

Project Report

Apex Hospital System And Account Management System

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Apex Hospital

Abstract

This Management System is a system java-programming based project that serves the activities of all the individuals in the hospital including patients. The system helps the management to get the information and symptoms of the patient and direct them to the respective doctor. The respective doctor will prescribe medicines to the patient by nurses, finally the patients can get their medicines and bills for the individuals from the helping staff. Also this system can appoint new Doctors, Nurses and other helping staff.

Introduction:

The main objective of the Apex Hospital management is to help the Manager of the hospital by automating the system, so that he/she can check all the requirements if required. This system contains and manages the information/ Bio-Data of all the Patients, Doctors, Nurses and other helping staff. The purpose of the project is to construct an application program for managing and storing the information, Bio-Data, details, Billings, records and all the process happening in the Hospital, Which will be useful to reduce the manual work.

Objective:

The main aim of this hospital system is to develop a project using java that can be implemented in the hospital where the management can easily work and get the details and data of all individuals in the Apex hospital for their respective needs easily instead of storing data manually we can store in computer so that easily search the data whenever required.

Outcomes:

Admin/Hospital Manager can be able to add the details of doctors, nurses and helping staff of the hospital, and can access all patients data whenever required. And doctors can view the list of patients and their respective data whenever required, and can also fetch the data of nurses and helping staff if a doctor needs any help. Helping staff help doctors and managers by inserting patients data and inserting medicines and hospital bills of their respective patients and assigning particular patients to respective diseases.

Technologies Used:

Java

Java IDE - Eclipse for writing code

JRE Library

Project Purpose

The purpose of this java-programming system can be implemented in the hospital where the manager of the management can easily work and get the details and data of all individuals in the Apex hospital and also in other hospitals for their respective needs.

Intended audience and reading suggestions

This document is mainly intended for the people who are involved in the development, testing, operation, maintenance and quality assurance of the system. This also helps users and clients in understanding the requirements of the system. Audiences need not follow any particular order while reading the document and they are free to move to any section which they find relevant to them.

Project Scope

This java-programming based Apex Hospital Management system is a creative and also created in a innovative way, where the management of hospital can easily maintain the records of all individual departments and members, where this will be a hard and huge process while doing this process in manual, also it is a tedious job. This system can make the management stress free from the above process. This system makes the management handle/ review records easily and perfectly. Also, on the patient's side they can easily know the path that they should go and get crossed from the treatments.

Product Perspective

The Apex hospital Management system would be a java application, through which Manager/Admin can easily add the data of doctors, Nurses, Helping staff and also doctors can add Patients data easily online instead of writing in books. It can be accessed through any operating system like Windows, MAC, Linux etc., All data for the Apex Hospital will be configured using Java. These data includes Doctors details, patients details, nurses details and other helping staff.

Hardware Interfaces

Operating system: Windows/ Linux/ Mac/ any other

Processor: i3 or above

Hard Disk Space: 124MB (min) for JRE

RAM Memory: 128MB (Min)

JRE System Library need to import in Eclipse IDE

Product Features and Characteristics

The Apex hospital system provides the functionalities for the Manager/Admin to Add Details

Such as:

- a. Manager can Add Doctors Records, Nurses data, Helping Staff
- b. Doctors and nurses can add the data of patients
- c. Doctors can view the records of their own and also Patients, Nurses, Helping Staff data
- d. Patients can see their own records

FUNCTIONAL REQUIREMENTS:

This is how the application will appear and function until it has been successfully completed. The functional criteria must be met by the system are as follows:

1. Admin/ Manager:

- Admin can be having user interface choice like
- Add Details of doctors
- Add Data of nurses
- Add data of Helping staff

2. Patients:

- Patients can able to see their own records
- Patients can not see others data

3. Doctors:

- Doctors can see only their own records
- Doctors can see patients data
- Doctors can see Nurses data
- Doctors can see other helping staff data
- Doctors can add Patients Data

4. Nurses:

- Nurse adds patients records
- And can monitor the health condition of the patients and can give updates to the doctor.

5. Helping staff:

- Helping staff will help the hospital to get hospital bill of a patient
- Helping staff will help the hospital to get medicine bill of a patient
- Helping staff will help the hospital wherever needed

NON-FUNCTIONAL REQUIREMENTS:

Some of the non-functional requirements include:

- Scalability
- Capacity
- Availability

- Reliability
- Recoverability
- Maintainability
- Serviceability
- Security
- Regulatory
- Manageability
- Environmental
- Data Integrity

PERFORMANCE REQUIREMENTS:

- Performance should be fast.
- Performance will depend up on hardware components
- The load time will be very fast

SAFETY REQUIREMENTS

- Data in the database of the system should not be lost or damaged.
- The source code developed for this system shall be maintained in the configuration Management tool.
- If there is extensive damage to a wide portion of the data due to some failure, such as a disk crash, the recovery method restores a past copy of the data that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed processes from the backed-up log, up to the time of failure.

SECURITY REQUIREMENTS

- Secure access of confidential data.
- The whole system is secured. Only the admin can add the data of doctors, nurses, helping staff so that it can't include fake details.

SOFTWARE QUALITY ATTRIBUTES

Availability:

The apex hospital management will be available to users at any time except when the space is not sufficient or when having some errors.

Robustness:

If the connection between admin and the application is broken or disconnected prior admin can't add the details of doctors, nurses, and helping staff.

Platform Independence:

The system must have to run on different platforms and support different types of operating systems.

Extensibility: The system must be easy to extend to provide new capabilities.

4. External Interface Requirements

User Interface

The system has to allow the Admin/manager to interact with different modules such as adding doctors, nurses and helping staff. Maintaining the records of patients, assigning the doctor to the patients. And viewing the patients, doctors, nurses data.

Hardware Interfaces

A laptop having any operating system. To deploy, the project administrator should have a system with a minimum of 128MB ram and 124Mb disk space for JRE and windows server.

Software Interfaces

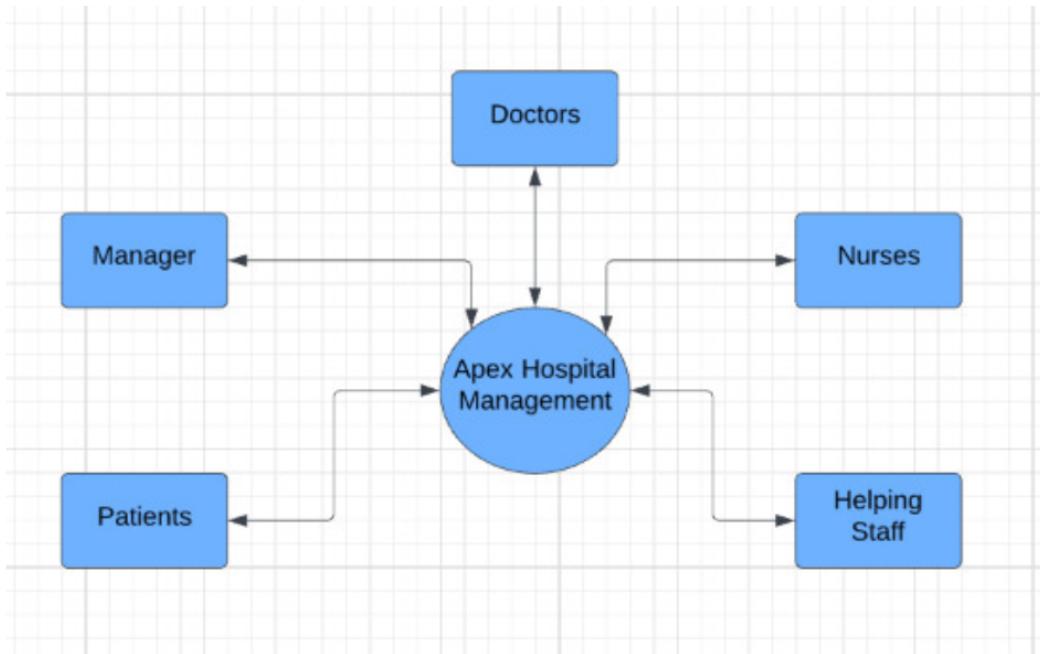
The system shall interface with a java(eclipse) for adding, viewing and getting the data. Data is stored related to doctors, patients, nurses and staff.

Communicational Interfaces

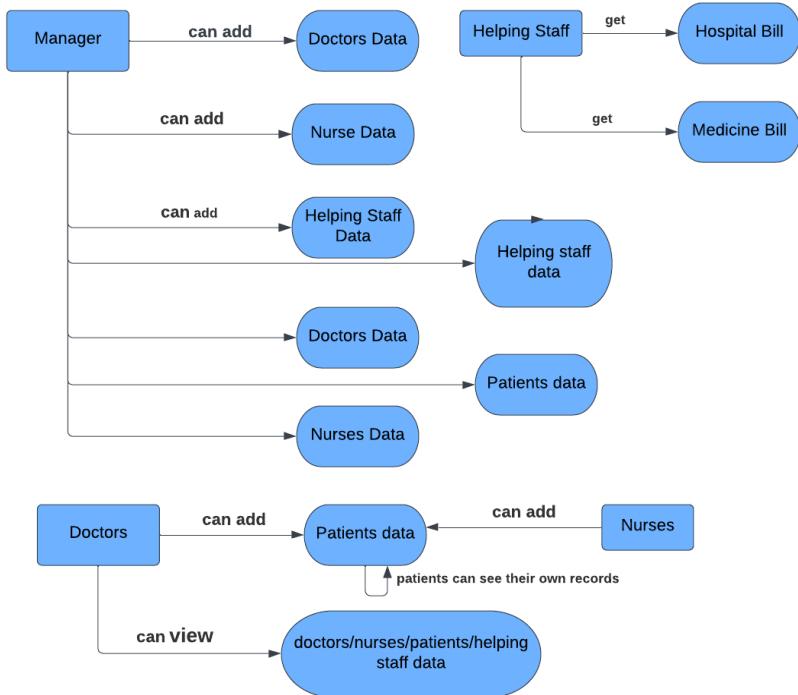
The system will show the details of patients and also which doctor is taking care of which patient to the manager.

Data Flow Diagram:

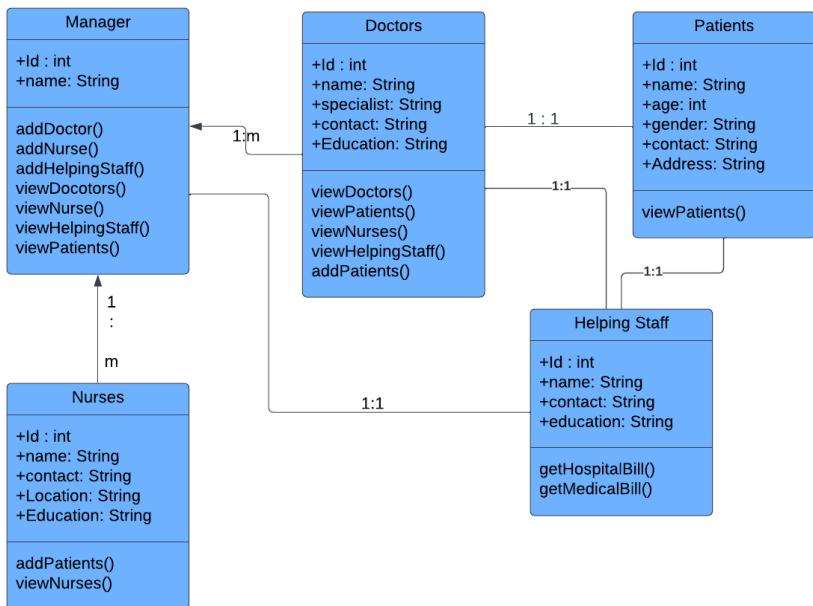
Level 0:



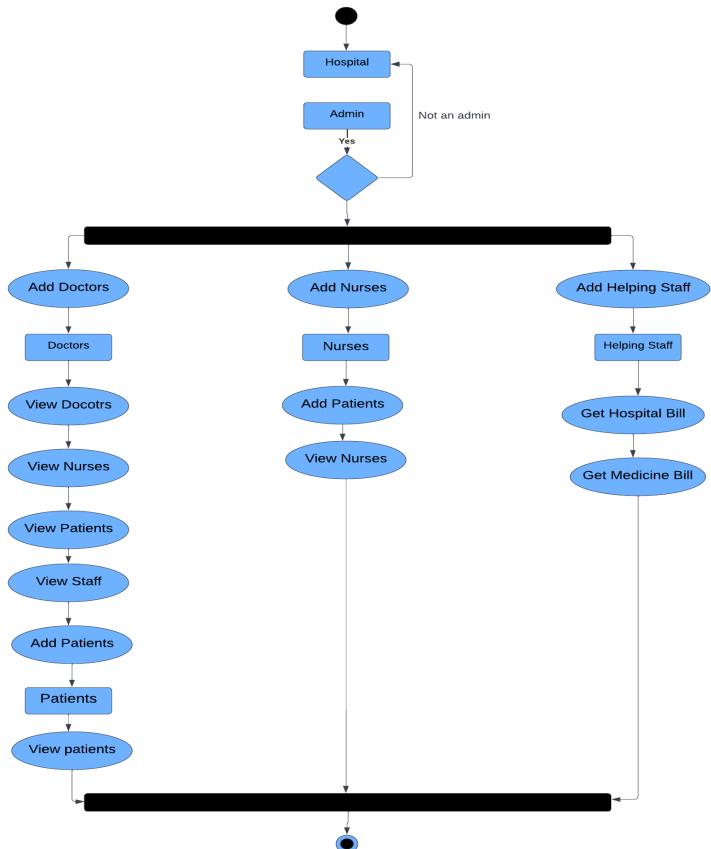
Level-1:



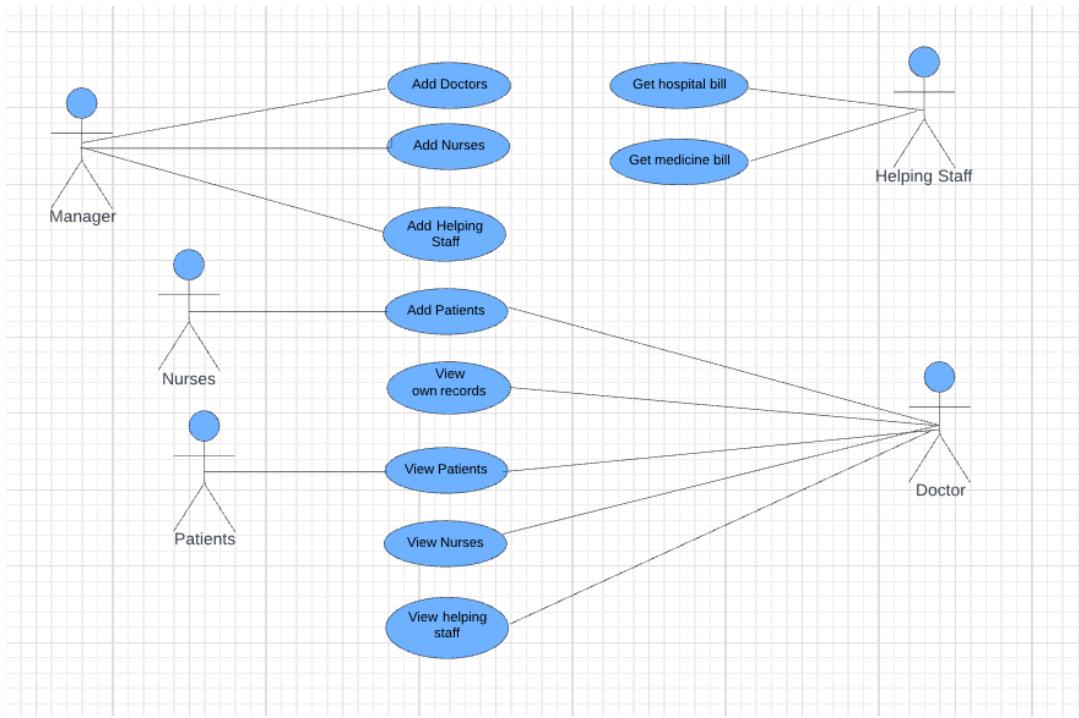
Class Diagram:



Activity Diagram:



Use Case Diagram:



Output Screenshots:

```

Hello, Manager !!!
-----
1. Add New Doctors Data
2. Add Nurses Data
3. Add New Helping Data
4. View Doctors Data
5. View Nurses Data
6. View Helping Staff Data
7. View Patients Data
2
Enter Nurse Id:
5
Enter Nurse Name:
Shyam
Enter nurse Contact Number:
7456485459
Enter nurse Education:
Nursing
Enter nurse Location:
Nepal

Press 1 to go for Main Menu
1

```

```
DXC_PROJECT - Apex_Hospital_System/src/apex/hospital/Manage
File Edit Source Refactor Navigate Search Project
Problems Javadoc Declaration Console X Coverage Manager (1) [Java Application] C:\Users\HP\p2\pool\plugins\org.e
Hello Welcome to the Apex Hospital Management
-----
Who Are You !!! Choose Accordingly
-----
1.Manager
2. Doctor
3. Nurses
4. Helping Staff
5. Patients
1

Hello, Manager !!!
-----
1. Add New Doctors Data
2. Add Nurses Data
3. Add New Helping Data
4. View Doctors Data
5. View Nurses Data
6. View Helping Staff Data
7. View Patients Data
1
Enter Doctors Id:
5
Enter Doctors Name:
Sujatha
Enter Doctors Specialisation:
Heart
Enter Doctors Contact Number:
7894561238
Enter Doctors Education:
MBBS

Press 1 to go for Main Menu
1

Return to MAIN MENU Press 1
1
|
Who Are You !!! Choose Accordingly
-----
1.Manager
2. Doctor
3. Nurses
4. Helping Staff
5. Patients
```



```
Hello, Manager !!!  
-----  
1. Add New Doctors Data  
2. Add Nurses Data  
3. Add New Helping Data  
4. View Doctors Data  
5. View Nurses Data  
6. View Helping Staff Data  
7. View Patients Data  
5  


| Nurse Id | Nurse Name | Nurse ContactNo | Nurse Qualification | Nurse Location   |
|----------|------------|-----------------|---------------------|------------------|
| 1        | Hema       | 4561479512      | BSN                 | Andhra pradesh   |
| 2        | Meghana    | 41247789512     | Nursing             | Madhya pradesh   |
| 3        | Ramya      | 457127879512    | Nursing             | Mumbai           |
| 4        | Vyshnavi   | 4567879512      | Nursing             | Himachal Pradesh |
| 5        | Shyam      | 7456485459      | Nursing             | Nepal            |

  
Press 1 to go for Main Menu
```

```
Who Are You !!! Choose Accordingly  
-----  
1. Manager  
2. Doctor  
3. Nurses  
4. Helping Staff  
5. Patients  
2  
  
Hello, Doctor !!!  
-----  
1. Add New Patients Data  
2. View Existing Doctors Data  
3. View Existing Nurses Data  
4. View Existing Helping Staff Data  
1  
Enter Patient Id:  
5  
Enter Patient Age:  
45  
Enter Patient Name:  
Raghu  
Enter Patient Gender:  
Male  
Enter Patient Symptoms:  
Cough,feve  
Enter Patient Contact Number:  
7894125897  
Enter Patient Address:  
Guntur,AP  
  
Press 1 to go for Main Menu  
1
```

```

Hello, Doctor !!!
-----
1.Add New Patients Data
2.View Existing Doctors Data
3. View Existing Nurses Data
4. View Existing Helping Staff Data
2

Doctor ID      Doctor Name      Doctor Specialist      Doctor Contact No      Doctor Education
1              Karuna          Heart                  9505918828            MBBS, MS
2              Radha           Neurialogist          95045574258            MBBS, MS
3              Srinivas         ENT                  45845478954            MBBS
4              Srinivas         Dentist              45845478954            MBBS

Press 1 to go for Main Menu
1

Return to MAIN MENU Press 1
1

Who Are You !!! Choose Accordingly
-----
1.Manager
2. Doctor
3. Nurses
4. Helping Staff
5. Patients
2

Hello, Doctor !!!
-----
1.Add New Patients Data
2.View Existing Doctors Data
3. View Existing Nurses Data
4. View Existing Helping Staff Data
3

Nurse Id      Nurse Name      Nurse ContactNo      Nurse Qualification      Nurse Location
1              Hema             4561479512            BSN                Andhra pradesh
2              Meghana          41247789512            Nursing            Madhya pradesh
<


```

```

Hello, Nurses !!!
-----
1.Add New Patients Data
2. View Existing Nurses Data
2

Nurse Id      Nurse Name      Nurse ContactNo      Nurse Qualification      Nurse Location
1              Hema             4561479512            BSN                Andhra pradesh
2              Meghana          41247789512            Nursing            Madhya pradesh
3              Ramya            457127879512            Nursing            Mumbai
4              Vyshnavi         4567879512            Nursing            Himachal Pradesh

Press 1 to go for Main Menu

```

```

Hello, Doctor !!!
-----
1.Add New Patients Data
2.View Existing Doctors Data
3. View Existing Nurses Data
4. View Existing Helping Staff Data
4

Helping Staff Data
-----
Staff Id      Staff Name      Staff Qualification      Staff Contact
APEX001 Pradeep Bsc      4587459851
APEX002 Dhruv   Msc      4571257851
APEX003 Lohith  Bsc      9874459851
<
```

```

Who Are You !!! Choose Accordingly
-----
1.Manager
2. Doctor
3. Nurses
4. Helping Staff
5. Patients
3

Hello, Nurses !!!
-----
1.Add New Patients Data
2. View Existing Nurses Data
1
Enter Patient Id:
6
Enter Patient Age:
23
Enter Patient Name:
Subhash
Enter Patient Gender:
Male
Enter Patient Symptoms:
vomitings, diziness
Enter Patient Contact Number:
4587965486
Enter Patient Adress:
Mangalgiri, AP

Hello, Helping Staff !!!
-----
1.View Staff Data
2. Add and Get Medicine Bill
3. Add and Get Hospital Bill
1
-----
Staff Id      Staff Name      Staff Qualification      Staff Contact
APEX001 Pradeep Bsc      4587459851
APEX002 Dhruv Msc      4571257851
APEX003 Lohith Bsc      9874459851
APEX004 Mahima Bsc      4545879851

Press 1 to go for Main Menu
1

```



```

Hello, Helping Staff !!!
-----
1.View Staff Data
2. Add and Get Medicine Bill
3. Add and Get Hospital Bill
2
Enter the number of Medicines Prescribed :
2
Enter the Medicine and its price :
paracetmol 65
Enter the Medicine and its price :
flunarize 40
Total Medicine bill to be paid : 105

Press 1 to go for Main Menu
1

```



```

4
Hello, Helping Staff !!!
-----
1.View Staff Data
2. Add and Get Medicine Bill
3. Add and Get Hospital Bill
3
Admit fee : 250
Admit fee : 150
First Aid fee :
100
Blood Test Fee :
100
Scan Fee :
0
Total Amount to be paid : 630.0

Press 1 to go for Main Menu

```

Conclusion:

In this project, we have implemented a hospital Management for Apex Hospital for user friendly and easy to maintain with the following features: Admin can add the doctors data, nurse data, helping staff data and view the details of doctors,patients,nurses,helping staff and patients, doctors can add patients data and can also see doctors data and can also view nurse and staff data. Helping staff will help with getting and adding medicine bills and also hospital bills. Nurses will be able to add patients' data. Patients can see their own data. This is a user-friendly system.

References:

- [1]Olusanya, Olamide. (2019). Design and Implementation of Hospital Management System Using Java. 3. 42-49. 10.9790/0050-0213236.
- [2]Farzandipour M, Sadoughi F and Meidani Z, 2010: Hospital Information Systems User Needs Analysis: A Vendor Survey

Account Management Project

1. Introduction

The Account Management System is an application for maintaining a person's account in a bank. This application shows the working of a banking account system and covers the basic functionality of an Account Management System. We have developed this project to help the banking sector make transactions easier. This project is developed using WebServlets, JSP, Java, MYSQL for storing databases and html css for basic stylings. The system is easy to use and interactive for customers. Thus, the features of this project will save transaction time and therefore increase the efficiency.

1.2 Purpose

The main aim of designing and developing this banking system is to provide secure and efficient net banking facilities to the banking customers over the internet. Storing Transactions and Account details and all like withdraw deposit and all will be easier to store in database and can access easily by bank admin. Every time the user needs to perform some transactions he has to go to the bank and perform the necessary actions, which may not be so feasible all the time. Here, we provide automation for the banking system through the internet. This project gives real life understanding of the Online Banking System and activities performed by various roles in the supply chain.

1.3 Intended audience and reading suggestions

This document is mainly intended for the people who are involved in the development, testing, operation, maintenance and quality assurance of the system. This also helps users and clients in understanding the requirements of the system. Audiences need not follow any particular order while reading the document and they are free to move to any section which they find relevant to them

1.4 Project Scope

This is Java programming and Web based application where the admin can easily get the details of customer accounts, and can create new accounts for customers, and verify the new accounts of customers and approve them if details are validated and verified correctly. There are 2 entities Customer and Admin. Customers can easily see their account details once logged in successfully and check the summary of transactions, easily transfer money from one account to another, they can check balance whenever they want, and can withdraw and deposit their money in account via Admin. And the admin can view all the databases of individual customers.

1.5 Definitions, Acronyms, and Abbreviations

SRS - Software Requirements Specification

AMS- Account Management System

1.6 Outcomes

The main objective is to build a banking application where users can transfer money easily online, can store information in a database, whenever required can check the information like transactions history, deposited amount, checking balance once logged in and can also request the admin to remove their account. Admin can fetch, update, and delete the accounts and data.

2. Overall Description

2.1 Product Perspective

The Account Management System would be a Java-Web Application, through which customer can easily create/open new account, can easily deposit amount, withdraw money from their own account, Customers can easily transfer money from one account to another account. They can easily check the balance, customers can request the admin to delete their account, and customers can see their own details easily. Admin can easily accept the customers request, and can approve customers accounts, and can deny and delete the customers accounts.

2.1.1 Hardware Interfaces

Operating system: Windows/ Linux/ Mac/ any other

Processor: i3 or above

Hard Disk Space: 124MB (min) for JRE

RAM Memory: 128MB (Min)

JRE System Library need to import in Eclipse IDE

Maven Dependencies

2.1.2 Software Interfaces

IDE: Sublime text/Notepad

Eclipse IDE - for writing and running code

Apache Tomcat Server

MySQL Workbench for DataBase

Browser: Google chrome or Mozilla Firefox or Internet explorer or Microsoft Edge etc..

2.1.3 Technologies Used

Core Java , WebServlets, JSP

Html, Css, Bootstrap for front End

MySQL and Java for Backend and DataBase

2.2 Product Features and Characteristics

The Account management system provides the functionalities for the Admin and customers

Such as:

Admin:

- a. First needs to login to the admin page
- b. Admin should be able to accept the customers new account requests and approve the details
- c. Can able to delete and deny customers requests

Customers:

- a. Customers need to login to their account if already existing account otherwise needs to open new account
- b. Customers can deposit amount after login to their account
- c. Customers can withdraw amount whenever required
- d. They can easily transfer amount from one to another account in online easily
- e. They can check the balance

3. SYSTEM FEATURES

3.1 FUNCTIONAL REQUIREMENTS:

This is how the application will appear and function until it has been successfully completed. The functional criteria must be met by the system are as follows:

- 1. Home Page** - This is welcome page of the banking system here we can find menu like admin Login, Customer Login and all
- 2. Login Page** - After entering to the login page customer can be able to login if the account is already existing otherwise there is another option for creating an account.
- 3. Create/Open New Account** - Then he or she can be able to create a new account by filling all the valid details and then that request will be sent to the admin automatically, the admin will verify and then if details are correct then admin will give the access to the customer otherwise deny.
- 4. Admin Screen** - After the admin has successfully logged in, he is able to view all the customer details like accounts, balance transactions and all and can approve the new customer accounts and can delete the account if a customer given a request to delete.
- 5. Customer Screen** - After successfully logged in, customer can able to see the summary of account and then make transactions from one to one, can deposit money, withdraw money and can view transaction summary

3.2 NON-FUNCTIONAL REQUIREMENTS:

- There should be sufficient network bandwidth
- Backup- provision for data backup
- Easy to maintain
- Performance/ response time- fast response
- Usability by target user community- easy to use
- Expandability- needs to be future proof or upgradable
- Safety- should be safe to use

3.2.1 PERFORMANCE REQUIREMENTS:

- Performance should be fast
- Performance will depend up on hardware components
- The UI will load faster
- When Someone logged in it will verify fastly
- Queries shall return results within five seconds.

3.2.2 SAFETY REQUIREMENTS

- Data in the database of the system should not be lost or damaged.
- The source code developed for this system shall be maintained in the configuration Management tool.
- If there is extensive damage to a wide portion of the database due to some failure, such as a disk crash, the recovery method that restores a past copy of the database will create a backup whenever required.

3.2.3 SECURITY REQUIREMENTS

- Secure access of confidential data. (customer information)
- The whole system is secured. Only the admin can access all the databases at any time.

3.2.4 SOFTWARE QUALITY ATTRIBUTES

Availability:

The online account management system will be available to users at any time except when the server is lost or has a bad internet connection or when having some errors.

Robustness:

If the connection between admin and the customer is broken or disconnected prior to a creating of account either confirmed or canceled, the account management system shall enable the user to recover an incomplete account creation.

Platform Independence:

The system must have to run on different platforms and support different types of database management systems.

4. External Interface Requirements

4.1 User Interface

The system has to allow the Admin to interact with different modules such as adding customers and deleting customers accounts. customers can easily create/open new accounts,

maintain the records of customers, And view the customers' data such as account summary, transaction list, balance enquiry etc. It must be easy to extend to provide new capabilities.

4.2 Hardware Interfaces

A laptop having any operating system. To deploy, the project administrator should have a system with a minimum of 128MB ram and 124Mb disk space for JRE and windows server.

4.3 Software Interfaces

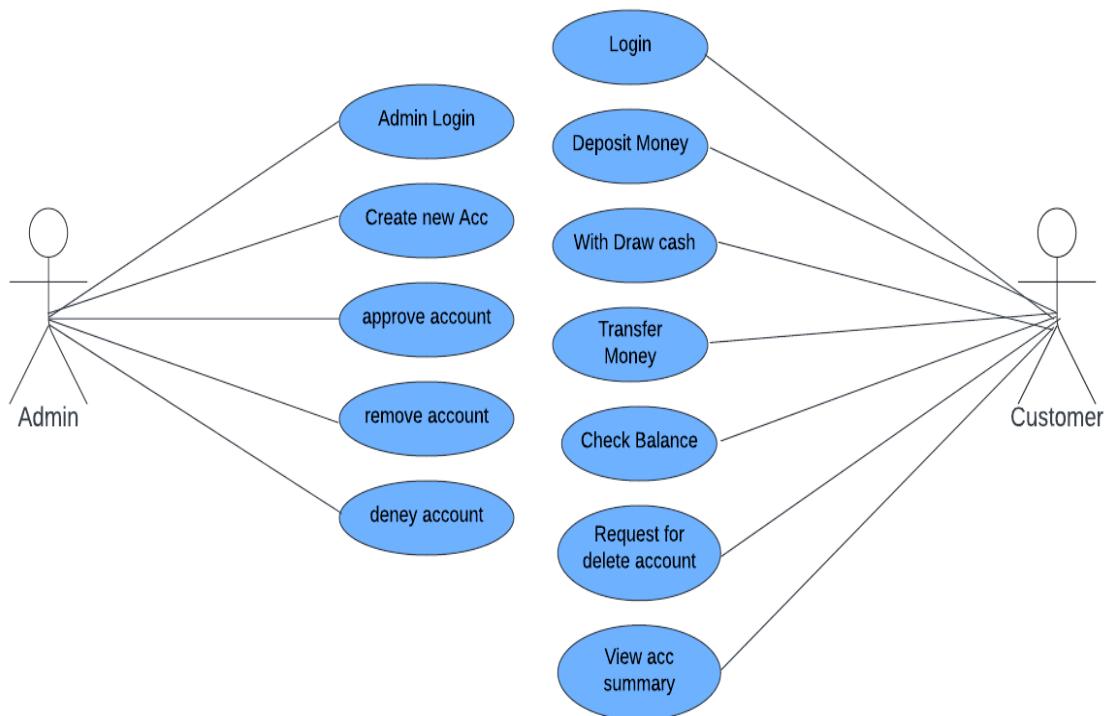
The system shall interface with a java(eclipse) for adding, viewing and getting the data. Data is stored related to many customers.

4.4 Communicational Interfaces

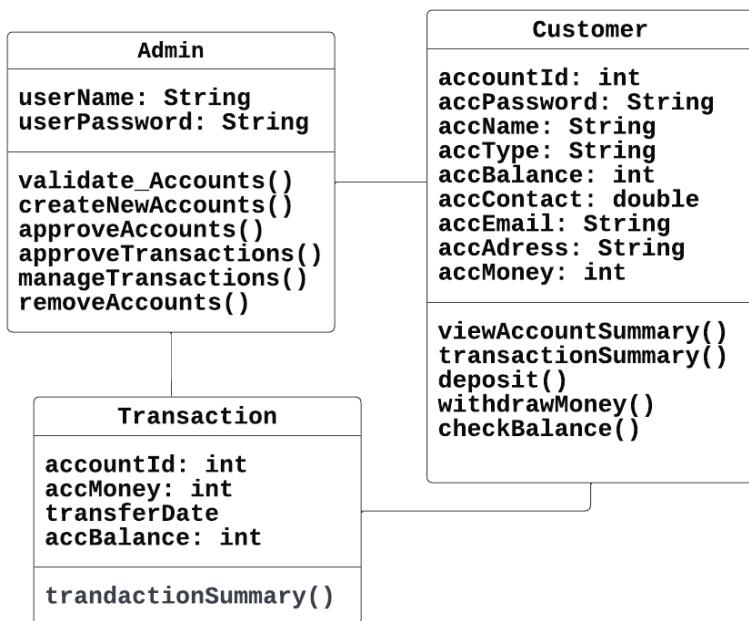
The system will show the details of customers and also maintain their activities like withdrawing money from their own account, can easily deposit amounts, Customers can easily transfer money from one account to another account. They can easily check the balance, customers can request the admin to delete their account, and customers can see their own details easily. Admin can easily accept the customers request, and can approve customers accounts, and can deny and delete the customers accounts.

5. UML Diagrams

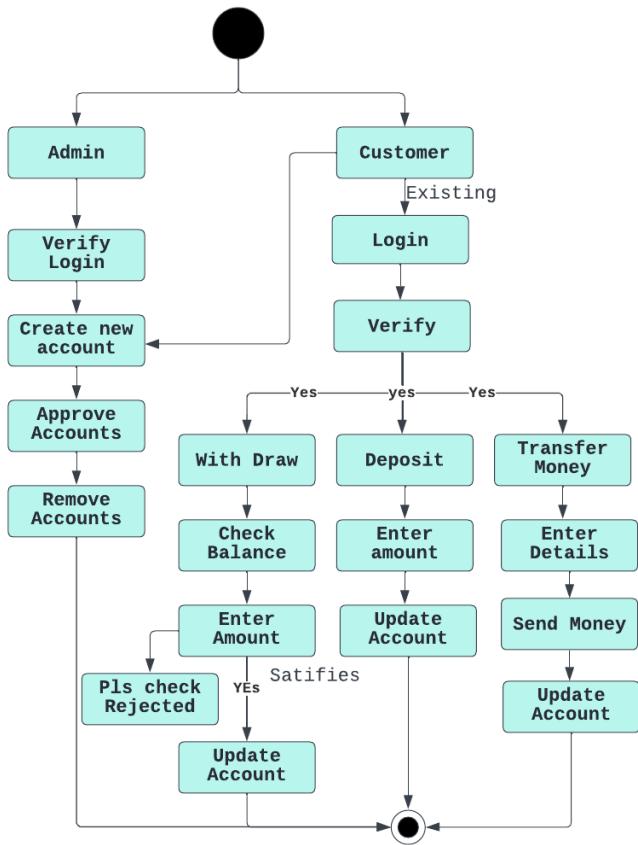
5.1 USe Case Diagram



5.2 Class Diagram

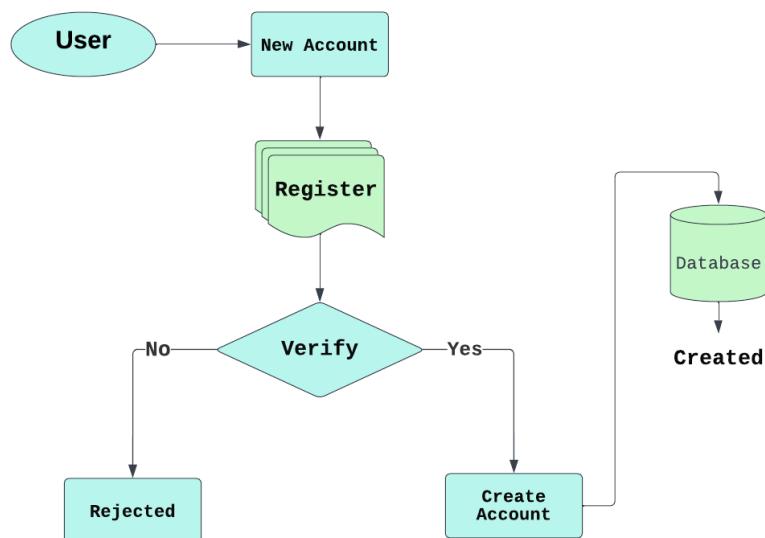


5.3 Activity Diagram

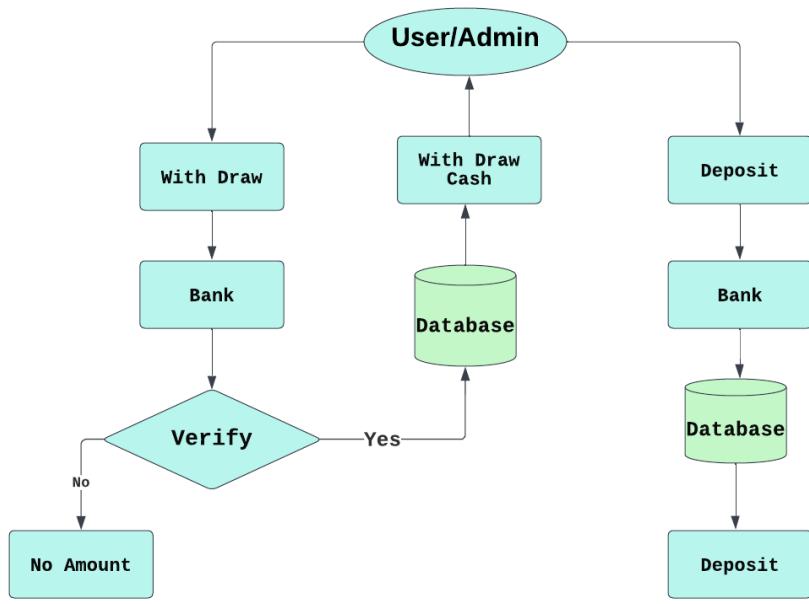


5.4 Data Flow Diagram

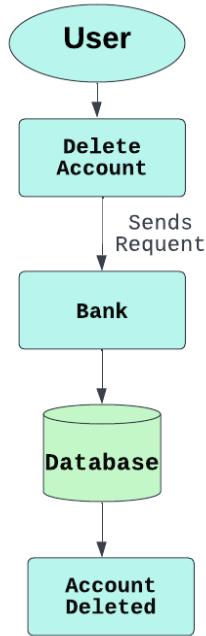
DFD For Creating Account:



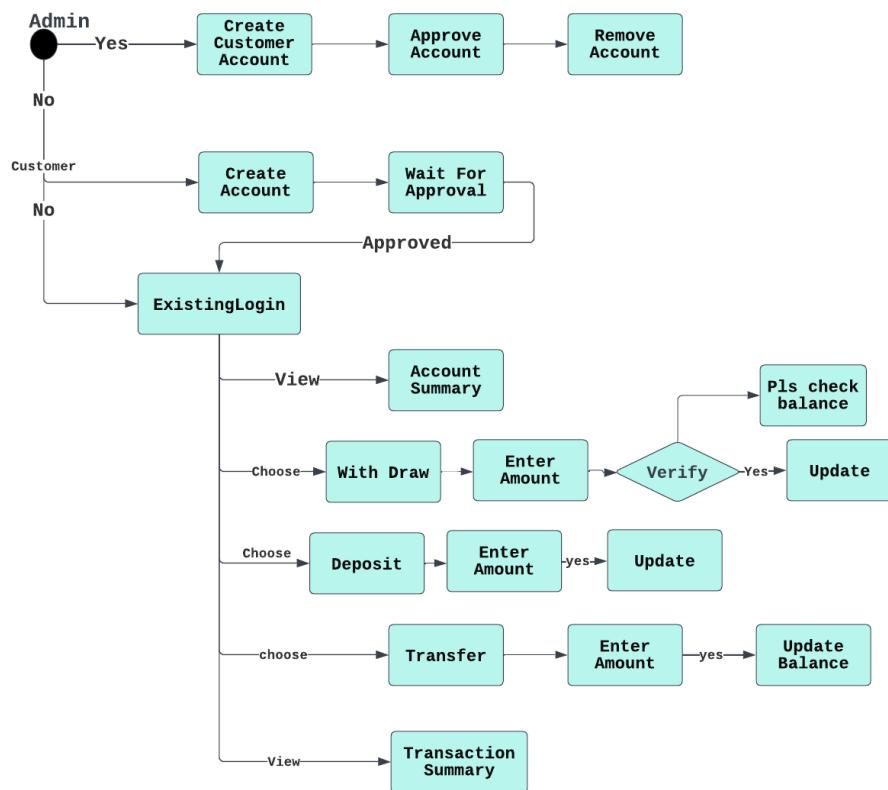
DFD Diagram For Withdraw And Deposit



DFD For Deleting Account:

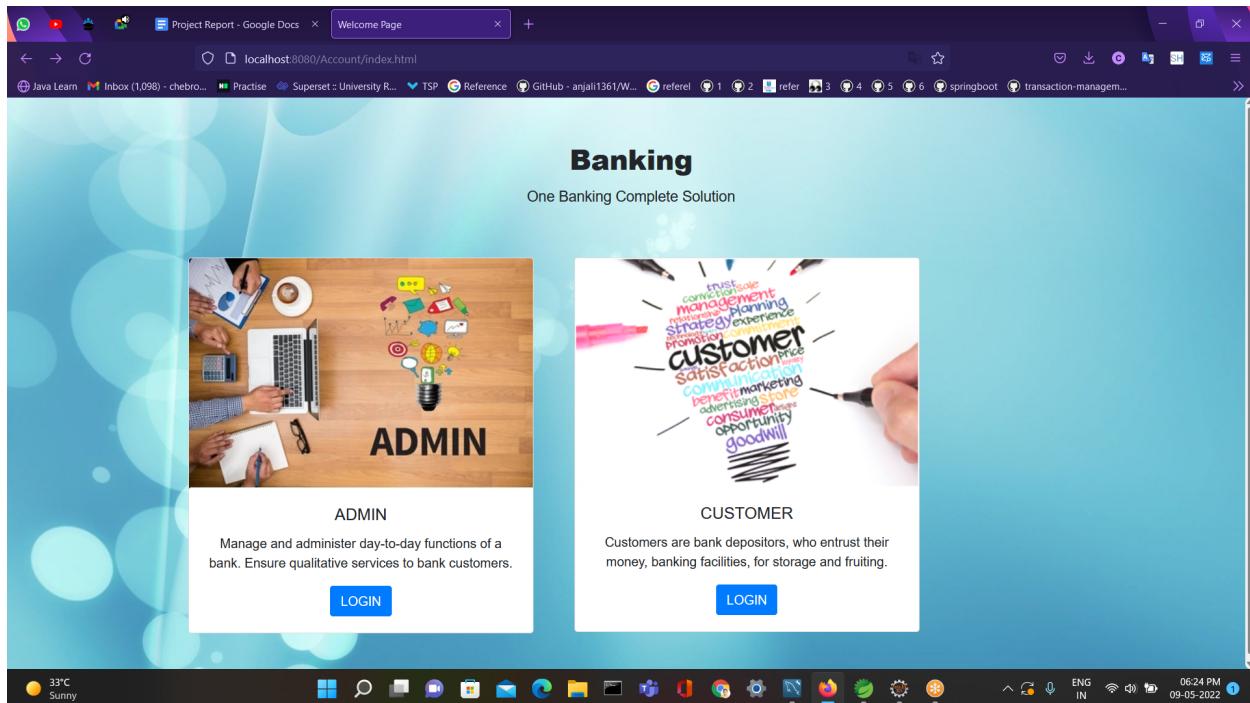


5.5 State Chart Diagram

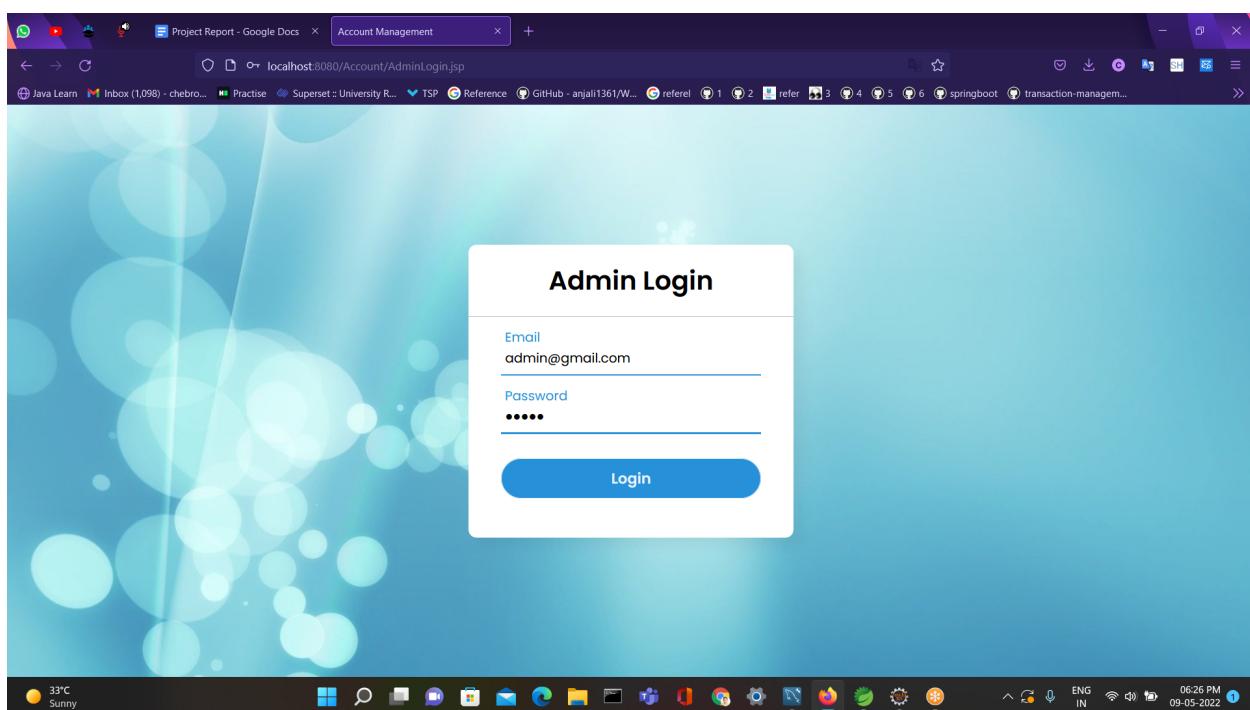


6. Project Output Screenshots:

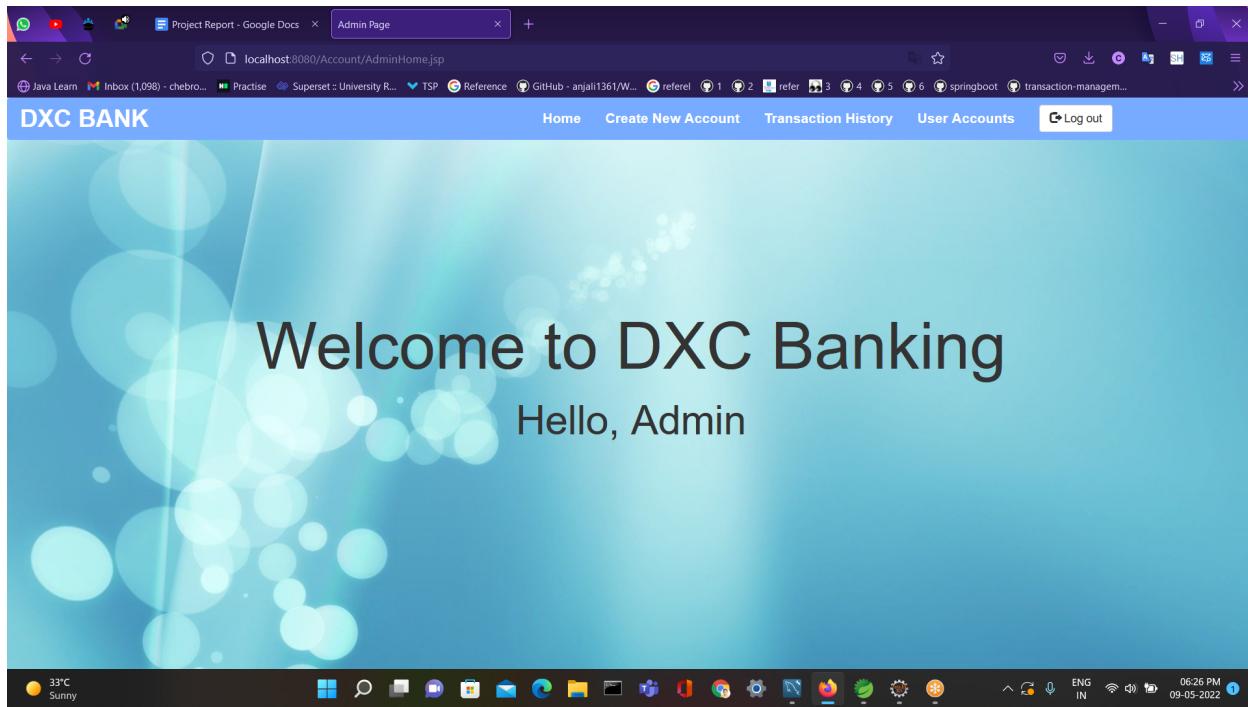
Main Page



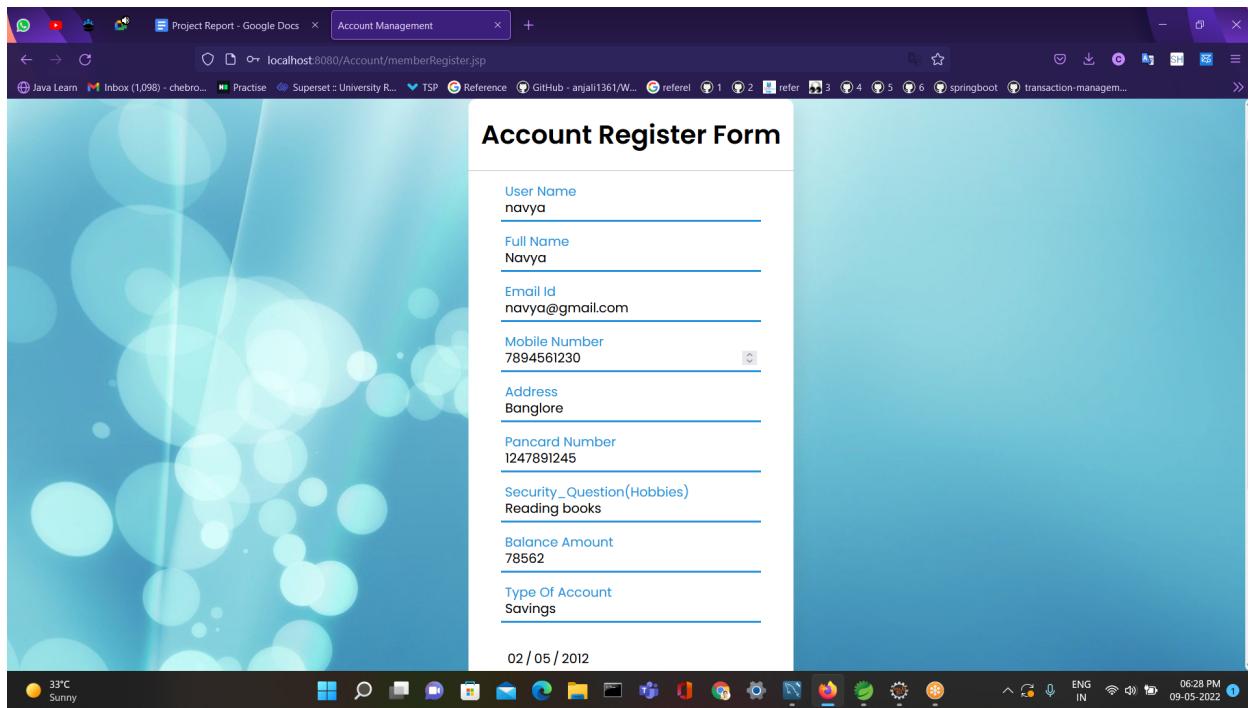
Admin Login Page:



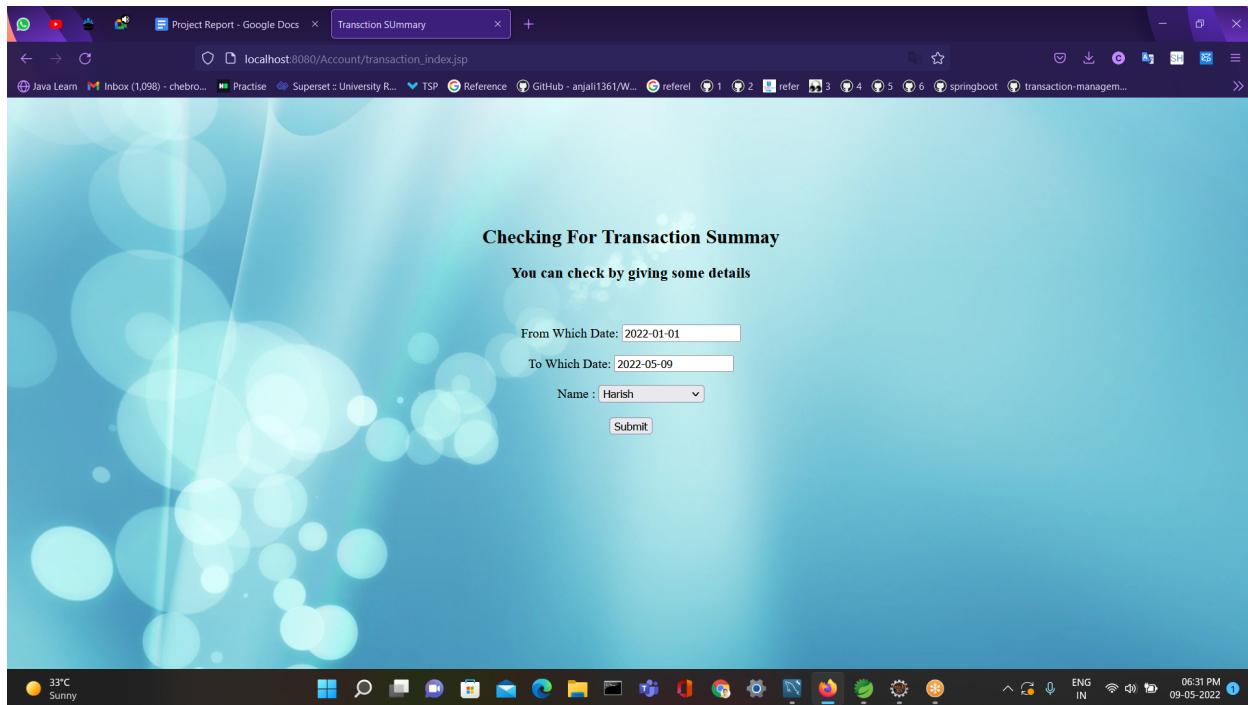
After Admin Login's Welcome Page:



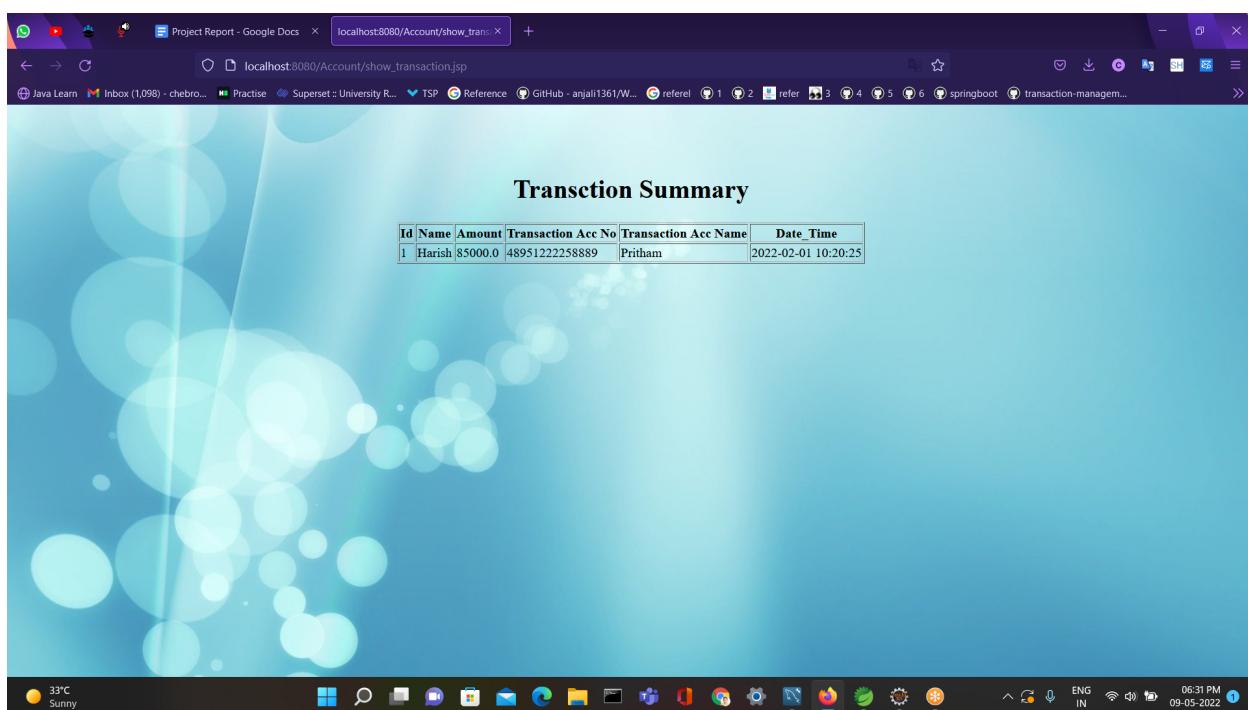
Admin Creating New Customers Accounts:



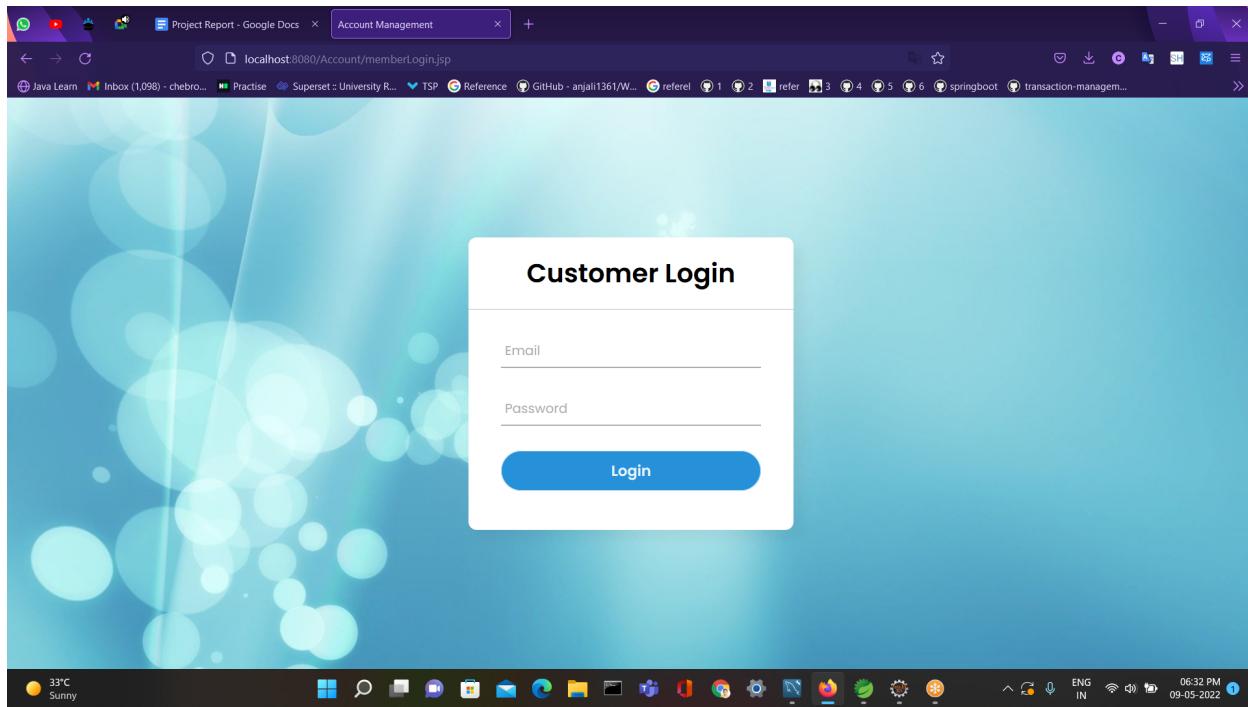
Admin Can Check Transaction Details of Particular Customer By Selecting Name



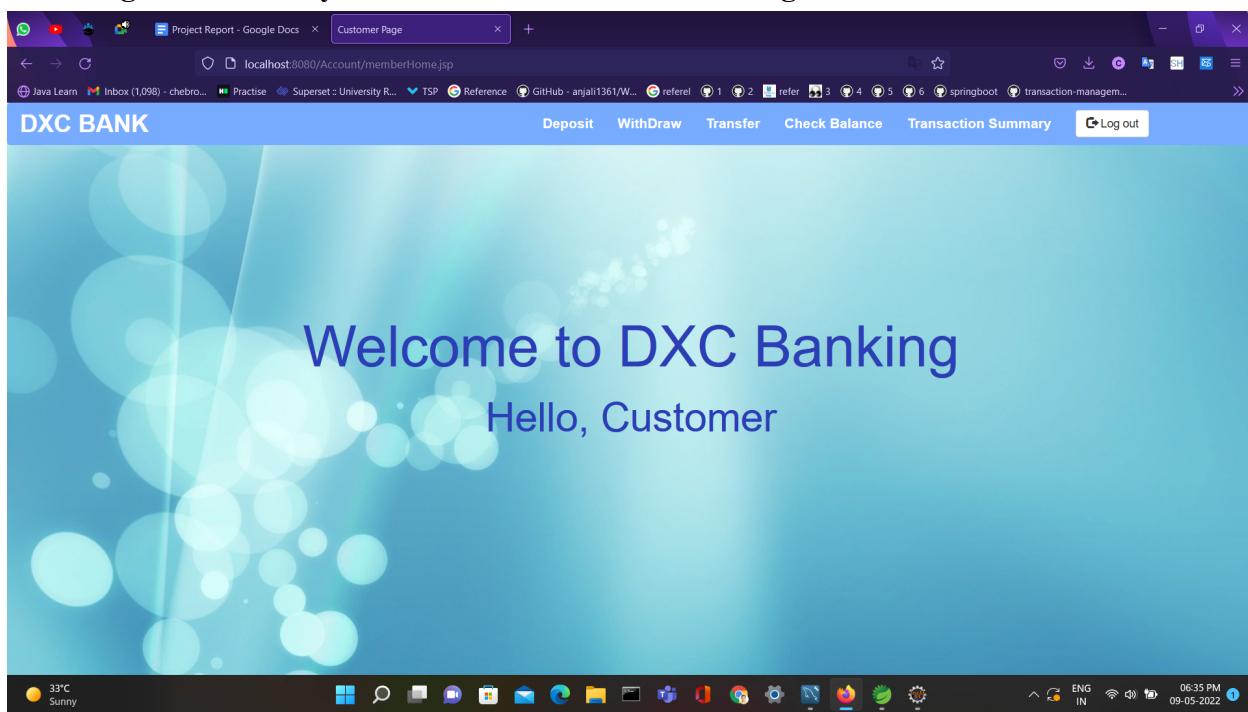
After Searching Admin can show particular Transactions of users



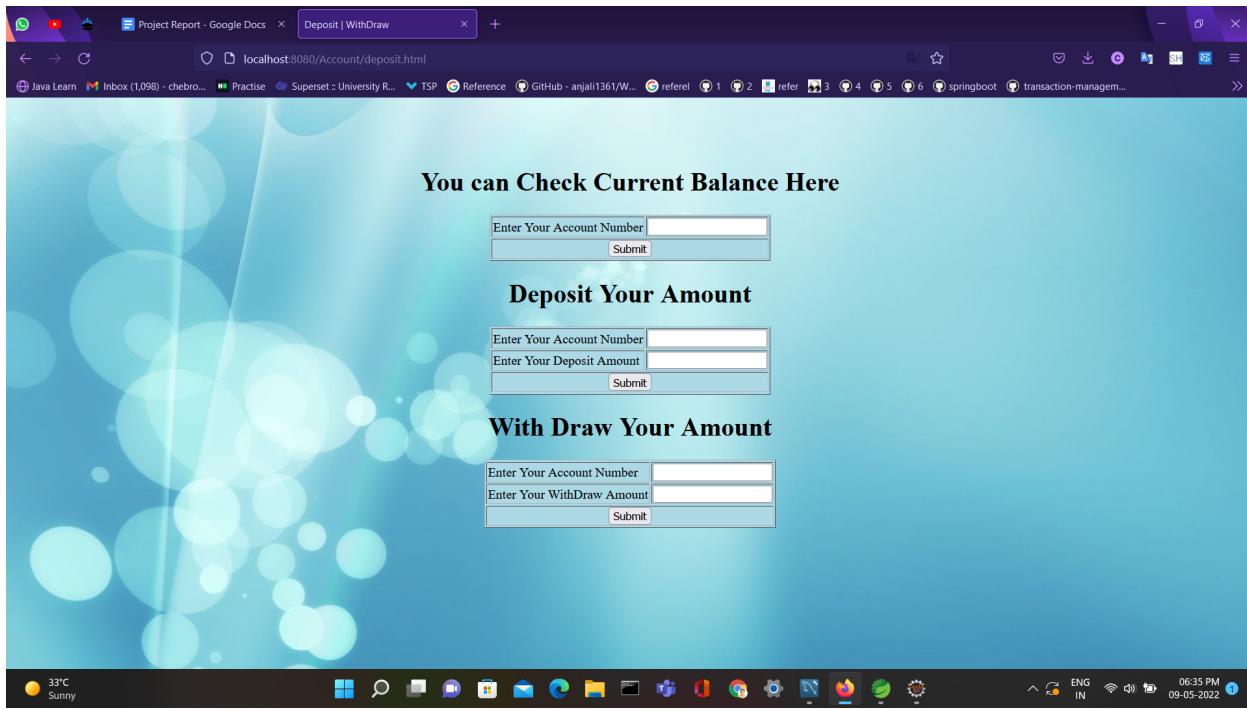
Customer Login



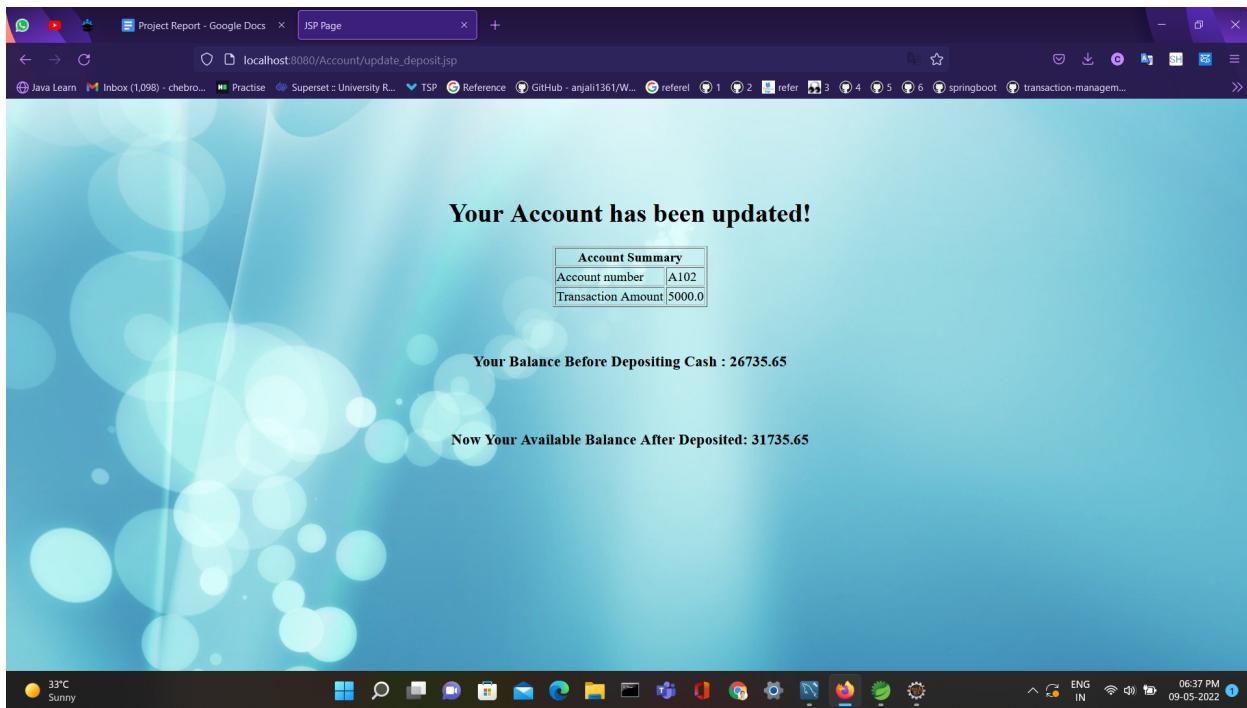
After Login Successfully Then User Can See Welcome Page



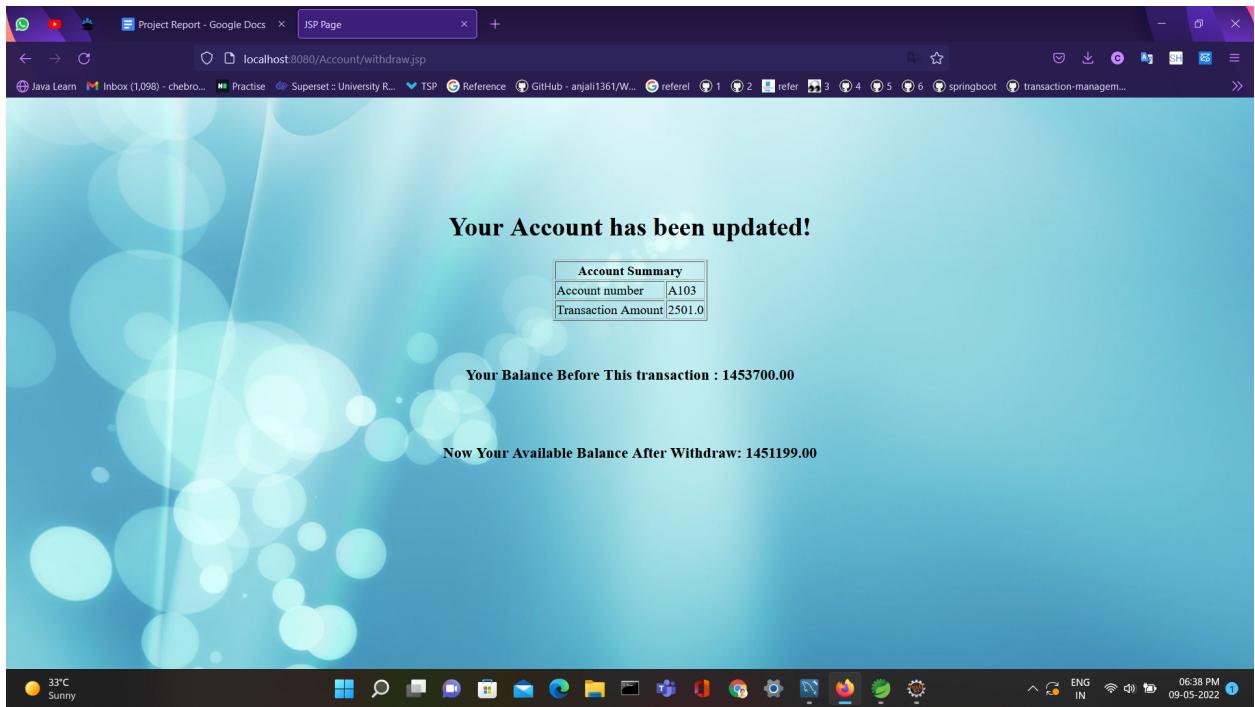
Customer Can Deposit/WithDraw/Transfer Funds After Successful Login



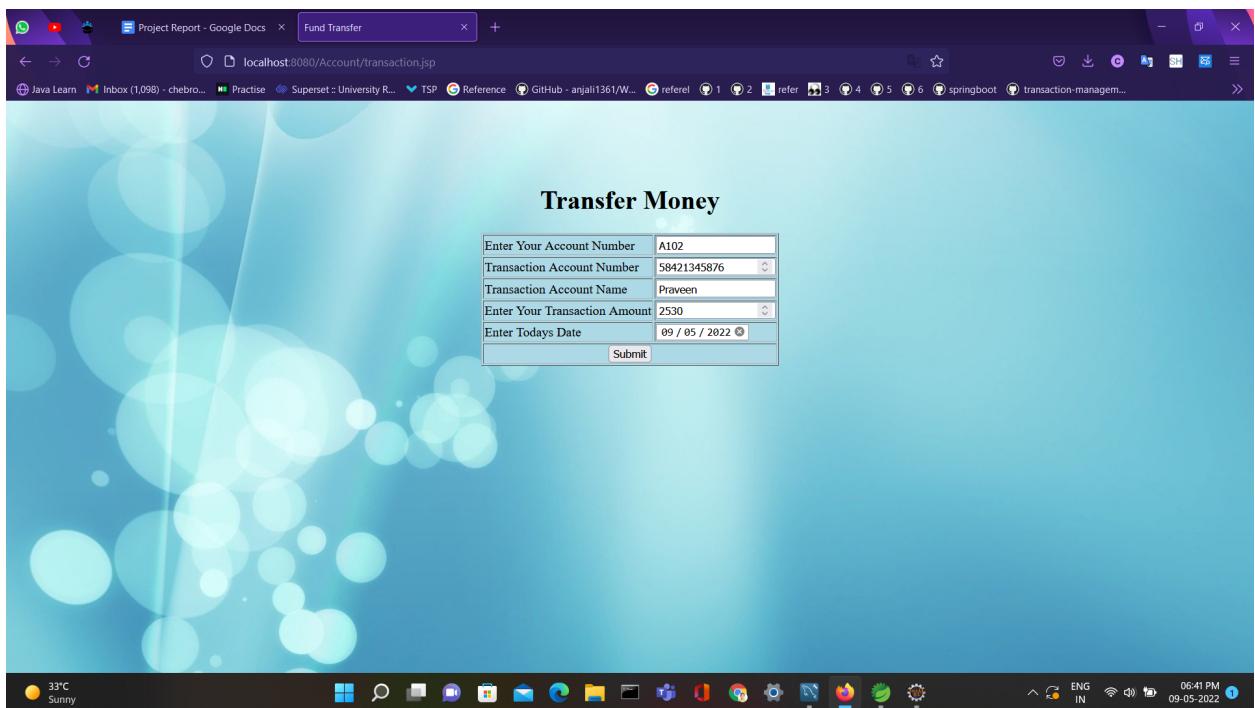
After Depositing



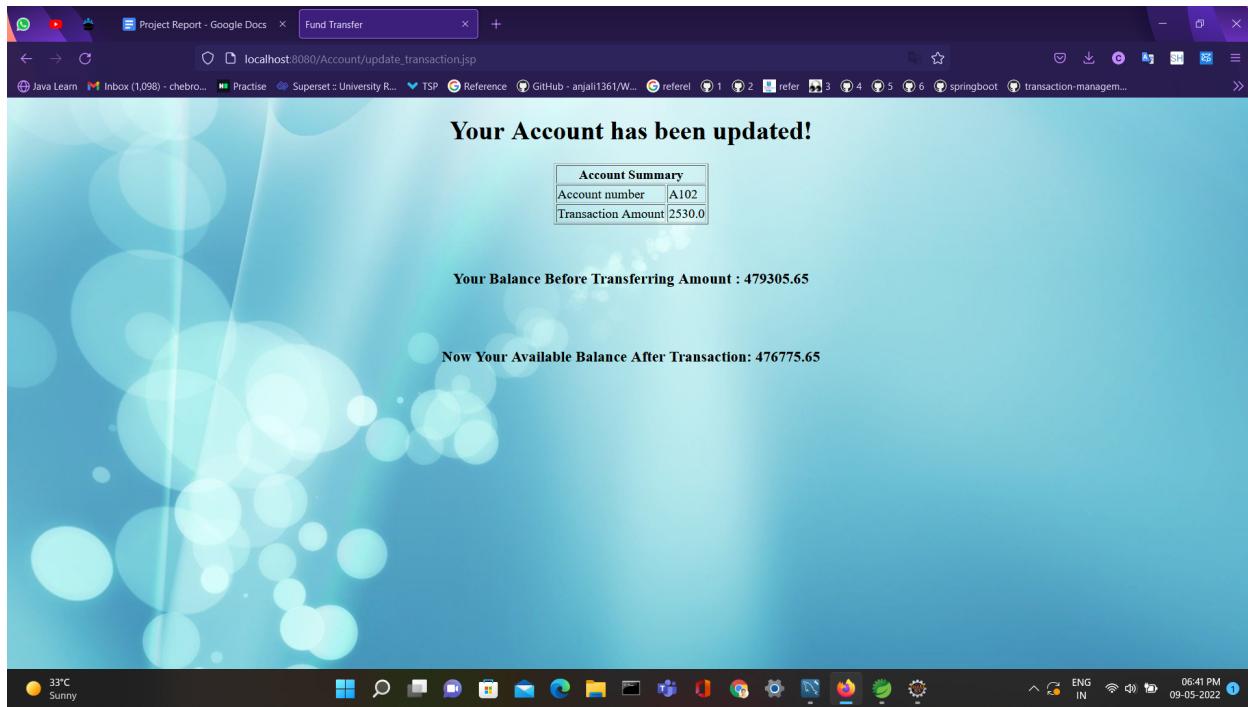
After WithDraw



Fund Transfer



After Transferring



7. Conclusion

In this project we have developed a web application which can be used for bank customers as well as bank admin to easily store and fetch the data, and customers can easily check their banking details and make transactions easily anywhere with mobile or PC using this application. This is user friendly web application where ever needed