Tab 1

Q 1

Q 1.Write a JDBC to program Create table as

Student(srn,sname,smarks) and perform following

operation in table .

• Insert at least 5 values using Statement object.

• Update one Particular Record.

• Delete One Particular Record.

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

System.***out***.println("enter table name");

String tname=sc.next();

System.***out***.println("enter first column");

String fcol=sc.next();

System.***out***.println("enter second column");

String scol=sc.next();

System.***out***.println("enter third column");

String tcol=sc.next();

String sql = "CREATE TABLE " + tname + " (" + fcol + " INT, " + scol + " VARCHAR(20), " + tcol + " INT)";

st.executeUpdate(sql);

System.***out***.println("table created");

for(int i=1;i<=5;i++) {

System.***out***.println("enter records" + i);

System.***out***.println("enter Student No");

int sno=sc.nextInt();

sc.nextLine();

System.***out***.println("enter Student Name");

String sname=sc.nextLine();

System.***out***.println("enter Strudent Marks");

int marks=sc.nextInt();

sc.nextLine();

String insertSql ="insert into " + tname+ " values(" + sno + ",'" + sname + "', " + marks + ")";

st.executeUpdate(insertSql);

}

System.***out***.println("5 records inserted successfully");

System.***out***.println("enter name to update");

String updateName=sc.nextLine();

System.***out***.println("enter new marks to update");

int updateMarks=sc.nextInt();

String updateSql = "UPDATE " + tname + " SET " + tcol + " = " + updateMarks + " WHERE " + scol + " = '" + updateName + "'";

st.executeUpdate(updateSql);

System.***out***.println("update record successfully");

System.***out***.println("enter student nu to delete");

int delNo=sc.nextInt();

String deleteSql="delete from "+tname+" where "+fcol+ "=" +delNo;

st.executeUpdate(deleteSql);

System.***out***.println("delete records successfully");

con.close();

Q 2.Write a java program to accept the details of customer (CID,

CName, Address, Ph\_No) and store it into the database(Use

PreparedStatement interface

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc = new Scanner(System.***in***);

String createTableSQL = "CREATE TABLE Customer (" +

"CID INT PRIMARY KEY, " +

"CName VARCHAR(30), " +

"Address VARCHAR(50), " +

"Ph\_No VARCHAR(15))";

st.executeUpdate(createTableSQL);

System.***out***.println("Customer table created successfully.");

System.***out***.print("Enter Customer ID: ");

int cid = sc.nextInt();

sc.nextLine();

System.***out***.print("Enter Customer Name: ");

String cname = sc.nextLine();

System.***out***.print("Enter Address: ");

String address = sc.nextLine();

System.***out***.print("Enter Phone Number: ");

String phone = sc.nextLine();

String sql = "INSERT INTO Customer VALUES (?, ?, ?, ?)";

PreparedStatement ps = con.prepareStatement(sql);

ps.setInt(1, cid);

ps.setString(2, cname);

ps.setString(3, address);

ps.setString(4, phone);

ps.executeUpdate();

System.***out***.println("Customer details inserted successfully!");

ps.close();

con.close();

sc.close();

Q 3.Write a JDBC Program to create table

Emp(Eno,Ename,Eadd,Eaadhar,esal)And Display Message

table Created

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

System.***out***.println("connection established");

String sql="create table emp(Eno int,Ename varchar(20),Eaadhar int,Esal int)";

st.executeUpdate(sql);

System.***out***.println("table create");

con.close();

Q 4.Write a java program to create Teacher

table(TNo,Tname,Sal,Desg)and insert a record in it

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

System.***out***.println("connection established");

String sql="create table teacher(Tno int,Tname varchar(20),Tsal int,desg varchar(20))";

st.executeUpdate(sql);

String Sql="insert into teacher values(1,'Tanzila',1000,'Lecturer')";

st.executeUpdate(Sql);

System.***out***.println("values inserted successfully");

con.close();

Q 5.Write a JDBC program to update number\_of\_students of “BCA

Science” to 1000.

Create a table Course (Code,name,

department,number\_of\_students) in PostgreSQL

database. Insert values in the table

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

System.***out***.println("Enter Course Code:");

int code=sc.nextInt();

sc.nextLine();

System.***out***.println("Enter Ciurse Name:");

String name=sc.nextLine();

System.***out***.println("Enter department:");

String dept=sc.nextLine();

System.***out***.println("Enter no of Students:");

int stud=sc.nextInt();

String sql="create table stu(" +

" code int," +

" name varchar(20)," +

" department varchar(30)," +

" stud\_no int)";

st.executeUpdate(sql);

System.***out***.println("table created successfully");

String insertSql="insert into stu values(" + code + ",'" + name + "', '" + dept + "', " + stud + ")";

st.executeUpdate(insertSql);

System.***out***.println("values inserted successfully");

String updateSql="update course set stud\_no=1000 where name='BCA Science'";

st.executeUpdate(updateSql);

System.***out***.println("values updated successfully");

con.close();

Q 6.Write a Java program to accept the details of Student (RNo,

SName, Per, Gender,Class) and store them into the database

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

String create="create table Student2(" + "rno int, " + " sname varchar(30), " + " per real, " + " gender varchar(10), " + " class varchar(20))";

st.executeUpdate(create);

System.***out***.println("table created successfully");

System.***out***.println("Enter RollNo:");

int rno=sc.nextInt();

sc.nextLine();

System.***out***.println("Enter Name:");

String name=sc.nextLine();

System.***out***.println("Enter Percentage:");

float per=sc.nextFloat();

sc.nextLine();

System.***out***.println("Enter Gendar:");

String gender=sc.nextLine();

System.***out***.println("Enter Class:");

String className=sc.nextLine();

String insert="insert into Student2 values(" + rno + ", '" + name + "', " + per + ", '" + gender + "', '" + className + "')";

st.executeUpdate(insert);

System.***out***.println("Student record inserted successfully.");

sc.close();

Q 7.Write a JDBC program to delete the details of a given

employee (ENo ENameSalary).

Take Eno from user

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

String create="create table emp1(" + "eno int,ename varchar(20),salary int)";

st.executeUpdate(create);

System.***out***.println("table created");

String insert="insert into emp1 values(101, 'Aliya', 30000)";

st.executeUpdate(insert);

System.***out***.println("value inserted successfully");

System.***out***.println("Enter Eno to delete");

int eno=sc.nextInt();

String delet="delete from emp1 where eno = " + eno;

int count=

st.executeUpdate(delet);

if (count > 0) {

System.***out***.println("Employee eno ;" + eno + "deleted successfully");

}else {

System.***out***.println("No Employee found with eno " + eno + ".");

}

sc.close();

Q 8.Write a java program to display a list of college names from

the college table.

(Assume College table (CID, CName, addr) is already

created

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

String create="create table college1(" + "cid int, " + "cname varchar(50), " + "addr varchar(50))";

st.executeUpdate(create);

st.executeUpdate("insert into college1 values(101,'Fergusson College','Pune')");

st.executeUpdate("insert into college1 values(102,'Puna College','Pune')");

st.executeUpdate("insert into college1 values(103,'Abeda Inamdar College','Pune')");

String sql="Select cname from college1";

ResultSet rs = st.executeQuery(sql);

System.***out***.println("list of College Name");

while (rs.next()) {

String name = rs.getString("cname");

System.***out***.println(name);

}

con.close();

Q 10.Given a table employees(id, name, email, salary,

department\_id), write JDBC code to:

Insert a new employee

Update an employee's salary

Delete an employee by ID

Retrieve all employees with salary > 50000

Sol: Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

String create="create table empl3(" + " eid int, " + "ename varchar(20), " + "email varchar, " + "salary int, " + "dept\_id int)";

st.executeUpdate(create);

for(int i=1;i<=3;i++) {

System.***out***.println("table created");

System.***out***.println("Enter ID:");

int eid=sc.nextInt();

sc.nextLine();

System.***out***.println("Enter Name:");

String ename=sc.nextLine();

System.***out***.println("Enter email:");

String email=sc.nextLine();

System.***out***.println("Enter Salary:");

int salary=sc.nextInt();

sc.nextLine();

System.***out***.println("Enter department ID:");

int dept\_id=sc.nextInt();

String insert="insert into empl3 values(" + eid + ", '" + ename + "', '" + email + "', " + salary + ", " + dept\_id + ")";

st.executeUpdate(insert);

System.***out***.println("values inserted successfully");

}

System.***out***.println("Enter Employee ID to update salary:");

int uid=sc.nextInt();

System.***out***.println("Enter new salary:");

int newsal=sc.nextInt();

String update="update empl3 set salary = " + newsal + " where eid = " + uid;

st.executeUpdate(update);

System.***out***.println("salary updatedd successfully");

System.***out***.println("Enter Employee ID to delete:");

int did=sc.nextInt();

String delete="delete from empl3 where eid=" + did;

st.executeUpdate(delete);

System.***out***.println("deleted successfully");

String select=("select \* from empl3 where salary>50000");

ResultSet rs = st.executeQuery(select);

while(rs.next()) {

System.***out***.println(rs.getInt("eid") + " | " + rs.getString("ename") + " | " + rs.getString("email") + " | " + rs.getInt("salary") + " | " + rs.getInt("dept\_id"));

}

con.close();

Q 11.Given a table students(id, first\_name, last\_name, email,

enrollment\_date, gpa, major\_id), write JDBC code to

Insert a new student

Update a student's GPA

Delete a student by email

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

System.***out***.println("connection established");

Scanner sc=new Scanner(System.***in***);

String create="create table stud3(id int,first\_name varchar(20),last\_name varchar(20),email varchar(20),enroll\_date varchar(30),gpa float,major\_id int)";

st.executeUpdate(create);

System.***out***.println("table created successfully");

for (int i = 1; i <= 2; i++) {

System.***out***.println("📥 Enter details for Student " + i);

System.***out***.print("Enter ID: ");

int id = sc.nextInt(); sc.nextLine();

System.***out***.print("Enter First Name: ");

String fname = sc.nextLine();

System.***out***.print("Enter Last Name: ");

String lname = sc.nextLine();

System.***out***.print("Enter Email: ");

String email = sc.nextLine();

System.***out***.print("Enter Enrollment Date (YYYY-MM-DD): ");

String enroll = sc.nextLine();

System.***out***.print("Enter GPA: ");

float gpa = sc.nextFloat();

System.***out***.print("Enter Major ID: ");

int major\_id = sc.nextInt();

String insert = "insert into stud3 values(" + id + ", '" + fname + "', '" + lname + "', '" + email + "', '" + enroll + "', " + gpa + ", " + major\_id + ")";

st.executeUpdate(insert);

System.***out***.println("✅ Student " + i + " inserted.\n");

}

sc.nextLine();

System.***out***.print("✏️ Enter email to update GPA: ");

String updateEmail = sc.nextLine();

System.***out***.print("Enter new GPA: ");

float newGpa = sc.nextFloat();

String update = "update stud3 set gpa = " + newGpa + " where email = '" + updateEmail + "'";

st.executeUpdate(update);

System.***out***.println("✅ GPA updated.\n");

String fetch = ("select \* from stud3 where email = '" + updateEmail + "'");

ResultSet rs = st.executeQuery(fetch);

while (rs.next()) {

System.***out***.println("📌 Updated Student Details:");

System.***out***.println(rs.getInt(1) + " | " + rs.getString(2) + " | " + rs.getString(3) + " | " +

rs.getString(4) + " | " + rs.getString(5) + " | " + rs.getFloat(6) + " | " +

rs.getInt(7));

}

sc.nextLine();

System.***out***.print("🗑️ Enter email to delete student: ");

String deleteEmail = sc.nextLine();

String delete = "delete from stud3 where email = '" + deleteEmail + "'";

st.executeUpdate(delete);

System.***out***.println("✅ Student deleted.\n");

con.close();

Q 12.Given a table products(id, name, description, price,

quantity\_in\_stock, category\_id, created\_at), write JDBC

code to:

Insert a new product with timestamp

Update product quantity after a sale

Delete discontinued products (quantity = 0)

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

System.***out***.println("connection established");

Scanner sc = new Scanner(System.***in***);

// 6️⃣ Create products table

String create = "CREATE TABLE products (" +"id INT," + "name VARCHAR(30)," + "description TEXT," + "price FLOAT," + "quantity\_in\_stock INT," + "category\_id INT," + "created\_at TIMESTAMP)";

st.executeUpdate(create);

System.***out***.println("🛠️ Table created successfully.");

// 7️⃣ Input product details

System.***out***.print("Enter Product ID: ");

int id = sc.nextInt(); sc.nextLine();

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

String name = sc.nextLine();

System.***out***.print("Enter Description: ");

String desc = sc.nextLine();

System.***out***.print("Enter Price: ");

float price = sc.nextFloat();

System.***out***.print("Enter Quantity: ");

int qty = sc.nextInt();

System.***out***.print("Enter Category ID: ");

int cat = sc.nextInt();

// 8️⃣ Insert product with current timestamp

String insert = "INSERT INTO products VALUES(" +

id + ", '" + name + "', '" + desc + "', " + price + ", " +

qty + ", " + cat + ", current\_timestamp)";

st.executeUpdate(insert);

System.***out***.println("✅ Product inserted.");

// 9️⃣ Update quantity after sale

System.***out***.print("Enter Product ID to update quantity: ");

int updateId = sc.nextInt();

System.***out***.print("Enter quantity sold: ");

int sold = sc.nextInt();

String update = "UPDATE products SET quantity\_in\_stock = quantity\_in\_stock - " +

sold + " WHERE id = " + updateId;

st.executeUpdate(update);

System.***out***.println("📦 Quantity updated.");

// 🔟 Delete discontinued products

String delete = "DELETE FROM products WHERE quantity\_in\_stock = 0";

st.executeUpdate(delete);

System.***out***.println("🗑️ Deleted products with zero quantity.");

// 🔁 Show all products

System.***out***.println("📋 Current Products in Table:");

String show = "SELECT \* FROM products";

ResultSet rs = st.executeQuery(show);

while (rs.next()) {

System.***out***.println(

rs.getInt(1) + " | " +

rs.getString(2) + " | " +

rs.getString(3) + " | " +

rs.getFloat(4) + " | " +

rs.getInt(5) + " | " +

rs.getInt(6) + " | " +

rs.getTimestamp(7));

}

// 🔚 Close all

con.close();

sc.close();

Q 13.Given tables orders(id, customer\_id, order\_date,

total\_amount, status) and order\_items(id, order\_id,

product\_id, quantity, unit\_price), write JDBC code to:

Insert a new order

Update order status to 'SHIPPED'

Delete Any Order

Sol:Class.*forName*("org.postgresql.Driver");

Connection con=DriverManager.*getConnection*("jdbc:postgresql://localhost:5432/postgres","postgres","root");

Statement st=con.createStatement();

Scanner sc=new Scanner(System.***in***);

String createOrders = "CREATE TABLE orders (id INT PRIMARY KEY, customer\_id INT, order\_date DATE, total\_amount FLOAT, status VARCHAR(20))";

st.executeUpdate(createOrders);

String createItems = "CREATE TABLE order\_items1 (id INT PRIMARY KEY, order\_id INT REFERENCES orders(id), product\_id INT, quantity INT, unit\_price FLOAT)";

st.executeUpdate(createItems);

System.***out***.println("Tables created.");

System.***out***.print("Enter Order ID: ");

int oid = sc.nextInt();

System.***out***.print("Enter Customer ID: ");

int cid = sc.nextInt();

System.***out***.print("Enter Order Date (YYYY-MM-DD): ");

String date = sc.next();

System.***out***.print("Enter Total Amount: ");

float total = sc.nextFloat();

sc.nextLine();

System.***out***.print("Enter Status: ");

String status = sc.nextLine();

String insertOrder = "INSERT INTO orders VALUES(" + oid + ", " + cid + ", '" + date + "', " + total + ", '" + status + "')";

st.executeUpdate(insertOrder);

System.***out***.println("✅ Order inserted.");

System.***out***.print("Enter Item ID: ");

int iid = sc.nextInt();

System.***out***.print("Enter Product ID: ");

int pid = sc.nextInt();

System.***out***.print("Enter Quantity: ");

int qty = sc.nextInt();

System.***out***.print("Enter Unit Price: ");

float price = sc.nextFloat();

String insertItem = "INSERT INTO order\_items1 VALUES(" + iid + ", " + oid + ", " + pid + ", " + qty + ", " + price + ")";

st.executeUpdate(insertItem);

System.***out***.println("Order item inserted.");

System.***out***.print("Enter Order ID to update status: ");

int upid = sc.nextInt();

String update = "UPDATE orders SET status = 'SHIPPED' WHERE id = " + upid;

st.executeUpdate(update);

System.***out***.println("🚚 Order status updated.");

System.***out***.print("Enter Order ID to delete: ");

int delid = sc.nextInt();

String deleteItem = "DELETE FROM order\_items1 WHERE order\_id = " + delid;

st.executeUpdate(deleteItem);

String deleteOrder = "DELETE FROM orders WHERE id = " + delid;

st.executeUpdate(deleteOrder);

System.***out***.println("Order deleted.");

con.close();

System.***out***.println("Connection closed.");