Project 1

Programming Fundamentals (CS-130-02) CS 130-01 FA2022

Total=100

A digital calculator is a type of electronic calculator, usually but not always handheld, designed to calculate problems in science, engineering, and mathematics. They have completely replaced slide rules in traditional applications, and are widely used in both education and professional settings

Build a Scientific calculator which will have at least 20 scientific operations.

A screenshot of a computer

Description automatically generated with medium confidence

You will need to give a demo of your code on 10/21 and submit a report with proper code and screenshot of your result with each operation.

import java.util.Scanner;

public class BasicCalculator {

public static void main(String[] args) {

// **TODO** Auto-generated method stub

float a, b, res=0;

char choice, ch;

Scanner scan = new Scanner(System.***in***);

do

{

//Prepare the menu for user

System.***out***.println("\n\nMain Menu: \n1.Addition\n2.Subtraction"

+"\n3.Multiplication\n4.Division\n5.Square\n6.Square Root"

+"\n7.Exponent\n8.COS\n9.SIN\nA.TAN\nB.MAX\nC.MIN"

+ "\nD.LN\nE.LOG\nF.Cube\nG.Arc Sine\nH.Arc Cosine"

+ "\nI.Arc Tangent Root\nJ.Absolute Value\nK.Round \nq.Exit\n");

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

choice = scan.next().charAt(0);

switch(choice) {

case '1':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=a+b;

System.***out***.println("Result: "+res);

break;

case '2':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=a-b;

System.***out***.println("Result: "+res);

break;

case '3':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=a\*b;

System.***out***.println("Result: "+res);

break;

case '4':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=a/b;

System.***out***.println("Result: "+res);

break;

case '5':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*pow*(a, 2);

System.***out***.println("Result: "+res);

break;

case '6':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*sqrt*(a);

System.***out***.println("Result: "+res);

break;

case '7':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=(float) Math.*pow*(a,b);

System.***out***.println("Result: "+res);

break;

case '8':

System.***out***.println("Enter one number");

a = scan.nextFloat();

a = (float) Math.*toRadians*(a);

System.***out***.println("Result:" + Math.*cos*(a));

break;

case '9':

System.***out***.println("Enter one number");

a = scan.nextFloat();

a = (float) Math.*toRadians*(a);

System.***out***.println("Result:" + Math.*sin*(a));

break;

case 'A':

System.***out***.println("Enter one number");

a = scan.nextFloat();

a = (float) Math.*toRadians*(a);

System.***out***.println("Result: "+ Math.*tan*(a));

break;

case 'B':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=(float) Math.*max*(a, b);

System.***out***.println("Result: "+ res);

break;

case 'C':

System.***out***.println("Enter two numbers");

a = scan.nextFloat();

b = scan.nextFloat();

res=(float) Math.*min*(a, b);

System.***out***.println("Result: "+ res);

break;

case 'D':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*log*(a);

System.***out***.println("Result: "+ res);

break;

case 'E':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*log10*(a);

System.***out***.println("Result: "+ res);

break;

case 'F':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*cbrt*(a);

System.***out***.println("Result: "+ res);

break;

case 'G':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*asin*(a);

System.***out***.println("Result: "+ res);

break;

case 'H':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*acos*(a);

System.***out***.println("Result: "+ res);

break;

case 'I':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*atan*(a);

System.***out***.println("Result: "+ res);

break;

case 'J':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*abs*(a);

System.***out***.println("Result: "+ res);

break;

case 'K':

System.***out***.println("Enter one number");

a = scan.nextFloat();

res=(float) Math.*round*(a);

System.***out***.println("Result: "+ res);

break;

case 'q':

System.*exit*(0);

break;

default:

System.***out***.println("The choice is not present in main menu");

break;

}

}

while(choice!='q');

}

}

Above is the code and this is the menu

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