1) Telephone program

DataBaseCallers.java

import java.util.\*;

import java.util.Map.Entry;

public class DataBaseCallers {

/\*\*

 \* @param args

 \*/

public static HashMap<Long,String> hm;

public static Scanner sc = new Scanner(System.in);

static void createEnteries(int n)

{ hm = new HashMap<Long,String>();

for(int i=0;i<n;i++)

{

System.out.println("Enter the phone number and Contact name");

Long phno = sc.nextLong();

String name = sc.next();

hm.put(phno, name);

}

}

public static void ForHoldingData() {

// TODO Auto-generated method stub

     System.out.println("Enter how many details do you require?");

     int n = sc.nextInt();

     createEnteries(n);

}

public static void display()

{

Set<Entry<Long,String>> hashSet=hm.entrySet();

        for(Entry<Long,String> entry:hashSet ) {

            System.out.println("Key="+entry.getKey()+", Value="+entry.getValue());

        }

}

}

**MissedCallDetails.java**

import java.util.\*;

class MissedCallDetails

{

Calendar calObj;

Long tel\_num;

String name;

MissedCallDetails(Calendar cob, Long tn, String n)

{

calObj = cob;

tel\_num = tn;

name = n;

}

void display()

{ calObj.add(Calendar.DATE, 1);

//SimpleDateFormat format1 = new SimpleDateFormat("yyyy-MM-dd");

System.out.println("Current Time is  "+calObj.getTime());

System.out.println("Telephone number is  "+tel\_num);

System.out.println("Name is  "+name);

}

}

**RecordManageMissedCall.java**

public class RecordManageMissedCall {

/\*\*

 \* @param args

 \*/

static LinkedList<MissedCallDetails> amiss;

static void HandleMissedCallActivities()

{

amiss = new LinkedList<MissedCallDetails>();

while(true)

{

System.out.println("Enter a choice");

System.out.println("1: add missed call \n 2.Display and delete on request \n 3. Delete based on number \n 4. Print");

int choice = DataBaseCallers.sc.nextInt();

//int i=1;

switch(choice)

{

case 1: //add missed call

System.out.println("Enter the missed call telephone number");

Calendar cb = Calendar.getInstance();

Long telnum= DataBaseCallers.sc.nextLong();

String name; // = DataBaseCallers.sc.next();

//check for name in the Database

if(DataBaseCallers.hm.containsKey(telnum))

name = DataBaseCallers.hm.get(telnum);

else

name = "Private Caller";

MissedCallDetails mcd = new MissedCallDetails(cb,telnum,name);

if(amiss.size()==10)//for eleventh entry onwards

{

//for eleventh entry onwards enter from the beginning

 amiss.removeLast();

}

amiss.addFirst(mcd);

break;

case 2: // Display number and ask for user to delete

ListIterator<MissedCallDetails> it = amiss.listIterator();

LinkedList<MissedCallDetails> removeList = new LinkedList<MissedCallDetails>();

int i=0;

while(it.hasNext())

{ i++;

System.out.println("Number is ");

MissedCallDetails m1 = it.next();

System.out.println(m1.tel\_num);

System.out.println("Do you want to delete the details related to this number? Indicate by 1 : delete, 2: move next call , 3: display call details \n");

int cho = DataBaseCallers.sc.nextInt();

if(cho==1)

removeList.add(m1);

else if(cho==3)

{//display

m1.display();

}

}

if(i==0)

System.out.println("No missed calls");

amiss.removeAll(removeList);

break;

case 3: //Delete based on the number specified by the user

System.out.println("Delete based on the number given by user");

System.out.println("Enter the number");

Long num = DataBaseCallers.sc.nextLong();

ListIterator<MissedCallDetails> it1 = amiss.listIterator();

boolean flag = false;

i=0;

while(it1.hasNext())

{ i++;

MissedCallDetails m1 = it1.next();

if(m1.tel\_num==num)

{

flag =true;

amiss.remove(m1);

break;

}

}

if(i!=0)

{

if(flag==true)

System.out.println("Phone number with details "+ num +"deleted");

else

System.out.println("No such number exists");

}

else

System.out.println("No missed Call");

break;

case 4:

//print missed call details

ListIterator<MissedCallDetails> it2 = amiss.listIterator();

while(it2.hasNext())

{

MissedCallDetails m1 = it2.next();

m1.display();

}

 break;

default: return;

}

}

}

public static void main(String[] args) {

// TODO Auto-generated method stub

//1. Enter contact details in the database

DataBaseCallers.ForHoldingData();

System.out.println("Receive missed Calls");

//DataBaseCallers.sc

HandleMissedCallActivities();

DataBaseCallers.display();

}

}

2) **BankCollection.java**

import java.util.\*;

public class BankCollection {

/\*\*

 \* @param args

 \*/

public static void main(String[] args) {

// TODO Auto-generated method stub

ArrayList<Bank> al = new ArrayList<Bank>();

al.add(new Bank("ced","wer","lmn",12345.00));

al.add(new Bank("qqq","aaa","mmm",22222.10));

al.add(new Bank("abc","xyz","pqr",123.566));

ArrayList<Bank> al1 = new ArrayList<Bank>(al);

Collections.sort(al1);

System.out.println("\*\*\*\*\*\*\*\*\*\*\*Sorted Collection\*\*\*\*\*\*\*\*\*\*");

for(Bank b:al1)

{

System.out.println(b);

}

System.out.println("\*\*\*\*\*\*\*\*\*\*Original Collection\*\*\*\*\*\*\*\*\*\*");

for(Bank b:al)

{

System.out.println(b);

}

}

}

**Bank.java**

public class Bank implements Comparable<Bank> {

/\*\*

 \* @param args

 \*/

String title, author, publisher;

Double price;

Bank(String t, String aut, String pub,Double pr)

{

title =t;

author = aut;

publisher = pub;

price = pr;

}

Double getPrice()

{

return price;

}

public String toString()

{

return "Book Details : Title "+title+"\n Author "+ author+"\n"+" Publisher "+publisher+"\n"+"price "+price;

}

public int compareTo(Bank o) {

    return getPrice().compareTo(o.getPrice());

}

}

3.

**5. Write a program that uses Java Swing and JDBC to create a stand-alone application:**

1. **Create two tables namely, Representative (RepNo, RepName, State, Comission, Rate) and Customer (CustNo, CustName, State, Credit\_Limit, RepNo) in MySQL database.**
2. **Use appropriate Swing components to insert values in a form.**
3. **Use another form to display Representative’s information whose Credit\_Limit is above 15,000.**

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.SQLException;

import javax.swing.BoxLayout;

import javax.swing.JButton;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JPanel;

import javax.swing.JTextArea;

import javax.swing.JTextField;

import com.mysql.jdbc.Statement;

public class myFrame extends JFrame

{

myFrame()

{

super("My Jframe Example");

JLabel jlrep = new JLabel("Representative Information");

JLabel jl11 = new JLabel("Enter RepNo");

final JTextField jtf11 = new JTextField();

JLabel jl12 = new JLabel("Enter RepName");

final JTextField jtf12 = new JTextField();

JLabel jl13 = new JLabel("Enter State");

final JTextField jtf13 = new JTextField();

JLabel jl14 = new JLabel("Enter Commission");

final JTextField jtf14 = new JTextField();

JLabel jl15 = new JLabel("Enter Rate");

final JTextField jtf15 = new JTextField();

JButton jb1 = new JButton("Submit");

JLabel jlcus = new JLabel("Customer Information");

JLabel jl21 = new JLabel("Enter CustomerNo");

final JTextField jtf21 = new JTextField();

JLabel jl22 = new JLabel("Enter CustomerName");

final JTextField jtf22 = new JTextField();

JLabel jl23 = new JLabel("Enter State");

final JTextField jtf23 = new JTextField();

JLabel jl24 = new JLabel("Enter Credit limit");

final JTextField jtf24 = new JTextField();

JLabel jl25 = new JLabel("Enter RepNo");

final JTextField jtf25 = new JTextField();

JButton jb2 = new JButton("Submit");

JPanel panel = new JPanel();

final JTextArea jta = new JTextArea();

jta.setRows(10);

jta.setColumns(5);

JButton jb3 = new JButton("click");

panel.add(jl11);

panel.add(jtf11);

panel.add(jl12);

panel.add(jtf12);

panel.add(jl13);

panel.add(jtf13);

panel.add(jl14);

panel.add(jtf14);

panel.add(jl15);

panel.add(jtf15);

panel.add(jb1);

panel.add(jl21);

panel.add(jtf21);

panel.add(jl22);

panel.add(jtf22);

panel.add(jl23);

panel.add(jtf23);

panel.add(jl24);

panel.add(jtf24);

panel.add(jl25);

panel.add(jtf25);

panel.add(jb2);

panel.add(jta);

panel.add(jb3);

jb1.addActionListener(new ActionListener()

{

public void actionPerformed(ActionEvent e)

{

try

{

Statement stmt;

Class.*forName*("com.mysql.jdbc.Driver");

Connection conn = DriverManager.*getConnection*("jdbc:mysql://localhost:3306/test", "root", "root");

if (conn != null)

{

System.*out*.println("Connection successful !!!");

String Repno = jtf11.getText();

String Repname = jtf12.getText();

String state = jtf13.getText();

String commission = jtf14.getText();

String rate = jtf15.getText();

stmt = (Statement) conn.createStatement();

System.*out*.println(Repno + Repname + state + commission);

String query1 = "insert into Representative values('"

+ Repno + "','" + Repname + "','" + state

+ "','" + commission + "','" + rate + "');";

stmt.executeUpdate(query1);

}

else

System.*out*.println("Connection not successful !!!");

}

catch (SQLException ex)

{

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

}

catch (ClassNotFoundException exx)

{

System.*out*.println(exx.getMessage());

}

}

});

jb2.addActionListener(new ActionListener()

{

public void actionPerformed(ActionEvent e)

{

try

{

Statement stmt2;

Class.*forName*("com.mysql.jdbc.Driver");

Connection conn = DriverManager.*getConnection*("jdbc:mysql://localhost:3306/test", "root", "root");

if (conn != null)

{

System.*out*.println("Connection successful !!!");

String Custno = jtf21.getText();

String CustName = jtf22.getText();

String state = jtf23.getText();

String Credit = jtf24.getText();

int cr = Integer.*parseInt*(Credit);

String Rno = jtf25.getText();

stmt2 = (Statement) conn.createStatement();

System.*out*.println(Custno + CustName + state + cr + Rno);

String query2 = "insert into Customer values('"+ Custno + "','" + CustName + "','" + state+ "','" + cr + "','" + Rno + "');";

stmt2.executeUpdate(query2);

}

else

System.*out*.println("Connection not successful !!!");

}

catch (SQLException ex)

{

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

}

catch (ClassNotFoundException exx)

{

System.*out*.println(exx.getMessage());

}

}

});

jb3.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

try {

Statement stmt;

Class.*forName*("com.mysql.jdbc.Driver");

Connection conn = DriverManager.*getConnection*(

"jdbc:mysql://localhost:3306/test", "root", "deek");

if (conn != null)

{

stmt = (Statement) conn.createStatement();

String query3="SELECT \* FROM Representative WHERE RepNo IN (SELECT RepNo FROM Customer WHERE Credit\_Limit > 15000 )";

ResultSet rs = stmt.executeQuery(query3);

while (rs.next())

{

jta.append("Representative Information");

jta.append("\n");

jta.append("Number:");

jta.append(rs.getString("RepNo"));

jta.append("\n");

jta.append("Name:");

jta.append(rs.getString("RepName"));

jta.append("\n");

jta.append("State:");

jta.append(rs.getString("State"));

jta.append("\n");

jta.append("Comission:");

jta.append(rs.getString("Comission"));

jta.append("\n");

jta.append("Rate:");

jta.append(rs.getString("Rate"));

jta.append("\n");

}

System.*out*.println("Connection successful !!!");

}

else

System.*out*.println("Connection not successful !!!");

}

catch (SQLException ex)

{

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

}

catch (ClassNotFoundException exx)

{

System.*out*.println(exx.getMessage());

}

}

});

setContentPane(panel);

}

public static void main(String[] args) {

myFrame mf = new myFrame();

mf.getContentPane().setLayout(

new BoxLayout(mf.getContentPane(), BoxLayout.*Y\_AXIS*));

mf.setVisible(true);

mf.setDefaultCloseOperation(*EXIT\_ON\_CLOSE*);

mf.pack();

}

}

7. Write a JSP and Servlet Program to do the following to buy a T-Shirt online:

* 1. A set of checkboxes to select your T-Shirt accessories such as ‘belt’, ‘cap’, ‘hair-band’ etc.
  2. A text area / text field to enter your T-Shirt tag-line
  3. A Radio-button that allows the user to choose between T-Shirt with chest pocket and without.
  4. A Combo Box to choose your T-Shirt color
  5. Appropriate labels for these GUI Components
  6. A Button called “Click Me” which when pressed will
  7. Insert the details entered into a table called ‘TShirts’.
  8. An OrderNo is generated by adding ‘1’ to the existing ‘OrderNo’
  9. If ‘TShirts’ table is empty the initial value of ‘OrderNo’ is 100.
  10. This ‘OrderNo’ is also inserted into the ‘TShirts’ table
  11. Display all the records of the ‘TShirts’ table in tabular form

PS: Frontend display should be in JSP and the business logic should be written in Servlet Class.

import java.io.IOException;  
//import com.mysql.jdbc.Statement;  
import java.sql.Connection;  
import java.io.PrintWriter;  
import java.sql.\*;  
import javax.servlet.ServletException;  
import javax.servlet.annotation.WebServlet;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import javax.servlet.annotation.WebServlet;  
import javax.servlet.http.HttpServlet;  
import java.util.\*;  
  
  
@SuppressWarnings("unused")  
@WebServlet("/tcon")  
public class tcon extends HttpServlet {  
private static final long serialVersionUID = 1L;  
     
public tcon() {  
    super();     
}  
  
protected void service(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {  
        response.setContentType("text/html");  
        PrintWriter out=response.getWriter();  
        String[] Accessories={};  
        Accessories=request.getParameterValues("tshirtAccessories");  
        String tshirtAccessories="";  
        String tshirtTagLine=request.getParameter("tshirtTagLine");  
        String tshirtOption=request.getParameter("tshirtOption");  
        String tcolor=request.getParameter("tcolor");  
        out.println("<html>");  
        out.println("<head><title>T-shirt</title></head>");  
        out.println("<body>");  
        try {  
            Statement stmt;  
            Class.forName("com.mysql.jdbc.Driver");  
            Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/s", "root", "msrit");  
              
            if (conn != null) {  
                stmt= conn.createStatement();  
                String qu;  
                  
                qu="select \* from Tshirts;";  
                ResultSet rs =stmt.executeQuery(qu);  
                                 
                if(!rs.isBeforeFirst()){  
                    int ono = 100;  
                    qu="insert into Tshirts values("+Integer.toString(ono)+",'"+tshirtAccessories+"','"+tshirtTagLine+"','"+tshirtOption+"','"+tcolor+"');";  
                    stmt.executeUpdate(qu);  
                   }  
                rs.afterLast();  
          
                if(rs.previous())  
                {  
                    int ono= Integer.parseInt(rs.getString("OrderNo"));  
                    ono++;  
                    if(tshirtAccessories!=null && tshirtTagLine!=null && tshirtOption!=null && tcolor!=null){  
                    for(String option:Accessories){  
                        tshirtAccessories=tshirtAccessories+option;  
                    }  
                    qu="insert into Tshirts values("+Integer.toString(ono)+",'"+tshirtAccessories+"','"+tshirtTagLine+"','"+tshirtOption+"','"+tcolor+"');";  
                    stmt.executeUpdate(qu);  
                }  
                        
                }  
                          
                qu="select \* from Tshirts;";  
                rs =stmt.executeQuery(qu);  
  
                out.println("<table border=2>");  
                out.println("<tr>");  
                out.print("<td>OrderNo</td>");  
                out.print("<td>T-shirt Accessories</td>");  
                out.print("<td>T-shirt tag-line</td>");  
                out.print("<td>T-shirt type</td>");  
                out.print("<td>T-shirt color</td>");  
                out.println("</tr>");  
                while(rs.next()){  
                out.println("<tr>");  
                      
                    out.print("<td>"+(rs.getString("OrderNo"))+"</td>");  
                //out.print("<td>"+rs.getString("OrderNo")+"1"+"</td>");  
                out.print("<td>"+rs.getString("tshirtAccessories")+"</td>");  
                    out.print("<td>"+rs.getString("tshirtTagLine")+"</td>");  
                    out.print("<td>"+rs.getString("tshirtOption")+"</td>");  
                    out.print("<td>"+rs.getString("tcolor")+"</td>");  
                    out.println("</tr>");  
                }  
                }  
                out.println("</table>");  
                out.println("<a href=\"tshirt.jsp\">click here</a>");  
                out.println("</body></html>");  
            }  
            catch (Exception e){  
            e.printStackTrace();  
        }  
    }  
}

**8. Create a Telephone Directory Application using Servlet that searches the database based on phone number or name. Also show database table creation with inserting 2-3 values to the table.**

* 1. **Database Name: OnlineDirectory**
  2. **Table Design:**
     1. **Table Name: Telephone\_Directory**
     2. **Attributes: Phone\_Number, Name, Address, Company, Pin\_Code.**

JDBClogin.java

~~~~~~~~~~~~~~~~~~~~~~~~

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.Statement;

import java.sql.DriverManager;

import java.sql.SQLException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@SuppressWarnings("serial")

@WebServlet(urlPatterns={"/javaConnection"})

public class JDBClogin extends HttpServlet {

static Connection getConnection() throws Exception {

String driver = "com.mysql.jdbc.Driver";

String url = "jdbc:mysql://localhost/onlinedirectory";

String username = "root";

String password = "";

Class.forName(driver);

Connection conn = DriverManager.getConnection(url, username, password);

return conn;

}

public void doGet(HttpServletRequest request, HttpServletResponse response) throws IOException {

PrintWriter out = response.getWriter();

//out.print("Working");

boolean flag = false;

Connection conn = null;

Statement stmt = null;

java.sql.ResultSet rs = null;

try {

conn = getConnection();

stmt = conn.createStatement();

out.print("Working");

long inp;

try

{

inp =Long.parseLong(request.getParameter("phone"));

out.println(""+inp);

rs = stmt.executeQuery("SELECT \* FROM tele\_dir where contact="+inp);

}

catch(Exception e)

{

String name=request.getParameter("phone");

// out.println(""+name);

rs = stmt.executeQuery("SELECT \* FROM tele\_dir where name='"+name+"'");

}

if(rs.next()) {

String name = rs.getString(1);

long contact = rs.getLong(2);

String address = rs.getString(3);

String company = rs.getString(4);

int pin =rs.getInt(5);

out.println("name"+name);

out.println("contact:"+contact);

out.println("address:"+address);

out.println("company:"+company);

out.println("pin:"+pin);

}

else

{

out.println("no contact found");

}

} catch (ClassNotFoundException e) {

System.out.println("Error: failed to load MySQL driver.");

e.printStackTrace();

} catch (SQLException e) {

System.out.println("Error: failed to create a connection object.");

e.printStackTrace();

} catch (Exception e) {

System.out.println("Error: unknown");

e.printStackTrace();

}

finally {

try {

stmt.close();

conn.close();

} catch (Exception e) {

e.printStackTrace();

}

}

}

}

~~~~~~~~~~~~~~~~~~~~~~~~

insert1.java

~~~~~~~~~~~~~~~~~~~~~~~~

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.Statement;

import java.sql.DriverManager;

import java.sql.SQLException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@SuppressWarnings("serial")

@WebServlet(urlPatterns = { "/ins" })

public class insert1 extends HttpServlet {

static Connection getConn() throws Exception {

String driver = "com.mysql.jdbc.Driver";

String url = "jdbc:mysql://localhost/onlinedirectory";

String username = "root";

String password = "";

Class.forName(driver);

Connection conn = DriverManager.getConnection(url, username, password);

return conn;

}

Connection conn1 = null;

public void doGet(HttpServletRequest request, HttpServletResponse response)

throws IOException {

PrintWriter out = response.getWriter();

// out.print("Working");

boolean flag = false;

Connection conn = null;

Statement stmt = null;

java.sql.ResultSet rs = null;

try {

// conn = getConn();

String driver = "com.mysql.jdbc.Driver";

String url = "jdbc:mysql://localhost:3306/onlinedirectory";

String username = "root";

String password = "";

Class.forName(driver);

conn1 = DriverManager.getConnection(url, username,

password);

if (conn1 != null)

System.out.println("Successful");

stmt = conn1.createStatement();

out.print("Working");

String name = request.getParameter("nam");

long contact = Long.parseLong(request.getParameter("cnt"));

String address = request.getParameter("address");

String company = request.getParameter("company");

int pin = Integer.parseInt(request.getParameter("pin"));

out.println("name" + name);

out.println("contact:" + contact);

out.println("address:" + address);

out.println("company:" + company);

out.println("pin:" + pin);

stmt.executeUpdate("insert into tele\_dir values('" + name + "'," + contact + ",'" + address + "','" + company + "'," + pin + ");");

out.println("updated the records");

} catch (ClassNotFoundException e) {

System.out.println("Error: failed to load MySQL driver.");

e.printStackTrace();

} catch (SQLException e) {

System.out.println("Error: failed to create a connection object.");

e.printStackTrace();

} catch (Exception e) {

System.out.println("Error: unknown");

e.printStackTrace();

} finally {

try {

stmt.close();

conn1.close();

} catch (Exception e) {

e.printStackTrace();

}

}

}

}

~~~~~~~~~~~~~~~~~~~~~~~~

Index.jsp

~~~~~~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Insert title here</title>

</head>

<body>

<form action="javaConnection" method="get"/>

Enter name or phone:<input type="text" name="phone" /><br/>

<input type="submit" />

</form>

<a href="insert.html;">insert into directory</a>

</body>

</html>

~~~~~~~~~~~~~~~~~~~~~~~~

insert.html

~~~~~~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta charset="ISO-8859-1">

<title>Insert title here</title>

</head>

<body>

<form action="ins" method="get" >

name:<input type="text" name="nam" /><br/>

contact:<input type="text" name="cnt" /><br/>

address:<input type="text" name="address" /><br/>

company:<input type="text" name="company" /><br/>

pincode:<input type="text" name="pin" />

<input type="submit" />

</form>

</body>

</html>

**9. Write a Java Program that creates two threads object of Thread class. Where one thread asks the user to enter a number not less than four digits. Split the digits of the number and display in words the value of the number. Ex: 1 – One. Second thread finding the number of vowels in a word. Ex: JAVA – Vowel - A, Count – 2.**

GetStringThread.java

~~~~~~~~~~~~~~~~~~~~~~~~

import java.util.Scanner;

public class GetStringThread extends Thread {

public String string;

public static String vowels = "aeiou";

public void run() {

Scanner s = new Scanner(System.in);

System.out.println("Enter a string: ");

string = s.next();

int x = 0;

for(char c : string.toCharArray())

for(char ch : vowels.toCharArray())

if(c==ch) x++;

System.out.print(x+" vowels present\n");

}

}

~~~~~~~~~~~~~~~~~~~~~~~~

GetNumberThread.java

~~~~~~~~~~~~~~~~~~~~~~~~

import java.util.Scanner;

public class GetNumberThread extends Thread {

public String number;

private static String[] digit = new String[] {"zero","one","two","three","four","five","six","seven","eight","nine"};

public void run() {

Scanner s = new Scanner(System.in);

System.out.println("Enter number with more than 4 digits: ");

number = s.next();

for(char c : number.toCharArray()) {

if(c<48||c>57) {

System.out.println("Invalid inputs");

break;

}

System.out.print(digit[((int)c-48)]+" ");

}

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

}

}

~~~~~~~~~~~~~~~~~~~~~~~~

InputThreads.java

~~~~~~~~~~~~~~~~~~~~~~~~

public class InputThreads {

public static void main(String[] args) throws InterruptedException {

GetStringThread getStringThread;

GetNumberThread getNumberThread;

getNumberThread = new GetNumberThread();

getStringThread = new GetStringThread();

//getNumberThread.start();

getStringThread.start();

Thread.sleep(100);

//getStringThread.start();

getNumberThread.start();

}

}

**10. Write a program using JSP that helps a student to calculate the income tax on various annual incomes that he will be earning when he gets a job.**

***Login.html* will call *dataCapture.jsp* that should do the following:**

* **Use Java Collections to make a list of valid users and facilitate user login functionality.**
* **Give a personalized Welcome message and display today’s date.**
* **Have a Text Entry with label ‘Name’ to enter the name of the user.**
* **Give a List of Organizations to choose ‘Place of Work’**
* **Provide a Male or Female option to choose the ‘Gender’**
* **Have a Text Entry with label ‘Annual Income’**
* **Give a Submit button reading ‘Calculate Tax’**

***CalculateTax.jsp* must calculate the interest based on the following business rules:**

* **Salary below 1,00,000 shall no have income-tax.**
* **Calculate 15% of tax on 1,00,001 – 5,00,000.**
* **Calculate 20% on 5,00,001 onwards.**

**The final income tax along with the details of how it is calculated must be put in a session object and displayed to the user in *dataCapture.jsp*. All the income taxes calculated so far by the user, must be taken out of the session object and displayed, each time in *dataCapture.jsp* which has a link called ‘*Logout’* that destroys the session.**

**Login.jsp:**

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=ISO-8859-1"*>

<title>Login Page</title>

</head>

<body>

<form action=*"dataCapture.jsp"* method=*"post"*>

User Name: <input type=*"text"* size=*"15"* name=*"username"*> <br>

Password: <input type=*"password"* size=*"15"* name=*"password"*> <br>

<input type=*"submit"* value=*"Login"*>

</form>

<%

String reason = request.getParameter("FailReason");

if (reason != null)

out.println(reason);

%>

</body>

</html>

**dataCapture.jsp:**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"* import=*"java.util.\* , java.text.\*"*%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<%!HashMap hm;

String uname;

String pwd;

Map.Entry entry;

boolean login = false;

hm = new HashMap();

uname = request.getParameter("username");

pwd = request.getParameter("password");

hm.put("Archie", "Riverdale");

hm.put("Haddock", "Marlinspike");

hm.put("Hermione", "Hogwarts");

Set s = hm.entrySet();

Iterator it = s.iterator();

while (it.hasNext())

{

entry = (Map.Entry) it.next();

if (uname.equals(entry.getKey())

&& pwd.equals(entry.getValue()))

{

login = true;

}

}//end while

if (login == true)

{

out.println("<B><FONT COLOR = Blue>");

out.println("Welcome </FONT></B>");

out.println(uname);

DateFormat dateFormat = new SimpleDateFormat(

"yyyy/MM/dd HH:mm:ss");

Date date = new Date();

out.println("<BR><FONT COLOR = Green>");

out.println("Today is </FONT>" + dateFormat.format(date));

%>

<form action=*"CalculateInterest.jsp"* method=*"post"*>

<FONT COLOR=*"Magenta"*> First Name:</FONT> <input type=*"text"* size=*"15"*

name=*"fname"*> <br> <FONT COLOR=*"Brown"*>Last Name:

</FONT> <input type=*"text"* size=*"15"* name=*"lname"*> <br> <FONT

COLOR=*"Purple"*>Select your Place of Work:</FONT> <br> <select

name=*"profession"* size=*"3"*>

<option>IT Company</option>

<option>Private Bank</option>

<option>Insurance Company</option>

</select> <br> <input type=*"radio"* name=*"gender"* value=*"Male"*>

Male<br> <input type=*"radio"* name=*"gender"* value=*"Female"* checked>Female<br>

<br> <FONT COLOR=*"Red"*> Annual Income(in Rupees):</FONT> <input

type=*"text"* size=*"15"* name=*"income"*> <br> <br> <input

type=*"submit"* value=*"Calculate Tax"*>

</form>

<%

}

else

{

%>

<jsp:forward page=*"Login.jsp"*>

<jsp:param name=*"FailReason"* value=*"Wrong Username or Password"* />

</jsp:forward>

<%

}

%>

</body>

</html>

**CalculateInterest.jsp:**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=ISO-8859-1"*>

<title>Calculate Interest JSP</title>

</head>

<body>

<%

String fname = request.getParameter("fname");

String lname = request.getParameter("lname");

String gender = request.getParameter("gender");

String profession = request.getParameter("profession");

String prefix = " ";

if (gender.equals("Male"))

{

prefix = "Mr.";

} else if (gender.equals("Female"))

{

prefix = "Ms.";

}

%>

<FONT COLOR=*"Blue"*>Hello <%=prefix%>&nbsp;<%=fname%>&nbsp;<%=lname%>

&nbsp; who works in a <%=profession%></FONT>

<%

String sincome = request.getParameter("income");

float income = Float.parseFloat(sincome);

out.println("<BR>Your Annual Income is " + income);

float tax;

float diff;

if (income <= 100000)

{

out.println("<BR>You are below the Tax Bracket!!");

}

else if (income > 100000 && income <= 200000)

{

out.println("Your Tax Bracket is between Rs.1,00000 to Rs.2,00000");

out.println("<BR>Tax to be paid is 10% of income above 1Lakh");

diff = income - 100000;

tax = (float) 0.1 \* diff;

out.println("<BR>Tax to be paid is " + tax);

}

else if (income > 200000 && income <= 300000)

{

out.println("<BR>Your Tax Bracket is between between Rs.1,00000 to Rs.3,00000");

out.println("<BR>Tax to be paid is 10% of income upto 1Lakh and 20% of rest of income");

diff = income - 200000;

tax = (float) 0.2 \* diff + (float) 0.1 \* 100000;

out.println("<BR>Tax to be paid is " + tax);

}

else if (income > 100000 && income <= 400000)

{

out.println("<BR>Your Tax Bracket is between Rs.1,00000 to Rs.4,00000");

out.println("<BR>Tax to be paid is 10% of income upto 1Lakh 20% of income upto 3Lakh and 30% of rest of income");

diff = income - 300000;

tax = (float) 0.3 \* diff + (float) 0.2 \* 200000 + (float) 0.1

\* 100000;

out.println("<BR>Tax to be paid is " + tax);

}

else if (income > 400000)

{

out.println("<BR>You fall in the tax bracket greater than Rs.4,00000");

diff = income - 400000;

tax = diff + (float) 0.3 \* 300000 + (float) 0.2 \* 200000

+ (float) 0.1 \* 100000;

out.println("<BR>Tax to be paid is 10% of income upto 1Lakh 20% of income upto 3Lakh, 30% of income upto 4 lakh and 100% of rest of income");

out.println("<BR>Tax to be paid is " + tax);

}//end if

%>

</body>

</html>

**11. a. Create two tables Flight(Flight\_Number, Airline\_Name, Weekdays) and SeatReservation(Flight\_Number, Date, Seat\_Number, Customer\_Name, Customer\_Phone) in MySQL database. b. Create JSP page *ReserveOnline.jsp* to reserve an airline seat and insert the values into the table SeatReservation. OnClick of Submit in *ViewDetails.jsp* display information about reservation. Validate the Flight\_Number from already existing Flight database and generate random number for Seat\_Number within the range 1-500.**

**c. Also create a link to display information of all the flights running on a particular day.**

flightdete.jsp

~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Insert title here</title>

</head>

<body>

<form action="flidet.jsp" method="post">

<p>Enter the day for flight details</p>

<input type="text" name="fdate" size="10" /> <input type="submit"

value="Click" />

</form>

</body>

</html>

~~~~~~~~~~~~~~~~~~~

flidet.jsp

~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Insert title here</title>

</head>

<body>

<%

String fldate = request.getParameter("fdate");

String url = "jdbc:mysql://localhost/flight";

String user = "root";

String password = "";

Connection connection = null;

Statement stmt;

try

{

Class.forName("com.mysql.jdbc.Driver").newInstance();

out.println("hi, Flight details=");

connection = DriverManager.getConnection(url, user, password);

if (connection != null)

{

stmt = connection.createStatement();

String query = " select \* from Flight where Weekdays='"

+ fldate + "'";

ResultSet re = stmt.executeQuery(query);

while (re.next())

{

out.println(re.getString("Flight\_Number") + "\n"

+ re.getString("Airline\_Name") + "\n"

+ re.getString("Weekdays") + "\n");

}

}

else

out.println("Connection refused");

}

catch (Exception e)

{

out.println(e.getMessage());

}

%>

</body>

</html>

~~~~~~~~~~~~~~~~~~~

ReserveOnline.jsp

~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">

<title>Insert title here</title>

</head>

<body>

<%

out.println("<B><FONT COLOR = Blue>");

out.println("Welcome </FONT></B>");

DateFormat dateFormat = new SimpleDateFormat("yyyy/MM/dd HH:mm:ss");

//Date datess = new Date();

out.println("<BR><FONT COLOR = Green>");

//out.println("Today is </FONT>"+dateFormat.format(datess));

%>

<form action="ViewDetails.jsp" method="post">

<FONT COLOR="Magenta"> Flight Number:</FONT> <input type="text"

size="15" name="fname"> <br> <FONT COLOR="Brown">Date:

</FONT> <input type="text" size="15" name="date"> <br> <FONT

COLOR="Brown">Customer Name: </FONT> <input type="text" size="15"

name="custname"> <br> <FONT COLOR="Brown">Customer

Number: </FONT> <input type="text" size="15" name="custno"> <br>

<input type="submit" value="Submit form">

</form>

</body>

</html>

~~~~~~~~~~~~~~~~~~~

ViewDetails.jsp

~~~~~~~~~~~~~~~~~~~

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Insert title here</title>

</head>

<body>

<%

String fno1 = request.getParameter("fname");

int fno = Integer.parseInt(fno1);

String datea = request.getParameter("date");

Random rand = new Random();

int s = rand.nextInt(500);

String seat = Integer.toString(s);

String custname = request.getParameter("custname");

String custno = request.getParameter("custno");

int fno2 = Integer.parseInt(custno);

%>

<%

String url = "jdbc:mysql://localhost/flight";

String user = "root";

String password = "";

Connection connection = null;

//boolean flag=false;

String query2;

boolean h = false;

Statement stmt;

try

{

Class.forName("com.mysql.jdbc.Driver").newInstance();

connection = DriverManager.getConnection(url, user, password);

if (connection != null)

{

out.println("Connection created");

stmt = connection.createStatement();

query2 = "select \* from Flight where Flight\_Number='" + fno

+ "'";

ResultSet rs = stmt.executeQuery(query2);

while (rs.next())

{

h = true;

}

if (h)

{

out.println("Flight Number:" + fno + "\nDate:" + datea

+ "\nSeatNumber:" + seat + "\nCustomerName:"

+ custname + "\nCustNumber:" + custno);

String query = "insert into SeatReservation values('"

+ fno + "','" + datea + "','" + seat + "','"

+ custname + "','" + custno + "');";

stmt.executeUpdate(query);

out.println("\nDetails inserted");

}

else

{

out.println("flight number doesnot exist");

}

}

else

out.println("Connection refused");

}

catch (Exception e)

{

out.println(e.getMessage());

}

%>

<p>

click for flight details <a href="flightdete.jsp">here</a>

</body>

</html>