JAVA Programs

6. Write a program to create an array of 10 integers. Accept values from the user in that array. Input another number from the user and find out how many numbers are equal to the number passed, how many are greater and how many are less than the number passed.

Sol.

//comparison of array of 10 integers

import java.util.Scanner;

class prog1

{

public static void main(String args[])

{

int l=0,c=0,e=0;

int num[]=new int[10];

Scanner s=new Scanner(System.in);

for(int i=0;i<10;i++)

{

System.out.println("enter new no");

num[i]=s.nextInt();

}

for(int i=0;i<10;i++)

{

System.out.println(num[i]);

}

System.out.println("enter no m to which you want to compare");

int m=s.nextInt();

for(int i=0;i<10;i++)

{

if(m>num[i])

{

c=c+1;

}

else if(m<num[i])

{

l=l+1;

}

else

{

e=e+1;

}

}

System.out.println("number less than m=" + c);

System.out.println("number greater than m=" + l);

System.out.println("number equal to m=" + e);

}

}

QUS 7 : Write java program for the following matrix operations: a. Addition of two matrices b. Summation of two matrices c. Transpose of a matrix -- Take input of elements of matrices from user .

ANS:

//matrix sum,add,transpose,multiplication

import java.util.Scanner;

class prog2

{

public static void main(String arg[])

{

int i,j;

int v=1;

while(v!=0)

{

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

System.out.println("Enter 1 for sum");

System.out.println("Enter 2 for difference");

System.out.println("Enter 3 for transpose");

System.out.println("Enter 4 for multiplication");

int choice;

Scanner s=new Scanner(System.in);

choice=s.nextInt();

int a[][]=new int[2][2];

int b[][]=new int[2][2];

int sum[][]=new int[2][2];

int diff[][]=new int[2][2];

int trans[][]=new int[2][2];

System.out.println("enter values for matrix A");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

int x=s.nextInt();

a[i][j]=x;

}

}

System.out.println("enter values for matrix B");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

int x=s.nextInt();

b[i][j]=x;

}

}

System.out.println("matrix A is");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(a[i][j] + "\t");

}

System.out.println();

}

System.out.println("matrix B is");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(b[i][j] + "\t");

}

System.out.println();

}

switch(choice)

{

case 1:for (i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

sum[i][j]=a[i][j]+b[i][j];

}

}

System.out.println("sum of matrices is");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(sum[i][j] + "\t");

}

System.out.println();

}

break;

case 2:for (i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

diff[i][j]=a[i][j]-b[i][j];

}

}

System.out.println("difference of matrices is");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(diff[i][j] + "\t");

}

System.out.println();

}

break;

case 3:for (i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

trans[j][i]=a[i][j];

}

}

System.out.println("transpose of matrix A is");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(trans[i][j] + "\t");

}

System.out.println();

}

break;

case 4:System.out.println("enter size of first matrix");

int r1=s.nextInt();

int c1=s.nextInt();

System.out.println("enter size of second matrix");

int r2=s.nextInt();

int c2=s.nextInt();

if(c1!=r2)

{

System.out.println("Incompatible operation");

}

else

{

int m[][]=new int[r1][c1];

int n[][]=new int[r2][c2];

int c[][]=new int[r1][c2];

System.out.println("enter value of matrix A");

for(i=0;i<r1;i++)

{

for(j=0;j<c1;j++)

{

m[i][j]=s.nextInt();

}

}

System.out.println("enter value of matrix B");

for(i=0;i<r2;i++)

{

for(j=0;j<c2;j++)

{

n[i][j]=s.nextInt();

}

}

for(i=0;i<r1;i++)

{

for(j=0;j<c2;j++)

{

c[i][j]=0;

for(int k=0;k<c1;k++)

{

c[i][j]=c[i][j]+m[i][k]\*n[k][j];

}

}

}

System.out.println("multiplication is:");

for(i=0;i<r1;i++)

{

for(j=0;j<c2;j++)

{

System.out.print(c[i][j]+"\t");

}

System.out.println();

}

break;

}

default:

System.out.println("invalid input");

}

System.out.println("enter 1 for continue and 0 for stop");

v=s.nextInt();

}

}

}

8. Write a java program that computes the area of a circle, rectangle and a Cylinder using function overloading.

Sol.

//area of figures by function or method overloading

class figure

{

double area(double x)

{

return 3.14\*x\*x;

}

int area(int x,int y)

{

return x\*y;

}

double area(double r,double h)

{

return 3.14\*r\*r\*h;

}

}

class program9

{

public static void main(String args[])

{

figure f=new figure();

double p=f.area(6);

System.out.println("area of circle is" + p);

int q=f.area(4,5);

System.out.println("area of rectangle is" + q);

double r=f.area(8.0,12.0);

System.out.println("area of cylinder is" + r);

}

}

10. Write a program that reads two integer numbers for the variables a and b. If any other character except number (0-9) is entered then the error is caught by NumberFormatException object. After that ex.getMessage() prints the information about the error occurring causes.

Sol.

//exceptional handling using throw keyword

import java.util.Scanner;

class prog4

{

public static void main(String args[])

{

int a,b;

Scanner s=new Scanner(System.in);

System.out.println("Enter value of a");

a=s.nextInt();

System.out.println("Enter value of b");

b=s.nextInt();

try

{

if(a>=0 && a<=9)

{

if(b>=0 && b<=9)

{

System.out.println("correct values");

System.out.println("you entered" + a + "and" + b);

}

else

{

throw new NumberFormatException();

}

}

else

{

throw new NumberFormatException();

}

}

catch(NumberFormatException e)

{

System.out.println(e);

getmessage();

}

}

static void getmessage()

{

System.out.println("you entered incorrect values");

}

}

11. Create a class called Fraction that can be used to represent the ratio of two integers. Include appropriate constructors and methods. If the denominator becomes zero, throw and handle an exception.

Sol. import java.io.\*;

import java.util.Scanner;

class fraction extends Exception

{

fraction(int a,int b) throws ArithmeticException

{

try

{

int r=a/b;

System.out.println("ratio is"+r);

}

catch(ArithmeticException e)

{

System.out.println(e + "error");

}

}

}

class prog5

{

public static void main(String args[])

{

System.out.println("Enter value of a");

System.out.println("Enter value of b");

Scanner s=new Scanner(System.in);

int a1=s.nextInt();

int b1=s.nextInt();

fraction f=new fraction(a1,b1);

}

}

9. Implement a Bank Account having Instance variables: Account Number, Balance and having methods:

float Deposit (float x) float withdraw (float x) int get account no () float get balance () tax deduction ()

Then implement class Bank having an array list of accounts of type BankAccount. Implement following methods: AddAccount in Bank Get Total balance in Bank Get account number with max. and min. balance Find an account given a bank account no. Count no. of accounts having atleast specific balance.

Sol.

import java.util.ArrayList;

import java.util.Scanner;

class Bankaccount

{

int accnum;

float balance,tax;

Bankaccount()

{

accnum=0;

balance=0;

}

Bankaccount(int a,float b)

{

accnum=a;

balance=b;

}

void deposit(float x)

{

balance=balance+x;

System.out.println(balance);

}

void withdraw(float x)

{

if(balance<x)

{

System.out.println("insufficient balance");

}

else

{

balance=balance-x;

System.out.println(balance);

}

}

void getaccnum()

{

System.out.println("balance is"+ balance);

}

void taxdeduction()

{

balance =balance-tax;

System.out.println("balance is"+ balance);

}

}

class Bank

{

public static void main(String args[])

{

ArrayList<Integer>accounts=new ArrayList<Integer>();

ArrayList<Double>balance=new ArrayList<Double>();

int x=0;

while(x==0)

{

System.out.println("ENTER YOUR CHOICE");

System.out.println("1.Add account in bank");

System.out.println("3.Get account number with maximum and minimum balance");

System.out.println("2.Get total balance in bank");

System.out.println("4.Find an account given a bank account number");

System.out.println("5.Count number of accounts having atleast specific balance");

Scanner s=new Scanner(System.in);

int choice=s.nextInt();

switch(choice)

{

case 1: System.out.println("ENTER the number of accounts to create");

int n=s.nextInt();

for(int i=1;i<=n;i++)

{

accounts.add(i);

}

for(int i=1;i<=n;i++)

{

System.out.println("Enter balance");

double b=s.nextInt();

balance.add(b);

}

break;

case 2: double sum=0;

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

{

sum=sum+balance.get(i);

}

System.out.println(sum);

break;

case 3: double min=balance.get(0);

double max=balance.get(0);

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

{

double no=balance.get(i);

if(no<min)

{

min=no;

}

if(no > max)

{

max=no;

}

System.out.println("Min balance is" + min );

System.out.println("Max balance is" + max);

}

break;

case 4: System.out.println("enter the accnum you want to check");

int a=s.nextInt();

if(accounts.contains(a))

{

System.out.println("account exist");

}

else

{

System.out.println("account does not exist");

}

break;

case 5: System.out.println("enter the least value for which you want to check number of accounts having that value");

int b=s.nextInt();

int count=0;

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

{

if(b<=balance.get(i))

{

count=count+1;

}

if(count==0)

{

System.out.println("zero accounts exist");

}

System.out.println("total accounts are" + count);

}

break;

}

System.out.println("press 1 for exit and 0 for continue");

x=s.nextInt();

}

}

}

12. Create a base class called Shape. It should contain 2 methods getcoord() and showcorrd () to accept X and Y coordinates and to display the same respectively. Create a sub class called Rect. It should also contain a method to display the length and breadth of the rectangle called showCorrd(). In main method, execute the showCorrd() method of the Rect class by applying the dynamic method dispatch concept.

ANS:

HTML CODING

2. Create HTML document with Ordered and Unordered lists.

Sol.

<html>

<head>

<TITLE> list </TITLE>

</head>

<body>

<UL STYLE="list-style-type:CIRCLE" >

<li "font-size=20px"> coffee

<li "font-size=20px"> milk

<li "font-size=20px"> drink

</UL>

<OL STYLE="list-style-type:decimal" start="1" >

<li "font-size=20px"> bread

<li "font-size=20px"> milk

<li "font-size=20px"> drink

</OL>

</body>

<html>

3. Create your time table using HTML tables.

Sol.

<!DOCTYPE html>

<html>

<head>

</head>

<body>

<table border="20" cellspacing="15" cellpadding="25";>

<caption> TIME TABLE OF PHYSICAL SCIENCE </caption>

<tr>

<th> Days/Time</th>

<th> 9:00 AM</th>

<th> 10:00 AM</th>

<th> 11:00 AM</th>

<th> 12:00 PM</th>

<th> 1:30 PM</th>

<th> 2:30 PM</th>

<th> 3:30 PM</th>

<th> 4:30 PM</th>

</tr>

<tr >

<td> MONDAY</td>

<td colspan="2"><center> CS(L) KANISHKA</center></td>

<td colspan="2"> <center>CS LAB</center></td>

<td> PHYSICS</td>

</tr>

<tr >

<td> TUESDAY</td>

<td colspan="4"><center> PHYSICS LAB</center></td>

<td colspan="2"> <center>MATHS</center></td>

</tr>

<tr >

<td> WEDNESAY</td>

<td colspan="2"> <center>SEC LAB</center></td>

<td> CS L</td>

<td> PHYSICS</td>

<td> SEC</td>

</tr>

<tr >

<td> THURSDAY</td>

<td colspan="2"> <center>MATHS</center></td>

<td colspan="2"> <center>SEC LAB</center></td>

<td> PHYSICS</td>

</tr>

<tr >

<td> FRIDAY</td>

<td> </td>

<td>CS L</td>

<td> SEC </td>

<td> PHYSICS</td>

<td colspan="2"><center> MATHS</center></td>

</tr>

</table>

</body>

</html>

4. Create a Registration / Admission or Feedback Form with Input Type, Select and Text Area, Text Box, Option/radio buttons, Check boxes, Reset and Submit buttons using HTML.

Sol.

<html>

<head> REGISTRATION FORM </head>

<body>

<form>

First Name:

<input type="text" name="fname"></br>

Last Name:

<input type="text" name="lname"></br>

Gender:</br>

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

<input type="radio" name="gender" >Female</br>

<input type="radio" name="gender" >Others</br>

Personal information:

<input type=" Checkbox " name="pi1" >have a car</br>

<input type=" Checkbox " name="pi2" >have a bike</br>

<BUTTON:

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

</form>

</body>

</html>

5. Create an HTML document (having multiple frames) showing horizontal and vertical frames having Internal and External links to different web pages. Apply CSS styles for formatting the web pages.

Sol. WEBSITE:

<!DOCTYPE html>

<html>

<head>

</head>

<frameset cols="30%,\*">

<frame name="part" src="frame\_a.html">

<frame name="main" src="frame\_b.html">

</frameset>

</html>

a.html:

<!DOCTYPE html>

<html>

<head>

<style> body {background: gray;}

h1 {color: blue;}

p {margin: 30px;}

</style>

</head>

<body>

<h1>Frame 1</h1>

<p>Contents</p>

</body>

<a href="aboutus.html" target="main"> about us</a>

<br/>

<a href="contact.html" target="main"> contact us</a>

</html>

b.html:

<!DOCTYPE html>

<html>

<head>

<style> body {background: white;}

h1 {color: red;}

p {margin: 30px;}

</style>

</head>

<body>

<h1>Frame 2</h1>

<p>Contents of Frame 2</p>

</body>

</html>

Aboutus.html

<!DOCTYPE html>

<html>

<head>

<style> body {background: blue;}

h1 {color: red;}

p {margin: 30px;}

</style>

</head>

<body>

<h1>about us</h1>

<p>This Is the info about college....</p>

<p>PRINCIPAL

<b><u>Dr. Madhu Pruthi</u> </b></p>

<img src="b.jpg" alt="hello" >

</body>

</html>

Contactus.html:

<!DOCTYPE html>

<html>

<head>

<style> body {background: cyan;}

h1 {color: green;}

p {margin: 30px;}

</style>

</head>

<body>

<h1>contact</h1>

<img src="t.jpg" alt="hello" >

<p>

You may contact us at the following.<br/>

Keshav Mahavidyalaya

(University of Delhi)<br/>

Address : H-4-5 Zone, Road No. 43,

Pitampura Near Sainik Vihar,

Delhi - 110034<br/>

Phone : 27018805 Telefax : 27018806<br/>

E-mail : principal@keshav.du.ac.in</p>

</body>

</html>

JAVASCRIPT

13. Create a student registration form. Create functions to perform the following checks: a. Roll number is a 7-digit numeric value b. Name should be an alphabetical value(String) c. Non-empty fields like DOB

ANS:

**<html>**

**<head>**

**<title>STUDENT REGISTRATION FORM</title>**

**<script ="JavaScript">**

**//alert("hello");**

**function check\_name()**

**{**

**var letters = /^[A-Za-z]+$/;**

**var c= document.getElementById("1").value;**

**if(!c.match(letters)) {**

**document.getElementById("0").value=('Username must have alphabet characters only');**

**}**

**else**

**document.getElementById("0").value="";**

**}**

**function check\_roll() {**

**var no = document.getElementById("1").value;**

**if (no.length!=7 ) {**

**document.getElementById("1").value=("Roll no must be of 7 digits" );**

**}**

**else**

**document.getElementById("1").value="";**

**}**

**function check\_date( ){**

**var db = new Date( );**

**//alert(db);**

**var weekdays=['Monday','Tuesday','Wednesday','Thursday','Friday','Saturday','Sunday'];**

**var mm=['January','February','March','April','May','June','July','August','September','October','November','December'];**

**var day = db.getDay();**

**var month=db.getMonth();**

**alert("Date is : "+weekdays[day]+" ,"+mm[month]+" "+db.getDate() +" "+db.getFullYear());**

**}**

**</script>**

**</head>**

**<body>**

**<center><b> STUDENT RESGISTRATION FORM</b></center><br><br>**

**<form name=f1 style="text-align: center">**

**Name:<input type="text" id="0" onclick="check\_name" ><br><br>**

**Roll no: <input type="number" id="1" onclick="check\_roll"><br><br>**

**DOB :<input type="date" name="dob" id ="3" <br><br>**

**<input type="submit" name="submit" onclick="check\_date( )">**

**</form>**

**</body>**

**</html>**

**14. Implement a static password protection**

**<html>**

**<head>**

**<title>Login Form</title><br>**

**<script type="text/javascript">**

**function check()**

**{**

**var id = document.getElementById("1").value;**

**var pass = document.getElementById("2").value;**

**if((id=="admin") && (pass=="password123"))**

**alert("Login Sucessful!!!\nWelcome "+id);**

**else**

**alert("ID not found");**

**}**

**</script>**

**</head>**

**<body>**

**Login id : <input type="text" id="1"/><br>**

**Password : <input type="password" id="2"/><br>**

**<input type="button" value="submit" onclick="check()"/>**

**</body>**

**</html>**

15. Write a java script a. To change the colour of text using SetTimeOut() b. To move an image across screen using SetInterval()

ANS:

**a.)to change the color of the text using setTimeout().**

**<html>**

**<head>**

**<center><b> CHANGE THE COLOUR </b></center</head>**

**<body>**

**<script language="javascript">**

**function f1(){**

**document.getElementById("1").style.color = "#FF0000";**

**setTimeout ( "f2()", 2000 );**

**}**

**function f2() {**

**document.getElementById("1").style.color = "#0000ff";**

**}**

**</script>**

**<form >**

**<center><br> ENTER THE TEXT:<br>**

**<input type="text" id="1" name="text1"/><br>**

**<input type="button" value="change color" id ="2" onclick="f1()"/>**

**</form>**

**</body>**

**</html>**

**b.)to move an image across screen using setInterval().**

**<html>**

**<head>**

**<title>JavaScript Animation</title>**

**<script type="text/javascript">**

**var imgObj = null;**

**var animate ;**

**function init(){**

**imgObj = document.getElementById('myImage');**

**imgObj.style.position= 'relative';**

**imgObj.style.left = '0px';**

**}**

**function moveRight(){**

**imgObj.style.left = parseInt(imgObj.style.left) + 10 + 'px';**

**animate = setInterval(moveRight,2000); // call moveRight in 20msec**

**}**

**function stop(){**

**clearTimeout(animate);**

**imgObj.style.left = '0px';**

**}**

**window.onload =init;**

**//-->**

**</script>**

**</head>**

**<body>**

**<form>**

**<img id="myImage" src="http://www.seedgeeks.com/store/image/cache/data.jpg>**

**<p>Click the buttons below to handle animation</p>**

**<input type="button" value="Start" onclick="moveRight();" />**

**<input type="button" value="Stop" onclick="stop();" />**

**</form>**

**</body>**

**</html>**

16. Create a table 'Student' and ‘Teacher’ in 'College' database and insert two rows in this newly created table using JDBC API and do the following: a. Update an already created table 'Teacher' in 'College' database by updating a teacher's name, with "Dr." appended before the name, whose name is "Rita". b. Repeat the same thing for all the teachers using PreparedStatement. c. Delete the student with ID=3 from 'Student' database. d. Insert two students to the ResultSet returned by the query which selects all students with FirstName="Ayush". The database must also get updated along with ResultSet.

ANS:

package javaapplication;

import java.sql.\*;

public class JDBCApplication {

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

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

String userID = "root";

String password = "root";

String printrow;

Statement DataRequest;

ResultSet Results;

Connection Db = null;

int noOfRows;

try {

Class.forName("java.sql.Driver");

Db = DriverManager.getConnection(url, userID, password);

} catch (ClassNotFoundException error) {

System.err.println("Unable to load the JDBC bridge." + error);

System.exit(1);

} catch (SQLException error) {

System.err.println("Cannot connect to the database." + error);

System.exit(2);

}

try {

//Ans 16.(a) starts here.

String query1 = "UPDATE Teacher SET FirstName = CONCAT ('Dr.', FirstName) WHERE FirstName = 'Rajat'";

DataRequest = Db.createStatement();

DataRequest.executeUpdate(query1); //Ans 16.(a) ends here.

//Ans 16.(b) starts here.

query1 = "UPDATE Teacher SET FirstName = CONCAT ('Dr.', FirstName) WHERE FirstName = ? AND FirstName NOT LIKE 'Dr.%'";

PreparedStatement pstatement = Db.prepareStatement(query1);

String query2 = "SELECT FirstName FROM Teacher";

Results = DataRequest.executeQuery(query2);

while (Results.next()) {

pstatement.setString(1, Results.getString(1));

pstatement.executeUpdate();

}

pstatement.close(); //Ans 16.(b) ends here.

query2 = "SELECT \* FROM Teacher";

Results = DataRequest.executeQuery(query2);

System.out.println("ID First Name Last Name");

while (Results.next()) {

printrow = Results.getString(1) + " " + Results.getString(2) + " " + Results.getString(3);

System.out.println(printrow);

}

//Ans 16.(c) starts here.

query2 = "DELETE FROM Student WHERE ID = 11732";

DataRequest.executeUpdate(query2); //Ans 16.(c) ends here.

} catch (SQLException error) {

System.err.println("Data display error." + error);

System.exit(4);

}

try {

//Ans 16.(d) starts here.

DataRequest = Db.createStatement(ResultSet.TYPE\_SCROLL\_SENSITIVE, ResultSet.CONCUR\_UPDATABLE);

String query = "SELECT \* FROM Student WHERE FirstName = 'Shubham'";

Results = DataRequest.executeQuery(query);

Results.moveToInsertRow();

Results.updateInt(1, 11700);

Results.updateString(2, "Tom");

Results.updateString(3, "Smith");

Results.insertRow();

Results.updateInt(1, 11701);

Results.updateString(2, "John");

Results.updateString(3, "Smith");

Results.insertRow();

//Ans 16.(d) ends here.

System.out.println("\nID First Name Last Name");

while (Results.next()) {

printrow = Results.getString(1) + " " + Results.getString(2) + " " + Results.getString(3);

System.out.println(printrow);

}

17. Create a procedure in MySQL to count the number of Rows in table 'Student'. Use Callable Statement to call this method from Java code.

ANS:

package javaapplication;

import java.sql.\*;

public class JDBCApplication {

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

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

String userID = "root";

String password = "root";

String printrow;

Statement DataRequest;

ResultSet Results;

Connection Db = null;

int noOfRows;

try {

Class.forName("java.sql.Driver");

Db = DriverManager.getConnection(url, userID, password);

} catch (ClassNotFoundException error) {

System.err.println("Unable to load the JDBC bridge." + error);

System.exit(1);

} catch (SQLException error) {

System.err.println("Cannot connect to the database." + error);

System.exit(2);

}

try {

//Ans 17 starts here.

query = "{ CALL count\_row (?)}";

CallableStatement cstatement = Db.prepareCall(query);

cstatement.registerOutParameter(1, Types.INTEGER);

cstatement.execute();

noOfRows = cstatement.getInt(1);

System.out.println("\nThe no. of rows in the 'Student' table are " + noOfRows);

cstatement.close();

//Ans 17 ends here.

DataRequest.close();

} catch (SQLException error) {

System.err.println("SQL error. The rollno already exists.");

System.exit(3);

}

Db.close();

}

}

JSP

18. Display the pattern: 1 1 2 1 2 3 Take ‘n’ in a textbox from user. Display this pattern using Scriptlets <c:forEach> loop

ANS:

INDEX.HTML

<!DOCTYPE html>

<html>

<head>

<title> Question 1</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<form action='index.jsp'>

Enter Number of Lines: <input type='text' name='lineno'>

<input type='submit' name='submit' value="Submit">

</form>

</body>

</html>

index.jsp

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<%!int n;%>

<html>

<body>

<% n=Integer.parseInt(request.getParameter("lineno"));

for(int i=1;i<=n;i++)

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

{ out.println(j+" "); }

out.println("<br>");

}

%>

</body>

</html>

b) index.html

<!DOCTYPE html>

<html>

<head>

<title> Question 1</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<form action='p.jsp'>

<input type=' number' name='num'>

<input type='submit' name='submit' value="Submit">

</form>

</body>

</html>

**p.jsp**

**<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<!DOCTYPE html>**

**<html>**

**<head>**

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

**<title>JSP Page</title>**

**</head>**

**<body>**

**<fmt:parseNumber var="n" type="number" value="$(param.num)"/>**

**<c:forEach var="i" begin="1" end="${n}">**

**<c:forEach var="i" begin="1" end="${i}">**

**<c:out value ="${i}"/>**

**</c:forEach>**

**</c:forEach>**

**</body>**

**</html>**

19. Make two files as follows: a. main.html: shows 2 text boxes and 3 radio buttons with values "addition", "subtraction" and "multiplication"

b. operate.jsp: depending on what the user selects perform the corresponding function (Give two implementations: using request.getParameter() and using expression language)

ANS:

**main.html**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta charset="UTF-8">**

**<meta name="viewport" content="width=device-width, initial-scale=1.0">**

**</head>**

**<body>**

**<form action="operate.jsp">**

**Enter Number 1: <input type="text" name="no1">**

**Enter Number 2:<input type="text" name="no2"><br>**

**Addition: <input type="radio" name="op" value="add"><br>**

**Subtraction: <input type="radio" name="op" value="sub"><br>**

**Multiplication: <input type="radio" name="op" value="mul"><br><br>**

**<input type="submit" name="submit" value="Submit">**

**</form>**

**</body>**

**</html>**

**operate.jsp**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<%! int n1,n2;%>**

**<%! String ch;%>**

**<!DOCTYPE html>**

**<html>**

**<head>**

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

**</head>**

**<body>**

**<% n1=Integer.parseInt(request.getParameter("no1"));**

**n2=Integer.parseInt(request.getParameter("no2"));**

**ch=request.getParameter("op");**

**if(ch.equals("add"))**

**out.println("Addition is: "+(n1+n2));**

**else if(ch.equals("sub"))**

**out.println("Subtraction is: "+(n1-n2));**

**else if(ch.equals("mul"))**

**out.println("Multiplication is: "+(n1\*n2));**

**%>**

**</body>**

**</html>**

**20. Validate User input entered in a form. The input must include Name, DOB, Email ID, Lucky Number, Favourite food etc.**

**ANS:**

**Index.html**

**<html>**

**<body>**

**<jsp:useBean id="userInfo"**

**class="com.ora.jsp.beans.userinfo.UserInfoBean">**

**<jsp:setProperty name="userInfo" property="\*" />**

**</jsp:useBean>**

**You entered:<br>**

**Name: <c:out value="${userInfo.userName}" /><br>**

**Birth Date: <c:out value="${userInfo.birthDate}" /><br>**

**Email Address: <c:out value="${userInfo.emailAddr}" /><br>**

**Gender: <c:out value="${userInfo.gender}" /><br>**

**Lucky Number: <c:out value="${userInfo.luckyNumber}" /><br>**

**Favorite Food:**

**<c:forEach items="${userInfo.food}" var="current">**

**<c:out value="${current}" />&nbsp;**

**</c:forEach>**

**</body>**

**</html>**

**Validate.jsp**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<!DOCTYPE html>**

**<html>**

**<head>**

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

**<title>JSP Page</title>**

**</head>**

**<body>**

**<body bgcolor="white">**

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

**<input type="hidden" name="submitted" value="true">**

**<table>**

**<c:if test="${param.submitted && empty param.userName}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please enter your Name**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Name:</td>**

**<td>**

**<input type="text" name="userName"**

**value="<c:out value="${param.userName}" />">**

**</td>**

**</tr>**

**<c:if test="${param.submitted && empty param.birthDate}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please enter your Birth Date**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Birth Date:</td>**

**<td>**

**<input type="text" name="birthDate"**

**value="<c:out value="${param.birthDate}" />">**

**</td>**

**<td>(Use format yyyy-mm-dd)</td>**

**</tr>**

**<c:if test="${param.submitted && empty param.emailAddr}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please enter your Email Address**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Email Address:</td>**

**<td>**

**<input type="text" name="emailAddr"**

**value="<c:out value="${param.emailAddr}" />">**

**</td>**

**<td>(Use format name@company.com)</td>**

**</tr>**

**<c:if test="${param.submitted &&**

**param.gender != 'm' && param.gender != 'f'}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please select a valid Gender**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Gender:</td>**

**<td>**

**<c:choose>**

**<c:when test="${param.gender == 'f'}">**

**<input type="radio" name="gender" value="m">**

**Male<br>**

**<input type="radio" name="gender" value="f" checked>**

**Female**

**</c:when>**

**<c:otherwise>**

**<input type="radio" name="gender" value="m" checked>**

**Male<br>**

**<input type="radio" name="gender" value="f">**

**Female**

**</c:otherwise>**

**</c:choose>**

**</td>**

**</tr>**

**<c:if test="${param.submitted &&**

**(param.luckyNumber < 1 || param.luckyNumber > 100)}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please enter a Lucky Number between 1 and 100**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Lucky number:</td>**

**<td>**

**<input type="text" name="luckyNumber"**

**value="<c:out value="${param.luckyNumber}" />">**

**</td>**

**<td>(A number between 1 and 100)</td>**

**</tr>**

**<c:forEach items="${paramValues.food}" var="current">**

**<c:choose>**

**<c:when test="${current == 'z'}">**

**<c:set var="pizzaSelected" value="true" />**

**</c:when>**

**<c:when test="${current == 'p'}">**

**<c:set var="pastaSelected" value="true" />**

**</c:when>**

**<c:when test="${current == 'c'}">**

**<c:set var="chineseSelected" value="true" />**

**</c:when>**

**<c:otherwise>**

**<c:set var="invalidSelection" value="true" />**

**</c:otherwise>**

**</c:choose>**

**</c:forEach>**

**<c:if test="${invalidSelection}">**

**<tr><td></td>**

**<td colspan="2"><font color="red">**

**Please select only valid Favorite Foods**

**</font></td></tr>**

**</c:if>**

**<tr>**

**<td>Favorite Foods:</td>**

**<td>**

**<input type="checkbox" name="food" value="z"**

**${pizzaSelected ? 'checked' : ''}>Pizza<br>**

**<input type="checkbox" name="food" value="p"**

**${pastaSelected ? 'checked' : ''}>Pasta<br>**

**<input type="checkbox" name="food" value="c"**

**${chineseSelected ? 'checked' : ''}>Chinese**

**</td>**

**</tr>**

**<tr>**

**<td colspan="3">**

**<input type="submit" value="Send Data">**

**</td>**

**</tr>**

**</table>**

**</form>**

**</body>**

**</html>**

**21. Display Good Morning <uname>, Good Afternoon <uname> or Good Evening <uname> based on the current time of the day.**

**ANS**

**index.html**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<title>TODO supply a title</title>**

**<meta charset="UTF-8">**

**<meta name="viewport" content="width=device-width, initial-scale=1.0">**

**</head>**

**<body>**

**<div>**

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

**question number<input type="text" name="number" >**

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

**</div>**

**</body>**

**</html>**

**time.jsp**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<%@taglib prefix="ex" uri="/WEB-INF/tlds/library"%>**

**<!DOCTYPE html>**

**<html>**

**<head id>**

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

**<title>HI</title>**

**</head>**

**<body>**

**<ex:uname/>**

**</body>**

**</html>**

**library.tld**

**<?xml version="1.0" encoding="UTF-8"?>**

**<taglib version="2.1" xmlns="http://java.sun.com/xml/ns/javaee" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-jsptaglibrary\_2\_1.xsd">**

**<tlib-version>1.0</tlib-version>**

**<short-name>library</short-name>**

**<uri>/WEB-INF/tlds/library</uri>**

**<tag>**

**<name>uname</name>**

**<tagclass>pack.Servlet</tagclass>**

**<body-content>scriptless</body-content>**

**</tag>**

**</taglib>**

**Servlet.java**

**package pack;**

**import java.io.IOException;**

**import javax.servlet.jsp.\*;**

**import javax.servlet.jsp.tagext.\*;**

**import java.io.\*;**

**import java.util.Date;**

**import javax.servlet.jsp.JspException;**

**public class Servlet extends SimpleTagSupport**

**{**

**public void doTag() throws JspException,IOException**

**{**

**JspWriter out=getJspContext().getOut();**

**try{**

**long d=new Date().getTime();**

**if(d<12)**

**out.println("Good Morning");**

**else if(d>=12 && d<=16)**

**out.println("good afternoon");**

**else**

**out.println("good evening");**

**}**

**catch(Exception e)**

**{**

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

**}**

**}**

**}**

**22. Let the user enter a word a in a textbox and let her/him select one of even or odd radio buttons. If she/he selects odd, check the odd positions in the word entered, if they all contain vowels, then display the message ‘You win’, else display ‘You lose’. Similarly, if the user selects even, check for vowels in all even positions in the word entered. Use jstl’s ‘fn’ library**

**ANS**

EvenOdd.html

**<!DOCTYPE html>**

**<html>**

**<head>**

**<title>TODO supply a title</title>**

**<meta charset="UTF-8">**

**<meta name="viewport" content="width=device-width, initial-scale=1.0">**

**</head>**

**<body>**

**<center><form action="Checkpos.jsp" method="POST">**

**Enter a string: <input type="text" name="str">**

**<br>**

**Select the operation: <br>**

**Odd<input type="radio" value="1" name="rad"><br>**

**Even<input type="radio" value="2" name="rad"><br>**

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

**</form></center>**

**</body>**

**</html>**

**Checkpos.jsp**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<title>JSP Page</title>**

**</head>**

**<body>**

**<%**

**String str1=request.getParameter("str");**

**String str2=request.getParameter("rad");**

**int c=Integer.parseInt(str2);**

**char ch;**

**int flag=0;**

**switch(c)**

**{**

**case 1: for(int i=0;i<str1.length();i++)**

**{**

**if(i%2!=0)**

**{ ch=str1.charAt(i); if(ch=='a' || ch=='A' || ch=='e' || ch=='E' ||ch=='i' || ch=='I' || ch=='o' || ch=='O' ||ch=='u' || ch=='U')**

**{ flag=1; }**

**else**

**{ flag=0; break; }**

**}**

**}**

**if(flag==1)**

**out.println("..You win..");**

**else**

**out.println("..You lose..");**

**break;**

**case 2 : for(int i=0;i<str1.length();i++)**

**{**

**if(i%2==0)**

**{ ch=str1.charAt(i);**

**if(ch=='a' || ch=='A' || ch=='e' || ch=='E' ||ch=='i' || ch=='I' || ch=='o' || ch=='O' ||ch=='u' || ch=='U')**

**{ flag=1; }**

**else**

**{ flag=0; break; }**

**}**

**}**

**if(flag==1)**

**out.println("..You win..");**

**else**

**out.println("..You lose..");**

**break;**

**}**

**%>**

**</body>**

**</html>**

23. Ask a user's name Java Server Pages by Hans Bergsten age on a HTML form. Then display Hello <uname> on a JSP. On the same page ask the product the user would like to buy. Then redirect to another JSP which would display: Hello <uname>, You have ordered <product>. (Use Session Scope Variable using setTag)

ANS

**index.html**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<title>TODO supply a title</title>**

**<meta charset="UTF-8">**

**<meta name="viewport" content="width=device-width, initial-scale=1.0">**

**</head>**

**<body>**

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

**Enter your name : <input type="text" name="name">**

**Enter your age : <input type="number" name="age">**

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

**</form>**

**</body>**

**</html>**

**hello.java**

**package ques10;**

**import javax.servlet.jsp.tagext.\*;**

**import javax.servlet.jsp.\*;**

**import java.io.\*;**

**public class hello extends SimpleTagSupport{**

**private String name;**

**public void setName(String name)**

**{**

**this.name=name;**

**}**

**public void doTag() throws JspException,IOException{**

**JspWriter out=getJspContext().getOut();**

**out.println("Hello "+name);**

**}**

**}**

**mytag.jsp**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<%@taglib prefix="ex" uri="WEB-INF/tlds/uname.tld" %>**

**<!DOCTYPE html>**

**<html>**

**<head>**

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

**<title>JSP Page</title>**

**</head>**

**<body>**

**<ex:uname name="${param.name}"/>**

**<p:product x="${param.sell}" scope="application"/>**

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

**BAG<input type="radio" name="sell" value="Bag">**

**BOTTLE<input type="radio" name="sell" value="Bottle">**

**TIFFIN BOX<input type="radio" name="sell" value="Tiffin box">**

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

**</form>**

**</body>**

**</html>**

**tag.jsp**

**<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>**

**<%@page contentType="text/html" pageEncoding="UTF-8"%>**

**<!DOCTYPE html>**

**<html>**

**<head>**

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

**<title>JSP Page</title>**

**</head>**

**<body>**

**<c:out value="${x}"></c:out>**

**<c:out value="${param.sell}"></c:out>**

**</body>**

**</html>**

**uname.tld**

**<?xml version="1.0" encoding="UTF-8"?>**

**<taglib version="2.1" xmlns="http://java.sun.com/xml/ns/javaee" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-jsptaglibrary\_2\_1.xsd">**

**<tlib-version>1.0</tlib-version>**

**<short-name>ex</short-name>**

**<uri>/WEB-INF/tlds/uname</uri>**

**<!-- A validator verifies that the tags are used correctly at JSP**

**translation time. Validator entries look like this:**

**<validator>**

**<validator-class>com.mycompany.TagLibValidator</validator-class>**

**<init-param>**

**<param-name>parameter</param-name>**

**<param-value>value</param-value>**

**</init-param>**

**</validator>**

**-->**

**<!-- A tag library can register Servlet Context event listeners in**

**case it needs to react to such events. Listener entries look**

**like this:**

**<listener>**

**<listener-class>com.mycompany.TagLibListener</listener-class>**

**</listener>**

**-->**

**<tag>**

**<name>uname</name>**

**<tag-class>ques10.hello</tag-class>**

**<attribute>**

**<name>name</name>**

**<rtexprvalue>true</rtexprvalue>**

**</attribute>**

**<body-content>scriptless</body-content>**

**</tag>**

**</taglib>**