Report on Mini Project

Bank Account Management System

Course Code : 20CS506

Course Name : DBMS Lab

Semester:V SEM   Section:C

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Signature of Course Instructor

Content

Chapter 1: INTRODUCTION

In today's world computers have become an essential part of human life, it has proved to be a great boon to the mankind. Since its invention in 1940's man has become more and more dependent on it. As a result, we can see today's computer involved in almost every field. The main reason that has necessary unavoidable is its speed and accuracy.

Computer as a machine is dead machine. To get effective job performed by the computer it should be loaded with appropriate software. The actual feats and skills of the computer depend on the software. If we want to make use of computer in a particular field, appropriate software must be developed which would fulfill the requirement user would ask.

At present, much software is developed for different purposes, which are actively used in different fields. Nowadays, in almost all educational fields, we can use computers to perform different data processing activities. In educational institutions, most of the works are done with help of computers.

Bank data keeping is the task of great complexity when handed manually it is great confusing and time consuming. Whereas this task can be easily handled through computers. Our aim here is to develop software for a bank, which we presented here.

Here the project, which we have presented, is "Bank Database Management System". This is a web-based software developed using ReactJS at the frontend and NodeJS, ExpressJS at the backend. A relational database MySQL is used to store data and to execute queries. This software is developed by keeping in mind the requirements of a bank. The purpose of this project is to handle overall security of a bank through computers thus bringing the advantage of computers into data processing activities like tracking balance, listing customers details, listing employee details, depositing, withdrawal, and transfer of amount, creating, and deleting customers etc.

Chapter 2: Design

Database Design:

The database design is the process of producing detailed data model of the database. The logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a design in a data definition language which can then be used to create a data base. Fully attributed data model contains detailed attributes of the entity. A term database design can be used to describe many different parts of the design of an overall data base system. Principally, and most correctly it can be thought of as the logical design of the base data structures used to store the data. In a relational model these are the tables and views. In an object database entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply the overall process of designing, not just based data structures, but also the forms and queries used as part of the overall database application within a database management system.

Schema:

ADMIN

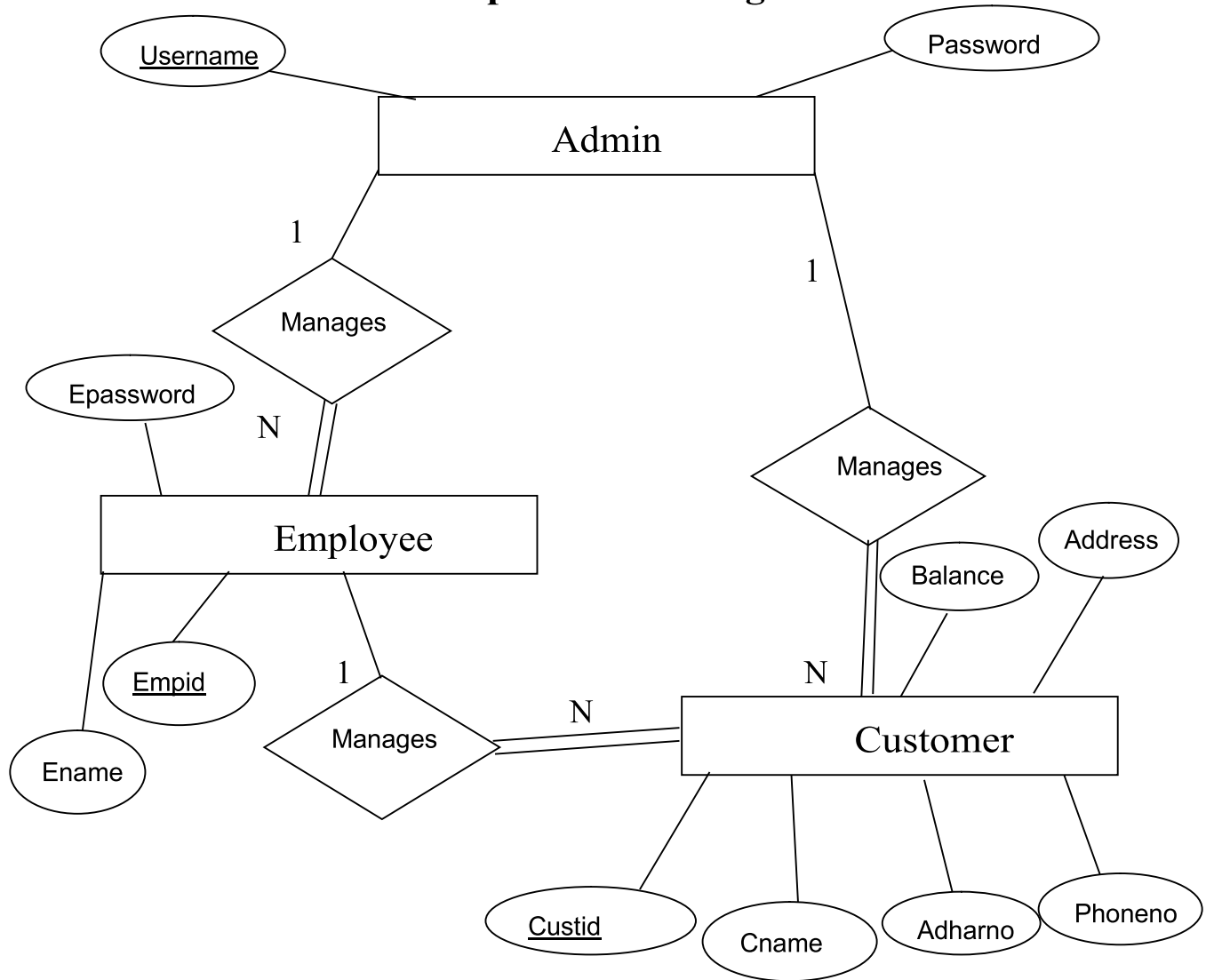| USERNAME	Password

CUSTOMER

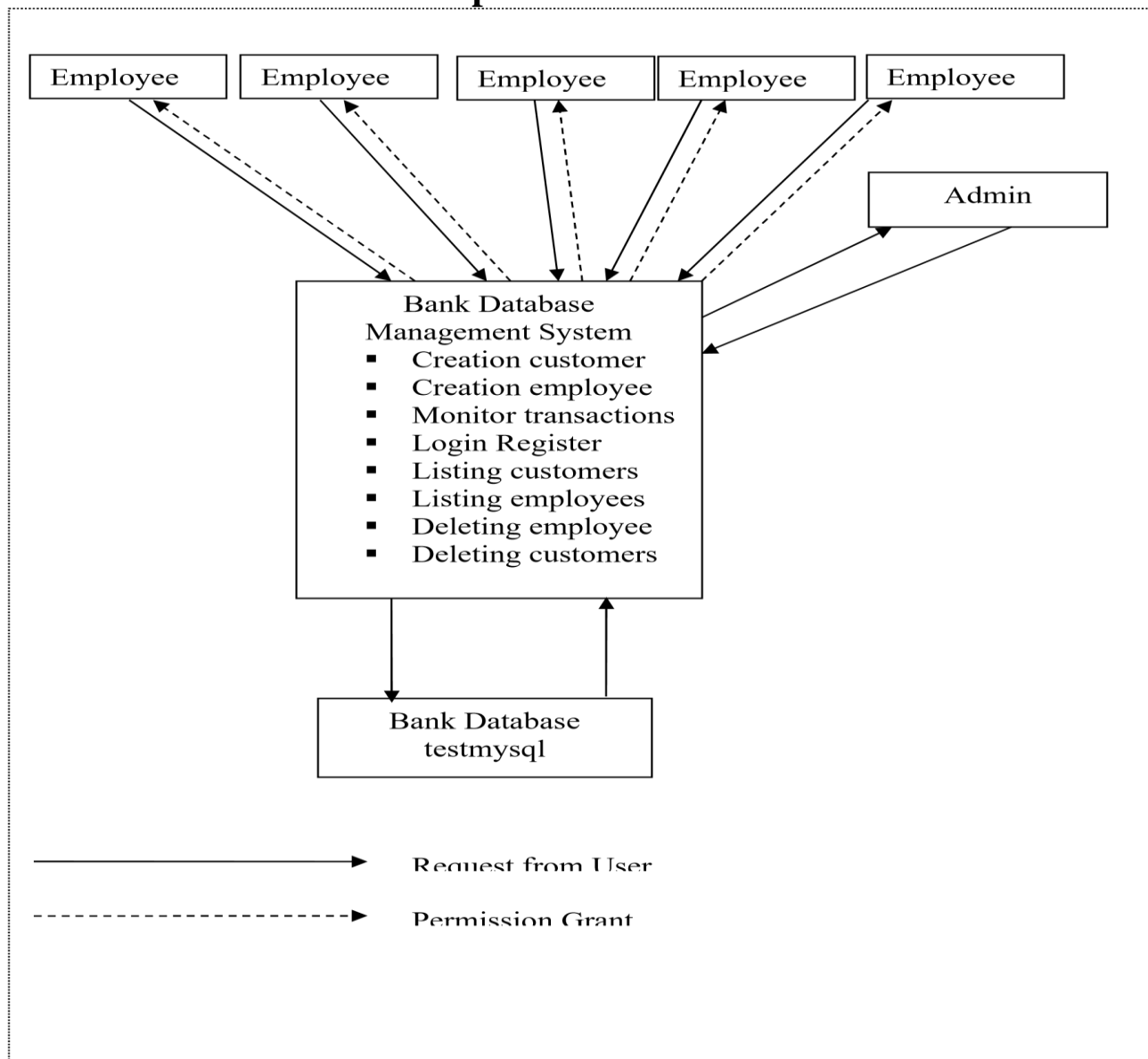| CUSTID	Cname	Adharno	Phoneno	Address	Balance

EMPLOYEE

EMPID	Ename	Epassword

We have designed this project by creating a database named testmysql for bank database.

We have created the tables admin, customer, employee.

In admin table USERNAME, Password are the attributes. USERNAME is the primary key.

In customer table CUSTID, Cname, Adharno, Phoneno, Address Balance are the attributes. CUSTID is the primary key.

In employee table EMPID, Ename, Epassword are the attributes. EMPID is the primary key

Chapter 3: ER Diagram

Username

Password

Admin

1

Manages

Epassword

N

Employee

Empid

Manages

1

Ename

Manages

N

N

Balance

Address

Customer

N

Custid

Cname

Adharno

Phoneno

Chapter 4:Dataflow

Employee   Employee   Employee   Employee   Employee

Admin

Bank Database
Management System
- Creation customer
- Creation employee
- Monitor transactions
- Login Register
- Listing customers
- Listing employees
- Deleting employee
- Deleting customers

Bank Database
testmysql

→ Request from User

----→ Permission Grant

- Admin can create a. new customer, new employee and able to delete customers and employees.

- Permitted employees can login their bank PC and perform transactions for the customers.

- If Ename and Epassword are proper, then employees can perform above operations.

- Admin can monitor all the customer transactions and add or remove customers and employees.

- If passwords are not proper, it will give invalid ID message to the user.

- Employees can perform transactions on behalf of customers and view transactions.

- The whole operation works like a client server application that is database stored in server admin or employee gives the request to enter into the application. If it is proper by verifying server database, if proper it allows to goto application.

Chapter 5: Implementation Details

Technology used:
Languages :HTML, CSS,Javascript
Library and Framework : React, Bootstrap, Nodejs, Express js,NPM
RDBMS :MySQL
Webserver: Localhost

Tools Used:
VS Code Editor
XAMP server
MySQL workbench
Postman (testing api)
OS :Windows 10

Hardware Used:
Processor: AMD Ryzen 5
Ram :8GB
Harddisk :1TB

Installation steps :

1.Install the latest version of VS Code from https://code.visualstudio.com
   and Nodejs from https://nodejs.org/en/ and XAMP server from
   https://www.apachefriends.org/download.html and MySQL workbench
   from https://www.mysql.com

2. Open the client and server folder on two separate window tab on VS Code

3.Run the command npm install install the necessary packages on terminal
open on client directory and server directory.

4.Run the command npm start on client directory using VS code terminal to run
client side react development server

5.Run the command npm run dev on server directory using VS code terminal to run the development server

6.Open the port localhost://3000 on browser to view the application

7.Run the MySQL server on XAMP and view the tables using either phpMyAdmin or MySQL workbench.

Table structure :

1.Customer table :

Attribute	Type
custid	bigint (primary key)
cname	varchar(200)
adharno	bigint
phoneno	bigint
address	varchar(200)
balance	bigint

2.Employee table:

Attribute	Type
empid	int (primary key)
ename	varchar(200)
epassword	varchar(100)

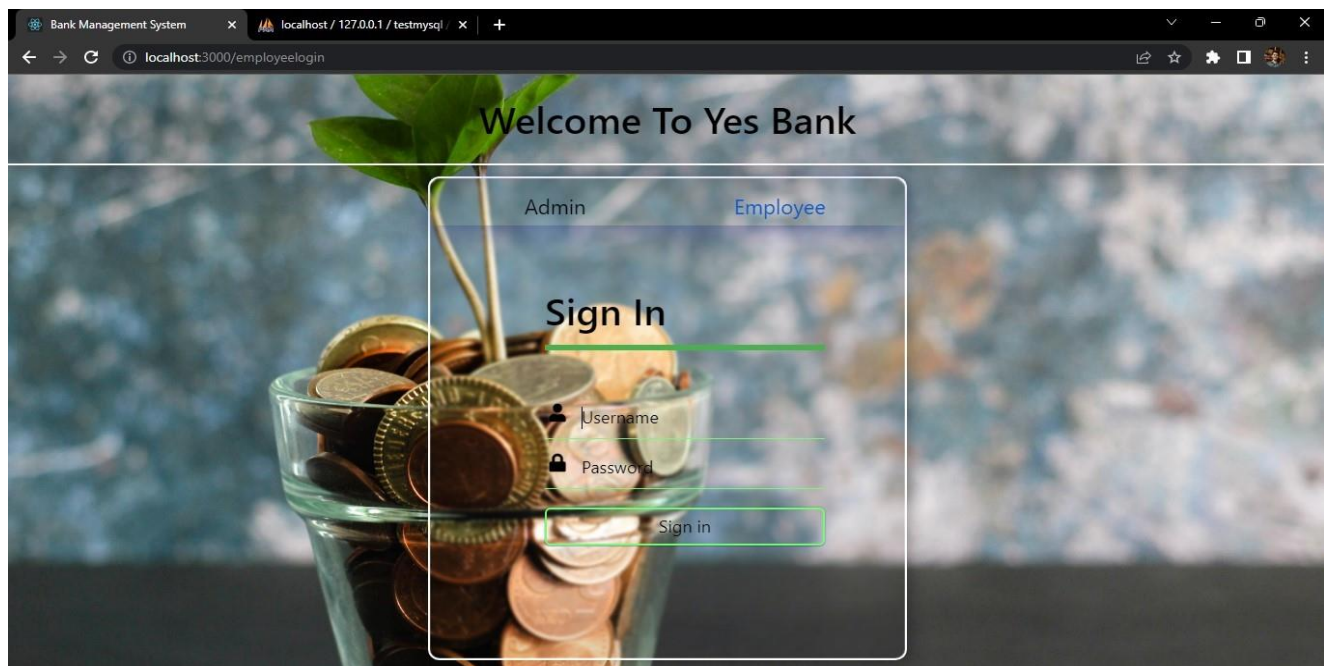3.Admin table

| Attribute	Type
username	varchar(200)
password	Varchar(200)

Chapter 6: Output Window

1.Startup page: This page will load when we run the software. This includes admin and employee login menu.
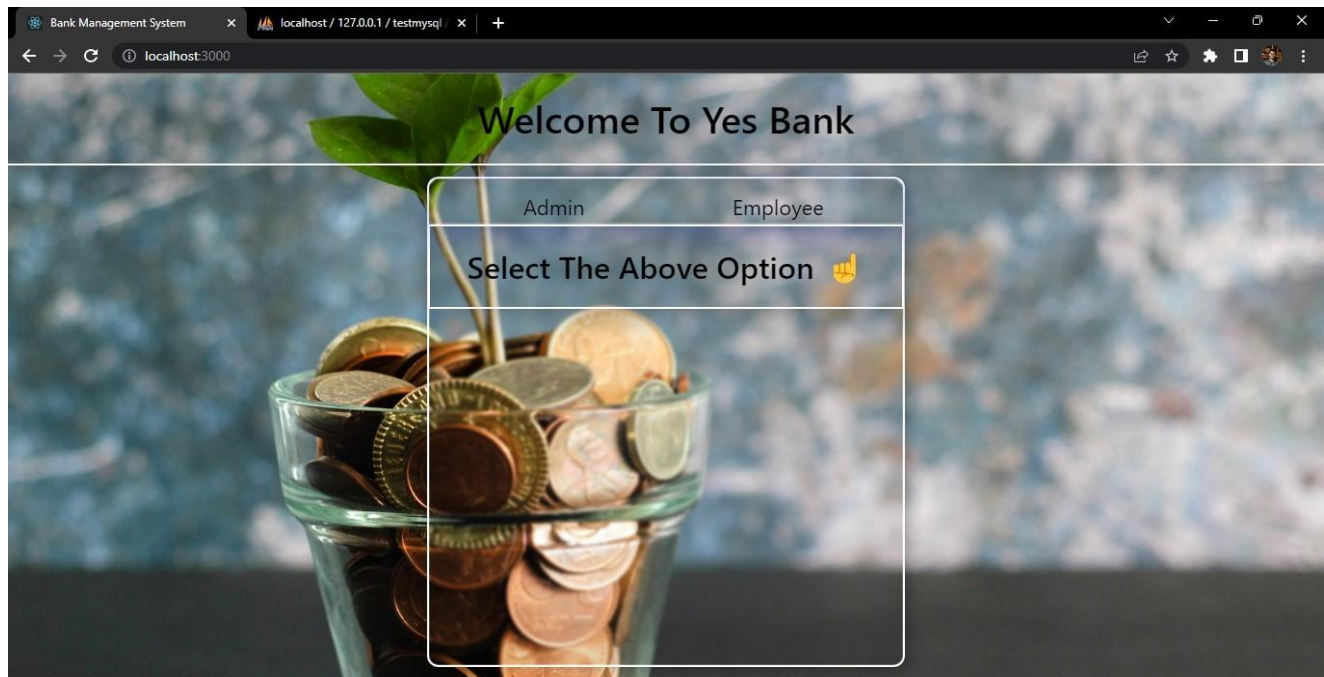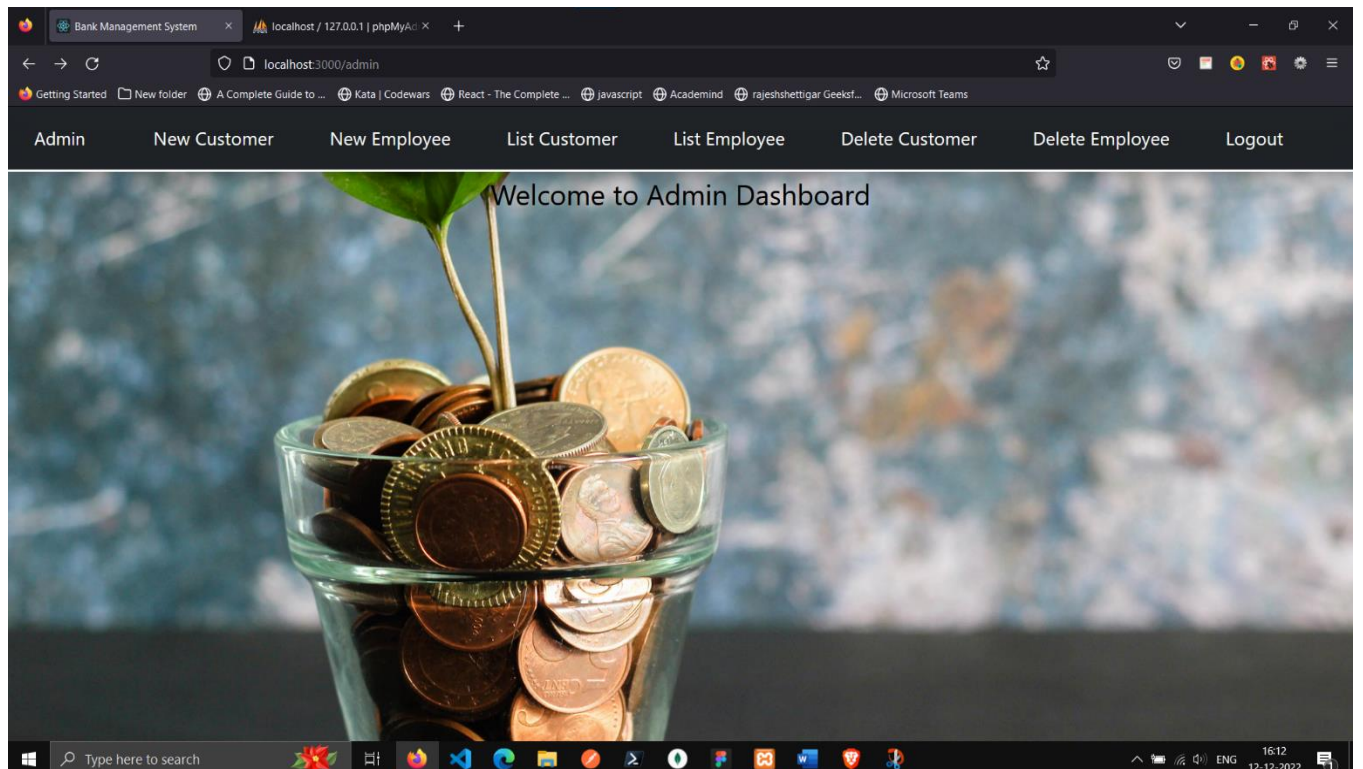

2.Employee login page: This page will prompt employees to enter his information to login.

3.Admin Login page: This page will prompt admins to enter name and password to access admin control page
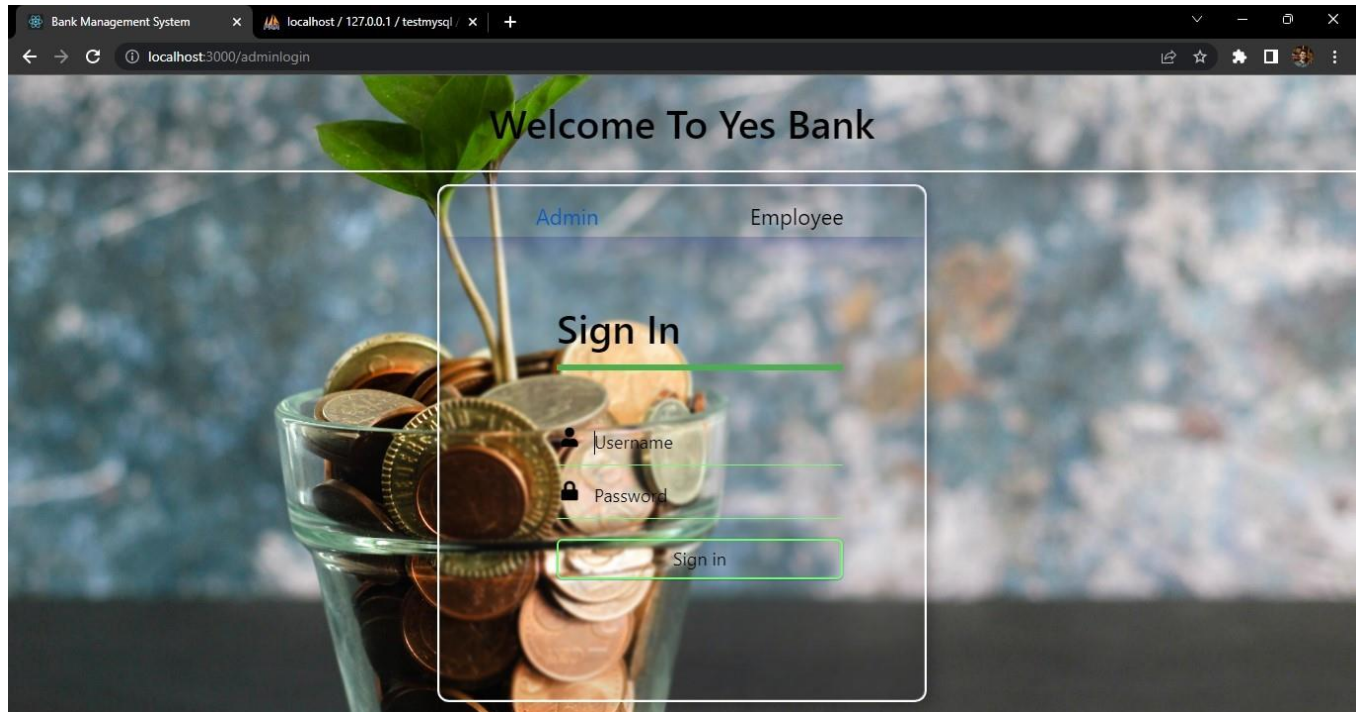
4.Admin Dashboard page: This page contains operations that Admin can perform like adding new customer, new employee, listing customers, listing employee, deleting customer, deleting employee.

Admin   New Customer   New Employee   List Customer   List Employee   Delete Customer   Delete Employee   Logout

Customer Details

Customer ID	4
Name	Pradeep Rao K
Adhar Number	123432415432
Phone Number	8095477572
Address	4th block Kokrady Belthangady
Balance	10000

Add   Clear

New customer added

Admin   New Customer   New Employee   List Customer   List Employee   Delete Customer   Delete Employee   Logout

Employee Details

Employee ID	1
Name	Pradeep Rao K
Password	••••••••••••

Add   Clear

New employee added

Bank Management System × | localhost / 127.0.0.1 | phpMyAd × | +

localhost:3000/listadmincustomer

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| Admin | New Customer | New Employee | List Customer | List Employee | Delete Customer | Delete Employee | Logout |

Customer Details

Customer ID	Name	Adhar No.	Phone No.	Address	Balance
1	rajesh	123456781234	9980095963	4th block bangalore	102000
2	rajesh	12324323253	2334324342	2nd block bangalore	15000
3	rajesh	12324323253	2334324342	2nd block bangalore	10600
4	Pradeep Rao K	123432415432	8095477572	4th block Kokrady Belthangady	10000

localhost:3000/listadmincustomer

Bank Management System × | localhost / 127.0.0.1 | phpMyAd × | +

localhost:3000/listemployee

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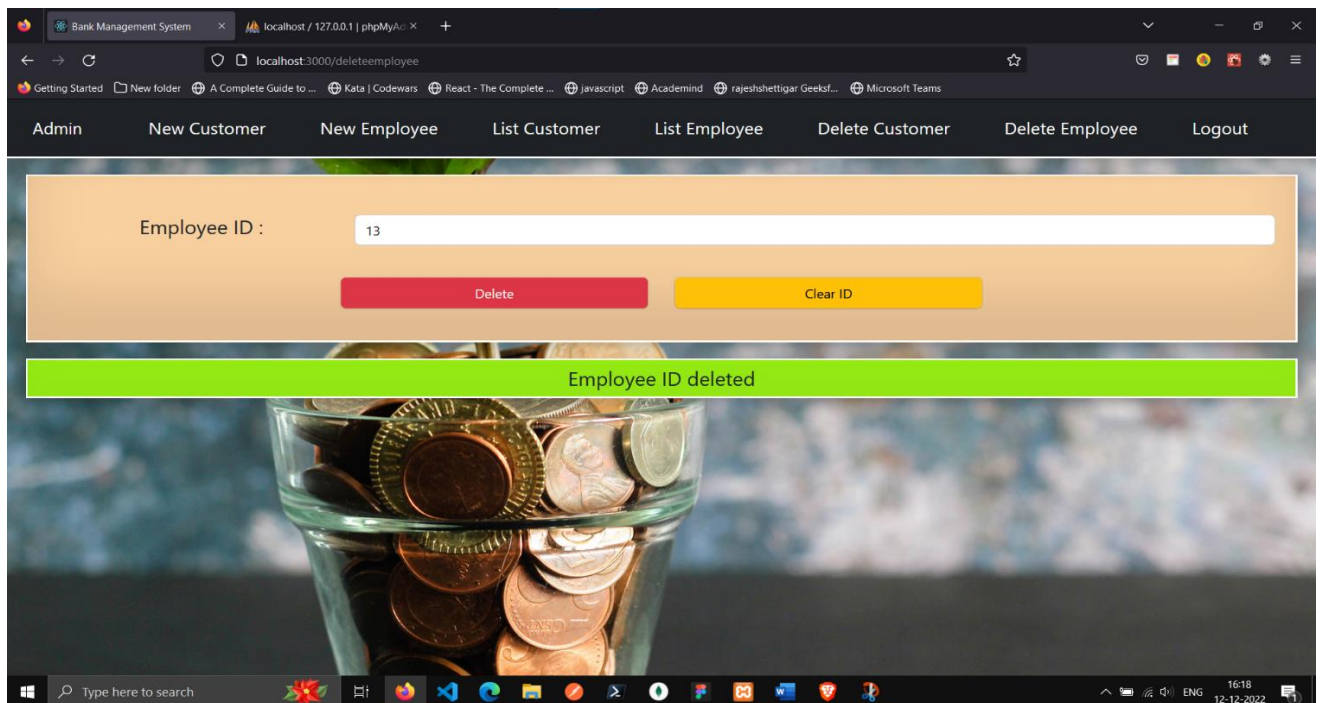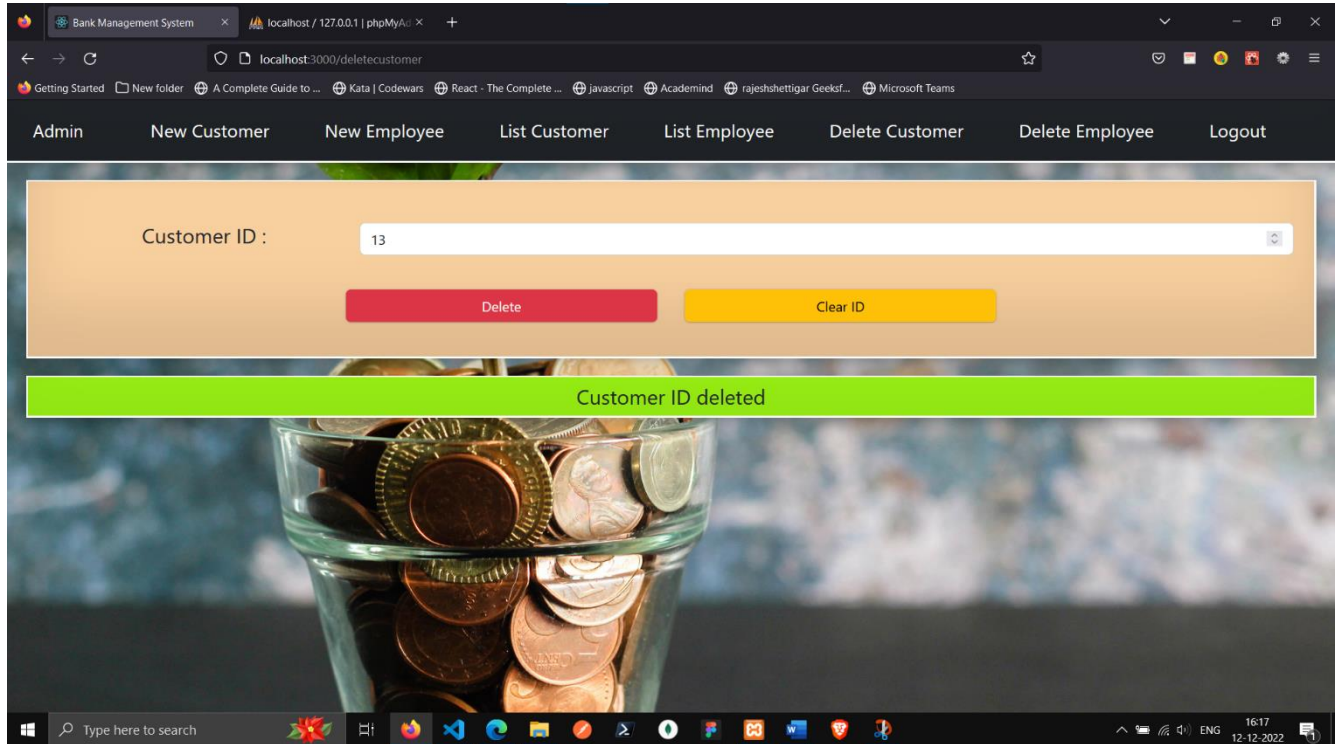| Admin | New Customer | New Employee | List Customer | List Employee | Delete Customer | Delete Employee | Logout |

Employee Details

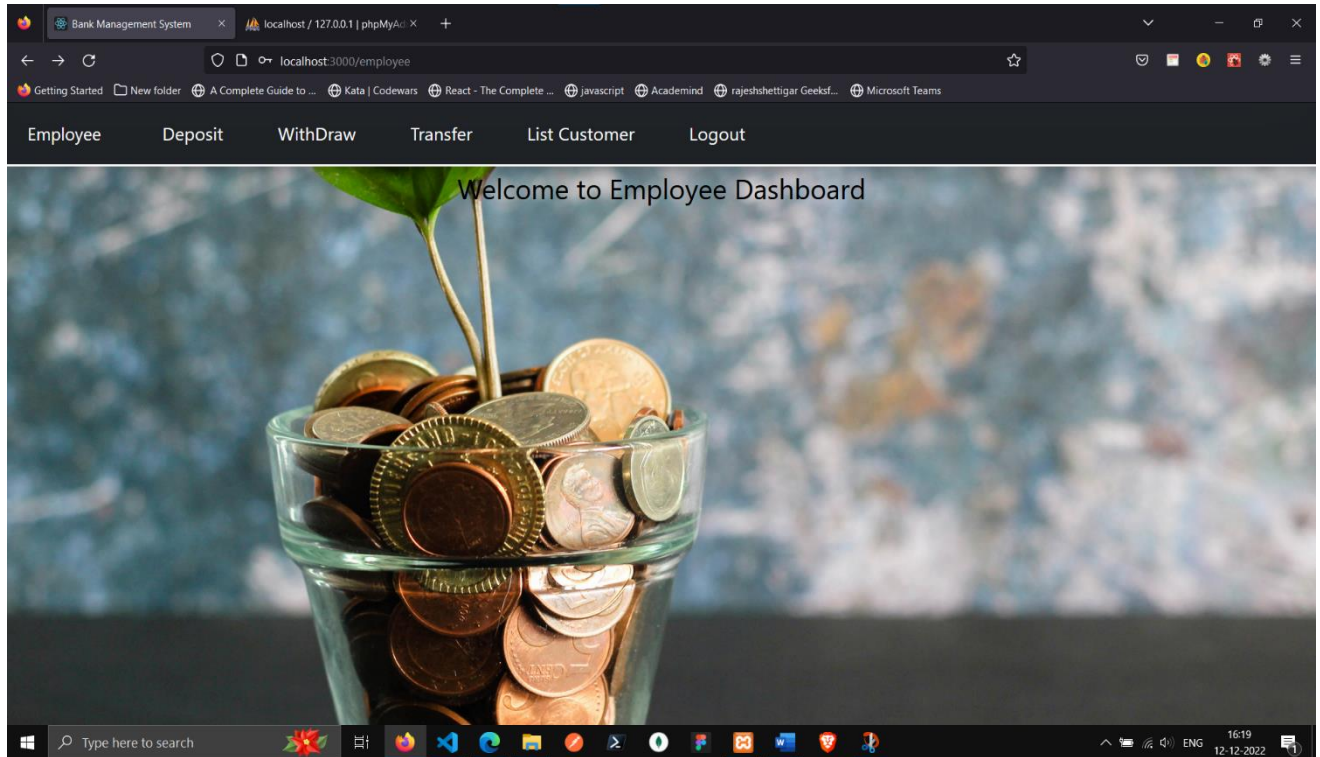| Employee ID	Name	Password
1	Pradeep Rao K	PAswword@123
2	shailesh	password
3	ganesh	password
5	shailesh	password
7	shailesh	password
10	ramesh	ramesh@123
11	rajesh	Rajesh@123
13	pavan	prk@123

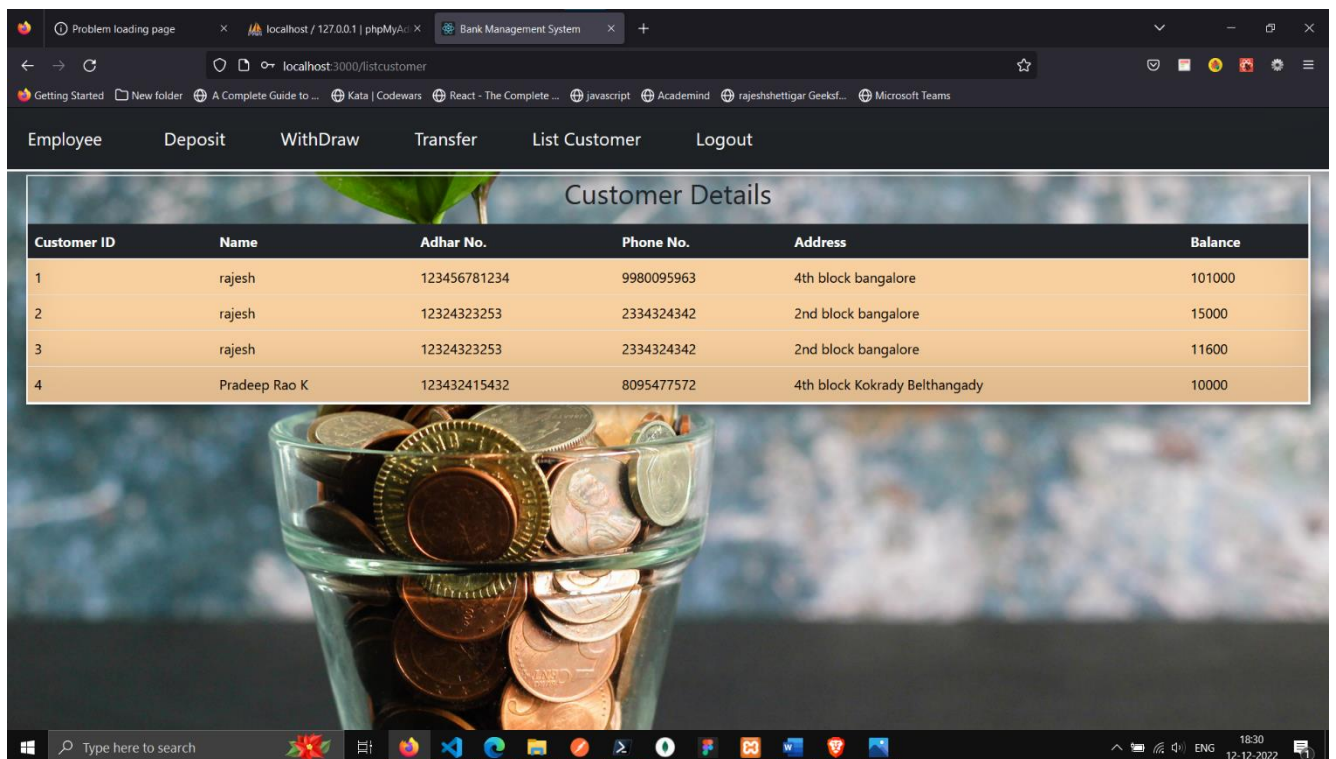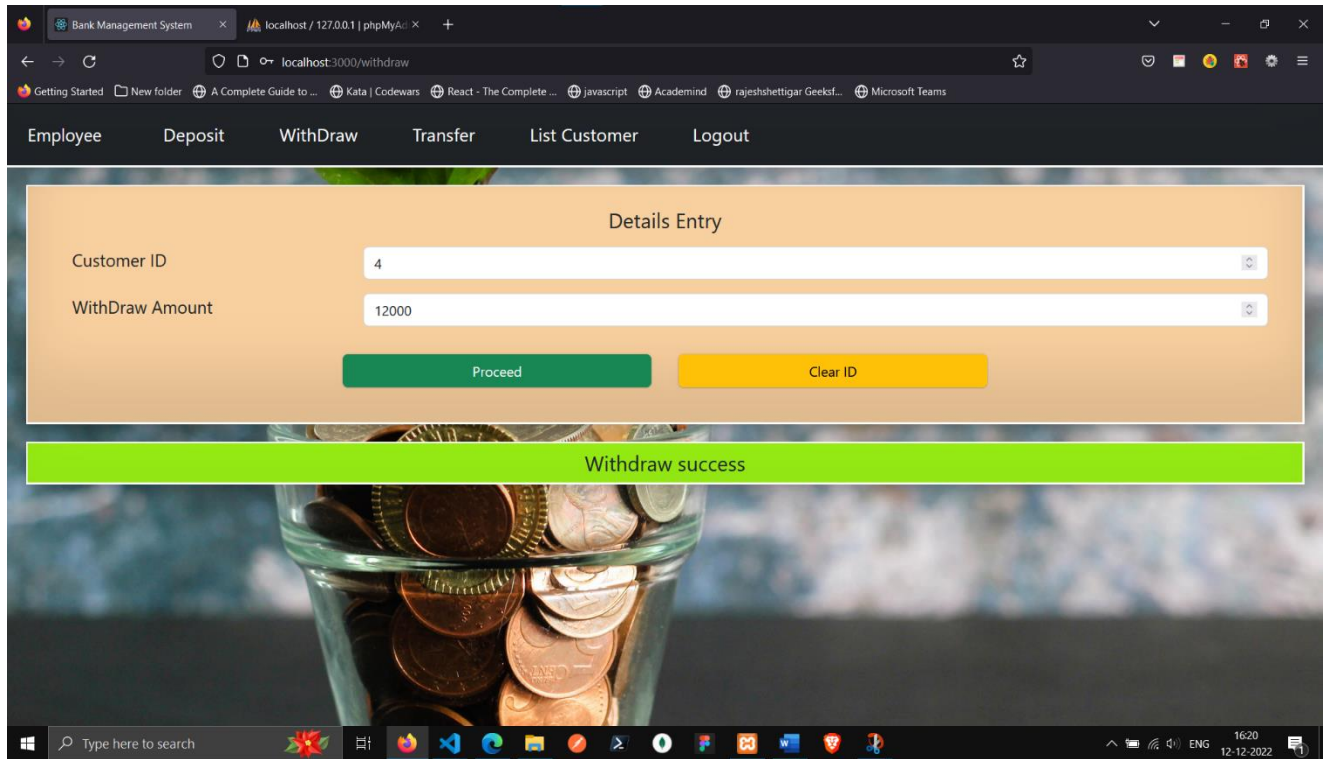## 6.Employee Dashboard page:

This page operations that Employee can perform like deposit, withdraw, transfer, listcustomer

localhost:3000/withdraw

| Employee | Deposit | WithDraw | Transfer | List Customer | Logout |

Details Entry

| Customer ID | 4 |
| WithDraw Amount | 12000 |

Proceed   **Clear ID**

Withdraw success

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localhost:3000/listcustomer

| Employee | Deposit | WithDraw | Transfer | List Customer | Logout |

Customer Details

Customer ID	Name	Adhar No.	Phone No.	Address	Balance
1	rajesh	123456781234	9980095963	4th block bangalore	101000
2	rajesh	12324323253	2334324342	2nd block bangalore	15000
3	rajesh	12324323253	2334324342	2nd block bangalore	11600
4	Pradeep Rao K	123432415432	8095477572	4th block Kokrady Belthangady	10000

Chapter 7. Conclusion and references

With this report we conclude that our mini project if scaled and additional features like customer login and functionalities are added and security policies are implemented can be used in banks.

References

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☐ https://nodejs.org/en/docs/

☐ https://dev.mysql.com/doc/

☐ https://expressjs.com/en/starter/installing.html

☐ https://medium.com/swlh/how-to-setup-a-react-js-project-fromscratch

☐ https://code.visualstudio.com/Docs

☐ https://youtu.be/T8mqZZ0r-RA

☐ https://youtu.be/SccSCuHhOw0