package jdbcpkg;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

import java.util.Scanner;

public class TestJDBC {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

//System.out.println("Enter Employee Details: ENo/Name/Salary/DeptNo");

System.out.println("Enter Employee Details: Name/Salary/DeptNo");

//int eno = sc.nextInt();

String name = sc.next();

int sal = sc.nextInt();

int dno = sc.nextInt();

try {

// 1. Load driver

//Class.forName("oracle.jdbc.driver.OracleDriver");

Class.forName("org.h2.Driver"); //H2 DB

// 2. Connect

//Connection con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "wcf13may","wcf13may");

Connection con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");

// 3. Statements

//String qry = "insert into EMPLOYEETB values(?,?,?,?)";

String qry = "insert into EMPTB values(?,?,?,?)"; //H2

PreparedStatement ps = con.prepareStatement(qry);

ps.setInt(1, generateEno());

ps.setString(2, name);

ps.setInt(3, sal);

ps.setInt(4, dno);

// 4. Execute

int count = ps.executeUpdate();

// 5. Process result

if (count == 1)

System.out.println("Employee details added");

else

System.out.println("Employee details could not be added");

// 6. Close Connection

con.close();

} catch (Exception sqlex) {

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

} finally {

System.out.println("Thank you...");

}

}

private static int generateEno() {

int eno=0;

try {

// 1. Load driver

//Class.forName("oracle.jdbc.driver.OracleDriver");

Class.forName("org.h2.Driver"); //H2 DB

// 2. Connect

//Connection con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "wcf13may","wcf13may");

Connection con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");

// 3. Statements

String qry = "Select eno\_seq.nextval eno from dual";

Statement st = con.createStatement();

ResultSet rs = st.executeQuery(qry);

if(rs.next())

eno = rs.getInt("eno");

}catch(Exception ex) {

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

}

return eno;

}

}

**Class Chatbox notes:**

[4:18 PM] Athma M

Sequence: DB obj  
-----------  
    generate unique numbers  
  
start with  
increment by  
[min val/max val  
cycle/nocycle  
cashe/nocashe]

Create sequence seq\_name start with val increment by val;

Create sequence ENO\_SEQ start with 100 increment by 100;

nextval

currval

Select seq\_name.nextval  
From dual;  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
SQL> Create sequence ENO\_SEQ start with 100 increment by 100;

Sequence created.

SQL> Select eno\_seq.nextval from dual;

   NEXTVAL  
----------  
       100

SQL> Select eno\_seq.nextval from dual;

   NEXTVAL  
----------  
       200

SQL> Select eno\_seq.currval from dual;

   CURRVAL  
----------  
       200  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

h2:  
===  
CREATE SEQUENCE ENO\_SEQ START WITH 1000 INCREMENT BY 1000

SELECT ENO\_SEQ.NEXTVAL FROM DUAL

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MYSQl  
=======

CREATE TABLE MY\_TB  
(  
  COL1 INT PRIMARY KEY AUTO\_INCREMENT,  
  COL2 VARCHAR(10) .  
)  
TRUNCATE TABLE MY\_TB;  
ALTER TABLE MY\_TB ALTER COL1 INT PRIMARY KEY AUTO\_INCREMENT;

INSERT INTO MY\_TB(COL1,COL2) VALUES(NULL,'VALUE2');  
INSERT INTO MY\_TB(COL2) VALUES('VALUE2');  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

package jdbcpkg;

import java.sql.Connection;  
import java.sql.DriverManager;  
import java.sql.PreparedStatement;  
import java.sql.ResultSet;  
import java.sql.SQLException;  
import java.sql.Statement;  
import java.util.Scanner;

public class TestJDBC {

public static Connection getH2DBConnection() {    
Connection con = null;      
try {      
Class.forName("org.h2.Driver"); // H2 DB        
con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test", "sa", "");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}

public static Connection getOracleDBConnection() {    
Connection con = null;      
try {      
Class.forName("oracle.jdbc.driver.OracleDriver"); // H2 DB        
con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "wcf13may", "wcf13may");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}

public static void main(String[] args) {    
Scanner sc = new Scanner(System.in);      
// System.out.println("Enter Employee Details: ENo/Name/Salary/DeptNo");      
System.out.println("Enter Employee Details: Name/Salary/DeptNo");      
// int eno = sc.nextInt();      
String name = sc.next();      
int sal = sc.nextInt();      
int dno = sc.nextInt();

try {      
// 1. Load driver        
// Class.forName("oracle.jdbc.driver.OracleDriver");        
// Class.forName("org.h2.Driver"); //H2 DB

// 2. Connect        
// Connection con =        
// DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl",        
// "wcf13may","wcf13may");        
// Connection con =        
// DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");        
Connection con = getH2DBConnection();        
// 3. Statements        
// String qry = "insert into EMPLOYEETB values(?,?,?,?)";        
String qry = "insert into EMPTB values(?,?,?,?)"; // H2        
PreparedStatement ps = con.prepareStatement(qry);        
ps.setInt(1, generateEno());        
ps.setString(2, name);        
ps.setInt(3, sal);        
ps.setInt(4, dno);        
// 4. Execute        
int count = ps.executeUpdate();        
// 5. Process result        
if (count == 1)        
System.out.println("Employee details added");          
else        
System.out.println("Employee details could not be added");          
// 6. Close Connection        
con.close();        
} catch (Exception sqlex) {      
System.out.println(sqlex.getMessage());        
} finally {      
System.out.println("Thank you...");        
}

}

private static int generateEno() {    
int eno = 0;      
try {      
// 1. Load driver        
// Class.forName("oracle.jdbc.driver.OracleDriver");        
// Class.forName("org.h2.Driver"); //H2 DB        
// 2. Connect        
// Connection con =        
// DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl",        
// "wcf13may","wcf13may");        
// Connection con =        
// DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");        
Connection con = getH2DBConnection();        
// 3. Statements        
String qry = "Select eno\_seq.nextval eno from dual";        
Statement st = con.createStatement();        
ResultSet rs = st.executeQuery(qry);        
if (rs.next())        
eno = rs.getInt("eno");          
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return eno;      
}

}  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MVC  
====

   Model  
business logic    
data    
   View  
presentation logic    
   Controller

Console based  
Web-App  
Frameworks

EMS  
-----  
Model    
     empmgrpkg - DAO Data Access Object  
empmgr      
boolean addEmp(Employee )        
boolean updateEmp(Employee )        
booelan deleteEmp(int eno)        
Employee searchEmp(int eno)        
arrayList      <Employee> viewAllEmp()  
     emppkg  
Employee      
eno,name,sal,dno        
     util  
EmpSalException : sal    <base sal  
EmpNameException : name=null | name.length    <2 | name is empty  
DBUtil.java      
Connection getDBConnection()        
View    
     adminpkg  
AdminEMS      
Menu: 1-Add 2-Update 3- Delete 4- Search 5 - View All...        
        Controller  
adminpkg      
AdminEMS      
validateEmp

EMS - JDBC - MVC  
    Oracle

[4:18 PM] Athma M

TestJDBC.java

[4:18 PM] Athma M

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[4:18 PM] Athma M

package jdbcpkg;

import java.sql.Connection;  
import java.sql.DriverManager;  
import java.sql.PreparedStatement;  
import java.sql.ResultSet;  
import java.sql.SQLException;  
import java.sql.Statement;  
import java.util.Scanner;

public class TestJDBC {

public static Connection getH2DBConnection() {    
Connection con = null;      
try {      
Class.forName("org.h2.Driver"); // H2 DB        
con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test", "sa", "");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}

public static Connection getOracleDBConnection() {    
Connection con = null;      
try {      
Class.forName("oracle.jdbc.driver.OracleDriver"); // H2 DB        
con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "wcf13may", "wcf13may");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}

public static void main(String[] args) {    
Scanner sc = new Scanner(System.in);      
// System.out.println("Enter Employee Details: ENo/Name/Salary/DeptNo");      
//System.out.println("Enter Employee Details: Name/Salary/DeptNo");      
// int eno = sc.nextInt();      
//String name = sc.next();      
//int sal = sc.nextInt();      
//int dno = sc.nextInt();

System.out.println("Enter Employee ENO to search");      
int enoToSearch = sc.nextInt();      
try {      
// 1. Load driver        
// Class.forName("oracle.jdbc.driver.OracleDriver");        
// Class.forName("org.h2.Driver"); //H2 DB

// 2. Connect        
// Connection con =DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl","wcf13may","wcf13may");        
// Connection con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");        
Connection con = getH2DBConnection();        
// 3. Statements        
// String qry = "insert into EMPLOYEETB values(?,?,?,?)"; //Oracle        
//String qry = "insert into EMPTB values(?,?,?,?)"; // H2        
String qry = "Select \* from        EmpTB where eid = ?"; // H2  
PreparedStatement ps = con.prepareStatement(qry);        
ps.setInt(1,enoToSearch);        
/\*ps.setInt(1, generateEno());        
ps.setString(2, name);        
ps.setInt(3, sal);        
ps.setInt(4, dno);        
\*/        
// 4. Execute        
//int count = ps.executeUpdate();        //insert  
ResultSet rs = ps.executeQuery();        //select  
// 5. Process result        
//if (count == 1)        
if(rs.next()) { //single row        
//System.out.println("Employee details added");          
System.out.println("Employee details found");          
System.out.println("EID="+rs.getInt("eid")+" Name="+rs.getString("name")+" Salary="+rs.getInt("salary")+" DeptNo="+rs.getInt("dno"));          
}        
else        
//System.out.println("Employee details could not be added");          
System.out.println("Employee details could not be found");          
  
// 6. Close Connection        
con.close();        
} catch (Exception sqlex) {      
System.out.println(sqlex.getMessage());        
} finally {      
System.out.println("Thank you...");        
}

}

private static int generateEno() {    
int eno = 0;      
try {      
// 1. Load driver        
// Class.forName("oracle.jdbc.driver.OracleDriver");        
// Class.forName("org.h2.Driver"); //H2 DB        
// 2. Connect        
// Connection con =        
// DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl",        
// "wcf13may","wcf13may");        
// Connection con =        
// DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");        
Connection con = getH2DBConnection();        
// 3. Statements        
String qry = "Select eno\_seq.nextval eno from dual";        
Statement st = con.createStatement();        
ResultSet rs = st.executeQuery(qry);        
if (rs.next())        
eno = rs.getInt("eno");          
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return eno;      
}

}

[4:19 PM] Athma M

package util;

import java.sql.Connection;  
import java.sql.DriverManager;

public class DBUtil {  
public static Connection getH2DBConnection() {    
Connection con = null;      
try {      
Class.forName("org.h2.Driver"); // H2 DB        
con = DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test", "sa", "");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}    
public static Connection getOracleDBConnection() {    
Connection con = null;      
try {      
Class.forName("oracle.jdbc.driver.OracleDriver"); // H2 DB        
con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl", "wcf13may", "wcf13may");        
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return con;      
}    
}

[4:20 PM] Athma M

EmpSalException.java

[4:20 PM] Athma M

---------------

[4:20 PM] Athma M

package util;

public class EmpNameException extends Exception{  
public EmpNameException() {    
super();      
}    
public EmpNameException(String msg) {    
super(msg);      
}    
@Override    
public String toString() {    
return "EmpNameException [Name must be valid]";      
  }    
}

**package util;**

public class EmpSalException extends Exception{  //IS-A type of Exception  
public EmpSalException() {    
super();      
}    
public EmpSalException(String msg) {    
super(msg);      
}    
@Override    
public String toString() {    
return "EmpSalException [Salary less than base salary]";      
  }    
}

has context menu

**EmpMgr.java**

[4:21 PM] Athma M

package mgrpkg;

import java.sql.Connection;  
import java.sql.PreparedStatement;  
import java.sql.ResultSet;  
import java.sql.Statement;  
import java.util.ArrayList;

import emppkg.Employee;  
import util.DBUtil;  
import util.EmpNameException;  
import util.EmpSalException;

public class EmpManager {  
//Employee emps[] = new Employee[5]; // |null|null|null|null|null|    
//static int index = 0;    
//ArrayList  <Employee> empList = new ArrayList<Employee>();  
final int basesal = 10000;    
  
public int generateEno() {    
int eno = 0;      
try {      
Connection con = DBUtil.getH2DBConnection();        
// 3. Statements        
String qry = "Select eno\_seq.nextval eno from dual";        
Statement st = con.createStatement();        
ResultSet rs = st.executeQuery(qry);        
if (rs.next())        
eno = rs.getInt("eno");          
} catch (Exception ex) {      
System.out.println(ex.getMessage());        
}      
return eno;      
}

public boolean addEmp(Employee e) {    
boolean sts = false;      
// code      
//if (index     < emps.length) {  
try {        
// validate employee e - sal with min basesal, name not empty/single char/null,          
// ......          
if(e==null)          
throw new NullPointerException("emp is invalid/null");             
else if(e.getName() ==null )          
throw new EmpNameException();            
if (e.getSal()  else          < basesal)  
throw new EmpSalException("emp sal less than base salary");            
else {          
//emps[index] = e;            
//index++;            
//empList.add(e);            
Connection con = DBUtil.getH2DBConnection();            
String qry = "insert into EMPTB values(?,?,?,?)"; // H2            
PreparedStatement ps = con.prepareStatement(qry);            
ps.setInt(1,e.getEid());            
ps.setString(2, e.getName());            
ps.setInt(3, e.getSal());            
ps.setInt(4,e.getDno());            
            int recCount = ps.executeUpdate();  
            if(recCount == 1)  
            sts = true;    
}          
} catch (Exception ese) {        
System.out.println(ese.getMessage());// .getMessage());          
}        
//} else {      
//System.out.println(" #EmployeeFull ");        
//}      
return sts;      
}

[4:22 PM] Athma M

AdminEMS.java

[4:22 PM] Athma M

------------

[4:23 PM] Athma M

**package adminpkg;**

import java.util.Scanner;

import emppkg.Employee;  
import mgrpkg.EmpManager;

public class AdminEMS {

public static void main(String[] args) {    
Scanner sc = new Scanner(System.in);      
int option = 0, choice = 0;      
EmpManager em = new EmpManager();      
do {      
System.out.println("Menu: \n1-Add Emp 2-Update Emp 3-Delete Emp 4-Search 5-View All Employees");        
option = sc.nextInt();        
switch (option) {        
case 1:// add        
System.out.println("Enter Employee details: NAME/SALARY/DNO");          
//int eid = sc.nextInt();          
int eid = em.generateEno();          
String name = sc.next();          
int sal = sc.nextInt();          
int dno = sc.nextInt();          
Employee emp = new Employee(eid, name, sal,dno);          
boolean addSts = em.addEmp(emp);          
if (addSts) {          
System.out.println("Employee details added");            
} else {          
System.out.println("Employee details could not be added");            
}          
break;          
case 2:// update        
break;          
case 3:// delete        
break;          
case 4:// search        
if(!em.isEmpTBEmpty())          
  {          
System.out.println("Enter EID to search");            
  
int eidToSearch = sc.nextInt();          
Employee e = em.searchEmp(eidToSearch);          
if(e!=null) {          
System.out.println("Employee details found\n"+e);            
}          
else {          
System.out.println("Employee details could not be found");            
}          
}else {          
System.out.println("No employees hired");            
}          
break;          
case 5:// view all        
break;          
default:        
System.out.println("wrong option!!");          
}        
System.out.println("To continue?? YES - 11         NO - 22");  
choice = sc.nextInt();        
} while (choice == 11);      
System.out.println("Thank you");      
}    
}