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CSE C G2
Bootcamp G4
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Calculator program using custom heeder file:

Header file:

Calculator.h | Calculator_Using_Header.c

Calculator.h

```c
#include <stdio.h>
int add(int a,int b)
{
    return(a+b);
}
int mul(int a,int b)
{
    return(a*b);
}
int sub(int a,int b)
{
    return(a-b);
}
int div(int a,int b)
{
    return(a/b);
}
int factorial(int a)
{
    long int fact(int a);
    printf("Factorial of %d = %d\n", a, fact(a));
    return 0;
}
long int fact(int a)
```

Calculator.h × | Calculator_Using_Header.c

Calculator.h

```
15  {
16      return(a/b);
17  }
18  int factorial(int a)
19  {
20      long int fact(int a);
21      printf("Factorial of %d = %d\n", a, fact(a));
22      return 0;
23  }
24  long int fact(int a)
25  {
26      if (a>= 1)
27          return a*fact(a-1);
28      else
29          return 1;
30      return 0;
31  }
```

Main code:

Calculator.h | Calculator_Using_Header.c

Calculator_Using_Header.c

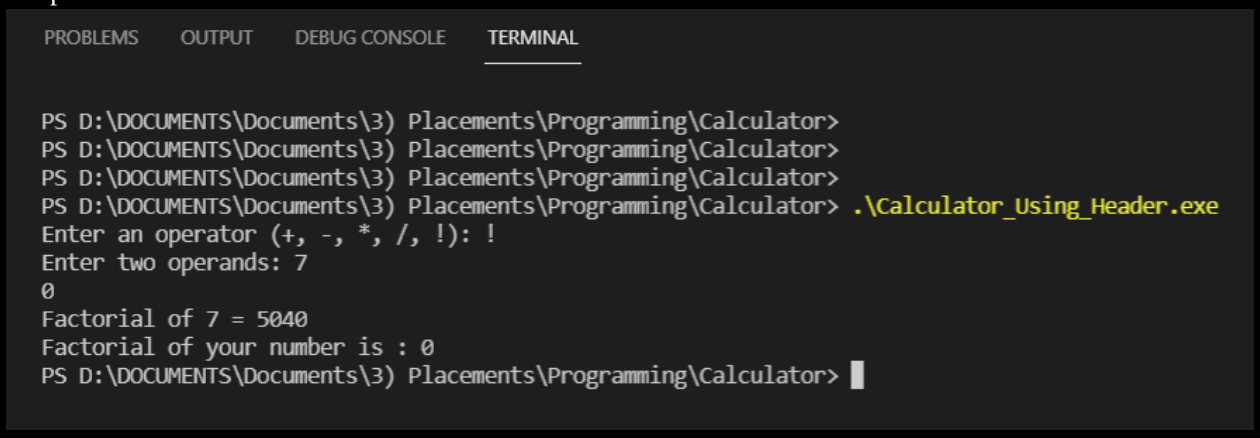
```c
#include<stdio.h>
#include "calculator.h"
int main()
{
   char operator;
   double num1, num2, num3, num4, num5, num6, num7;
   printf("Enter an operator (+, -, *, /, !): ");
   scanf("%c", &operator);
   printf("Enter two operands: ");
   scanf("%lf %lf", &num1, &num2);
   switch (operator) {
   case '+':
      num3 = add(num1, num2);
      printf("Addition of Two numbers : %d", num3);
      break;
   case '-':
      num4 = sub(num1, num2);
      printf("Subtraction of Two numbers : %d", num4);
      break;
   case '*':
      num5 = mul(num1, num2);
      printf("Multiplication of Two numbers : %d", num5);
      break;
   case '/':
```

Calculator.h | Calculator_Using_Header.c

Calculator_Using_Header.c

```c
   case '/':
      num6 = div(num1, num2);
      printf("Addition of Two numbers : %d", num6);
      break;
   case '!':
      num7 = factorial(num1);
      printf("Factorial of your number is : %d", num7);
      break;
        // operator doesn't match any case constant
   default:
      printf("Error! operator is not correct");
   }
   return 0;
}
```

Output:



Done by Hrithik Sagar

On 12th June 2021

TOWER OF HANOI:

```
#include <stdio.h>
#include <string.h>
#include <stdbool.h>
bool palRec(char str[], int s, int e){
        if (s == e)
        return true
        if (str[s] != str[e])
        return false;
        if (s < e + 1)
        return palRec(str, s + 1, e - 1);
        return true;
}
bool isPalindrome(char str[]){
    int n = strlen(str);
    if (n == 0)
            return true;
    return palRec(str, 0, n - 1);
}

int main()
{
        char str[20];
        printf("Enter the string to check whether it is Palindrome or not: ");
        scanf("%s", &str)
        if (isPalindrome(str))
```

```
        printf("'%s' is a Palindrome.", str);
        else
        printf("'%s' is not a Palindrome.", str);
        return 0;
}
```

PALINDROME

```
#include <stdio.h>
#include <string.h>
#include <stdbool.h>
bool palRec(char str[], int s, int e){
        if (s == e)
        return true;
        if (str[s] != str[e])
        return false;
        if (s < e + 1)
        return palRec(str, s + 1, e - 1);
        return true;
}

bool isPalindrome(char str[]){
    int n = strlen(str);
    if (n == 0)
            return true;
    return palRec(str, 0, n - 1);
```

```
}
int main()
{
        char str[20];

        printf("Enter the string to check whether it is Palindrome or not: ");
        scanf("%s", &str);
        if (isPalindrome(str))
        printf("'%s' is a Palindrome.", str);
        else
        printf("'%s' is not a Palindrome.", str);
        return 0;
}
```