```
package a2;
import java.awt.Label;
import java.sql.*;
import java.util.Scanner;

public class a2jdbc {

	private static Scanner s=new Scanner(System.in);

	public static void main(String[] args)

	{
		Statement st=null;
		Connection conn = null;
		int q1;
		try
		{
			 // create our mysql database connection
			String myurl="jdbc:mysql://192.168.4.91:3306/";
			String myDriver="com.mysql.jdbc.Driver";
			 //  Database credentials
			System.out.println("Enter Your UserName: ");
			String username=s.nextLine();
			System.out.println("Enter Your Password: ");
			String passwd=s.nextLine();
			System.out.println("Enter Your Database Name: ");
			String dbname=s.nextLine();
			myurl+=dbname;
			//STEP 2: Register JDBC driver
			Class.forName(myDriver);

			//STEP 3: Open a connection

			conn= DriverManager.getConnection(myurl, username,passwd);
			//STEP 4: Execute a query
			// create the java statement
			st=conn.createStatement();
			System.out.println("Success!");

			System.out.println("available tables are :\n");

			String query = "show full tables;";


			// execute the query, and get a java resultset
			ResultSet rs = st.executeQuery(query);

			// iterate through the java resultset

			System.out.print("Tables\tType\n ");
	System.out.print("--------------------\n");
		while (rs.next())
		{
			 //STEP 5: Extract data from result set
			 String table = rs.getString("Tables_in_te3174db");
			 String t_type = rs.getString("Table_type");


		  // print the results
			 System.out.print(""+table+"\t"+t_type+"\n");

		}
```

```
System.out.println("Enter your choice.\n Create and drop \t 1.Simple view\n 2.compound view\t 3. Simple index\n 4. Unique index\t 5. Composite index\n");
Scanner reader=new Scanner(System.in);
int n=reader.nextInt();
reader.close();

switch(n)
{
case 1:
{

query = "create view H_name as select hotelNo,hotelName from Hotel;";

q1 = st.executeUpdate(query);

query = "show full tables;";
rs = st.executeQuery(query);

System.out.print("Tables\tType\n ");
System.out.print("--------------------\n");
while (rs.next())
{
String table = rs.getString("Tables_in_te3174db");
String t_type = rs.getString("Table_type");

System.out.print(""+table+"\t"+t_type+"\n");

}

System.out.println("simple view <H_name> Created on Hotel Table\n");
System.out.print("hotelNo\thotelName\n ");
System.out.print("-----------------------------\n");


query = "select * from H_name";

rs = st.executeQuery(query);
while (rs.next())
{
int hotelno = rs.getInt("hotelNo");
String h_name = rs.getString("hotelName");

System.out.print(""+hotelno+"\t"+h_name+"\n");

}
System.out.print("-----------------------------\n");
q1=st.executeUpdate("drop view H_name;");
System.out.println("simple view droped on Hotel Table");

break;
}
case 2:
{

query = "create view roominfo as select hotelName,city,roomNo,roomType from Hotel,Room where Hotel.hotelNo=Room.hotelNo;";

q1 = st.executeUpdate(query);

query = "show full tables;";
rs = st.executeQuery(query);

System.out.print("Tables\tType\n ");
```

```
System.out.print("--------------------\n");
        while (rs.next())
          {
                String table = rs.getString("Tables_in_te3174db");
                String t_type = rs.getString("Table_type");

                System.out.print(""+table+"\t"+t_type+"\n");

          }
        System.out.print("------------------------------\n");
                System.out.println("compound view <roominfo> Created on Hotel Table\n");
                System.out.print("Name\tcity\tr_No\tType\n ");
                System.out.print("------------------------------\n");


                query = "select * from roominfo";

                rs = st.executeQuery(query);
                while (rs.next())
{

        String h_name = rs.getString("hotelName");
        String c_name = rs.getString("city");
        int r_no = rs.getInt("roomNo");
        String r_type = rs.getString("roomType");

        System.out.print(""+h_name+"\t"+c_name+"\t"+r_no+"\t"+r_type+"\n");

}
                System.out.print("------------------------------\n");
                q1=st.executeUpdate("drop view roominfo;");
                System.out.println("compound view droped");

                break;
      }
      case 3:
      {
                System.out.print("without using Simple index\n");
                System.out.print("id\ttype\ttable\ttype\tps_key\tkey\tlen\tref\trows\textra\n");
                 System.out.print("-------------------------------------------------\n");

                query = "explain select * from Hotel where hotelName like 'J%'";
                rs = st.executeQuery(query);
                while (rs.next())
          {

                        int id = rs.getInt("id");
                String s_type = rs.          getString("select_type");
                String tt = rs.getString("table");
                String type = rs.getString("type");
                String ps_key = rs.getString("possible_keys");
                String k = rs.getString("key");
                String kl = rs.getString("key_len");
                String ref = rs.getString("ref");
                        int row = rs.getInt("rows");
                String extra = rs.getString("Extra");


System.out.print(""+id+"\t"+s_type+"\t"+tt+"\t"+type+"\t"+ps_key+"\t"+k+"\t"+kl+"\t"+ref+"\t"+row+"\t"+extra+"\n");

          }

          System.out.print("-----------------------------------------\n");
```

```
        query = "create index name on Hotel (hotelName)";
        q1=st.executeUpdate(query);

        System.out.print("\nImple index <name> is created\n");
        System.out.println("Table\tNonUniq\tkey\tcolumn");
        System.out.print("\n------------------------------------------------------\n");
        query = "show index from Hotel";
        rs = st.executeQuery(query);
        while (rs.next())
    {


        String t = rs.getString("Table");
        int nu = rs.getInt("Non_unique");
        String key = rs.getString("Key_name");
        String c_name  = rs.getString("Column_name");

        System.out.print(""+t+"\t"+nu+"\t"+key+"\t"+c_name+"\n");

    }

    System.out.print("------------------------------------------------------\n");

    System.out.print("Using Simple index\n");
    System.out.print("id\ttype\ttable\ttype\tps_key\tkey\tlen\tref\trows\textra\n");
         System.out.print("-----------------------------------------------\n");
    query = "explain select * from Hotel where hotelName like 'J%'";
        rs = st.executeQuery(query);
        while (rs.next())
    {

            int id = rs.getInt("id");
        String s_type = rs.          getString("select_type");
        String t = rs.getString("table");
        String type = rs.getString("type");
        String ps_key = rs.getString("possible_keys");
        String k = rs.getString("key");
        String kl = rs.getString("key_len");
        String ref = rs.getString("ref");
            int row = rs.getInt("rows");
        String extra = rs.getString("Extra");


System.out.print(""+id+"\t"+s_type+"\t"+t+"\t"+type+"\t"+ps_key+"\t"+k+"\t"+kl+"\t"+ref+"\t"+row+"\t"+extra+"\n");

    }

        System.out.print("\nResult::\n");
    System.out.print("H_no\tName\tcity\n--------------------------------\n");
        query = "select * from Hotel where hotelName like 'J%'";
        rs = st.executeQuery(query);
        while (rs.next())
        {
            int no = rs.getInt("hotelNo");
        String name = rs.getString("hotelName");
        String c = rs.getString("city");

          System.out.print(""+no+"\t"+name+"\t"+c+"\n");

        }
        q1=st.executeUpdate("drop index name on Hotel");
```

```
                System.out.println("\nsimple index <name> is droped\n");

                break;
            }
            case 4:
            {

                query = "create unique index n2 on Hotel(hotelName)          ";
                q1=st.executeUpdate(query);

                System.out.print("\nImple index <n2> is created\n");
                System.out.println("Table\tNonUniq\tkey\tcolumn");
                System.out.print("\n------------------------------------------------------\n");
                query = "show index from Hotel";
                rs = st.executeQuery(query);
                while (rs.next())
                {


                String t = rs.getString("Table");
                int nu = rs.getInt("Non_unique");
                String key = rs.getString("Key_name");
                String c_name  = rs.getString("Column_name");

                System.out.print(""+t+"\t"+nu+"\t"+key+"\t"+c_name+"\n");

                }

                System.out.print("------------------------------------------------------\n");

                System.out.print("Using unique index\n");
                System.out.print("id\ttype\ttable\ttype\tps_key\tkey\tlen\tref\trows\textra\n");
                        System.out.print("-------------------------------------------------\n");
                query = "explain select * from Hotel where hotelName like 'J%' or hotelName is NULL;";
                        rs = st.executeQuery(query);
                        while (rs.next())
                {

                                int id = rs.getInt("id");
                        String s_type = rs.             getString("select_type");
                        String t = rs.getString("table");
                        String type = rs.getString("type");
                        String ps_key = rs.getString("possible_keys");
                        String k = rs.getString("key");
                        String kl = rs.getString("key_len");
                        String ref = rs.getString("ref");
                                int row = rs.getInt("rows");
                        String extra = rs.getString("Extra");


System.out.print(""+id+"\t"+s_type+"\t"+t+"\t"+type+"\t"+ps_key+"\t"+k+"\t"+kl+"\t"+ref+"\t"+row+"\t"+extra+"\n");

                }

                        System.out.print("\nResult::\n");
                System.out.print("H_no\tName\tcity\n-------------------------------\n");
                        query = "select * from Hotel where hotelName like 'J%' or hotelName is NULL";
                        rs = st.executeQuery(query);
                        while (rs.next())
                        {
                                int no = rs.getInt("hotelNo");
                        String name = rs.getString("hotelName");
                        String c = rs.getString("city");
```

```
                    System.out.print(""+no+"\t"+name+"\t"+c+"\n");

                }
                q1=st.executeUpdate("drop index n2 on Hotel");
                System.out.println("\nsimple index <n2> is droped\n");

                break;
            }
            case 5:
            {

                query = "create index x3 on Guest(guestSname,guestAddress)          ";
                q1=st.executeUpdate(query);

                System.out.print("\ncompound  index <x3> is created\n");
                System.out.println("Table\tNonUniq\tkey\tcolumn");
                System.out.print("\n------------------------------------------------------------\n");
                query = "show index from Guest";
                rs = st.executeQuery(query);
                while (rs.next())
                {


                String t = rs.getString("Table");
                int nu = rs.getInt("Non_unique");
                String key = rs.getString("Key_name");
                String c_name  = rs.getString("Column_name");

                System.out.print(""+t+"\t"+nu+"\t"+key+"\t"+c_name+"\n");

                }

                System.out.print("------------------------------------------------------------\n");

                System.out.print("Using compound index\n");
                System.out.print("id\ttype\ttable\ttype\tps_key\tkey\tlen\tref\trows\textra\n");
                    System.out.print("-------------------------------------------------\n");
                query = "explain select * from Guest where guestSname in ('M') and guestAddress like
'%Pune%'";
                rs = st.executeQuery(query);
                while (rs.next())
                {

                    int id = rs.getInt("id");
                String s_type = rs.          getString("select_type");
                String t = rs.getString("table");
                String type = rs.getString("type");
                String ps_key = rs.getString("possible_keys");
                String k = rs.getString("key");
                String kl = rs.getString("key_len");
                String ref = rs.getString("ref");
                    int row = rs.getInt("rows");
                String extra = rs.getString("Extra");


System.out.print(""+id+"\t"+s_type+"\t"+t+"\t"+type+"\t"+ps_key+"\t"+k+"\t"+kl+"\t"+ref+"\t"+row+"\t"+extra+"\n");

                }


                q1=st.executeUpdate("drop index x3 on Guest");
                System.out.println("\ncomposite index <x3> is droped\n");
```

```
                        break;
                }

                default:
                {
                        System.out.println("Enter a valid input!");
                }
                }



                rs.close();
            st.close();
            conn.close();


        }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(st!=null)
                 st.close();
            }catch(SQLException se2){
            }// nothing we can do
            try{
              if(conn!=null)
                 conn.close();
            }catch(SQLException se){
              se.printStackTrace();
            }//end finally try
          }//end try
          System.out.println("Goodbye!");
        }

    }
```

OUTPUT:

```
Enter Your UserName:
te3174
Enter Your Password:
te3174
Enter Your Database Name:
te3174db
Success!
available tables are :

Tables   Type
 --------------------
Booking BASE TABLE
Guest    BASE TABLE
Hotel    BASE TABLE
Room     BASE TABLE
```

```
class      BASE TABLE
student    BASE TABLE
Enter your choice.
 Create and drop   1.Simple view
 2.compound view              3. Simple index
 4. Unique index   5. Composite index

1
Tables    Type
 --------------------
Booking BASE TABLE
Guest     BASE TABLE
H_name VIEW
Hotel     BASE TABLE
Room     BASE TABLE
class      BASE TABLE
student    BASE TABLE
simple view <H_name> Created on Hotel Table

hotelNo hotelName
 ------------------------------
103        Taj
142        Oberoi
211        Horizon
252        Grand
389        Silver oak
526        Orchid
777        J W
808        null
------------------------------
simple view droped on Hotel Table
Goodbye!

Enter your choice.
 Create and drop   1.Simple view
 2.compound view              3. Simple index
 4. Unique index   5. Composite index

2
Tables    Type
 --------------------
Booking BASE TABLE
Guest     BASE TABLE
Hotel     BASE TABLE
Room     BASE TABLE
class      BASE TABLE
roominfo             VIEW
student    BASE TABLE
------------------------------
compound view <roominfo> Created on Hotel Table

Name     city       r_No      Type
 ------------------------------
Taj        mumbai 1038      Delux
Taj        mumbai 1039      Suite
Oberoi    mumbai 1422      Delux
Oberoi    mumbai 1424      Suite
Horizon Pune       2111      AC
Horizon Pune       2112      Non-AC
Horizon Pune       2114      Delux
Grand     Pune       2524      AC
Grand     Pune       2525      Non-AC
Grand     Pune       2526      Delux
```

```
Grand   Pune    2527    Suite
J W     Delhi   7772    Delux
J W     Delhi   7777    Suite
-----------------------------
compound view droped

Enter your choice.
 Create and drop   1.Simple view
 2.compound view              3. Simple index
 4. Unique index   5. Composite index

3
without using Simple index
id      type    table   type    ps_key  key     len     ref     rows    extra
-------------------------------------------------
1       SIMPLE          Hotel   ALL     null    null    null    null    8       Using where
-------------------------------------------

Imple index <name> is created
Table   NonUniq         key     column

-----------------------------------------------------
Hotel   0       PRIMARY         hotelNo
Hotel   1       name    hotelName
-----------------------------------------------------
Using Simple index
id      type    table   type    ps_key  key     len     ref     rows    extra
-----------------------------------------------------
1       SIMPLE          Hotel   range   name    name    23      null    1       Using index condition

Result::
H_no    Name    city
-------------------------------
777     J W     Delhi

simple index <name> is droped

Enter your choice.
 Create and drop   1.Simple view
 2.compound view              3. Simple index
 4. Unique index   5. Composite index

4

unique index <n2> is created
Table   NonUniq         key     column

-----------------------------------------------------
Hotel   0       PRIMARY         hotelNo
Hotel   0       n2      hotelName
-----------------------------------------------------
Using unique index
id      type    table   type    ps_key  key     len     ref     rows    extra
-----------------------------------------------------
1       SIMPLE          Hotel   range   n2      n2      23      null    2       Using index condition; Using
where

Result::
H_no    Name    city
-------------------------------
808     null    Pune
777     J W     Delhi
```

unique index <n2> is droped

Enter your choice.
Create and drop 1.Simple view
2.compound view 3. Simple index
4. Unique index 5. Composite index

5

compound index <x3> is created

Table	NonUniq	key	column
Guest	0	PRIMARY	guestNo
Guest	1	hotelNo	hotelNo
Guest	1	x3	guestSname
Guest	1	x3	guestAddress

Using compound index

id	type	table	type	ps_key	key	len	ref	rows	extra
1	SIMPLE	Guest	ref	x3	x3	13	const	1	Using index condition

composite index <x3> is droped

Goodbye!