Cloud Project

ON

BANK MANAGEMENT SYSTEM

Submitted By-

Yash Agrawal 14103263

Aditya Aggarwal 14103301

Utkarsh Shekhar 14103251

Introduction

Bank Management System (BMS) is an online platform for delivering various services to its customers like that of loan, interests, Pay/send money, account registration, manager login.

Requirements Analysis

Users can include any individual with a valid id proof such as pancard number or adhaar card number.

Users can login with their valid userid and password combination.

Manager login will be provided so as to revive the blocked accounts for some reason or to permit the cash/loan transactions of large amounts.

User Table :

customer_id	Integer
Name	text
Password	text
Verification_type	text
Verification_number	Varchar(256)
Status(active/blocked)	Varchar(256)
Security_question	text
Security_answer	text

Admin table

Admin_id	Integer
Name	Varchar(256)
Password	Varchar(256)

Transaction table :

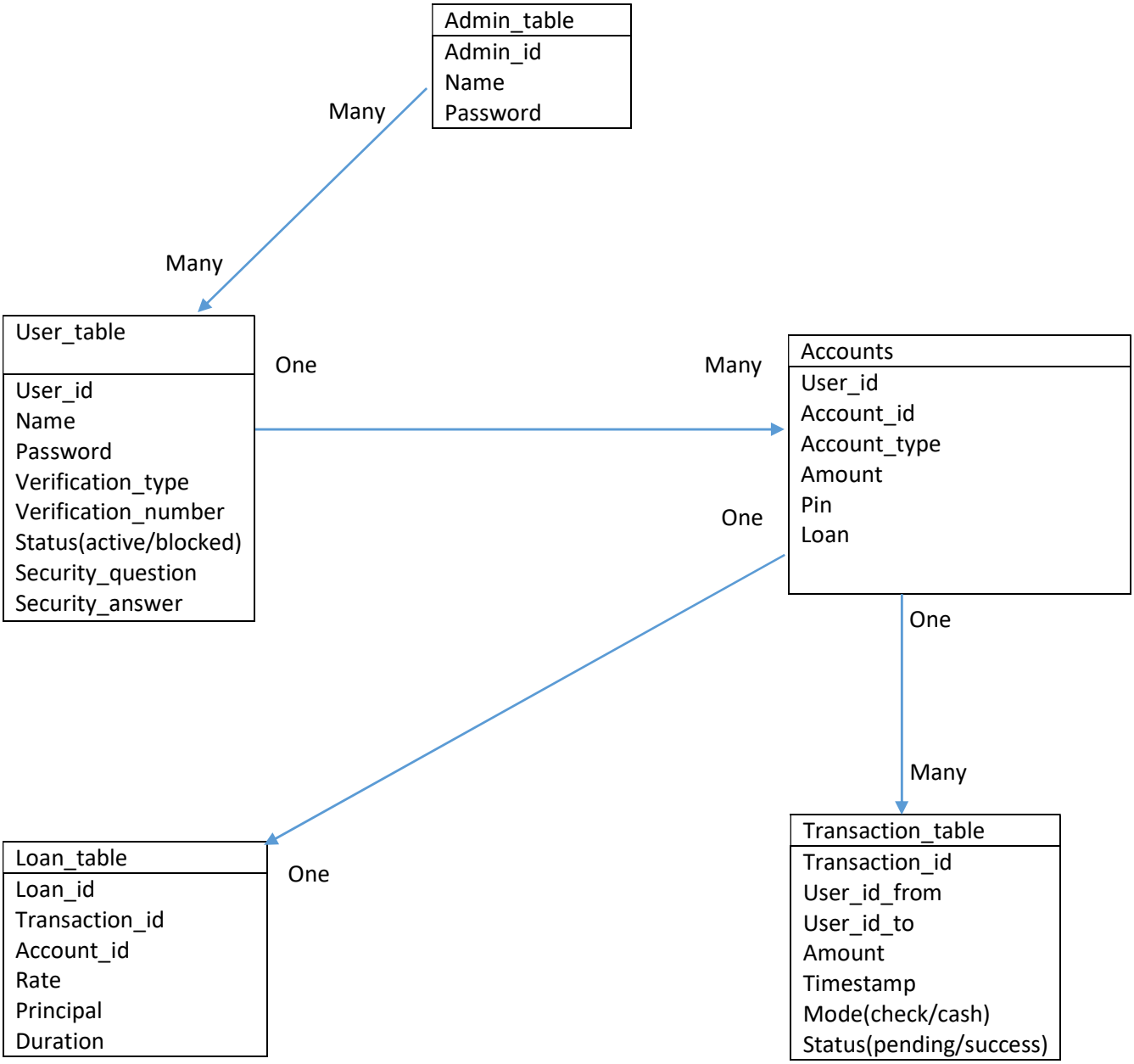
Transaction_id	Integer
User_id_from	Integer
User_id_to	Integer
Amount	double
Timestamp	Datetime
Mode(check/cash)	Varchar(256)
Status(pending/success)	Varchar(256)

accounts table :

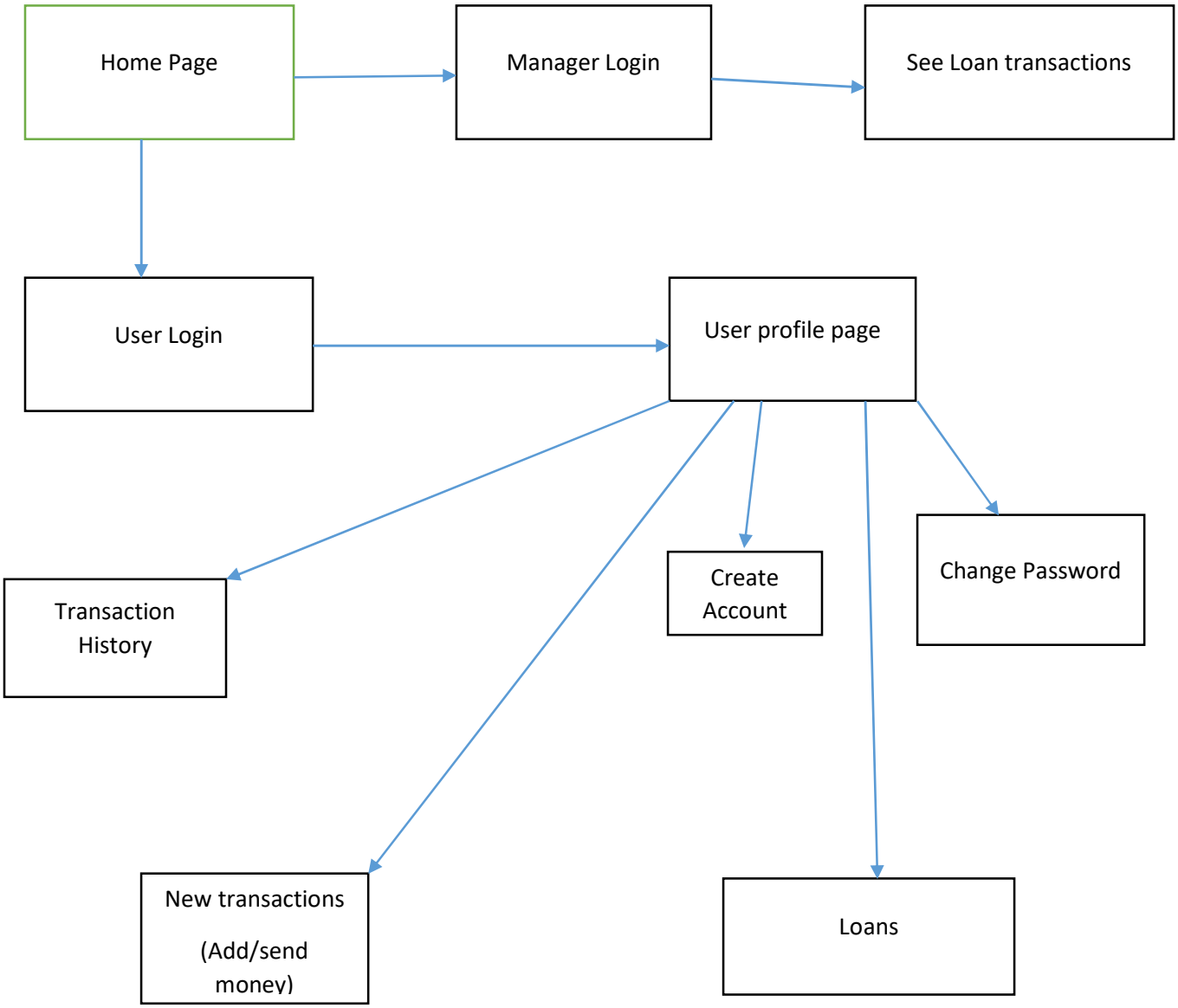
User_id	Integer
Account_id	Integer
Account_type	Text
Amount	double
Pin	Integer
Loan	Integer

Loan table :

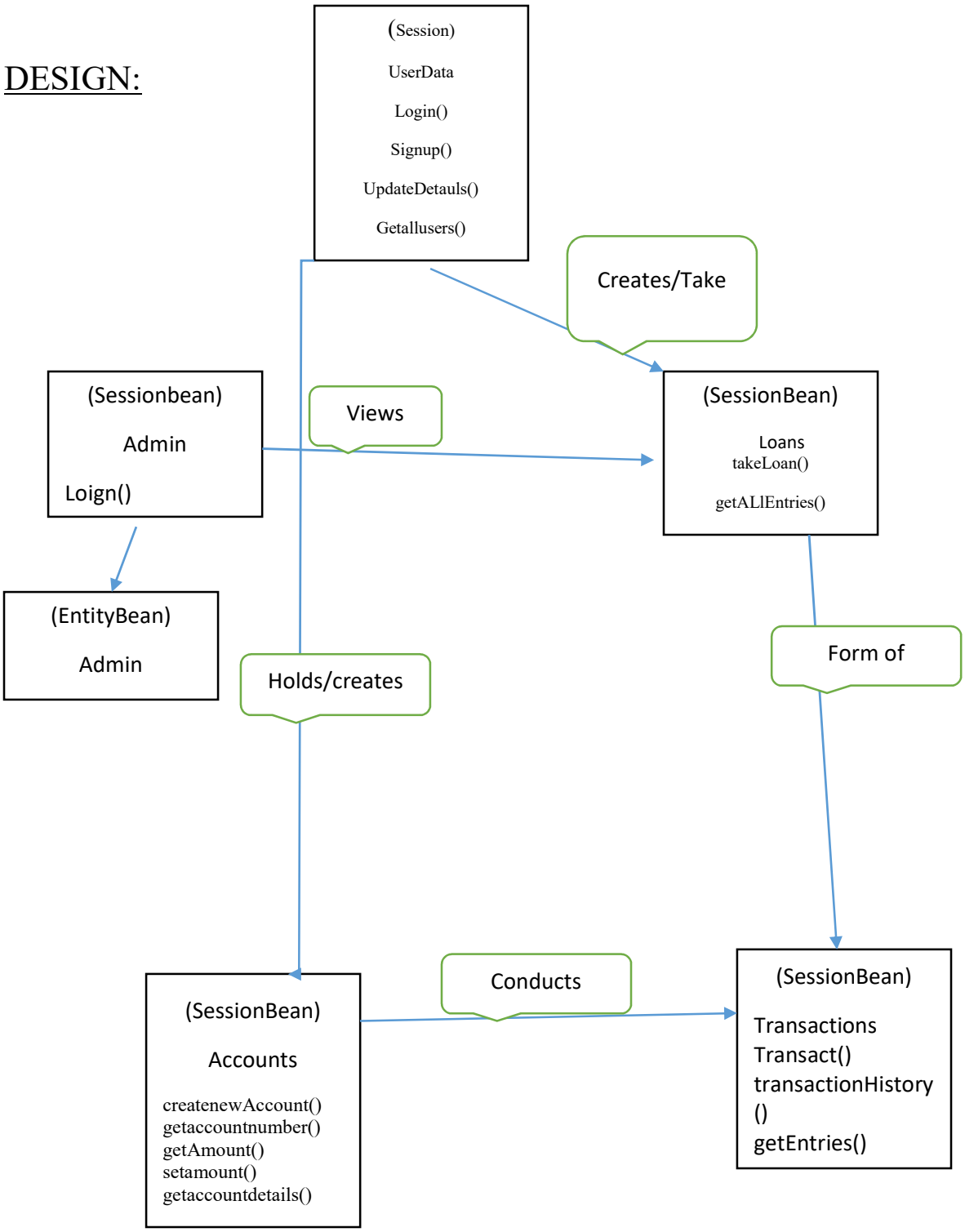
Loan_id	Integer
Transaction_id	integer
Account_id	Integer
Rate	Double
Principal	double
Duration	double


Admin_table
Admin_id
Name
Password
Many
Many
User_table
User_id
Name
Password
Verification_type
Verification_number
Status(active/blocked)
Security_question
Security_answer
One
Many
Accounts
User_id
Account_id
Account_type
Amount
Pin
Loan
One
One
Many
Loan_table
Loan_id
Transaction_id
Account_id
Rate
Principal
Duration
One
Transaction_table
Transaction_id
User_id_from
User_id_to
Amount
Timestamp
Mode(check/cash)
Status(pending/success)

High Level Design



DESIGN:


(Session)
UserData
Login()
Signup()
UpdateDetauls()
Getallusers()
Creates/Take
(Sessionbean)
Admin
Loign()
Views
(SessionBean)
Loans
takeLoan()
getALlEntries()
(EntityBean)
Admin
Holds/creates
Form of
(SessionBean)
Accounts
createnewAccount()
getaccountnumber()
getAmount()
setamount()
getaccountdetails()
Conducts
(SessionBean)
Transactions
Transact()
transactionHistory
()
getEntries()

Presentation tier code using Servlets and JSPs

The application contains the JSP pages, such as the home page, signup page, login page, Profile page, Transaction page. These components contain the presentation logic for user-related functionality such as transactions between different users , application for loans and profile management. In addition, the manager page contains the presentation logic for manager-related functionality such as approval of transactions and loans.

Error Log

1. Reference Error

mysql-connector.jar file/folder could not be found. Appears during the initial stages of the project when you try to run the database connection code without adding the necessary jar file.
Solution : Locate the missing file/Folder and add using "Resolve Problem option"

2. NullPointerException

Can appear at multiple stages in the project. Occurs when you try to invoke a method on a object or referance variable that is empty or null.

Solution: Identify the null values , trace where theses values cam from, trace where these values should be set.

3. javax.validation.ConstraintViolationException

Caused when database is changed but the same changes haven't been reflected in the EJBs and they are outdated. Thus a constraint violation exception arises.

Solution: To know what caused the constraint violation, you can use the a validator and logger. If the beans are outdated, update them by re-importing them.

4. NumberFormatException

Passing an object instead of an int gives this error.
eg: session.getAttribute() returns an object which need to be converted to desired datatype befor being used

Solution: convert object to required state before implementing.

5. Deployment Issues

We didnt deploy on AWS because it was expensive. Alternatively we tried deploying on Heroku but it was not possible. EJB's are implemented using a binary protocol whereas Heroku can interface only with HTTP based protocols.

6. Servlet class not found exception

Web.xml may be incorrectly configured

7. javax.ejb.EJBTransactionRollbackException

Caused due to passing an illegal argument in a function while using EJB functions. This effectively rolls back any changes made to maintain the ACID property.