

SIMPLE CALCULATOR

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STATEMENT:- To Create a Simple Calculator Program using the C- Programming Language.

Algorithm of Calculator Program:

Step 1: Declare local variables n1, n2, res, opt. For example, where n1 and n2 take two numeric values, res will store results and opt variable defines the operator symbols.

Step 2: Print the Choice (Addition, Subtraction, multiplication, division,etc.)

Step 3: Enter the Choice

Step 4: Takes two numbers, n1 and n2

Step 5: Switch case jump to an operator selected by the user

Step 6: Store result into res variable.

Step 7: Display the operation result

Step 8: Exit from the program.

The different ways to write a Calculator Program in the C language.

1. Calculator Program in C using the switch statement
2. Calculator Program in C using if else if statement

3. Calculator Program in C using do-while loop and switch statement

4. Calculator Program in C using function and switch statement

In this Mini project that we do, we write the Calculator Program Using the do-while loop and Switch Statement. i.e the 3rd way.

Program:- Calculator program using do-while loop and switch case statement in C

```
#include <stdio.h>

#include <math.h>

#include <stdlib.h>

int main()
{
    // declaration of local variable op;
    int op, n1, n2;
    float res;
    char ch;
    do
    {
        // displays the multiple operations of the C Calculator
        printf (" Select an operation to perform the calculation in C Calculator: ");
        printf (" \n 1 Addition \t \t 2 Subtraction \n 3 Multiplication \t 4 Division \n 5
Square \t \t 6 Square Root \n 7 Exit \n \n Please, Make a choice ");
```

```
scanf ("%d", &op); // accepts a numeric input to choose the operation
```

```
// use switch statement to call an operation
```

```
switch (op)
```

```
{
```

```
case 1:
```

```
    // Add two numbers
```

```
    printf (" You chose: Addition");
```

```
    printf ("\n Enter First Number: ");
```

```
    scanf (" %d", &n1);
```

```
    printf (" Enter Second Number: ");
```

```
    scanf (" %d", &n2);
```

```
    res = n1 + n2; // Add two numbers
```

```
    printf (" Addition of two numbers is: %.2f", res);
```

```
    break; // break the function
```

```
case 2:
```

```
    // Subtract two numbers
```

```
    printf (" You chose: Subtraction");
```

```
    printf ("\n Enter First Number: ");
```

```
    scanf (" %d", &n1);
```

```
    printf (" Enter Second Number: ");
```

```
scanf ("%d", &n2);  
  
res = n1 - n2; // subtract two numbers  
  
printf (" Subtraction of two numbers is: %.2f",  
res); break; // break the function
```

case 3:

```
// Multiplication of the numbers  
  
printf (" You chose: Multiplication");  
  
printf ("\n Enter First Number: ");  
  
scanf ("%d", &n1);  
  
printf (" Enter Second Number: ");  
  
scanf ("%d", &n2);  
  
res = n1 * n2; // multiply two numbers  
  
printf (" Multiplication of two numbers is: %.2f",  
res); break; // break the function
```

case 4:

```
// Division of the numbers  
  
printf (" You chose: Division");  
  
printf ("\n Enter First Number: ");  
  
scanf ("%d", &n1);  
  
printf (" Enter Second Number: ");  
  
scanf ("%d", &n2);
```

```
if (n2 == 0)
{
    printf (" \n Divisor cannot be zero. Please enter another value
"); scanf ("%d", &n2);
}

res = n1 / n2; // divide two numbers

printf (" Division of two numbers is: %.2f", res);

break; // break the function
```

case 5:

```
// getting square of a number

printf (" You chose: Square");

printf ("\n Enter First Number: ");

scanf (" %d", &n1);

res = n1 * n1; // get square of a number

printf (" Square of %d number is: %.2f", n1, res);

break; // break the function
```

case 6:

```
// getting the square root of the number

printf (" You chose: Square Root");

printf ("\n Enter First Number: ");

scanf (" %d", &n1);
```

```
res = sqrt(n1); // use sqrt() function to find the Square Root
printf (" Square Root of %d numbers is: %.2f", n1,
res); break; // break the function
```

case 7:

```
printf (" You chose: Exit");
exit(0);
break; // break the function
```

default:

```
printf(" Something is wrong!! ");
break;
```

```
}
```

```
printf (" \n \n ***** \n
"); } while (op != 7);
```

```
return 0;
```

```
}
```

Output:-

```
C:\Users\ganes\Desktop\Madhu.exe
Select an operation to perform the calculation in C Calculator:
1 Addition          2 Subtraction
3 Multiplication     4 Division
5 Square            6 Square Root
7 Exit

Please, Make a choice 3
You chose: Multiplication
Enter First Number: 63
Enter Second Number: 95
Multiplication of two numbers is: 5985.00

*****

Select an operation to perform the calculation in C Calculator:
1 Addition          2 Subtraction
3 Multiplication     4 Division
5 Square            6 Square Root
7 Exit

Please, Make a choice 1
You chose: Addition
Enter First Number: 98
Enter Second Number: 34
Addition of two numbers is: 132.00

*****

Select an operation to perform the calculation in C Calculator:
1 Addition          2 Subtraction
3 Multiplication     4 Division
5 Square            6 Square Root
7 Exit

Please, Make a choice 5
You chose: Square
Enter First Number: 69
Square of 69 number is: 4761.00

*****

Select an operation to perform the calculation in C Calculator:
1 Addition          2 Subtraction
3 Multiplication     4 Division
5 Square            6 Square Root
7 Exit

Please, Make a choice
```

Result:- Hence we created a Simple Calculator Program using the do-while loop and switch case statement in C.