**بسم الله الرحن الرحيم**

**اقدم لكم مبادئ البرمجه بلغه الجافا**

**اعداد المهندس:-**

**محمد عبد السلام مصطفي**

**خريج نظم معلومات**

**الكليه الكنديه السودانيه**

**معلومات الاتصال**

**جوال : 00249914653126**

**بريد الكتروني**

**hegoo1990@live.com**

**hegoo1990@gmail.com**

**ملحوظزه:هذا الكتاب ما زال في التطوير يمكنك اضافه اي معلومات مفيده بعد الرجوع الي**

**Java (OOP)**

**Example 2**

import javax.swing.JOptionPane;

public class Test

{

public static void main(String args[])

{

 JOptionPane.showMessageDialog(null," Hallo java");

 }

 }

**Example three 3- New line method.**

import javax.swing.JOptionPane;

public class Test

{

public static void main(String args[])

{

 JOptionPane.showMessageDialog(null," Welcome\n to\n java");

 }

 }

**Example 3- Addition**

import javax.swing.JOptionPane;

public class test2

{

public static void main(String args[])

{

 String FirstNo;

 String SecondNo;

 int number1;

 int number2;

 int sum;

 FirstNo=JOptionPane.showInputDialog(null," Enter the first name: ");

 SecondNo=JOptionPane.showInputDialog(null," Enter the Second Name: ");

 number1=Integer.parseInt(FirstNo);

 number2=Integer.parseInt(SecondNo);

 sum=number1+number2;

 JOptionPane.showMessageDialog(null," The sum is " + sum);

 }

 }

**3- Comparison**

import javax.swing.JOptionPane;

public class comparison

{

 public static void main(String args[])

 {

 String firstNo; int No1;

 String secondNo; int No2;

 firstNo=JOptionPane.showInputDialog(null," Enter the first Number");

 secondNo=JOptionPane.showInputDialog(null," Enter the Second Number");

 No1=Integer.parseInt(firstNo);

 No2=Integer.parseInt(secondNo);

 if (No1>No2)

 JOptionPane.showMessageDialog(null," The big number is " +No1);

 if (No2>No1)

 JOptionPane.showMessageDialog(null," The big number is " +No2);

 if (No1==No2)

 JOptionPane.showMessageDialog(null," The two numbers are Equal ");

 }

 }

**Exercise 4,Comparing Three Numbers**

import javax.swing.JOptionPane;

public class comparison2

{

 public static void main(String args[])

 {

 String FirstNo; int No1;

 String SecondNo; int No2;

 String ThirdNo; int No3;

 FirstNo=JOptionPane.showInputDialog(null," Enter the first Number");

 SecondNo=JOptionPane.showInputDialog(null," Enter the Second Number");

 ThirdNo=JOptionPane.showInputDialog(null," Enter the third Number");

 No1=Integer.parseInt(FirstNo);

 No2=Integer.parseInt(SecondNo);

 No3=Integer.parseInt(ThirdNo);

if (No1>No2 && No1>No3)

 JOptionPane.showMessageDialog(null," The big number is " +No1);

 if (No2>No1 && No2>No3)

 JOptionPane.showMessageDialog(null," The big number is " +No2);

 else

 JOptionPane.showMessageDialog(null," The big number is " +No3);

}

}

**Looping 1**

import javax.swing.JOptionPane;

public class loop1

{

 public static void main(String args[])

 {

 for (int i=1;i<=10;i++ )

 {

 System.out.println("Hello");

 System.out.println("java");

 }

**Summation 1 to 100,**

import javax.swing.JOptionPane;

public class summation

{

 public static void main(String args[])

 {

 int i=1;

 int sum=0;

 do

 {sum=sum+i;

 i++;

 }while (i<=100);

 System.out.println(sum);

 }

}

**Summation of Odd numbers from one to 100;**

import javax.swing.JOptionPane;

public class summation

{

 public static void main(String args[])

 {

 int i=1;

 int sum=0;

 do

 {

 i=i+2;

 sum=sum+i;

 }while (i<=100);

 System.out.println(sum);

 }

}

**Methods USING APPLETS**

import java.awt.Container;

import javax.swing.\*;

public class squareinteger extends JApplet{

public void init()

 {

 JTextArea outputArea=new JTextArea();

 Container Container=getContentPane();

 Container.add(outputArea);

 int result;

 String output ="";

 for(int counter=1; counter<=10; counter++){

 result = square(counter);

 output+="the square of "+ counter +"is " + result +"\n";}

 outputArea.setText(output);

 }

 public int square (int y)

 {

 return (y\*y);

 }

}

import javax.swing.JOptionPane;

class tommy {

 public static void main (String[] args) {

 String FactNo;

 FactNo=JOptionPane.showInputDialog("Enter the number");

 int a= Integer.parseInt(FactNo);

 int fact= 1;

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

 {

 fact=fact\*i;

 }

 JOptionPane.showMessageDialog(null," Factorial of "+a+" is "+fact);

 }

 }

Homework

Write a program that reads two numbers from the user , the program has a method which receives two numbers and return the x power y=method to calculate the power of two numbers

public class MathLibraryExample {

 public static void main(String[] args) {

 int i = 7;

 int j = -9;

 double x = 72.3;

 double y = 0.34;

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

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

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

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

 // The absolute value of a number is equal to

 // the number if the number is positive or

 // zero and equal to the negative of the number

 // if the number is negative.

 System.out.println("|" + i + "| is " + Math.abs(i));

 System.out.println("|" + j + "| is " + Math.abs(j));

 System.out.println("|" + x + "| is " + Math.abs(x));

 System.out.println("|" + y + "| is " + Math.abs(y));

 // Truncating and Rounding functions

 // You can round off a floating point number

 // to the nearest integer with round()

 System.out.println(x + " is approximately " + Math.round(x));

 System.out.println(y + " is approximately " + Math.round(y));

 // The "ceiling" of a number is the

 // smallest integer greater than or equal to

 // the number. Every integer is its own

 // ceiling.

 System.out.println("The ceiling of " + i + " is " + Math.ceil(i));

 System.out.println("The ceiling of " + j + " is " + Math.ceil(j));

 System.out.println("The ceiling of " + x + " is " + Math.ceil(x));

 System.out.println("The ceiling of " + y + " is " + Math.ceil(y));

 // The "floor" of a number is the largest

 // integer less than or equal to the number.

 // Every integer is its own floor.

 System.out.println("The floor of " + i + " is " + Math.floor(i));

 System.out.println("The floor of " + j + " is " + Math.floor(j));

 System.out.println("The floor of " + x + " is " + Math.floor(x));

 System.out.println("The floor of " + y + " is " + Math.floor(y));

 // Comparison operators

 // min() returns the smaller of the two arguments you pass it

 System.out.println("min(" + i + "," + j + ") is " + Math.min(i,j));

 System.out.println("min(" + x + "," + y + ") is " + Math.min(x,y));

 System.out.println("min(" + i + "," + x + ") is " + Math.min(i,x));

 System.out.println("min(" + y + "," + j + ") is " + Math.min(y,j));

 // There's a corresponding max() method

 // that returns the larger of two numbers

 System.out.println("max(" + i + "," + j + ") is " + Math.max(i,j));

 System.out.println("max(" + x + "," + y + ") is " + Math.max(x,y));

 System.out.println("max(" + i + "," + x + ") is " + Math.max(i,x));

 System.out.println("max(" + y + "," + j + ") is " + Math.max(y,j));

 // The Math library defines a couple

 // of useful constants:

 System.out.println("Pi is " + Math.PI);

 System.out.println("e is " + Math.E);

 // Trigonometric methods

 // All arguments are given in radians

 // Convert a 45 degree angle to radians

 double angle = 45.0 \* 2.0 \* Math.PI/360.0;

 System.out.println("cos(" + angle + ") is " + Math.cos(angle));

 System.out.println("sin(" + angle + ") is " + Math.sin(angle));

 // Inverse Trigonometric methods

 // All values are returned as radians

 double value = 0.707;

 System.out.println("acos(" + value + ") is " + Math.acos(value));

 System.out.println("asin(" + value + ") is " + Math.asin(value));

 System.out.println("atan(" + value + ") is " + Math.atan(value));

 // Exponential and Logarithmic Methods

 // exp(a) returns e (2.71828...) raised

 // to the power of a.

 System.out.println("exp(1.0) is " + Math.exp(1.0));

 System.out.println("exp(10.0) is " + Math.exp(10.0));

 System.out.println("exp(0.0) is " + Math.exp(0.0));

 // log(a) returns the natural

 // logarithm (base e) of a.

 System.out.println("log(1.0) is " + Math.log(1.0));

 System.out.println("log(10.0) is " + Math.log(10.0));

 System.out.println("log(Math.E) is " + Math.log(Math.E));

 // pow(x, y) returns the x raised

 // to the yth power.

 System.out.println("pow(2.0, 2.0) is " + Math.pow(2.0,2.0));

 System.out.println("pow(10.0, 3.5) is " + Math.pow(10.0,3.5));

 System.out.println("pow(8, -1) is " + Math.pow(8,-1));

 // sqrt(x) returns the square root of x.

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

 System.out.println(

 "The square root of " + i + " is " + Math.sqrt(i));

 }

 // Finally there's one Random method

 // that returns a pseudo-random number

 // between 0.0 and 1.0;

 System.out.println("Here's one random number: " + Math.random());

 System.out.println("Here's another random number: " + Math.random());

 }

}

**Array without data!**

import javax.swing.\*;

public class Arraytest{

public static void main(String[] args) {

int array[];

array=new int[10];

String output="index\tvalue\n";

for(int counter=0; counter<array.length; counter++)

output=counter+"\t"+array[counter]+"\n";

JTextArea outputArea=new JTextArea();

outputArea.setText(output);

JOptionPane.showMessageDialog(null,outputArea, "initializing Array of integer values", JOptionPane.INFORMATION\_MESSAGE);

System.exit(0);

}

}

Assignment

Write a java program that defines array and fill the array values from the user in0put, after that the program ask the user to insert any value then the program shows the index of the value inside the array!

**TEST 1**

Write a java program that will create a class called bank account, The account consists of

Account No, Customer Name, Customaer balance. The program enables user to opens an account by asking the user to enter details (no, name, balance). Write different set and get methods for account. Also make two methods one for deposit and one for withdrawal. (Check the balance before subtracting from it)

Main Menu

1. Add new student
2. Show student
3. Delete student
4. Input degree
5. Calculate the GPA
6. Show GPA
7. Exit

St\_no

St\_name

St\_subj1

St\_subj2

St\_subj3

GPA=(st\_sbj1+st\_subj2+st\_subj3)/3

**1-Student**

import javax.swing.\*;

public class TS{

public static void main(String arg[]){

StudentRecord x=new StudentRecord();

StudentRecord y=new StudentRecord();

while choices=()

String a=JOptionPane.showInputDialog(null,"Enter the Student number");

int aa=Integer.parseInt(a);

String b=JOptionPane.showInputDialog(null,"Enter the student name");

String c=JOptionPane.showInputDialog(null,"Enter the first subject");

int cc=Integer.parseInt(c);

String d=JOptionPane.showInputDialog(null,"Enter the second subject");

int dd=Integer.parseInt(d);

String e=JOptionPane.showInputDialog(null,"Enter the third subject");

int ee=Integer.parseInt(e);

JOptionPane.showMessageDialog(null," Number / Name / First Sub /Second Sub /Third Sub /GPA \n "+a+" "+b+" "+c+" "+d+" "+e);

y.setStudentNumber(aa);

y.setStudentName(b);

y.setFirstSubject(cc);

y.setSecondSubject(dd);

y.setThirdSubject(ee);

y.getStudentNumber();

y.getStudentName();

y.getFirstSubject();

y.getSecondSubject();

y.getThirdSubject();

}

}

**2-Student**

public class StudentRecord

{

private int st\_no;

private String st\_name;

private int st\_subj1;

private int st\_subj2;

private int st\_subj3;

private double GPA;

public StudentRecord() {

 st\_no=0;

 st\_name="N";

 st\_subj1=0;

 st\_subj2=0;

 st\_subj3=0;

 GPA=0;

}

public void setStudentNumber(int StudentNumber)

{

 st\_no=StudentNumber;

}

public void setStudentName(String StudentName)

{

 st\_name=StudentName;

}

public void setFirstSubject(int FirstSubject)

{

 st\_subj1=FirstSubject;

}

public void setSecondSubject(int SecondSubject)

{

 st\_subj2=SecondSubject;

}

public void setThirdSubject(int ThirdSubject)

{

 st\_subj3=ThirdSubject;

}

public void setGPAAva(int GPAAva)

{

 GPA=(st\_subj1+st\_subj2+st\_subj3)/3;

}

public void getStudentNumber()

{

 System.out.println(st\_no);

}

public void getStudentName()

{

 System.out.println(st\_name);

}

public void getFirstSubject()

{

 System.out.println(st\_subj1);

}

public void getSecondSubject()

{

 System.out.println(st\_subj2);

}

public void getThirdSubject()

{

 System.out.println(st\_subj3);

}

public void getGPAAva()

{

 System.out.println(GPA);

}

}