L1- CORE JAVA LAB ASSESSMENT

Emp No: 12228

Emp Name: Nagarjun N S

Batch: Java Batch-5 **Duration**: 4 Hours

Please add the below notes to all the Questions. Instructions:

- 1. Analyze the given problem using W3H technique.
- 2. Write an algorithm and draw the flowchart for the application.
- 3. Prepare UML diagrams for the given scenario [Class Diagram, Use Case Diagram & Sequence Diagram].
- 4. Create a console-based Java application and connect with MySQL database using JDBC API for the given scenario.
- 5. Perform all the CRUD operations using Java DAO pattern.
- 6. Make the application as user interactive.
- 7. Maintain the Code Quality and the Coding Standard .

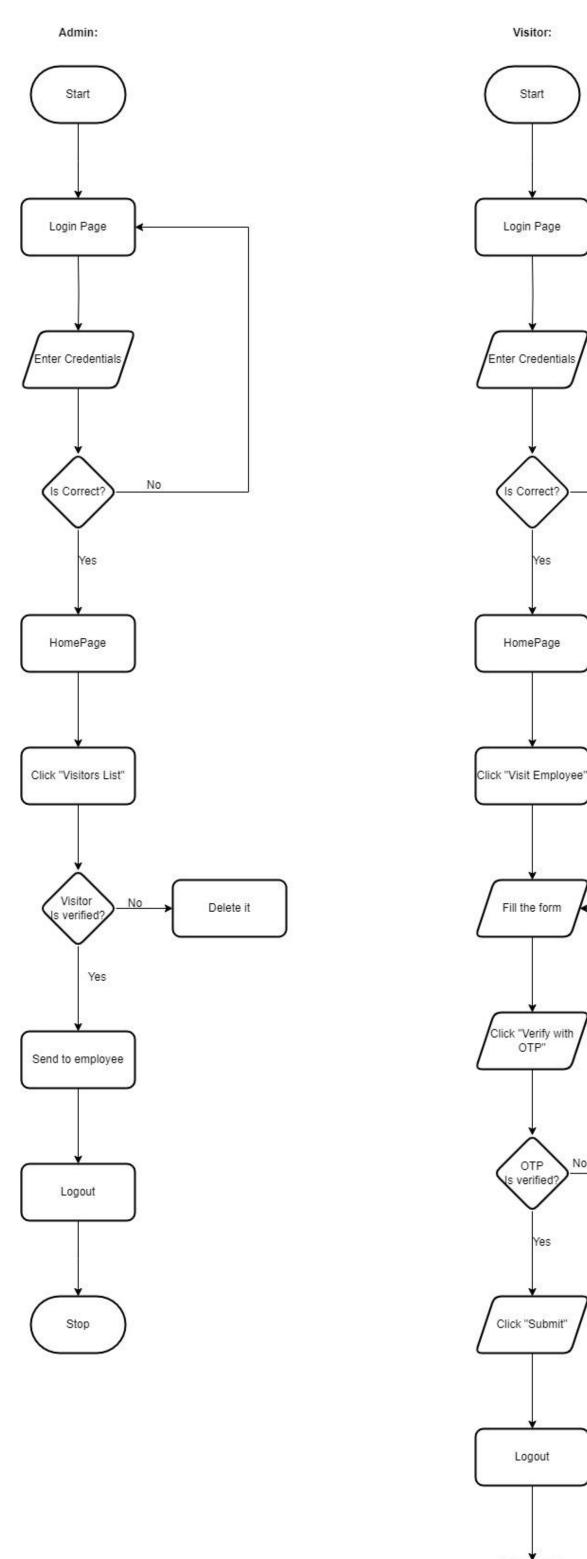
Q4) Visitors Management System

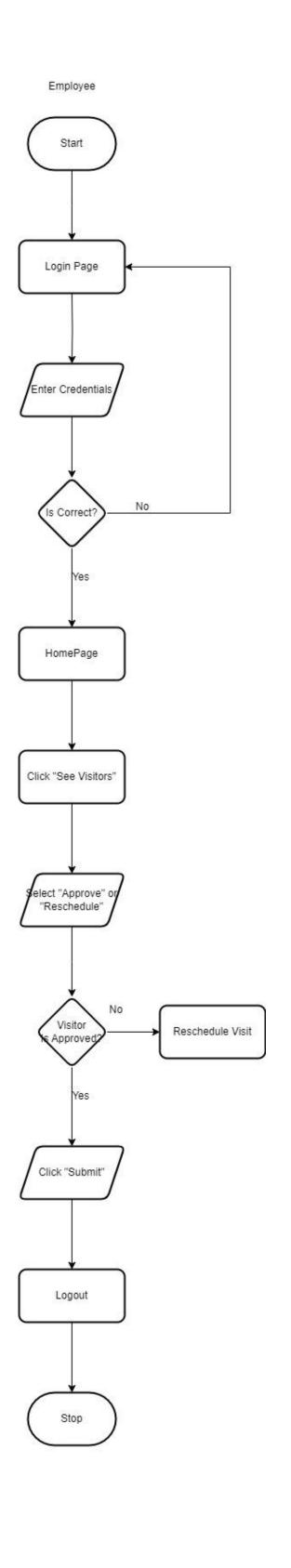
W3H:

PROJECT NAME: Visitors Management System	
What? 1	How? 2
1. What are the modules are required?	1) Admin (System):
Ans: a) Admin (System) Module	a) Login:
b) Employee Module	Method 1: The admin can login using their Email and password.
c) Visitors Module	
c) visitors iviodule	Method 2: The admin can login using their username and password.
	Method 3: The admin can login to their account using social media accounts.
2. What are the responsibilities of Admin (System)?	
Ans: a) Admin (System) will handle all the CRUD operations of the visitors database and also on the employee's database they want to visit.	b) Verifying Appointment:
	Method 1: Admin can verify visitors by sending an OTP to confirm the appointment.
3. What can the visitor do?	Method 2: Admin can verify visitors with their basic details like Name, email, Employee name, ph.no, address to confirm their appointment.
Ans: a) The visitor can able to enter the employee's name and other personal details of the employee they wish to see.	
b) Visitors can able to see the Employee is present or not.	c) Update / delete / view visitor details:
c) Visitors can easily select the date and time to visit the employees' of the office.	Method 1: Admin can be able to Update / delete / view visitor details by providing separate buttons.
	Method 2: Admin can be able to Update / delete / view visitor details by using the drop-down list.
4. What can the employees see?	
Ans: a) Employees can be able to see their list of visitors.	2) Visitor:
b) They can see the appointed date and time.	a) Login:
c) They can see the purpose of the visit written in a short description.	Method 1: The Visitor can login by using their Email and password.
of they can see the purpose of the visit whitein in a short description.	Method 2: The Visitor can login by using mobile number and Password.
5. What are the fields required for visitors?	Method 3: The Visitor can login to their account using their visiting id.
Ans: Visitor_ID, Visitors_Name, Employee_name, Visiting_Purpose, Visiting_DateTime, Visitor_PhoneNo, Visitor_Address.	Wethou 3. The visitor can login to their account using their visiting id.
And visitor_id, visitors_ivame, employee_mame, visiting_rurpose, visiting_date mile, visitor_rubleivo, visitor_Address.	b) CRUD Operations:
6. What if the employee is unavailable on that day?	Method 1: Visitor can perform CRUD Operations for their account with separate buttons.
Ans: The employee can be able to update the next available date and this information will be updated to the system and a SMS will be sent to the visitor	Method 2: Visitor can be able to perform CRUD Operations for their account using a drop-down list and a confirm button.
	c) Filling Visiting Form:
	Method 1: Visitor can enter their basic details like name, Purpose of the visit, Visiting Date and Time, ph no, address and the name of the employee they
	want to visit in the fields.
	Method 2: Visitor can enter their name and purpose and the name of the employee.
1) Admin (System):	1) Admin:
a) Login:	a) Login:
Method 1: The admin can login using their Email and password.	Method 2: The admin can login using their username and password.
(This method is used because the originality of the admin is verified).	(Admin can't login using their username and password as the originality is not verified.)
	(talling and troping and assertance and passenters as the originality to hot verifically
b) Verifying Appointment:	Method 3: The admin can login to their account using social media accounts.
Method 1: Admin can verify visitors by sending an OTP to confirm the appointment.	(Using Social media accounts to login will not be a feasible way and it is less secure).
(This method is used because the user will be verified as well as the date and time also acknowledged by confirming the OTP)	(esting section means accounts to logarity with not see a reastione way and it is less secure).
(This method is used because the user will be verified as well as the date and time also deknowledged by committing the off j	b) Verifying Appointment:
c) Update / delete / view visitor details:	Method 2: Admin can verify visitors with their basic details like Name, email, Employee Name, ph.no, address to confirm their appointment.
Method 1: Admin can be able to Update / delete / view visitor details by providing separate buttons.	(If a visitor just filled in all the details and didn't verify their appointment then there is a cause for spamming or any other unauthorized access.)
(Providing separate buttons with separate functionalities will help to use the application easily.)	A11. July 1.4. Lat. 1.2. 1.29. 1.4.29.
	c) Update / delete / view visitor details:
2) Visitor:	Method 2: Admin can be able to Update / delete / view visitor details by using the drop-down list.
a) Login:	(The drop-down list feature is not feasible, and it is hard to use, and it is time-consuming function too).
Method 1: The Visitor can login by using their Email and password.	
(Login to the system by using their Email and password will help to identify the originality of the user)	2) Visitor:
	a) Login:
b) CRUD Operations:	Method 2: The visitor can login by using mobile number and password.
Method 1: Visitor can perform CRUD Operations for their account with separate buttons.	(User login using mobile number and account number will not be secure)
(Providing separate buttons with separate functionalities will help to use the application easily.)	
	Method 3: The Visitor can login to their account using their visiting id.
c) Filling Visiting Form:	(We cannot authorize the visitor who only has the visiting_ID and it is not a feasible way to authorize)
Method 1: Visitor can enter their basic details like name, Purpose of the visit, Visiting Date and Time, ph no, address and the name of the employee they	
want to visit in the fields.	b) CRUD Operations:
(By filling the above details in the online form will pave a way for the clear understanding of the visit and these are all the basic details to get from a	Method 2: Visitor can be able to perform CRUD Operations for their account using a drop-down list and a confirm button.
visitor.)	(The drop-down list feature is not feasible, and it is hard to use, and it is time-consuming function too).
	c) Filling Visiting Form:
	Method 2: Visitor can enter their name and purpose and the name of the employee.
	(If visitor enters only their name, purpose and name of the employee, these details are not enough for records if anything goes wrong in the visit. So, it is
	not feasible.)
M/by/2 2	W/by no+2.4
Why? 3	Why not? 4

ALGORITHM & FLOW CHART: ALGORITHM: Visitor Algorithm: Step 1: Start **Step 2: Go to Login page Step 3: Enter the credentials** Step 4: After completing step 3, click login **Step 5: Go to homepage Step 6: Select "Visit Employee" Step 7: Fill the form Step 8: Confirm the visit with OTP Step 9: Logout** Step 10: Stop **Admin Algorithm:** Step 1: Start **Step 2: Go to Login page Step 3: Enter the credentials** Step 4: After completing step 3, click login **Step 5: Go to homepage Step 6: Click on Visitor's list Step 7: Send the approved Visitor's details to the relevant Employees Step 8: Logout** Step 9: Stop **Employee Algorithm:** Step 1: Start **Step 2: Go to Login page Step 3: Enter the credentials** Step 4: After completing step 3, click login **Step 5: Go to homepage Step 6: Select "See Visitors" tab** Step 7: Click "Approve" button to accept the appointment, or else click "Reschedule" to inform the availability to the visitor on some other days **Step 8: Logout** Step 9: Stop

FLOWCHART:

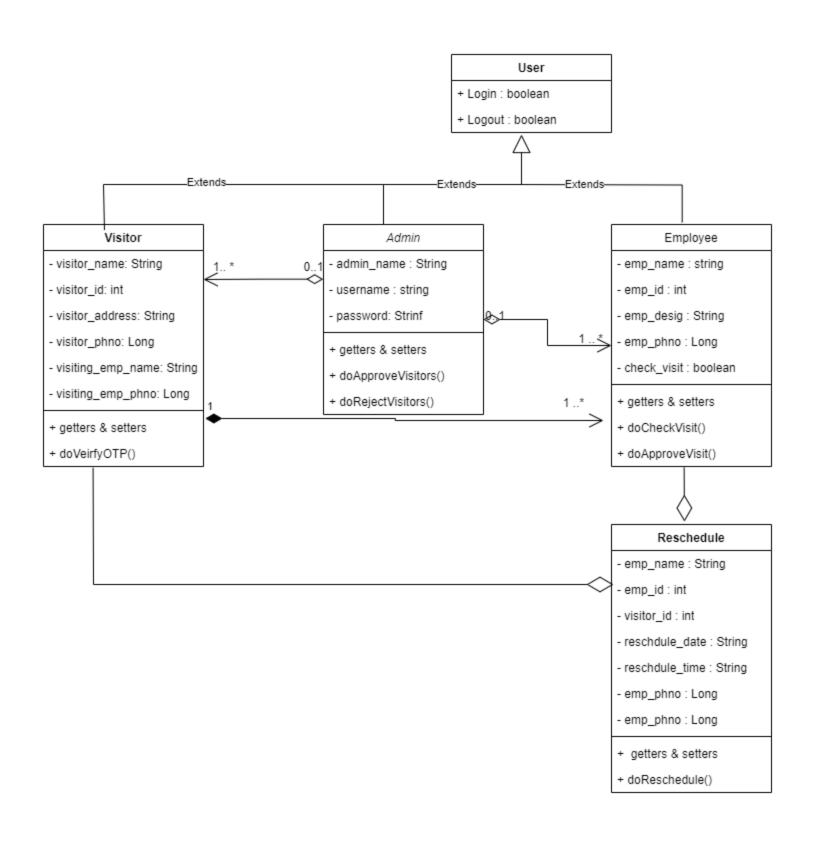




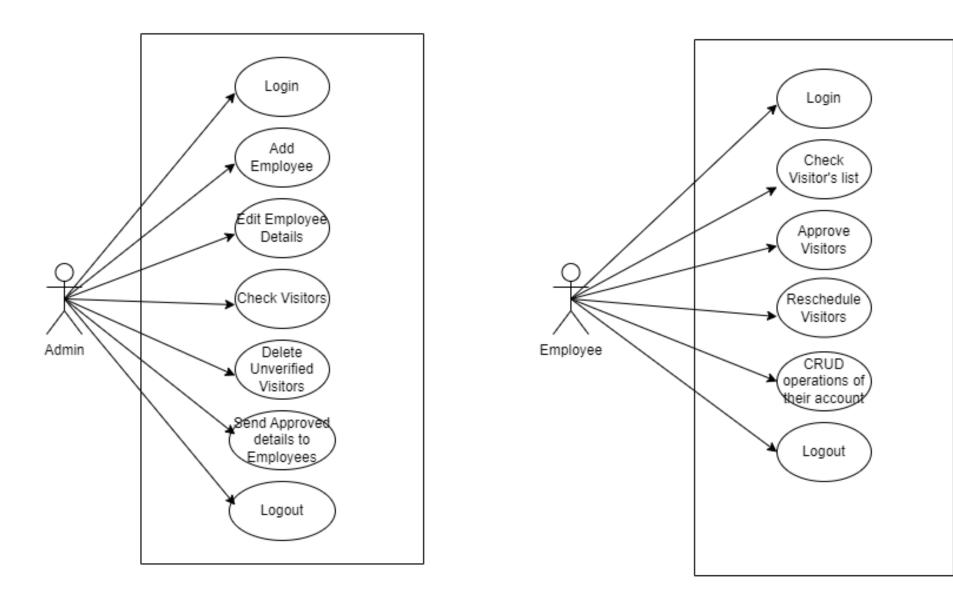
UML DIAGRAMS:

CLASS DIAGRAM:

VISITOR MANAGEMENT CLASS DIAGRAM

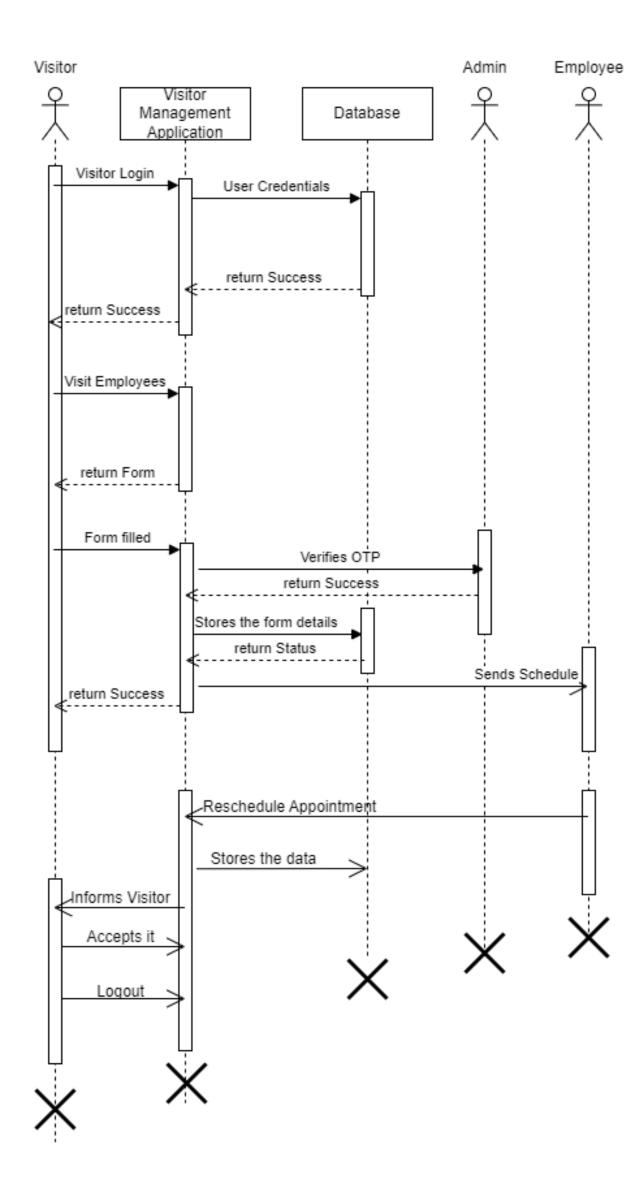


USE CASE DIAGRAM





SEQUENCE DIAGRAM:



FOLDER STRUCTURE:

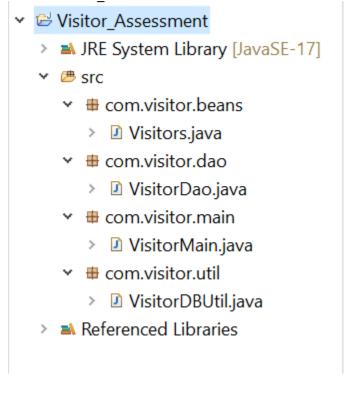
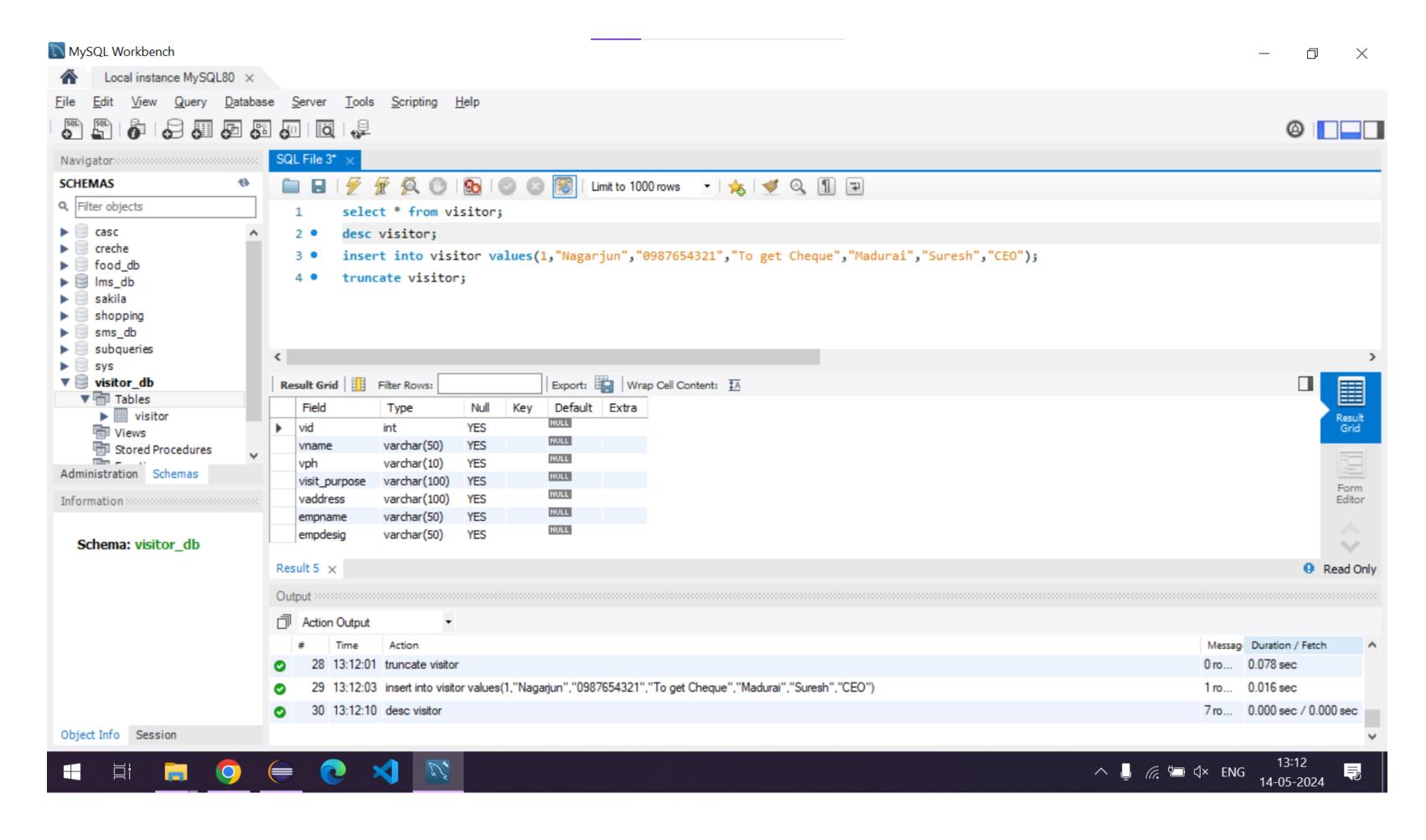


TABLE STRUCTURE:



SCREENSHOTS:

INSERTION:

```
Problems @ Javadoc 	☐ Declaration
☐ Console ×
☐ Coverage
VisitorMain [Java Application] D:\eclipse-java-2023-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.8.v20230831-1047\jre\bin\javaw.exe (14-May-2024,
-----Menu-----
1.ViewAll
2.Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:
1 Nagarjun 6379414314 To_Get_Cheque Madurai Suresh CEO
Record Inserted Successfully!!!
Do you want to continue (Yes | No) ?:
-----Menu-----
1.ViewAll
Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:
2 Madhan 7878989827 Casual Chennai Madhavi Tester
Record Inserted Successfully!!!
```

VIEW ALL:

```
1.ViewAll
2.Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
1
vid || vname || vph || visit_purpose || vaddress || empname || empdesig

1 || Nagarjun || 6379414314 || To_Get_Cheque || Madurai || Suresh || CEO
2 || Madhan || 7878989827 || Casual || Chennai || Madhavi || Tester

Do you want to continue (Yes | No) ?:
```

UPDATE:

```
VisitorMain [Java Application] D:\eclipse-java-2023-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.8.v20230831-1047\jre\bin\javaw.exe (14-May-2024,
 1.ViewAll
 2.Insert
 Update
 4.Delete
 5.Find by Visitor ID
 6.Find by Visitor Name
 7.Find by Employee Name
 8.Exit
Enter your Option:
Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:
1 Arjun 78787878 normal_meet Malaysia Gokul Senior_Developer
Record Updated Successfully...
Do you want to continue (Yes | No) ?:
yes
-----Menu-----
 1.ViewAll
 2.Insert
 Update
 4.Delete
 5.Find by Visitor ID
 6.Find by Visitor Name
 7. Find by Employee Name
 8.Exit
Enter your Option:
vid || vname || vph || visit_purpose || vaddress || empname || empdesig
1 || Arjun || 7878787878 || normal_meet || Malaysia || Gokul || Senior_Developer
2 || Madhan || 7878989827 || Casual || Chennai || Madhavi || Tester
<
```

DELETE:

```
VisitorMain [Java Application] D:\eclipse-java-2023-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.8.v20230831-1047\jre\bin\javaw.exe (14-May-2024,
 Update
 4.Delete
 5.Find by Visitor ID
 6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
Enter the Visitor's ID to delete:
Record Deleted successfully...
Do you want to continue (Yes | No) ?:
yes
-----Menu-----
 1.ViewAll
 2.Insert
 Update
 4.Delete
 5.Find by Visitor ID
 6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
vid || vname || vph || visit_purpose || vaddress || empname || empdesig
2 || Madhan || 7878989827 || Casual || Chennai || Madhavi || Tester
Do you want to continue (Yes | No) ?:
```

FINDING BY VISITOR ID:

```
1.ViewAll
2.Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
5
Enter the Visitor's ID to Find:
2
2 Madhan 7878989827 Casual Chennai Madhavi Tester
Record Found!!!
Do you want to continue (Yes | No) ?:
```

FINDING BY VISITOR NAME:

```
1.ViewAll
2.Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
6
Enter the Employee Name to Find:
Madhan
2 Madhan 7878989827 Casual Chennai Madhavi Tester
Record Found!!!
Do you want to continue (Yes | No) ?:
```

FINDING BY EMPLOYEE NAME:

```
1.ViewAll
2.Insert
3.Update
4.Delete
5.Find by Visitor ID
6.Find by Visitor Name
7.Find by Employee Name
8.Exit
Enter your Option:
7
Enter the Employee name to Find:
Madhavi
2 Madhan 7878989827 Casual Chennai Madhavi Tester
Record Found!!!
Do you want to continue (Yes | No) ?:
```

CODING:

<u>Visitors.java</u>

package com.visitor.beans;

```
private int vid;
private String vname;
private String vph;
private String vpurpose;
private String vaddress;
private String emp_name;
private String emp_desig;
public Visitors() {
super();
// TODO Auto-generated constructor stub
public Visitors(int vid, String vname, String vph, String vpurpose, String vaddress, String emp_name,
String emp_desig) {
super();
this.vid = vid;
this.vname = vname;
this.vph = vph;
this.vpurpose = vpurpose;
this.vaddress = vaddress;
this.emp_name = emp_name;
this.emp_desig = emp_desig;
public int getVid() {
return vid;
public void setVid(int vid) {
this.vid = vid;
public String getVname() {
return vname;
public void setVname(String vname) {
this.vname = vname;
public String getVph() {
return vph;
public void setVph(String vph) {
this.vph = vph;
public String getVpurpose() {
return vpurpose;
public void setVpurpose(String vpurpose) {
this.vpurpose = vpurpose;
public String getVaddress() {
return vaddress;
public void setVaddress(String vaddress) {
this.vaddress = vaddress;
public String getEmp_name() {
return emp_name;
public void setEmp_name(String emp_name) {
this.emp_name = emp_name;
public String getEmp_desig() {
return emp_desig;
public void setEmp_desig(String emp_desig) {
this.emp_desig = emp_desig;
Visitor Dao. java
package com.visitor.dao;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.ResultSetMetaData;
import java.sql.SQLException;
import com.visitor.beans.Visitors;
import com.visitor.util.VisitorDBUtil;
public class VisitorDao {
public int viewAll() throws SQLException {
int count=0;
Connection con1 = VisitorDBUtil.getConnection();
String sql = "select * from visitor";
PreparedStatement ps = con1.prepareStatement(sql);
ResultSetMetaData rms = ps.getMetaData();
ResultSet rs = ps.executeQuery();
System.out.println(rms.getColumnName(1)+" || "+rms.getColumnName(2)+" || "+rms.getColumnName(4)+" || "+rms.getColumnName(5)+" || "+rms.getColumnName(6)+" || "+rms.getColumnName(7));
System.out.println("-----");
```

public class Visitors {

```
System.out.println(rs.getInt(1)+" || "+rs.getString(2)+" || "+rs.getString(3)+" || "+rs.getString(4)+" || "+rs.getString(5)+" || "+rs.getString(6)+" || "+rs.getString(7));
con1.close();
return count;
public int doInsert(Visitors e) throws SQLException {
Connection con1 = VisitorDBUtil.getConnection();
String sql = "insert into visitor values(?,?,?,?,?,?)";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setInt(1, e.getVid());
ps.setString(2, e.getVname());
ps.setString(3, e.getVph());
ps.setString(4, e.getVpurpose());
ps.setString(5, e.getVaddress());
ps.setString(6, e.getEmp_name());
ps.setString(7, e.getEmp_desig());
int n=ps.executeUpdate();
con1.close();
return n;
public int doUpdate(Visitors e) throws SQLException {
Connection con1 = VisitorDBUtil.getConnection();
String sql = "update visitor set vname=?,vph=?,visit_purpose=?,vaddress=?,empname=?,empdesig=? where vid=?";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setString(1, e.getVname());
ps.setString(2, e.getVph());
ps.setString(3, e.getVpurpose());
ps.setString(4, e.getVaddress());
ps.setString(5, e.getEmp_name());
ps.setString(6, e.getEmp_desig());
ps.setInt(7, e.getVid());
int n=ps.executeUpdate();
con1.close();
return n;
public int doDelete (int id) throws SQLException {
Connection con1 = VisitorDBUtil.getConnection();
String sql = "delete from visitor where vid=?";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setInt(1, id);
int n=ps.executeUpdate();
con1.close();
return n;
public int doFind (int id) throws SQLException {
int count=0;
Connection con1 = VisitorDBUtil.getConnection();
String sql = "select * from visitor where vid=?";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setInt(1, id);
ResultSet rs=ps.executeQuery();
while(rs.next()) {
System.out.println(rs.getInt(1)+" "+rs.getString(2)+" "+rs.getString(3)+" "+rs.getString(4)+" "+rs.getString(5)+" "+rs.getString(6)+" "+rs.getString(7));
con1.close();
return count;
public int doFindName (String name) throws SQLException {
int count=0;
Connection con1 = VisitorDBUtil.getConnection();
String sql = "select * from visitor where vname=?";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setString(1, name);
ResultSet rs=ps.executeQuery();
while(rs.next()) {
System.out.println(rs.getInt(1)+" "+rs.getString(2)+" "+rs.getString(3)+" "+rs.getString(4)+" "+rs.getString(5)+" "+rs.getString(6)+" "+rs.getString(7));
con1.close();
return count;
public int doFindEmp (String emname) throws SQLException {
int count=0;
Connection con1 = VisitorDBUtil.getConnection();
String sql = "select * from visitor where empname=?";
PreparedStatement ps = con1.prepareStatement(sql);
ps.setString(1, emname);
ResultSet rs=ps.executeQuery();
while(rs.next()) {
System.out.println(rs.getInt(1)+" "+rs.getString(2)+" "+rs.getString(3)+" "+rs.getString(4)+" "+rs.getString(5)+" "+rs.getString(6)+" "+rs.getString(7));
count++;
con1.close();
return count;
```

while(rs.next()) {

```
import java.util.Scanner;
import com.visitor.beans.Visitors;
import com.visitor.dao.VisitorDao;
public class VisitorMain {
static Scanner sc = new Scanner(System.in);
public static int displayMenu() {
int choice;
System.out.println("-----");
System.out.println(" 1.ViewAll\n 2.Insert\n 3.Update\n 4.Delete\n 5.Find by Visitor ID\n 6.Find by Visitor Name\n 7.Find by Employee Name\n 8.Exit \nEnter your Option:");
choice = sc.nextInt();
return choice;
public static Visitors insert() {
System.out.println("Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:");
return(new Visitors(sc.nextInt(),sc.next(),sc.next(),sc.next(),sc.next(),sc.next());
public static Visitors update() {
System.out.println("Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:");
return(new Visitors(sc.nextInt(),sc.next(),sc.next(),sc.next(),sc.next(),sc.next());
public static Visitors findName() {
System.out.println("Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:");
return(new Visitors(sc.nextInt(),sc.next(),sc.next(),sc.next(),sc.next(),sc.next());
public static Visitors findEmpName() {
System.out.println("Enter the Visitor ID, Visitor name, Visitor Phone number, Visit Purpose, Visitor Address, Employee Name, Employee Designation:");
return(new Visitors(sc.nextInt(),sc.next(),sc.next(),sc.next(),sc.next(),sc.next());
public static void main(String s[]) throws SQLException {
VisitorDao dao = new VisitorDao();
String ch;
switch(displayMenu()) {
case 1:
int n = dao.viewAll();
if(n<=0) {
System.out.println("No Records Found!!!");
break;
case 2:
Visitors v = insert();
int in = dao.doInsert(v);
if(in>0) {
System.out.println("Record Inserted Successfully!!!");
else {
System.out.println("Record Insertion Failed!!!");
break;
case 3:
Visitors upd = update();
int up = dao.doUpdate(upd);
if(up>0) {
System.out.println("Record Updated Successfully...");
else {
System.out.println("Failure in Updation");
break;
System.out.println("Enter the Visitor's ID to delete:");
int id = sc.nextInt();
int del = dao.doDelete(id);
if(del>0) {
System.out.println("Record Deleted successfully...");
else {
System.out.println("Failure in Deletion!!!");
break;
case 5:
System.out.println("Enter the Visitor's ID to Find:");
int fid = sc.nextInt();
int fin = dao.doFind(fid);
if(fin>0) {
System.out.println("Record Found!!!");
else {
System.out.println("Record not found");
break;
System.out.println("Enter the Employee Name to Find:");
String ename = sc.next();
int fname = dao.doFindName(ename);
if(fname<=0) {</pre>
```

import java.sql.SQLException;

```
System.out.println("Record not found");
else {
System.out.println("Record Found!!!");
break;
case 7:
System.out.println("Enter the Employee name to Find:");
String fename = sc.next();
int fenamede = dao.doFindEmp(fename);
if(fenamede>0) {
System.out.println("Record Found!!!");
else {
System.out.println("Record not found");
break;
System.out.println("Thank You! Visit Again!!!");
System.exit(0);
System.out.println();
System.out.println("Do you want to continue (Yes | No) ?:");
ch = sc.next();
} while(ch.equalsIgnoreCase("yes"));
VisitorDBUtil.java
```

```
package com.visitor.util;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
public class VisitorDBUtil {
public static Connection getConnection() throws SQLException{
final String URL = "jdbc:mysql://localhost:3306/visitor_db";
final String User = "root";
final String pass = "root";
Connection conn = DriverManager.getConnection(URL,User,pass);
return conn;
```