Cloud Project

ON

BANK MANAGEMENT SYSTEM



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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

|  |
| --- |
| Loan\_table |
| Loan\_id  Transaction\_id  Account\_id  Rate  Principal  Duration |

|  |
| --- |
| Transaction\_table |
| Transaction\_id  User\_id\_from  User\_id\_to  Amount  Timestamp  Mode(check/cash)  Status(pending/success) |

|  |
| --- |
| User\_table |
| User\_id  Name  Password  Verification\_type  Verification\_number  Status(active/blocked)  Security\_question  Security\_answer |

|  |
| --- |
| Accounts |
| User\_id  Account\_id  Account\_type  Amount  Pin  Loan |

Many

One Many

One

One

Many

One

**High Level Design**

Home Page

See Loan transactions

Manager Login

User profile page

User Login

Change Password

Create Account

Transaction History

Loans

New transactions

(Add/send money)

DESIGN:

(Session)

UserData

Login()

Signup()

UpdateDetauls()

Getallusers()

(EntityBean)

Admin

(Sessionbean)

Admin

Loign()

(SessionBean)

Accounts

createnewAccount()

getaccountnumber()

getAmount()

setamount()

getaccountdetails()

(SessionBean)

Transactions

Transact()

transactionHistory()

getEntries()

(SessionBean)

Loans

takeLoan()

getALlEntries()

Form of

Conducts

Holds/creates

Views

Creates/Take

**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](http://stackoverflow.com/questions/22946549/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](http://stackoverflow.com/questions/16052360/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.