EXPERIENTIAL LEARNING

ADVANCED CALCULATOR

APRIL 20, 2022

DATA STRUCTURES USING C

TEAMMATES

NAMRATA MAKHIJA (20070123078)
PINAKCI KATHOTIA (20070123035)
ISHIKA CHAUHAN (20070123020)

Symbiosis Institute of Techonolgy

AIM AND OBJECTIVE

To understand the working of an advanced calculator using basic C programming and performing different types of operations using various operators.

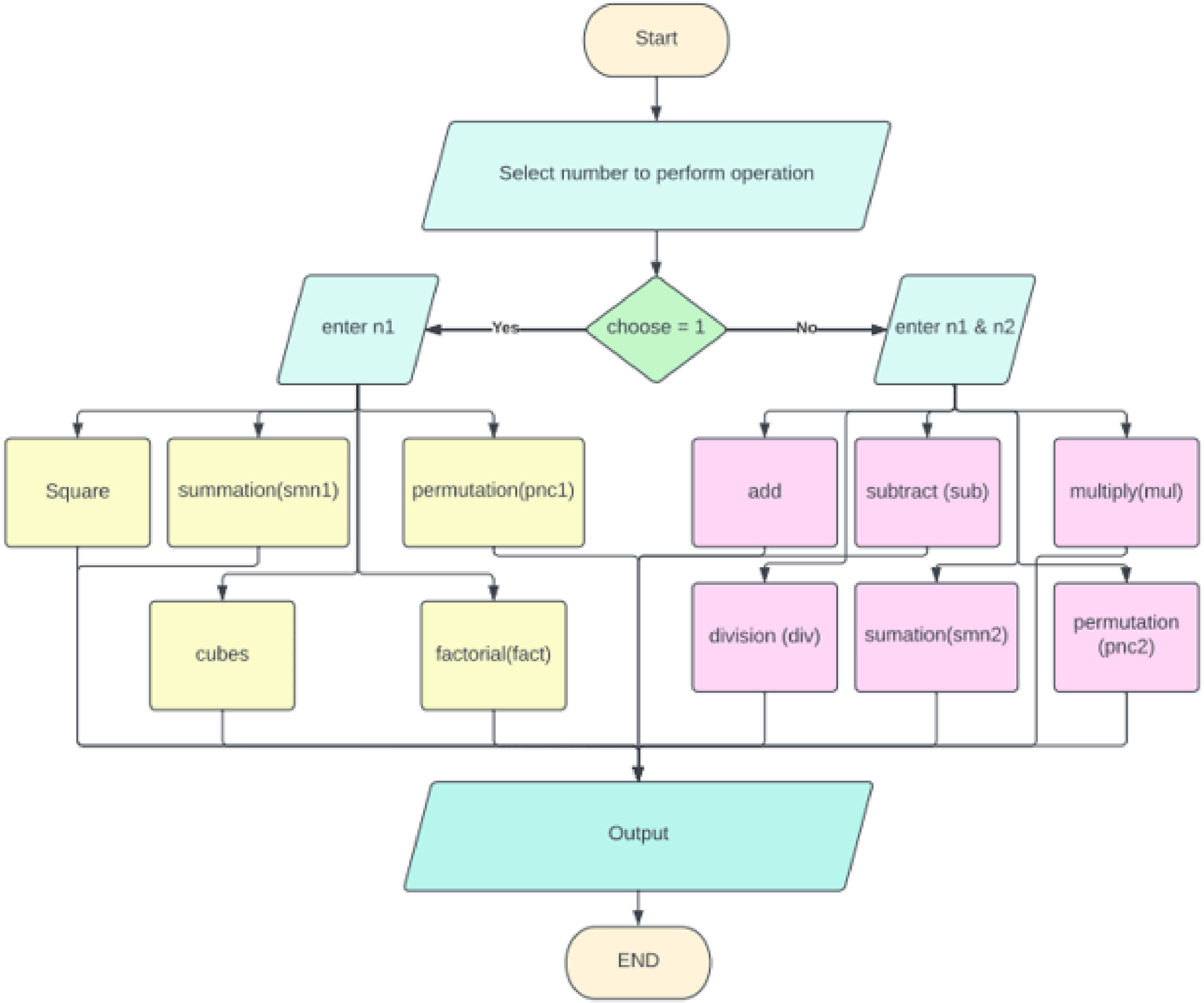
DESCRIPTION

In this programming project, basic C programming constructs are used to develop an advanced calculator. An Advanced Calculator helps us in performing complex calculations correctly and efficiently thereby relieving the user of the need to do mental operations and of the need to rely on paper.

DESCRIPTION

It performs operations such as: Addition (+), Subtraction (−), Multiplication (×), Division (÷), Summation (∑), Square (2) & Square Root (√), Cube (3) & Cube Root (∛), Permutation (nPr) & Combination (nCr).

The program starts by prompting the user to enter either 1 or 2 values and then displays the possible operations done based on number of values


Start
Select number to perform operation
choose = 1
Yes
No
enter n1
enter n1 & n2
Square
summation(smn1)
permutation(pnc1)
add
subtract (sub)
multiply(mul)
cubes
factorial(fact)
division (div)
sumation(smn2)
permutation (pnc2)
Output
END

Condition 1 : When number of inputs = 1 and input is positive

```
How many numbers would you like to enter: 1 or
1
Enter the number
5
5 * 5 = 25
Square Root (Γêü) 5 = 2.236068
5 * 5 * 5 = 125
Cube Root (Γê¢) 5 = 1.709976
Summation (╬ú) 5 = 15
5! = 120
5C0 = 1
5C1 = 5
5C5 = 1
5P0 = 1
5P1 = 5
5P5 = 120
```

Condition 2 : When number of inputs = 1 and input is negative

```
How many numbers would you like to enter: 1 or 2
1
Enter the number
-5
-5 * -5 = 25
Square Root (Γêü) -5 = Complex Number
-5 * -5 * -5 = -125
Cube Root (Γê¢) -5 = -1.709976
Summation (╬ú) -5 = not possible
-5! = not possible
-5C0 = not possible
-5C1 = not possible
-5C-5 = not possible
-5P0 = not possible
-5P1 = not possible
-5P-5 = not possible
```

Condition 3 : When number of inputs = 2 and input 1 < input 2

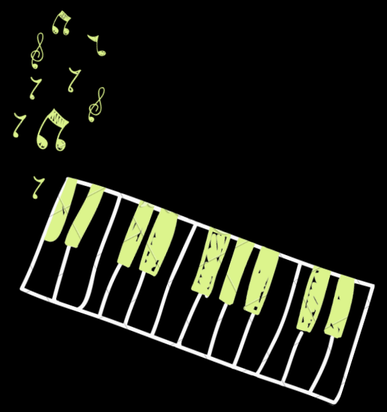
```
How many numbers would you like to enter: 1 or 2
2
Enter the first number
5
Enter the second number
10
5 + 10 = 15
5 - 10 = -5
10 - 5 = 5
5 * 10 = 50
5 / 10 = 0.500000
10 / 5 = 2.000000
Summation (╬ú) 5 to 10 = 45
5C10 = not possible
5P10 = not possible
5C0 = 1
5C1 = 5
5C5 = 1
5P0 = 1
5P1 = 5
5P5 = 120
10C0 = 1
10C1 = 10
10C10 = 1
10P0 = 1
10P1 = 10
10P10 = 3628800
```

Condition 4 : When number of inputs = 2 and input 1 > input 2

```
How many numbers would you like to enter: 1 or 2
2
Enter the first number
10
Enter the second number
5
10 + 5 = 15
10 - 5 = 5
5 - 10 = -5
10 * 5 = 50
10 / 5 = 2.000000
5 / 10 = 0.500000
Summation (╬ú) 5 to 10 = 45
10C5 = 252.000000
10P5 = 30240.000000
10C0 = 1
10C1 = 10
10C10 = 1
10P0 = 1
10P1 = 10
10P10 = 3628800
5C0 = 1
5C1 = 5
5C5 = 1
5P0 = 1
5P1 = 5
5P5 = 120
```

LEARNING OUTCOME

This code helped us in understanding the working of an advanced calculator



THANK YOU!