FINAL SEMESTER ASSESSMENT (FSA)
B.TECH. (CSE)
VI SEMESTER

UE18CS355 – OBJECT ORIENTED ANALYSIS AND DESIGN WITH SOFTWARE ENGINEERING LABORATORY

PROJECT REPORT

ON

Bank Management System

SUBMITTED BY

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TABLE OF CONTENTS

Abstract

The main aim of Bank Management project is to keep record of customer transactions in the bank. We aim to demonstrate the use of create, read, update and delete MySQL operations through this project. Firstly, employee registration is done in the concern bank branch. Branch employee creates customer account in the bank, then customer can credit amount, debit amount and check balance. Customer can even use different services like insurance, loan, bill payments etc.

This project intends to introduce more user friendliness in the various activities such as record updation, maintenance, and searching. The searching of record has been made quite simple as all the details of the customer can be obtained by simply keying in the identification or account number of that customer.

This project includes the entire upgraded feature required for the computerization banking system. This system is very easy to use, so that any user can use without getting pre-knowledge about this. Its very much user friendly and meet almost all daily working process requirements. This system is completely GUI based and can be use by mouse and as well as keyboard. This system is melded in such a way that has got all features to upgrade without making much change in existing components.

1. SOFTWARE REQUIREMENTS SPECIFICATION

1.1 Introduction:

1.1.1 Purpose

The main purpose that banks have been serving since their inception is keeping our money safe for us. Internet banking offers an array of different advantages to the user, including account balances and history including year-to date information, the ability to transfer money from one account to another and to payees for bill payments, check history, reorders, and stop payments, check credit card balances and statements, complete online loan applications, secure interactive messaging with staff and much more. Internet banking basically allows you to be able to do everything that you can do it all right from the convenience of your own home.

The aim of this project is to develop a secured online banking system with the following objectives:

- Create a banking system that is easily accessible by customers from the comfort of their homes, offices etc.
- Reduce the flow of human traffic and long queues at banks.
- Reduce the time wasted in going to banks to stay on queues.
- Promote efficient and effective banking for the banks by focusing on those services that still require physical presence at the banking hall.

1.1.2 Intended Audience and Reading Suggestions

The different types of readers are:

(a). Customers.
   1. Product Scope.
   2. Security Available.

(b). Employers.

(c). Developers.
   1. Project Scope.
   2. Use Case Module.

(d). Project Manager.
   1. System Features.
   2. Hardware Requirement.
   3. Software Requirement.
   4. Interface Requirement.

(e). Marketing Staff
   1. Product Scope
   2. Product Feature
   3. Intended Audience
   4. Product Perspectives

1.1.3 Product Scope

The Scope of this project is limited to the activities of the operation units of the banking system which include opening of account, deposit of funds, withdrawal of funds & transfer.

- Any bank can use this application to provide better service to their customers.
- Customers can access his/her all accounts present in various branches of the same bank at one click.
- Manager can access all accounts present in the bank through this

application.

- Reduction in work load of all employees will possible through this application as transaction rights are provided online to customer.

1.2 Overall Description

1.2.1 Product Perspective

The client will have client interface in which he can interact with the banking system. It is a web based interface which will be the web page of the banking application. The staring page is the login page where the user can enter the login details. If the login particulars are valid then the user is taken to a home page where he has the entire transaction list that he can perform with the bank. All the above activities come under the client interface. The administrator will have an administrative interface which is a GUI so that he can view the entire system. He will also have a login page where he can enter the login particulars so that he can perform all his actions. This administrative interface provides different environment such that he can maintain database etc. He can register the users by providing them with username, password & by creating account in the database. He can view the cheque book request & perform action to issue the cheque books to the clients.

1.2.2 Product Functions

The Internet banking system consists of following modules:

1) **Login Process**
   This module allows valid customers to access the functionalities provided by the bank.
2) **Balance Enquiry**
   This module maintains the balance details of a particular account.
3) **Update Profile**
   This module allows the customer to update profile of their account.
4) **Funds Transfer**
   This module allows the customers to transfer funds from one account to another within the same bank.
5) **Change of Password**
   This module allows customers to change their password.

6) **Mini Statements**

This module allows customers to view their transaction details.

1.3 External Interface Requirements

1.3.1 User Interfaces

There are four different ways for a user to interact with the system:

Viewers:

Many unknown persons or un-authorised persons visit the Bank official site via internet. They collect the information and search what are the schemes that are available in the bank web page. Those viewers or visitors may become the customers of the bank.

New User:

The one's who wish to create a new account in the bank. They will have to fill in initial details and full fill a few formalities before being able to access the online banking facilities.

Existing User:

The Existing user is the most common user of the Online Banking system. Each user has their own account and login access. The existing user can login in online to their account, perform the operation of deposit, withdrawn, transfer, balance queries and transactions etc. It's helpful for user because it helps save time and it's an efficient process.

Manager:

Admin is master user of the system. Admin grants permission to view and maintains the database of the existing users.

1.3.2 Hardware Interfaces

Client Side:

User on Internet	**:**	Web Browser, Operating System (any)
Application Server	**:**	Netbeans, Java JDK
Data Base Server	**:**	Xampp
Network	:	Internet
Development Tools	:	HTML, OS(Windows).

Server Side:

Processor	:	Pentium IV or higher.
RAM	:	1 GB or more.
Disk Space	:	More than 160 GB.

1.3.3 Software Interfaces

User on Internet : Web Browser, Operating System (any)
Application Server : Netbeans
Data Base Server : Xampp
Network : Internet
Development Tools : HTML, OS(Windows)

Appendix C: Requirement Traceability Matrix

Sl. No	Requirement ID	Brief Description of Requirement	Architecture Reference	Design Reference	Code File Reference	Test Case ID	System Test Case ID
1	Req1	Registration of bank branch				UT_01	
2	Req2	Employee registration				UT_02	
3	Req3	Account holder registration				UT_03, UT-04	

2. PROJECT PLAN

The life cycle to be followed for the execution of our project which is an online bank management system is the Waterfall model. This model is mainly used when the requirements are very well known, clear and fixed. It's easy to manage due to the rigidity of the model and each phase has specific deliverables and a review process. In waterfall, development of one phase starts only when the previous phase is complete. The customer is not prone to demanding changes.

Agile is the appropriate choice when action and getting things built is more important than documentation and process. Considerably the most significant advantage of agile methodology is how adaptable it is to changing development environments, requirements and even developing teams, It can embracing uncertainty easily.

Requirement Analysis:

- Requirement Gathering: Reuse

The client (Banks) requirements are taken into consideration and additional features are added to this project.

- Requirement Analysis: Reuse

The gathered requirement are analyzed for feasibility study and their benefits and cost.

- Security Planning: Reuse

The security with respect to the users and data are maintained.

Design:

- High level design : Build

A basic understanding of the features provided by the application are documented.

- Proof of concept : Reuse

Many Bank Management systems are implemented , these serves as a proof of concept and hence our idea/project is feasible.

- Detailed Design : Build

A detailed explanation of the project features are documented including its action diagram
and use case diagram.

Development:

- User Interface : Reuse

User interface is mostly similar to the existing bank management systems and can be modified as per the client requests.

- Backend : Build

The database is built from start or cloud storage can also be used based on the scope of the
Application.

- Integration Plan : Build

Using necessary frameworks the User interface and the databases can be combined.

Testing:

- Testing : Reuse

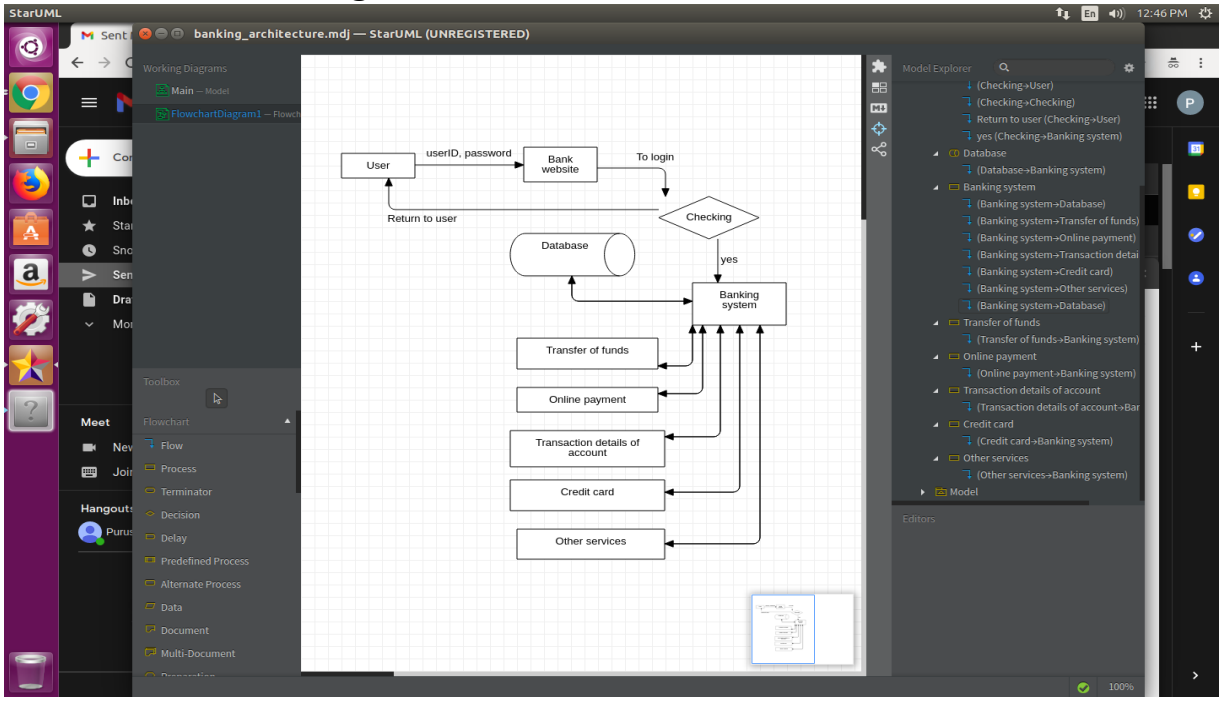
Multiple software testing tools which are available in the market are used to test the quality
of the project being built.

- User acceptance : Build

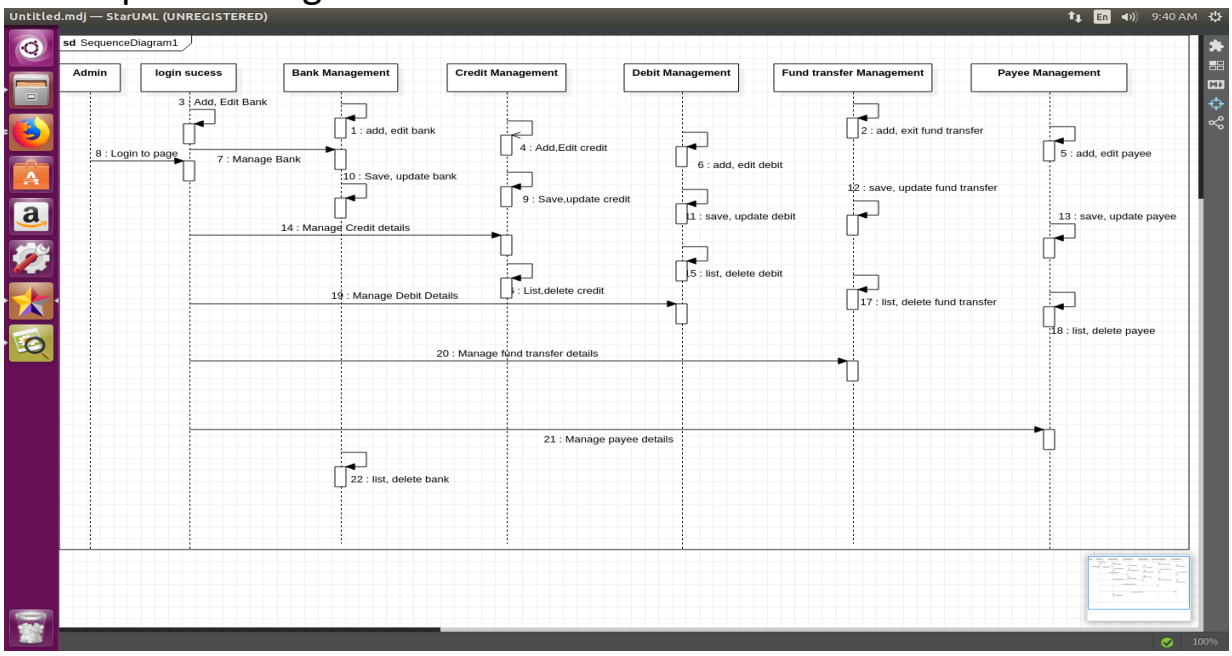
User acceptance testing would be done with a set of users in the proximity of the team, and
any changes to be made would be taken from their responses.

3. DESIGN DIAGRAMS

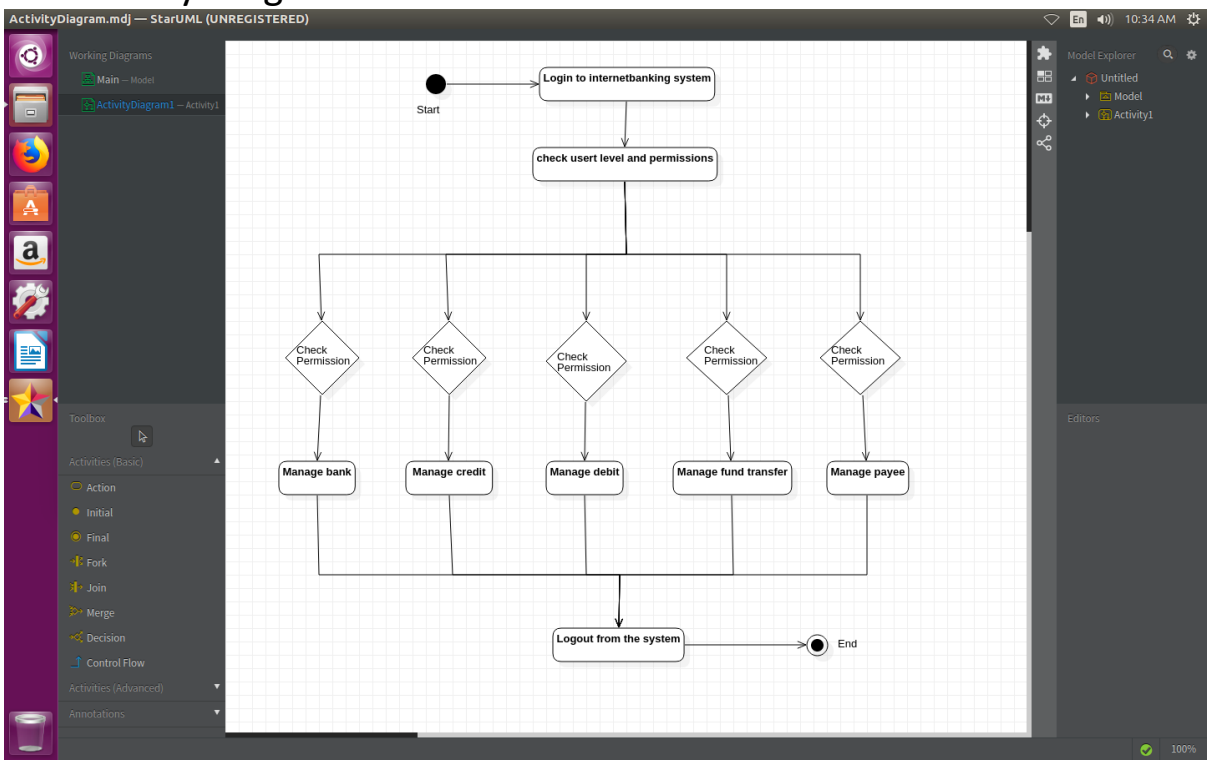
3.1 Architecture Diagram:



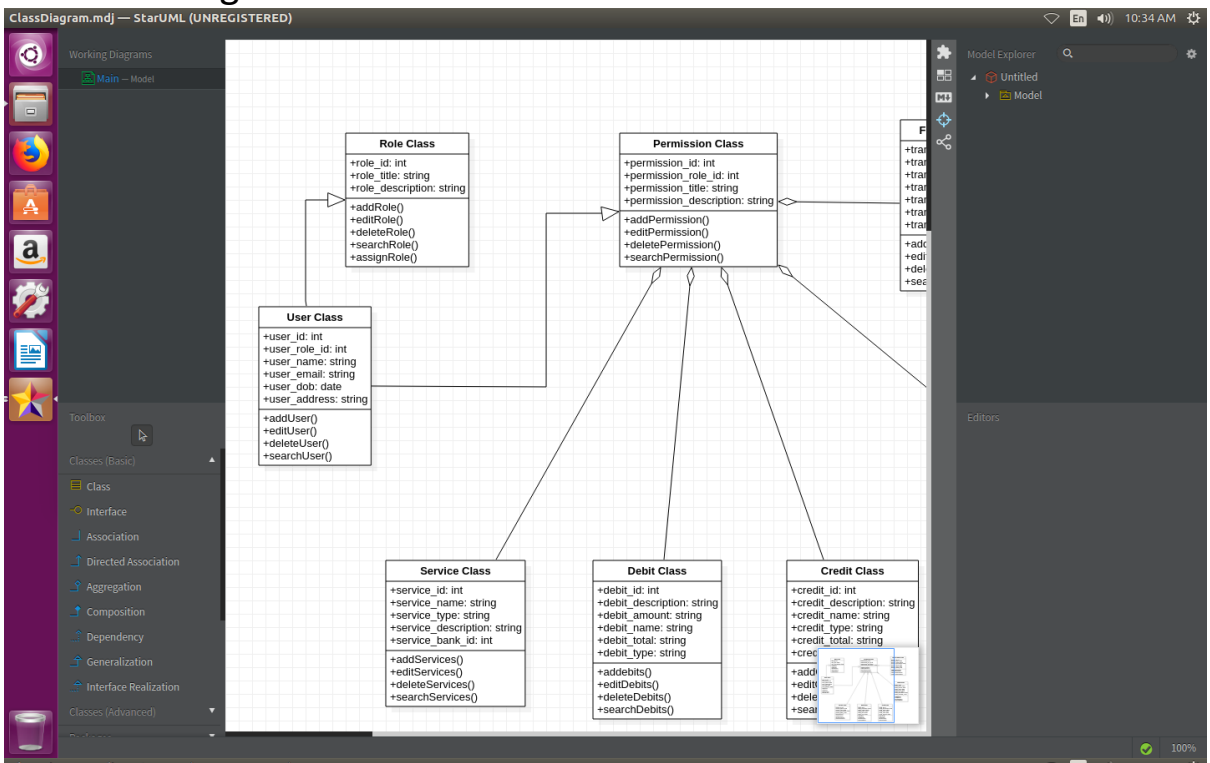
3.2 Sequence Diagram:

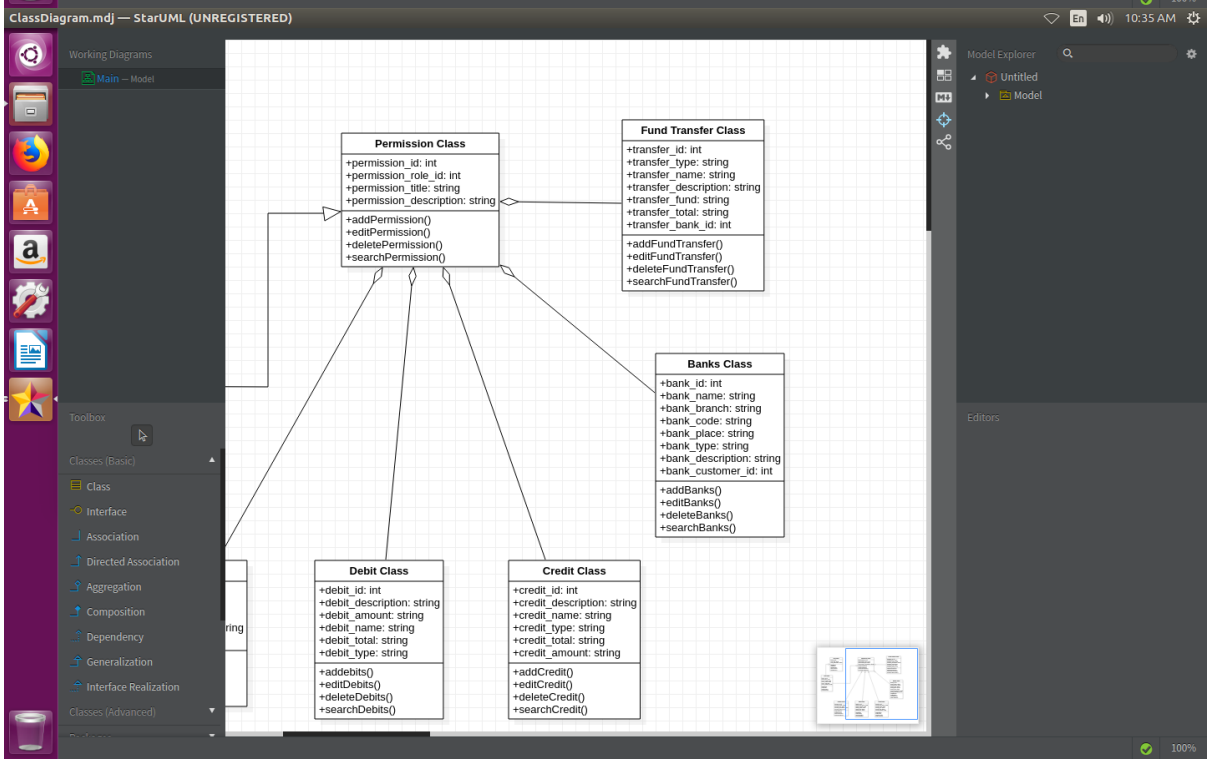


3.3 Activity Diagram

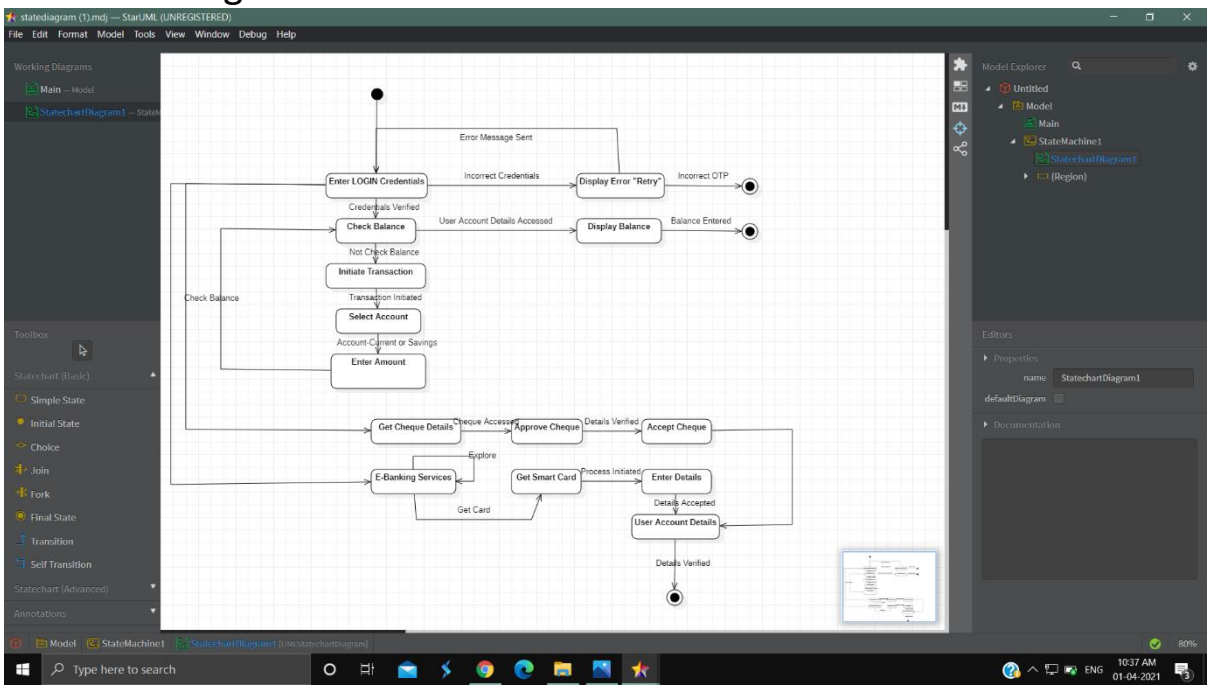


3.4 Class Diagram

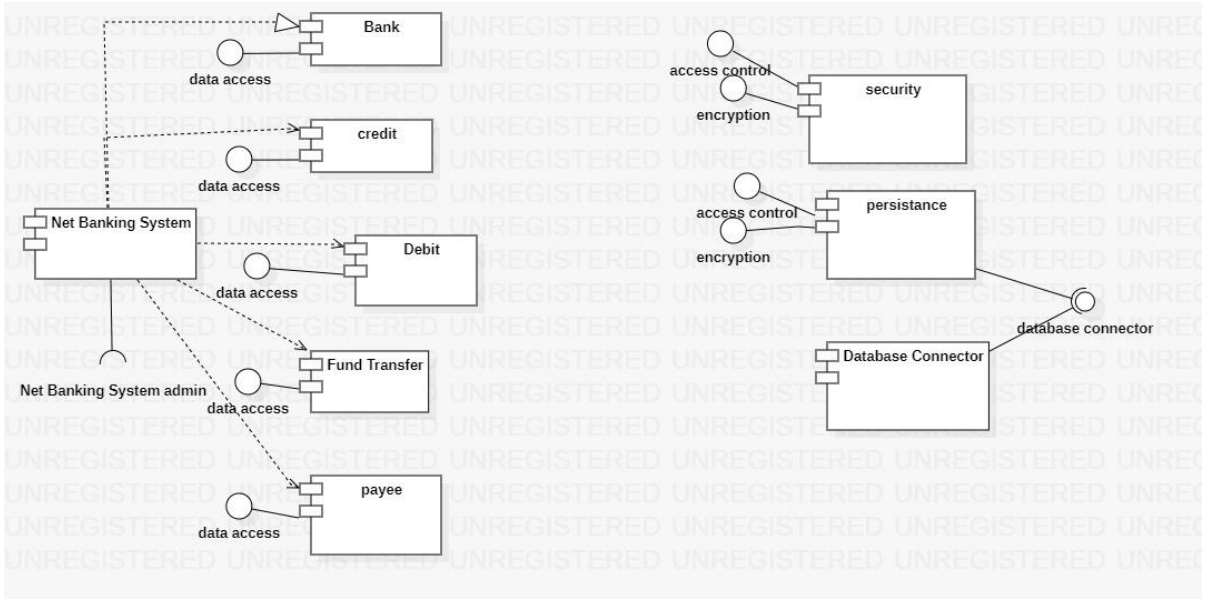




3.5 State Diagram



3.6 Component Diagram



4. MODULE DESCRIPTION

1. Account Holder: As the name suggests, a record of customer details. In this module account of the customer will be created by entering all the required inputs. Account number will get generated automatically.
2. Transaction: Transactions to be made by the customer (credit amount,

debit etc.). The transaction record will be saved with respect to account number.

3. Services: Additional services that customer may want like (insurance, loan etc.). Here amount gets debited for particular service from the subscribed account.
4. Branch/Employee: Branch/Employee details of the concern bank. In this module branch of the bank can be created by entering all the required inputs. Later employee can be registered for the particular branch.

5. TEST CASES

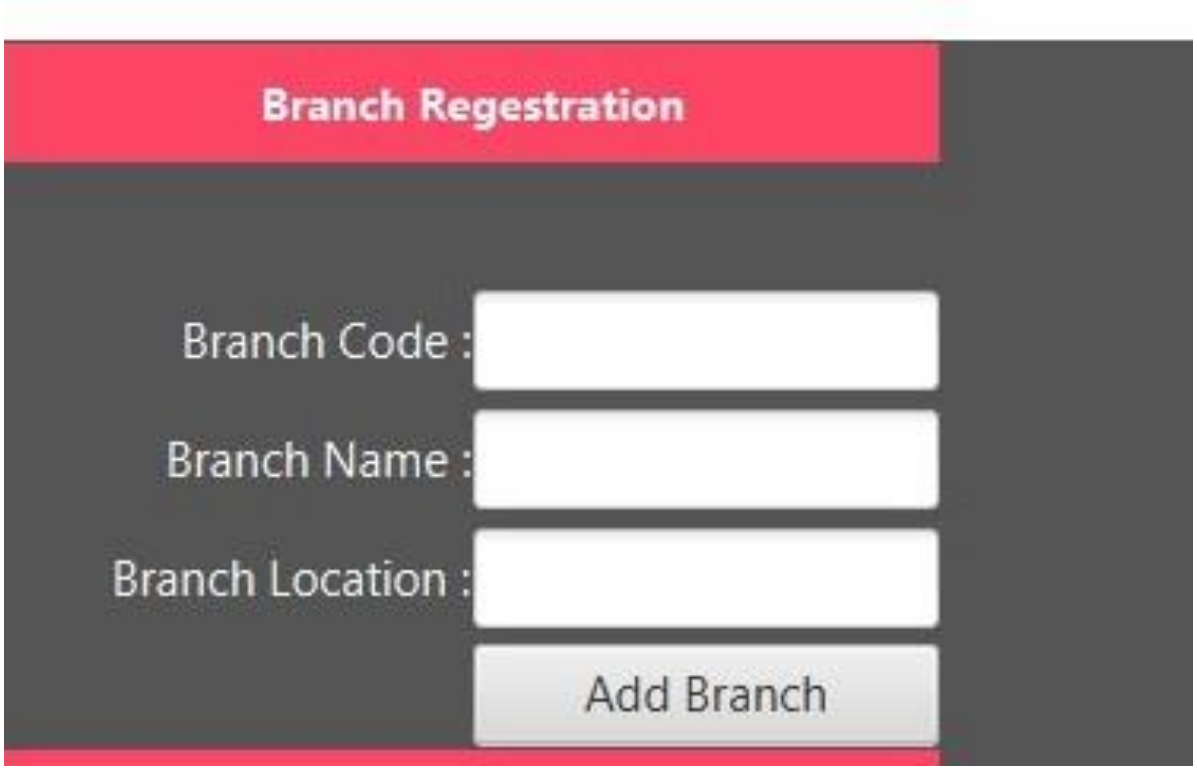
Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result
UT-01	Branch Registration	To test the branch registration functionality	Access to Browser	1: Enter Branch Code 2: Enter Branch name 3: Enter branch location 4: Click add branch	Branch Code: SBIEC Branch Name: Electronic City Branch Location: Bangalore	Branch registration should be successful	Branch registration should be successful	Pass
UT-02	Employee registration	To test the employee registration functionality	1: Access to browser 2. Branch should be existing	1: Enter employee name 2: Select branch from the branch list 3: Click add employee	Name: Kevin Branch: SBIEC (Branch should be existing)	Employee registration should be successful with employee added in the employee table	Employee registration should be successful with employee added in the employee table	pass
UT-03	Account holder registration	To test the account holder registration functionality	1: Access to browser 2. Branch should be existing	1: Enter Account holder name 2: Select Account Type 3: Select Gender 4: Enter Adhar id 5: Set Date of Birth 6: Select Branch Code 7: Enter Address 8: Click	Name: Suresh Account Type: Savings Gender: Male Adhaar ID: 123456789012 Date of Birth: 27/04/2000 Branch Code: SBIEC (Branch should be existing) Address: #108, Konappana	Account holder registration should be successful with Account holder added in the account table	Account holder registration should be successful with Account holder added in the account table d	pass

				create account	Agrahara , Electronic City Bangalore			
UT-04	Account holder registration	To test the account holder registration functionality	1: Access to browser 2. Branch should be existing	1: Enter Account holder name 2: Select Account Type 3: Select Gender 4: Enter Adhaar ID of greater than 12 digits 5: Set Date of Birth 6: Select Branch Code 7: Enter Address 8: Click create account	Name: Suresh Account Type: Savings Gender: Male Adhaar ID: 123456789012 34 Date of Birth: 27/04/2000 Branch Code: SBIEC (Branch should be existing) Address: #108 , Konappana Agrahara , Electronic City Bangalore	Account holder registration should be unsuccessful	Account holder registration should be unsuccessful	pass
UT-05	Transaction	To test the transaction functionality	1: Access to the browser 2: Balance amount should be greater than the debit amount 3: user should be an account holder	1: Select the Date 2: Enter account number 3: Select type of transaction 4. Enter the amount 5. Click on add transaction	Date: 15-04-2021 Account No: 12345678910 Transaction type: Debit Amount: 500	Transaction should be successful with the transaction added in the transaction table provided the balance amount is greater than debit amount.	Transaction should be successful with the transaction added in the transaction table provided the balance amount is greater than debit amount.	pass
UT-06	Services	To transfer the amount to a user	1: Access to the browser 2: Balance amount should be greater than the debit amount 3: user should be an account holder	1: Enter Date 2: Enter Account number 3: Enter Service name 4: Enter Service amount 5: Enter description 6: Click on Add Services	Date: 14-03-2021 Account No: 12345678998 Service name: online banking Service amount: 20,000 Description: Amount sent	Amount should be transferred with transactions details added to the tab	Amount transferred and transaction details added	pass
UT-07	Search Account holder	To search the account holder by account number	1: Access to the browser	1: Enter Account number	Account number: 12345678998	If the account is existing the account details should be	Account details should be displayed	pass

						displayed		
UT-08	Search Account holder	To search the account holder by account number	1: Access to the browser	1: Enter Account number	Account number: 55555555555	If the account is existing the account details should be displayed	Account details should not be displayed	pass
UT-09	Search Employee	To search the Employee and his branch details	1: Access to the browser	1: Enter employee name	Employee Name: Kevin	If the employee is already registered with the branch, then the details of the employee must be displayed.	The details of the employee is displayed.	pass
UT-10	Search Employee	To search the Employee and his branch details	1: Access to the browser	1: Enter employee name	Employee Name: Jack	If the employee is already registered with the branch, then the details of the employee must be displayed	The details of the employee is not displayed	pass

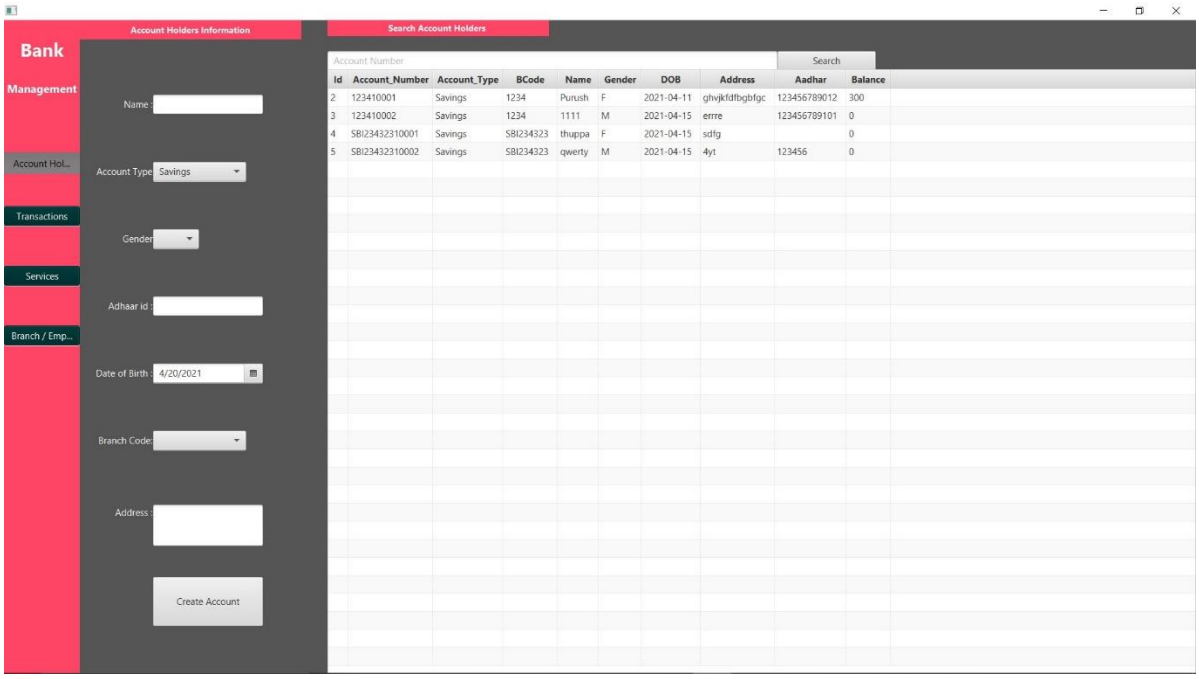
6. SCREENSHOTS OF OUTPUT

Branch Registration

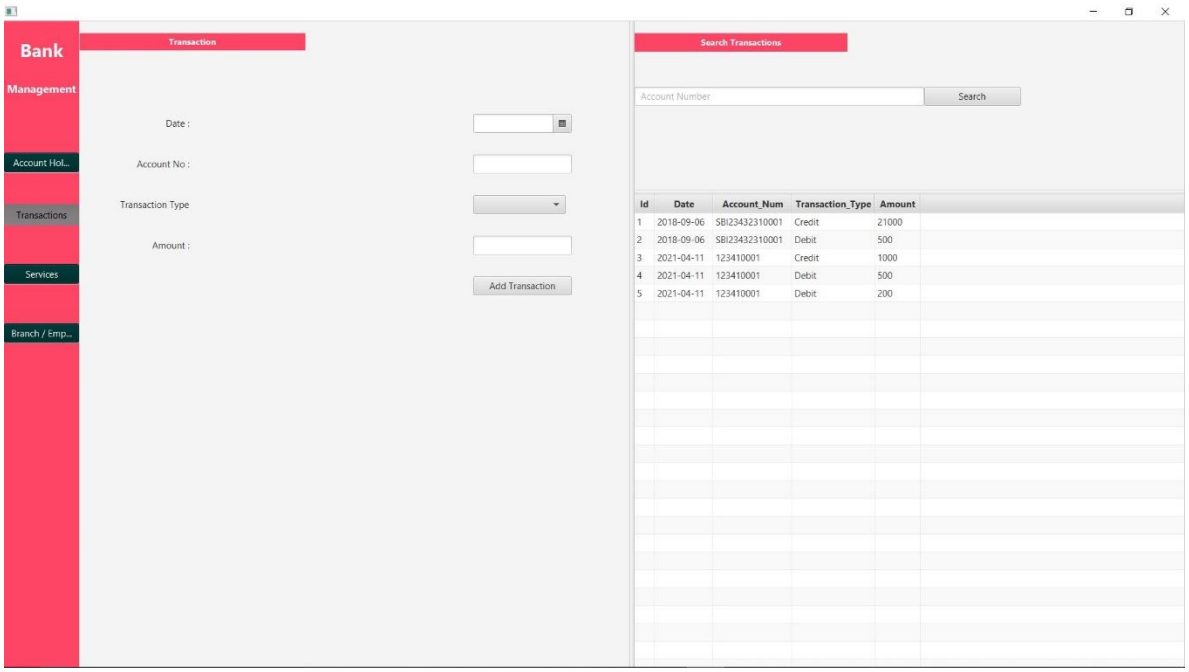


Employee Registration

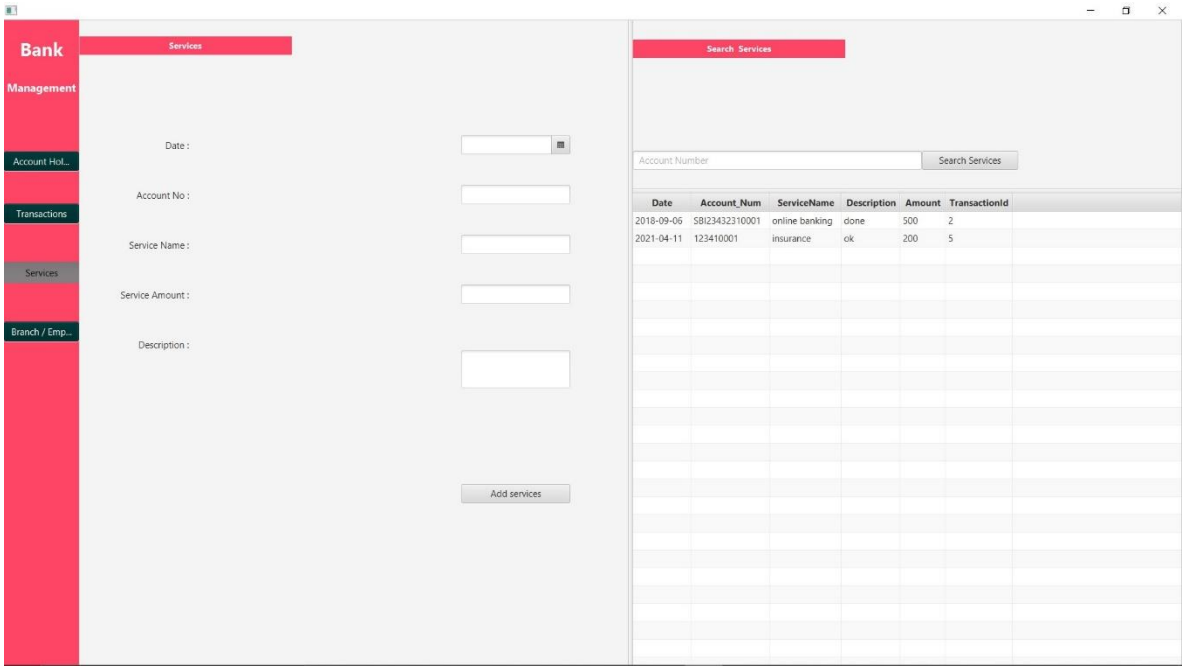
Account Holder Registration



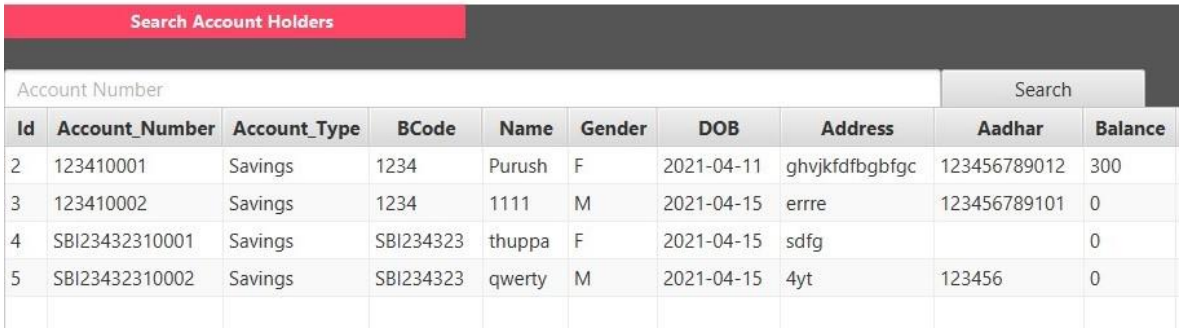
Transactions



Services

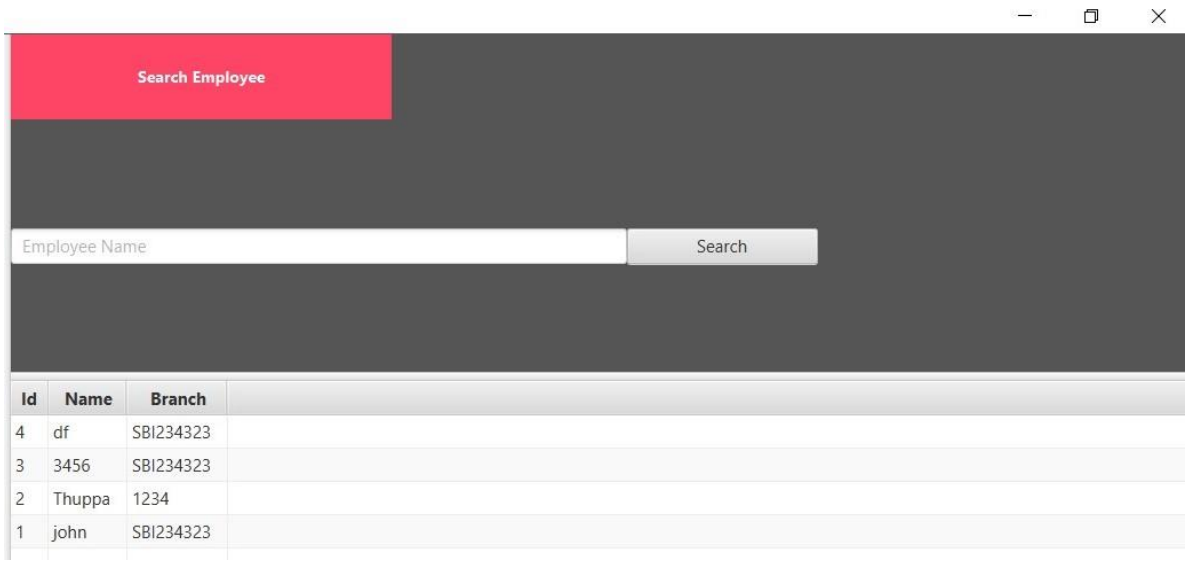


Search Account Holder



Id	Account_Number	Account_Type	BCode	Name	Gender	DOB	Address	Aadhar	Balance
2	123410001	Savings	1234	Purush	F	2021-04-11	ghvjkfdfbgbfgc	123456789012	300
3	123410002	Savings	1234	1111	M	2021-04-15	errre	123456789101	0
4	SBI23432310001	Savings	SBI234323	thuppa	F	2021-04-15	sdfg		0
5	SBI23432310002	Savings	SBI234323	qwerty	M	2021-04-15	4yt	123456	0

Search Employee



Id	Name	Branch
4	df	SBI234323
3	3456	SBI234323
2	Thuppa	1234
1	john	SBI234323