INTRODUCTION

Scientific Calculator :

The calculator was written by Rolf Howarth in early 1996.

A fully featured scientific calculator with proper operator precedence is implemented, including trig functions and logarithms, factorials, 12 levels of parentheses, logs to base 2 (a handy function for information entropists!), bitwise logical operators, hex, octal, binary and ASCII display.

The calculator is written in JavaScript and you are welcome to view the JavaScript source (visible within the HTML page) for personal educational purposes as long as you recognize that it is copyrighted and not in the public domain. This calculator is now available as part of Hummingbird's Enterprise Information Portal. All enquiries regarding licensing the calculator should be directed to Hummingbird Ltd.

Features Available:

● Addition

● Subtraction

● Multiplication

● Division

● Power

● Sqrt

● Max

● Min

● Sin

● Cos

Solving Procedure:

For this calculator project we did use fundamental OOP concept like

Encapsulation,Inheritance and for getting the operator from user we did use switch

case.This program will run till we want to if we continue to press y after a operation if we

press n after a operation program will terminate.

**CODING**

import java.util.Scanner;

public class Calculator

{

public static void main(String[] args)

{

double a,b;

boolean check=true;

System.out.println("Welcome to our Calculator v1.0");

while (check)

{

System.out.println("Available features are :");

System.out.println("Addition----------->(1)");

System.out.println("Subtraction-------->(2)");

System.out.println("Multiplication----->(3)");

System.out.println("Division----------->(4)");

System.out.println("Power-------------->(5)");

System.out.println("Sqrt--------------->(6)");

System.out.println("Max---------------->(7)");

System.out.println("Min---------------->(8)");

System.out.println("Sin---------------->(9)");

System.out.println("Cos---------------->(10)");

Scanner input = new Scanner(System.in);

normal\_mode obj = new normal\_mode();

int operators= input.nextInt();

switch (operators)

{

case 1:

System.out.println("Enter 2 numbers for Addition :");

a=input.nextInt();

b=input.nextInt();

obj.set\_addition(a,b);

System.out.println("The Addition of "+a+" + "+b+" =

"+obj.get\_addition()+"");

break;

case 2:

System.out.println("Enter 2 numbers for Subtraction :");

a=input.nextInt();

b=input.nextInt();

obj.set\_subtraction(a,b);

System.out.println("The Subtraction of "+a+" - "+b+" =

"+obj.get\_subtraction()+"");

break;

case 3:

System.out.println("Enter 2 numbers for Multiplication :");

a=input.nextInt();

b=input.nextInt();

obj.set\_multiplication(a,b);

System.out.println("The Multiplication of "+a+" × "+b+" =

"+obj.get\_multiplication()+"");

break;

case 4:

System.out.println("Enter 2 numbers for division :");

a=input.nextInt();

b=input.nextInt();

if(b==0)

{

System.out.println("Math Error ");

break;

}

obj.set\_division(a,b);

System.out.println("The Division of "+a+" ÷ "+b+" =

"+obj.get\_division()+"");

break;

case 5:

System.out.println("Enter 2 numbers for Power :");

a=input.nextInt();

b=input.nextInt();

obj.set\_power(a,b);

System.out.println("The Power of "+a+" & "+b+" = "+obj.get\_power()+"");

break;

case 6:

System.out.println("Enter the numbers for Squareroot :");

a=input.nextInt();

obj.set\_squareroot(a);

System.out.println("The Squareroot of "+a+" = "+obj.get\_squareroot()+"");

break;

case 7:

System.out.println("Enter 2 numbers for define Max :");

a=input.nextInt();

b=input.nextInt();

obj.set\_maximum(a,b);

System.out.println("The Maximum value from "+a+" & "+b+" =

"+obj.get\_maximum()+"");

break;

case 8:

System.out.println("Enter 2 numbers for define Min :");

a=input.nextInt();

b=input.nextInt();

obj.set\_minimum(a,b);

System.out.println("The Minimum value from "+a+" & "+b+" =

"+obj.get\_minimum()+"");

break;

case 9:

System.out.println("Enter the radian of Sin :");

a=input.nextInt();

obj.set\_Sin(a);

System.out.println("The radian of Sin "+a+" = "+obj.get\_Sin()+"");

break;

case 10:

System.out.println("Enter the radian of Cos :");

a=input.nextInt();

obj.set\_Cos(a);

System.out.println("The radian of Cod "+a+" = "+obj.get\_Cos()+"");

break;

default:

System.out.println("Wrong Choice");

}

System.out.println("Do you want to keep continue then press (y) or (n) to

terminate : ");

Scanner input1 = new Scanner(System.in);

String c=input1.nextLine();

if(c.equals("y"))

{

check=true;

}

else

{

check=false;

}

}

}

}

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import java.util.Scanner;

public class normal\_mode extends scientific\_mode

{

private double a,b;

public void set\_addition(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_subtraction(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_multiplication(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_division(double a,double b)

{

this.a=a;

this.b=b;

}

public double get\_addition()

{

return (a+b);

}

public double get\_subtraction()

{

return (a-b);

}

public double get\_multiplication()

{

return (a\*b);

}

public double get\_division()

{

return (a/b);

}

}

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public class scientific\_mode

{

private double a,b;

public void set\_power(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_squareroot(double a)

{

this.a=a;

}

public void set\_maximum(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_minimum(double a,double b)

{

this.a=a;

this.b=b;

}

public void set\_Sin(double a)

{

this.a=a;

}

public void set\_Cos(double a)

{

this.a=a;

}

public double get\_power()

{

return ((double)Math.pow(a,b));

}

public double get\_squareroot()

{

return ((double)Math.sqrt(a));

}

public double get\_maximum()

{

return Math.max(a,b);

}

public double get\_minimum()

{

return Math.min(a,b);

}

public double get\_Sin()

{

return Math.sin(a);

}

public double get\_Cos()

{

return Math.cos(a);

}

}