**PRACTICAL 2.4**

**AIM:**

Write RMI application where client will send Enrolment number and Name of a student to the server. Server will Open a database connection and store the Information in Database. Add a new Server to read the data from the database and display it on output screen of client.

**CODE:**

**RemoteInterfaceInsert.java**

import java.rmi.\*;

public interface RemoteInterfaceInsert extends Remote {

public void insert(int enrollNo, String name) throws RemoteException;

}

**ServerInsert.java**

import java.rmi.\*;

import java.rmi.server.\*;

import java.sql.\*;

public class ServerInsert extends UnicastRemoteObject implements RemoteInterfaceInsert {

//JDBC Driver Name and Database URL

static final String JDBC\_DRIVER = "com.mysql.jdbc.Driver";

static final String DB\_URL = "jdbc:mysql://localhost:3306/s2b130050131525";

//Database Credentials

static final String USER = "root";

static final String PASS = "mysql";

public ServerInsert() throws RemoteException{

super();

}

public void insert(int enrollNo, String name) throws RemoteException {

Connection conn = null;

Statement stmt = null;

try{

//STEP 2: Register JDBC Driver

Class.forName(JDBC\_DRIVER);

//STEP 3: Open a Connection

System.out.println("Connecting to selected database");

conn = DriverManager.getConnection(DB\_URL, USER, PASS);

System.out.println("Connected to database successful");

//STEP 4: Creating Statement

stmt = conn.createStatement();

//STEP 5: Execute Statements

System.out.println("Inserting records into the table");

String sql = "INSERT INTO student\_data VALUES(" + enrollNo + ", '" + name + "')";

stmt.executeUpdate(sql);

System.out.println("Records inserted");

} catch(SQLException se){

//Handle errors for JDBC

se.printStackTrace();

} catch(Exception e){

//Handle errors for Class.forName

e.printStackTrace();

} finally{

//finally block used to close resources

try{

if(stmt!=null)

conn.close();

} catch(SQLException se){

}

try{

if(conn!=null)

conn.close();

} catch(SQLException se){

se.printStackTrace();

}

}

System.out.println("Goodbye!");

}

}

**RemoteInterfaceGet.java**

import java.rmi.\*;

import java.util.\*;

public interface RemoteInterfaceGet extends Remote {

public List<Student> get() throws RemoteException;

}

**ServerInsert.java**

import java.rmi.\*;

import java.rmi.server.\*;

import java.sql.\*;

import java.util.\*;

public class ServerGet extends UnicastRemoteObject implements RemoteInterfaceGet {

//JDBC Driver Name and Database URL

static final String JDBC\_DRIVER = "com.mysql.jdbc.Driver";

static final String DB\_URL = "jdbc:mysql://localhost:3306/s2b130050131525";

//Database Credentials

static final String USER = "root";

static final String PASS = "mysql";

public ServerGet() throws RemoteException{

super();

}

public List<Student> get() throws RemoteException {

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

List<Student> data = new ArrayList<>();

try{

//STEP 2: Register JDBC Driver

Class.forName(JDBC\_DRIVER);

//STEP 3: Open a Connection

System.out.println("Connecting to selected database");

conn = DriverManager.getConnection(DB\_URL, USER, PASS);

System.out.println("Connected to database successful");

//STEP 4: Creating Statement

stmt = conn.createStatement();

//STEP 5: Retrive Tuples

rs = stmt.executeQuery("SELECT \* FROM student\_data");

System.out.println("Records Retrived");

while(rs.next())

data.add(new Student(rs.getInt(1), rs.getString(2)));

} catch(SQLException se){

//Handle errors for JDBC

se.printStackTrace();

} catch(Exception e){

//Handle errors for Class.forName

e.printStackTrace();

} finally{

//finally block used to close resources

try{

if(stmt!=null)

conn.close();

} catch(SQLException se){

}

try{

if(conn!=null)

conn.close();

} catch(SQLException se){

se.printStackTrace();

}

}

return data;

}

}

**Registration.java**

import java.rmi.\*;

import java.net.\*;

public class Registration {

public static void main(String[] args){

try {

ServerInsert si = new ServerInsert();

Naming.rebind("INSERT",si);

ServerGet sg = new ServerGet();

Naming.rebind("GET",sg);

System.out.println("Bindins Successful. Server Started");

} catch(Exception e) {

System.out.println(e.getMessage());

}

}

}

**Client.java**

import java.rmi.\*;

import java.io.\*;

import java.util.\*;

public class Client {

public static void main(String[] args) {

Scanner in = new Scanner(System.in);

int enrollNo;

String name;

try {

System.out.println("Enrollment No.: 130050131525");

String ip="rmi://localhost/";

RemoteInterfaceInsert si = (RemoteInterfaceInsert)Naming.lookup(ip + "INSERT");

RemoteInterfaceGet sg = (RemoteInterfaceGet)Naming.lookup(ip + "GET");

System.out.print("Enrollment No.: ");

enrollNo = in.nextInt();

System.out.print("Name: ");

name = in.next();

si.insert(enrollNo, name);

List<Student> data = sg.get();

for(int i=0; i<data.size(); i++)

System.out.println(data.get(i));

} catch(Exception e) {

e.printStackTrace();

}

}

}

**Student.java**

public class Student implements Serializable {

private int enrollNo;

private String name;

public Student(int enrollNo, String name) {

this.enrollNo = enrollNo;

this.name = name;

}

@Override

public String toString() {

return "\nENROLLMENT NO: " + this.enrollNo + "\nNAME: " + this.name;

}

}

**OUTPUT:**







