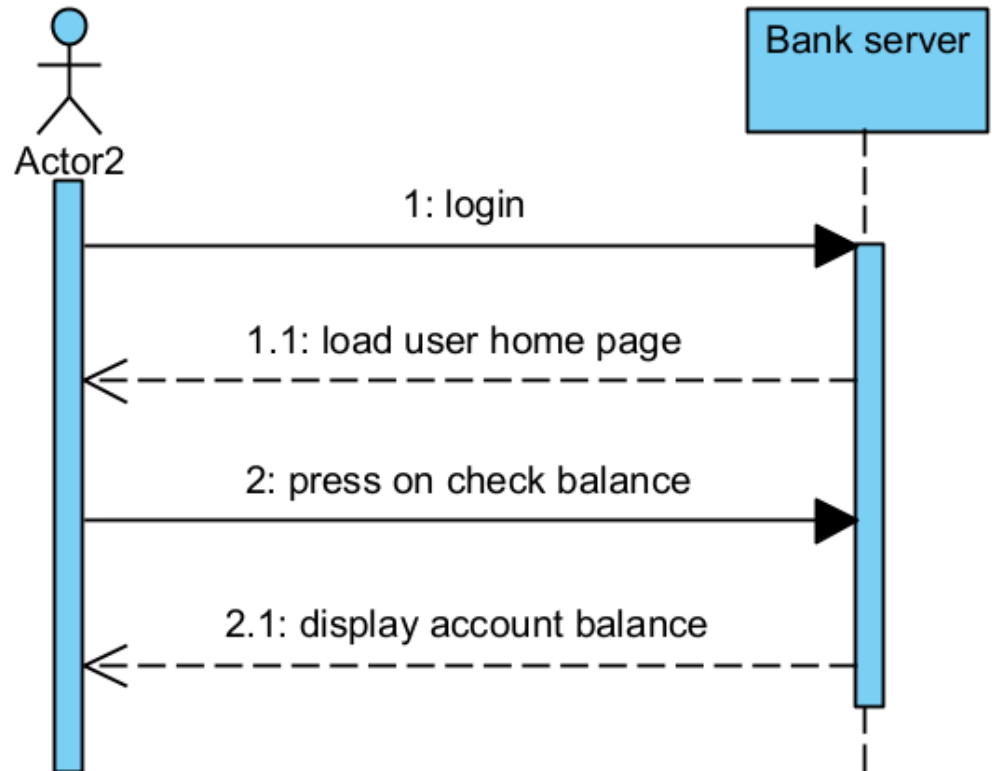
- Dontae



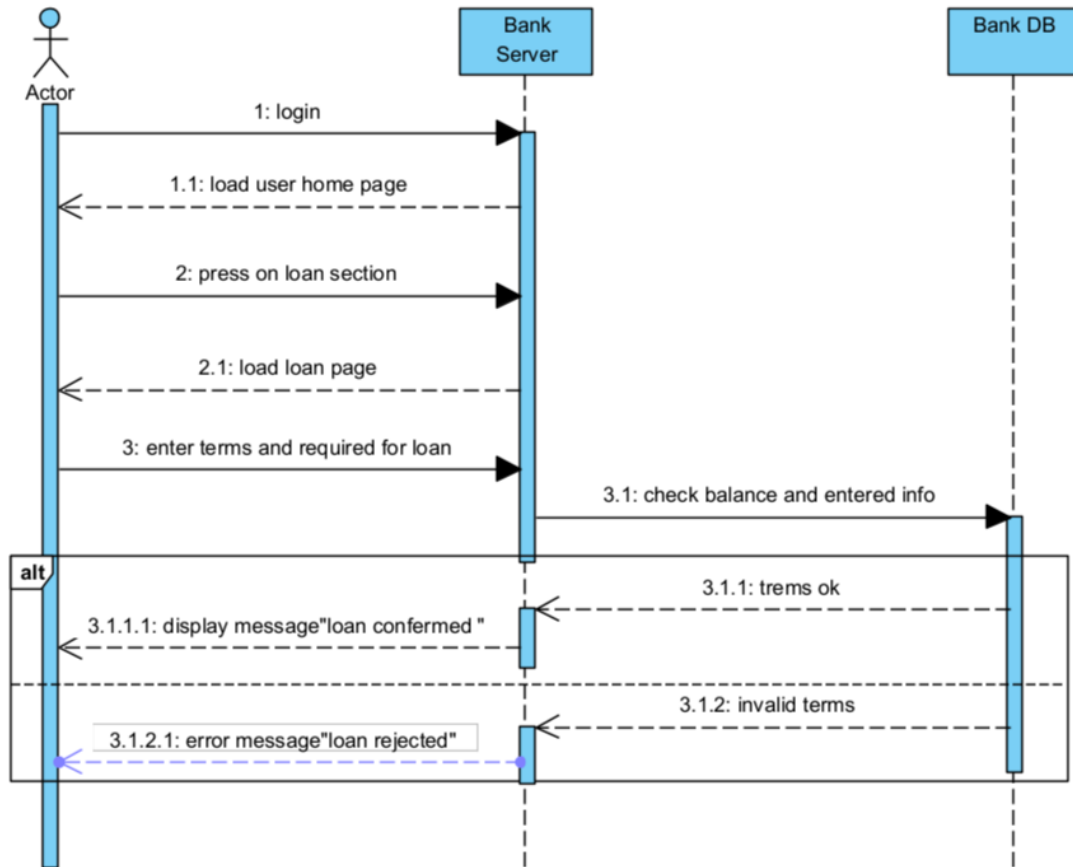
- **Make payment**



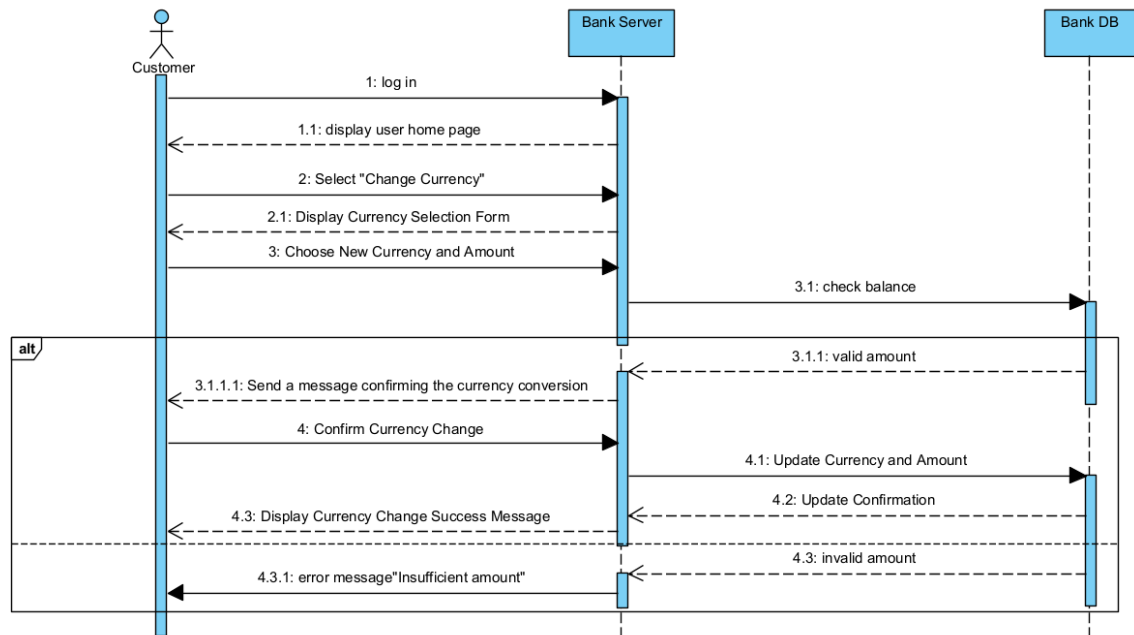
- **Check balance**



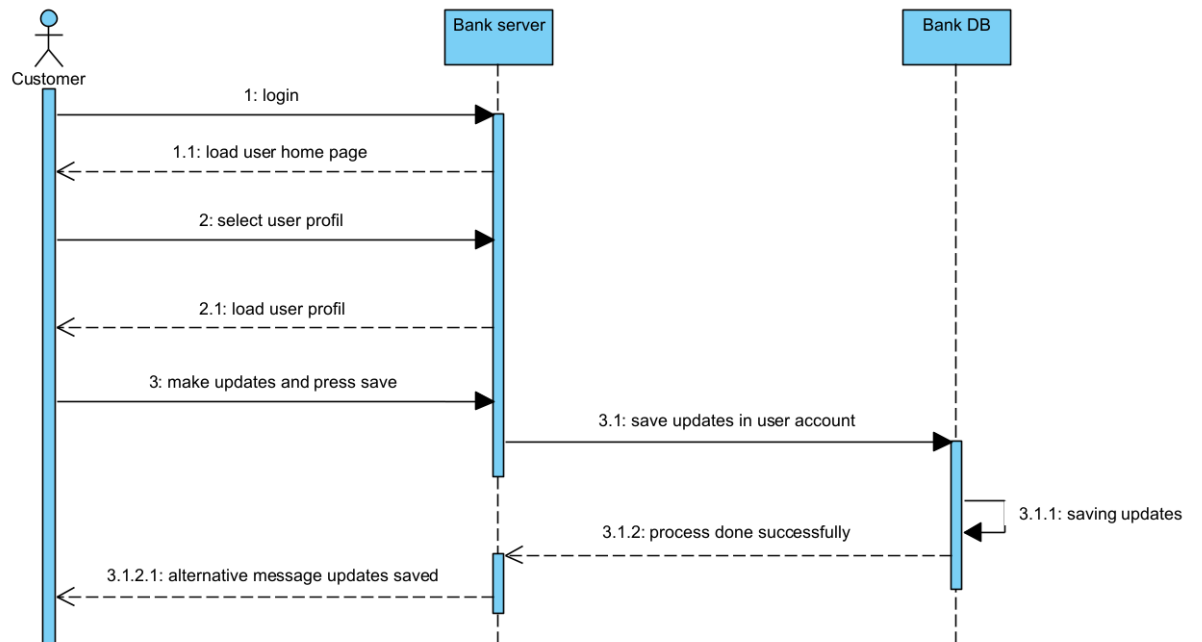
- Loan



## • Change Currency



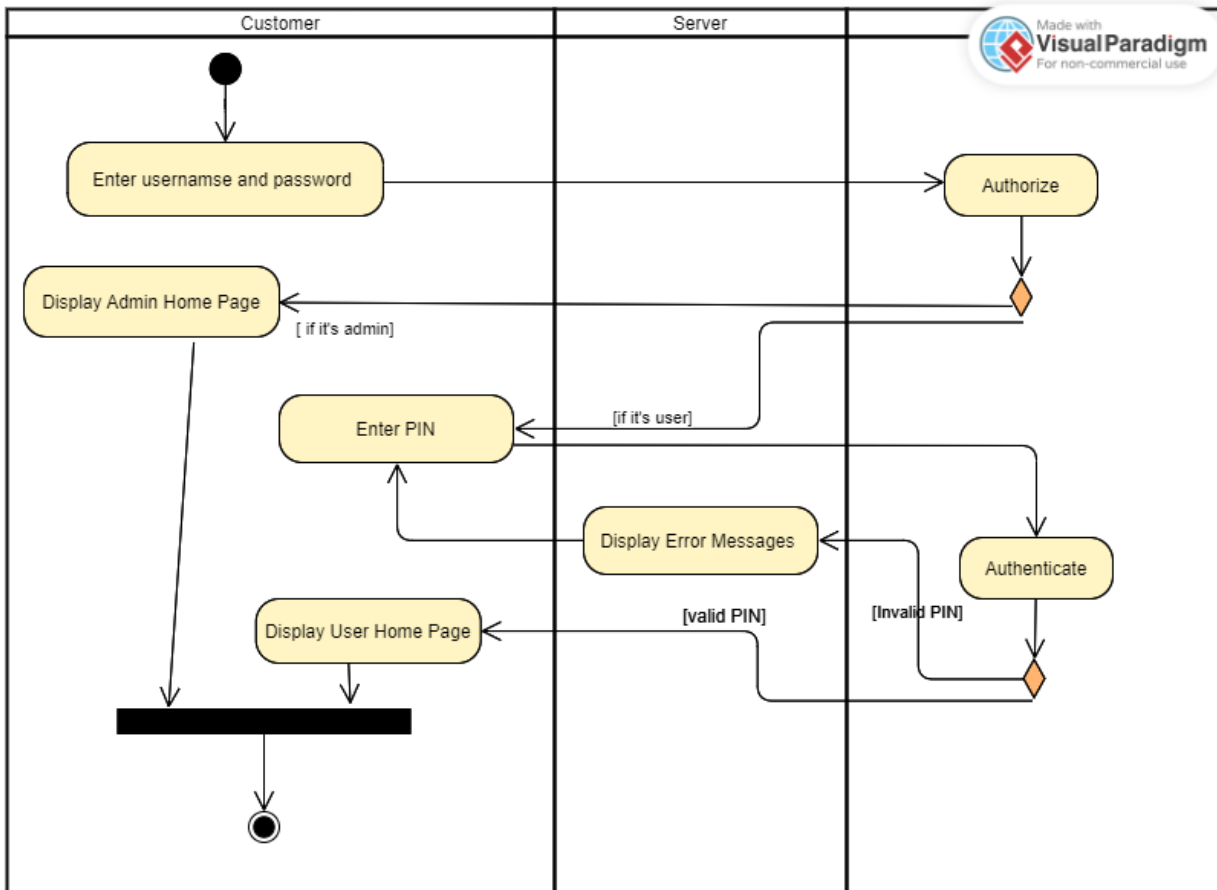
- **Update account**



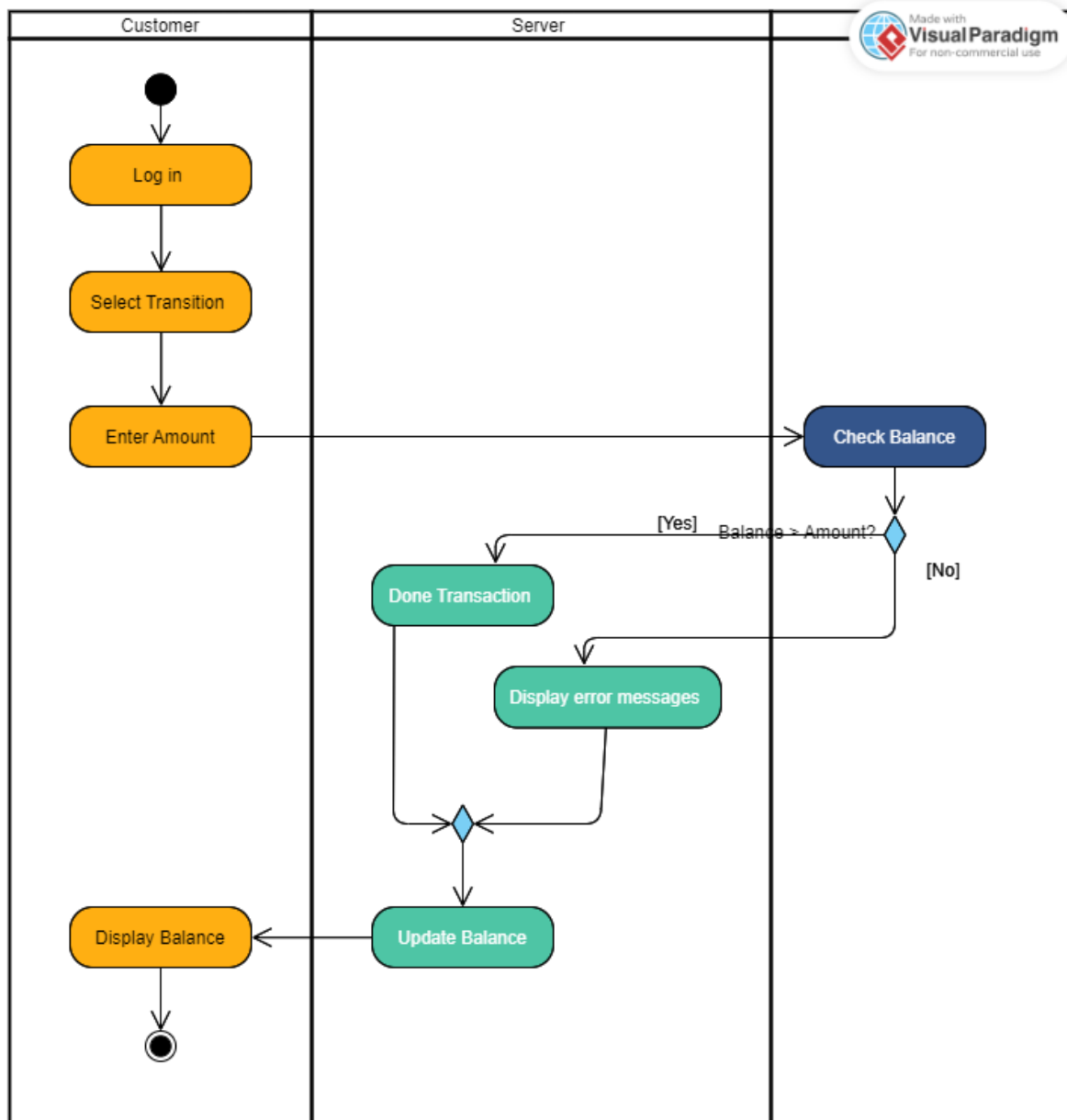


# Activity Diagrams

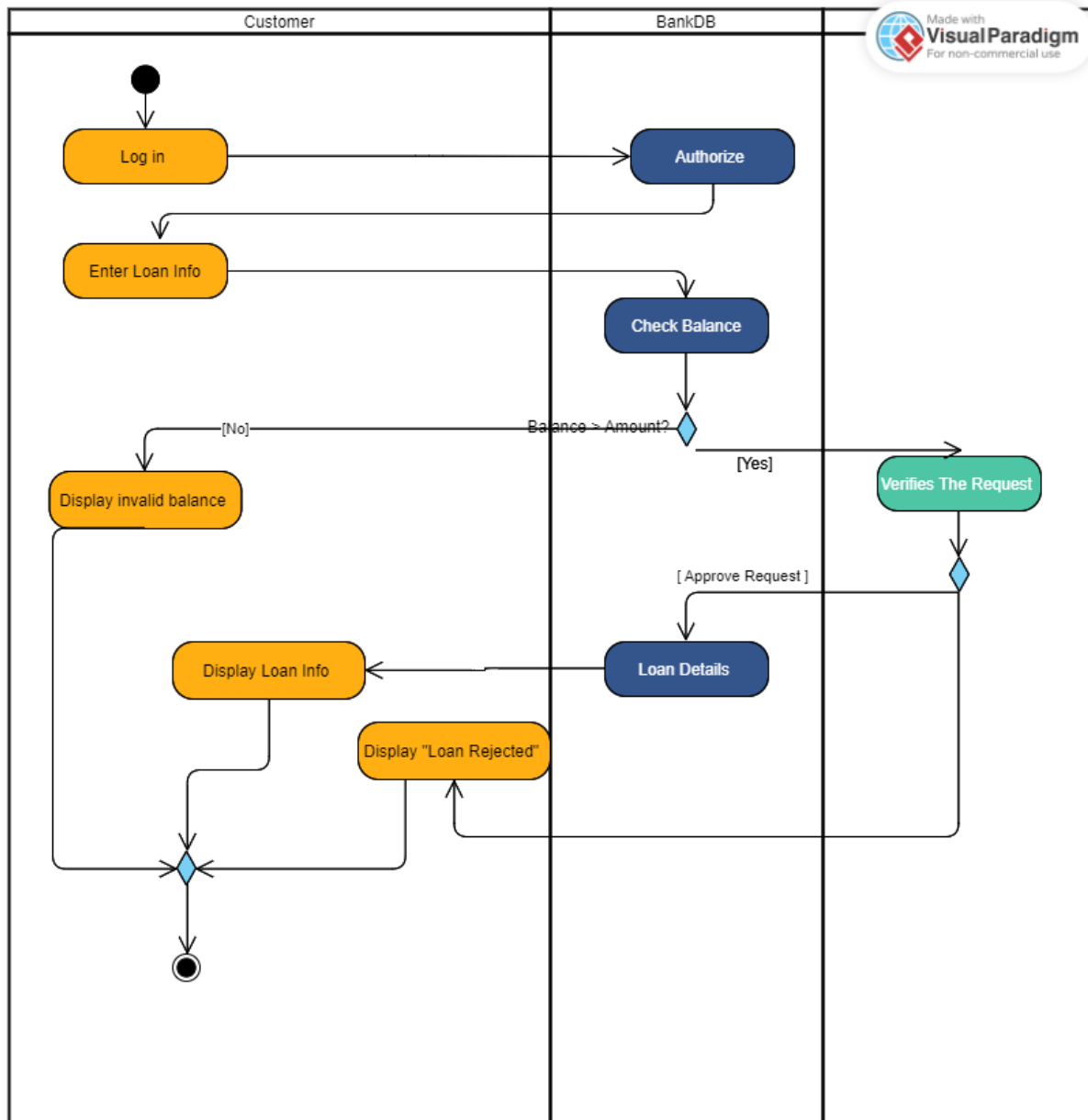
## Log in



## Transactions



## Loan



## Update Account

