1. \*\*Transactions\*\*

- \*\*Description\*\*: Handling of deposits, withdrawals, and transfers.

- \*\*Actors\*\*: Customers, Bank Employees, ATM

- \*\*Components\*\*:

- \*\*Deposit\*\*: A customer can deposit money into their account.

- \*\*Withdrawal\*\*: A customer can withdraw money from their account.

- \*\*Transfer\*\*: A customer can transfer money between accounts.

- \*\*Process\*\*:

1. Customer initiates a transaction (deposit, withdrawal, or transfer).

2. System validates the transaction (e.g., sufficient funds, correct account details).

3. Transaction is processed and recorded in the customer's account.

4. Confirmation is provided to the customer.

\*\*Customer\*\*

customer\_id (int)

customer\_name (string)

date\_of\_birth (Date)

address (string)

phone\_number (string)

email (string)

acc\_numbers (List<int>)

pan No

atm\_card\_number (int)

atm\_pin (int)

transaction\_history (List<int>)

\*\*Account\*\*

-acc\_type (enum)

* Salaried
* Current
* Savings

account\_status (enum)

* Active
* Inactive
* Closed

- branch (string)

- customer\_id (int)

- acc\_number (int)

- bank\_balance (float)

\*\*Bank\*\*

- bank\_id (int)

- branches (List<int>)

\*\*Branch\*\*n

- branch\_name (string)

- ifsc\_code (int)

\*\*Transaction\*\*

- transfer\_id (int)

- acc\_number (int)

- customer\_id (int)

- transfer\_type (enum)

- IMPS

- ATM

- UPI

- Cheque

- Manual\_Counter

- transaction\_fee (float)

- payment\_status (enum)

- Failed

- Success  
 - missed

- transaction\_date\_time (DateTime)

\*\*IMPS Transaction\*\*

- receiver\_acc\_number (int)

- receiver\_name (string)

- receiver\_ifsc\_code (int)

- receiver\_branch\_name (string)

\*\*Cheque Transaction\*\*

- cheque\_number (int)

\*\*ATM Transaction\*\*

- atm\_id (int)

- atm\_location (string)

\*\*Manual Counter Transaction\*\*

- employee\_id (int)

\*\*UPI Transaction\*\*

- sender\_upi\_id (string)

- receiver\_upi\_id (string)

Customer -> Bank System: Apply for Loan

Bank System -> Loan Officer: Review Application

Loan Officer -> Bank System: Approve/Reject Loan

Bank System -> Customer: Notify Approval/Rejection

Bank System -> Customer: Disburse Loan (if approved)

Customer -> Bank System: Repay Loan in Installments

#### 

* **LoanApplication**:
  + applicationId
  + customerId
  + loanType (e.g., Personal, Home, Car)
  + amount
  + status (Pending, Approved, Rejected)
  + applicationDate
  + reviewDate

#personal loan

salary

emp\_type

com\_name

pay\_slip

Guarantee(id)

#car loan

rc

dr license

#Education

| interest\_id | loan\_type | interest\_rate |

|-------------|---------------|---------------|

| 1 | Car Loan | 7.5% |

| 2 | Home Loan | 6.8% |

| 3 | Personal Loan | 11.5% |

| 4 | Education Loan| 8.0% |

| 5 | Business Loan | 9.5% |

* **Loan**:
  + loanId
  + applicationId
  + customerId
  + loanType
  + amount
  + interestRate
  + term
  + installment\_amount  
    current\_term  
    missed\_due
  + balance

**LoanPeriod**

* loan\_period\_id (int)
* loan\_id (int)
* start\_date (DateTime)
* end\_date (DateTime)
* total\_interest (float)
* accrued\_interest (float)
* **LoanOfficer**:
  + empId
  + loanVerification()
  + validateApplication()
  + approveLoan()
  + rejectLoan()
  + calculateInstallment()
  + processRepayment()

\*\*InterestRates\*\*

- interest\_id (int)

- loan\_type (enum)

- Car Loan

- Home Loan

- Personal Loan

- Education Loan

- Business Loan

- Gold Loan

- interest\_rate (float)

Example entries:

| interest\_id | loan\_type | interest\_rate |

|-------------|---------------|---------------|

| 1 | Car Loan | 7.5% |

| 2 | Home Loan | 6.8% |

| 3 | Personal Loan | 11.5% |

| 4 | Education Loan| 8.0% |

| 5 | Business Loan | 9.5% |

| 6 | Gold Loan | 10.0% |

**LoanApplication**

* application\_id (int)
* customer\_id (int)
* loan\_type (enum)
  + Car Loan
  + Home Loan
  + Education Loan
  + Gold Loan
* application\_date (DateTime)
* application\_status (enum)
  + Submitted
  + In Review
  + Approved
  + Rejected
* required\_documents (List<string>)
* created\_at (DateTime)
* updated\_at (DateTime)

**LoanPeriod**

* loan\_period\_id (int)
* loan\_id (int)
* start\_date (DateTime)
* end\_date (DateTime)
* total\_interest (float)
* accrued\_interest (float)

**LoanPaymentHistory**

* payment\_id (int)
* loan\_id (int)
* payment\_date (DateTime)
* amount\_paid (float)
* payment\_status (enum)
  + On Time
  + Missed
  + Late
  + Partial
* late\_fee (float) (if applicable)

FD

* IsClosedBy (emp)
* Nomine

RD

* IsClosedBy (emp)
* Nomine