C CALCULATOR

PPS MINI PROJECT

Submitted by

VAIBHAV MISHRA (RA2111026010249)

SALADI MANOJ SAI ABHITHESH (RA2111026010229)

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Under the Guidance of

Lakshminarayana R Sir

(Associate Professor, NWC)

DEPARTMENT OF COMPUTING COLLEGE OF

ENGINEERING & TECHNOLOGY

AIM: The aim of the project is to make a simple calculator using C programming Language to perform two number arithmetic operations (like Addition, Subtraction, Multiplication and Division) and simple trigonometric values (sin, cos, tan, etc).

ABSTRACT: Calculators are widely used device nowadays. It makes calculations easier and faster. Calculators are used to everyone in daily life. A simple calculator can be made using a C++ program which is able to add, subtract, multiply and divide, two operands entered by the user. The switch and break statement is used to create a calculator.

ALGORITHM:

- Start the program.
- Print the options available for operation in calculator.
- Take input from the user for the operation want to perform.
- Print the operation selected by the user using if and else if statements.
- Use Switch statement.
- Take input from the user required for the operation.
- Perform the operation.
- Print the Result.
- End the program.

SOURCE CODE

```
#include <stdio.h>
#include <math.h>
int main()
{
   // declare local variables
   char opt;
   float n1, n2;
   float res,x;
   printf("\n\t******C MINI PROJECT******\n");
   printf("\t******By Vaibhav & Manoj******\n");
   printf("\t*****C CALCULATOR*****\n");
   printf ("  Choose an operator\n  + for Addition,\n  - for Subtraction,\n");
   printf("  * for Multiplication,\n  / for Division,\n  s for sin,\n");
   printf("  c for cos,\n  t for tan,\n  o for cot,\n  e for sec,\n  a for cosec\n");
   printf("  g for Greatest Integer,\n  f for Fractional Part,\n");
   printf("  to perform the operation in C Calculator \n");
   scanf ("\t%c", &opt); // take an operator
   if (opt == '/' )
   {
      printf (" You have selected: Division");
   }
   else if (opt == '*')
   {
```

```
    printf (" You have selected: Multiplication");
 }

else if (opt == '-')
{
    printf (" You have selected: Subtraction");
 }
    else if (opt == '+')
{
    printf (" You have selected: Addition");
 }
 else if (opt == 's')
{
    printf (" You have selected: sin");
 }
 else if (opt == 't')
{
    printf (" You have selected: tan");
 }
 else if (opt == 'c')
{
    printf (" You have selected: cos");
 }
 else if (opt == 'o')
{
```

```
    printf (" You have selected: cot");
 }
 else if (opt == 'e')
{
    printf (" You have selected: sec");
 }
 else if (opt == 'a')
{
    printf (" You have selected: cosec");
 }
 else if (opt == 'g')
{
    printf (" You have selected: Greatest Integer");
 }
 else if (opt == 'f')
{
    printf (" You have selected: Fractional Part");
 }

switch(opt)
{
    case '+':
        printf (" \n Enter the first number: ");
        scanf(" %f", &n1); // take fist number
        printf (" Enter the second number: ");
```

```
    scanf (" %f", &n2); // take second number
    res = n1 + n2; // add two numbers
    printf (" Addition of %f and %f is: %.2f", n1, n2, res);
    break;

case '-':
    printf (" \n Enter the first number: ");
    scanf(" %f", &n1); // take fist number
    printf (" Enter the second number: ");
    scanf (" %f", &n2); // take second number
    res = n1 - n2; // subtract two numbers
    printf (" Subtraction of %f and %f is: %.2f", n1, n2, res);
    break;

case '*':
    printf (" \n Enter the first number: ");
    scanf(" %f", &n1); // take fist number
    printf (" Enter the second number: ");
    scanf (" %f", &n2); // take second number
    res = n1 * n2; // multiply two numbers
    printf (" Multiplication of %f and %f is: %.2f", n1, n2, res);
    break;

case '/':
    printf (" \n Enter the first number: ");
```

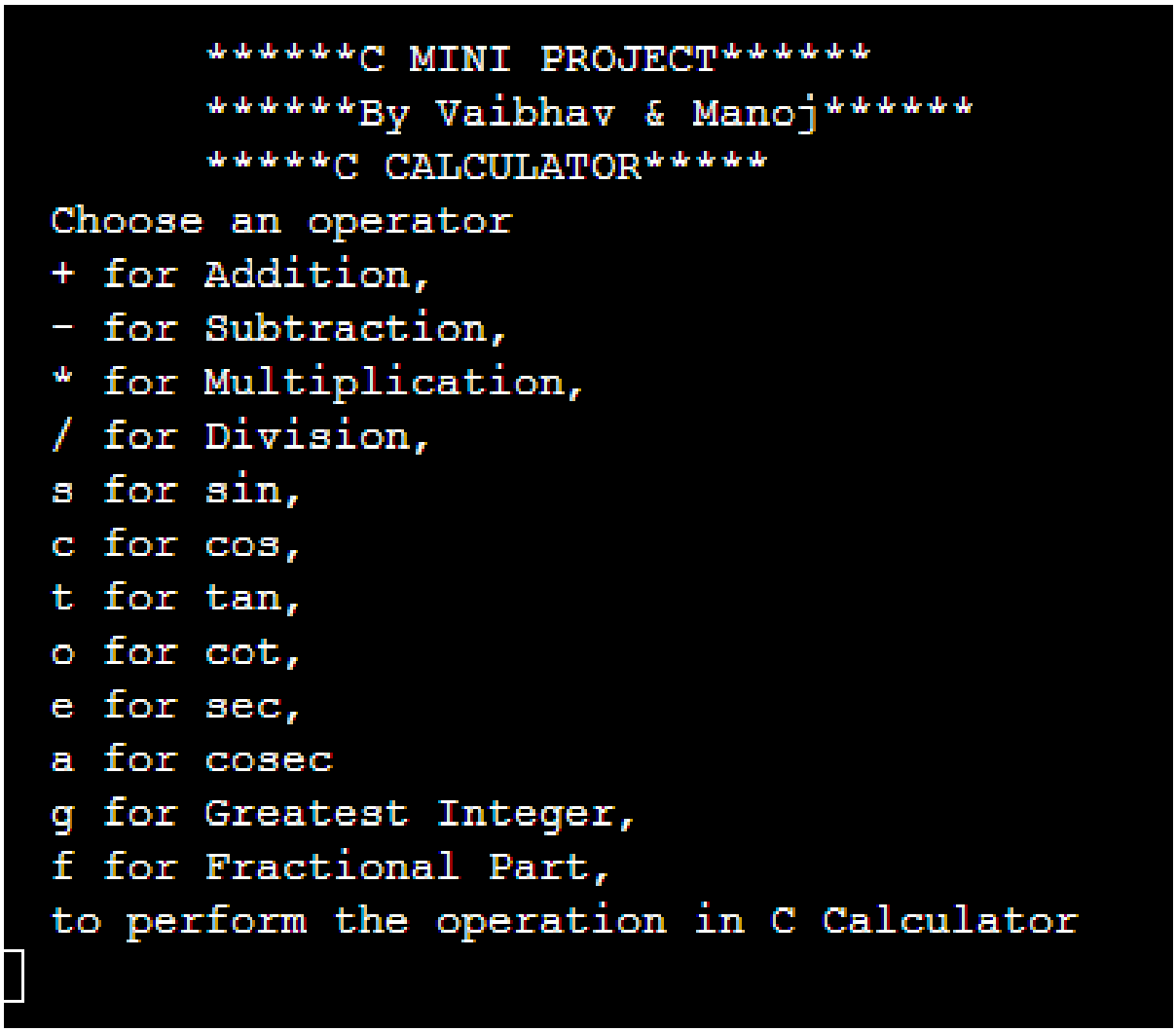
```
    scanf(" %f", &n1); // take fist number
    printf (" Enter the second number: ");
    scanf (" %f", &n2); // take second number
    if (n2 == 0)   // if n2 == 0, take another number
    {
       printf (" \n Divisor cannot be zero. Please enter another value ");
       scanf ("%f", &n2);
       }
    res = n1 / n2; // divide two numbers
    printf (" Division of %f and %f is: %.2f", n1, n2, res);
    break;
case 's':
    printf("\n\nEnter degree x-");
    scanf("%f",&x);
    res = sin((3.14*x)/180); // sin numbers
    printf (" sin of %f is: %.2f", x, res);
    break;
case 'c':
    printf("\n\nEnter degree x-");
    scanf("%f",&x);
    res = cos((3.14*x)/180); // cos numbers
    printf (" cos of %f is: %.2f", x, res);
    break;
case 't':
    printf("\n\nEnter degree x-");
```

```
    scanf("%f",&x);
    res = tan((3.14*x)/180);
    printf (" tan of %f is: %.2f", x, res);
    break;
case 'e':
    printf("\n\nEnter degree x-");
    scanf("%f",&x);
    res = 1/cos((3.14*x)/180);
    printf (" sec of %f is: %.2f", x, res);
    break;
case 'a':
    printf("\n\nEnter degree x-");
    scanf("%f",&x);
    res = 1/sin((3.14*x)/180);
    printf (" cosec of %f is: %.2f", x, res);
    break;
case 'o':
    printf("\n\nEnter degree x-");
    scanf("%f",&x);
    res = 1/tan((3.14*x)/180);
    printf (" cot of %f is: %.2f", x, res);
    break;
case 'g':
    printf("\n  Enter number- ");
    scanf("  %f",&x);
```

```
        int b=(int)x;
        printf("  The Greatest Integer of %f : %d",x,b);
        break;
    case 'f':
        printf("\n  Enter number- ");
        scanf("  %f",&x);
        float l=x-(int)x;
        printf("  Fractional Part of %f : %f",x,l);
        break;
    default:  /* use default to print default message if any condition is not satisfied */
        printf (" Something is wrong!! Please check the options ");
  }
  return 0;
}
```

OUTPUT

OPENING SCREEN



```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
 Choose an operator
 + for Addition,
 - for Subtraction,
 * for Multiplication,
 / for Division,
 s for sin,
 c for cos,
 t for tan,
 o for cot,
 e for sec,
 a for cosec
 g for Greatest Integer,
 f for Fractional Part,
 to perform the operation in C Calculator
+
 You have selected: Addition
 Enter the first number: 56
 Enter the second number: 67
 Addition of 56.000000 and 67.000000 is: 123.00
```

```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
 Choose an operator
 + for Addition,
 - for Subtraction,
 * for Multiplication,
 / for Division,
 s for sin,
 c for cos,
 t for tan,
 o for cot,
 e for sec,
 a for cosec
 g for Greatest Integer,
 f for Fractional Part,
 to perform the operation in C Calculator
/
 You have selected: Division
 Enter the first number: 56
 Enter the second number: 7
 Division of 56.000000 and 7.000000 is: 8.00
```

```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
 Choose an operator
 + for Addition,
 - for Subtraction,
 * for Multiplication,
 / for Division,
 s for sin,
 c for cos,
 t for tan,
 o for cot,
 e for sec,
 a for cosec
 g for Greatest Integer,
 f for Fractional Part,
 to perform the operation in C Calculator
-
You have selected: Subtraction
Enter the first number: 565
Enter the second number: 87
Subtraction of 565.000000 and 87.000000 is: 478.00
```

```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
 Choose an operator
 + for Addition,
 - for Subtraction,
 * for Multiplication,
 / for Division,
 s for sin,
 c for cos,
 t for tan,
 o for cot,
 e for sec,
 a for cosec
 g for Greatest Integer,
 f for Fractional Part,
 to perform the operation in C Calculator
*
You have selected: Multiplication
Enter the first number: 56
Enter the second number: 65
Multiplication of 56.000000 and 65.000000 is: 3640.00
```

```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
  Choose an operator
  + for Addition,
  - for Subtraction,
  * for Multiplication,
  / for Division,
  s for sin,
  c for cos,
  t for tan,
  o for cot,
  e for sec,
  a for cosec
  g for Greatest Integer,
  f for Fractional Part,
  to perform the operation in C Calculator
s
 You have selected: sin

Enter degree x-90
 sin of 90.000000 is: 1.00
```

```
        ******C MINI PROJECT******
        ******By Vaibhav & Manoj******
        *****C CALCULATOR*****
  Choose an operator
  + for Addition,
  - for Subtraction,
  * for Multiplication,
  / for Division,
  s for sin,
  c for cos,
  t for tan,
  o for cot,
  e for sec,
  a for cosec
  g for Greatest Integer,
  f for Fractional Part,
  to perform the operation in C Calculator
g
 You have selected: Greatest Integer
  Enter number- 56.65655456
  The Greatest Integer of 56.656555 : 56
```

RESULT: C Calculator has been created working with maximum efficiency, Our project has succeeded in managing the data and providing the best output.

CONCLUSION: This calculator can be used to perform operations efficiently taking input from the user in a easy and understanding way giving out sentence output with no confusions.