VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

C PROGRAMMING LAB RECORD

Submitted by

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Under the Guidance of
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in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING

B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
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B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECALARATION

I,JHANAVI L, student of 2nd Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this laboratory work for "C Programming" course has been carried out by us under the guidance of Prof. Rekha G S ,Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester April-2021-June-2021

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

JHANAVI L (1BM20IS055)

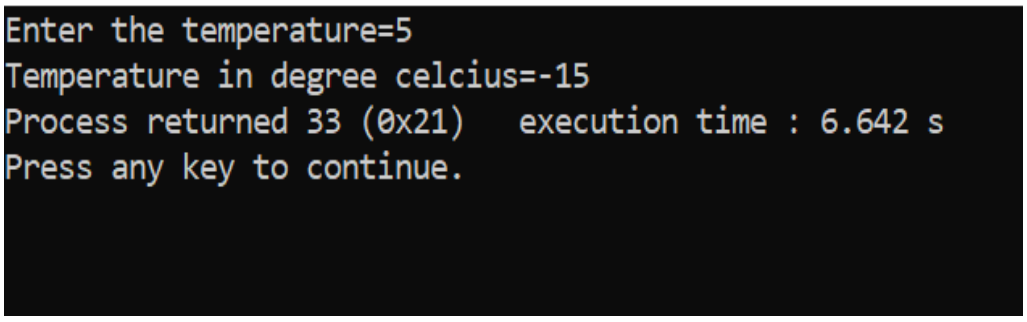
1. **PROGRAM NAME:CONVERTION OF DEGREES FAHRENHEIT INTO DEGREES CELSIUS.**

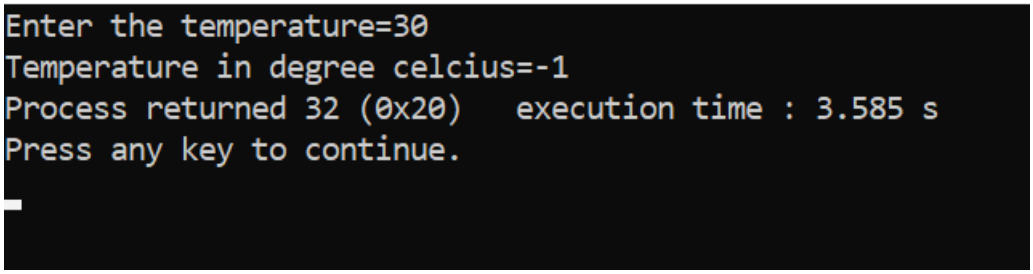
PROGRAM CODE:

TEMPERATURE CONVERSION FROM F TO C

```
#include <stdio.h>
void main()
{
 int f;
 int c;
 printf("Enter the temperature=");
 scanf("%d",&f);
 c=(f-32)*5/9;
 printf("Temperature in degree celcius=%d",c);
 return 0;
 }
```

PROGRAM OUTPUT SCREENSHOT:





```
Enter the temperature=45
Temperature in degree celcius=7
Process returned 31 (0x1F)   execution time : 3.266 s
Press any key to continue.
```

2. PROGRAM NAME: AREA OF A TRIANGLE USING FUNCTIONS

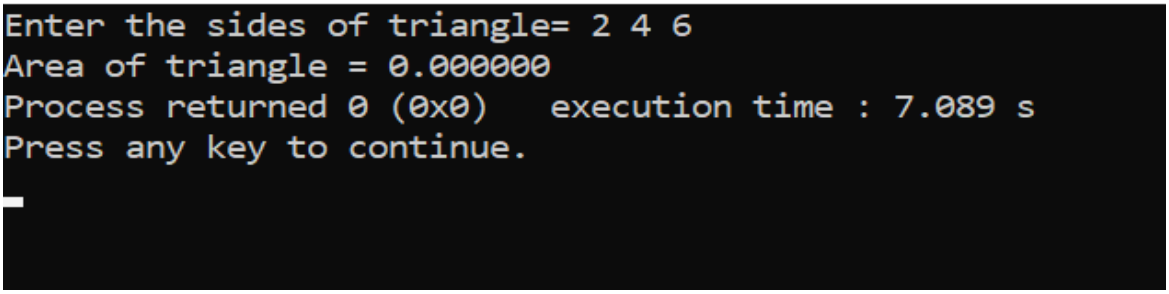
PROGRAM CODE:

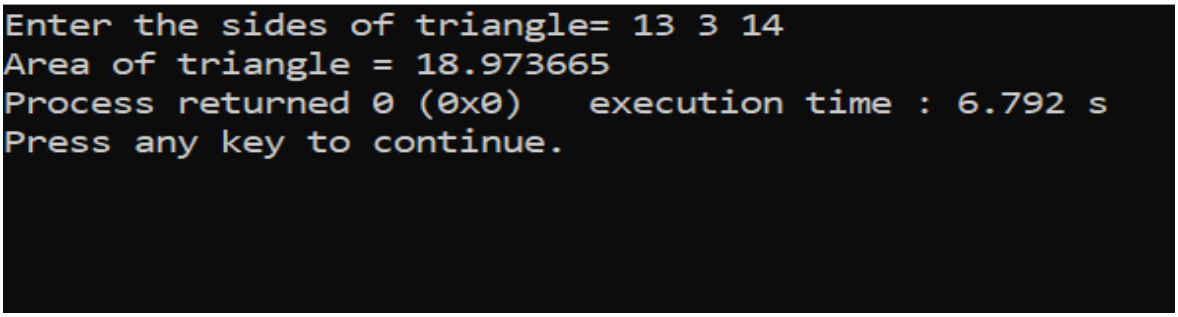
AREA OF A TRIANGLE

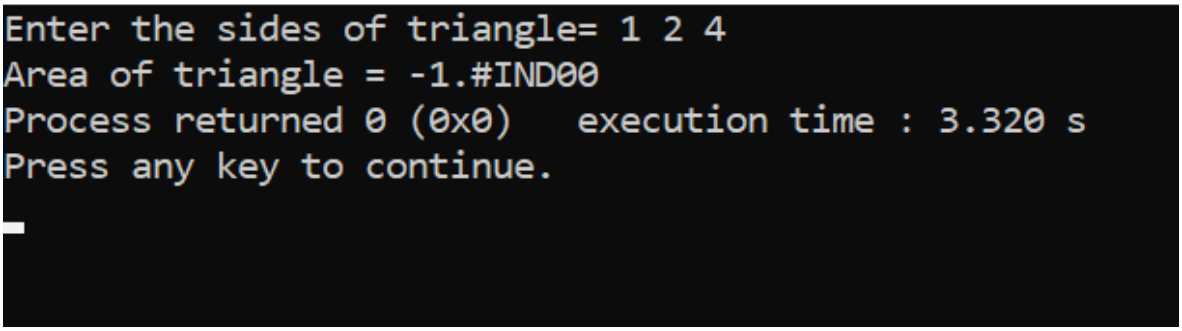
```
#include<stdio.h>
#include<math.h>
float Area_of_a_triangle(float , float , float );
int main()
{
float a, b, c, Area;
printf("Enter the sides of triangle= ");
scanf("%f%f%f",&a,&b,&c);
Area = Area_of_a_triangle(a, b, c);
printf("Area of triangle = %f", Area);
return 0;
}

float Area_of_a_triangle( float a, float b, float c )
{
float sum, Area;
sum = (a+b+c)/2;
Area = sqrt(sum*(sum-a)*(sum-b)*(sum-c));
return Area;
}
```

PROGRAM OUTPUT SCREENSHOT:







3. PROGRAM NAME: ROOTS OF QUADRATIC EQUATION

PROGRAM CODE:

ROOTS OF QUADRATIC EQUATION

```
#include<stdio.h>
#include<math.h>
void main()
{
int a;
int b;
int c;
double x;
double i;
double j;
int denominator;
printf("Enter the values of a,b,c = ");
scanf("%d%d%d",&a,&b,&c);
x=(b*b)-4*a*c;
denominator=2*a;
if(x>0)
{
i=(-b+sqrt(x))/denominator;
j=(-b-sqrt(x))/denominator;
printf("The roots are Real and distinct \nRoots = %lf\t%lf",i,j);
}
else if(x==0)
{
i=-b/denominator;
printf("The roots are Real and Equal \nRoots = %lf",i);
}
else
{
  i=b/denominator;
   j=-b/denominator;
printf("The roots are Imaginary \nRoots = %lf\t%lf",i,j);
}
}
```

PROGRAM OUTPUT SCREENSHOT:

```
Enter the values of a,b,c = 1 7 12
The roots are Real and distinct
Roots = -3.000000       -4.000000
Process returned 60 (0x3C)   execution time : 52.722 s
Press any key to continue.
```

```
Enter the values of a,b,c = 1 2 3
The roots are Imaginary
Roots = 1.000000        -1.000000
Process returned 51 (0x33)   execution time : 2.946 s
Press any key to continue.
```

```
Enter the values of a,b,c = 1 -2 1
The roots are Real and Equal
Roots = 1.000000
Process returned 46 (0x2E)   execution time : 5.502 s
Press any key to continue.
```

4. PROGRAM NAME: VOWEL OR CONSONANT USING SWITCH CASE

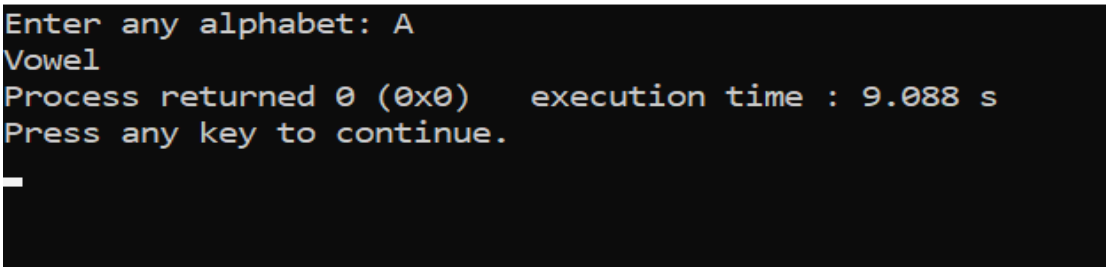
PROGRAM CODE:

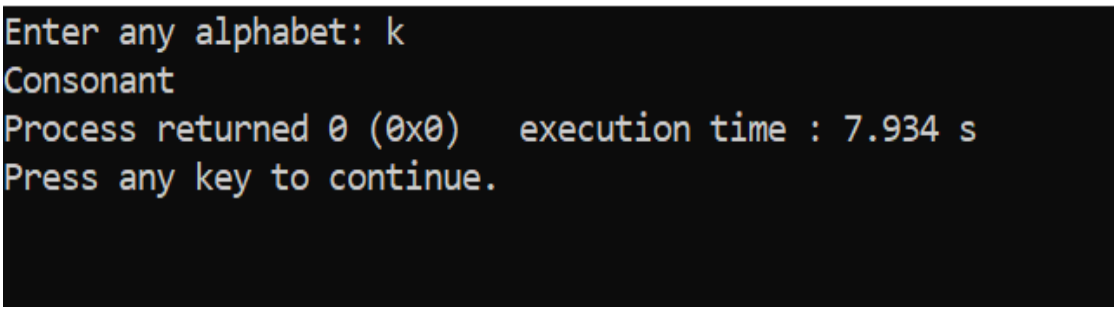
VOWEL OR CONSONANT

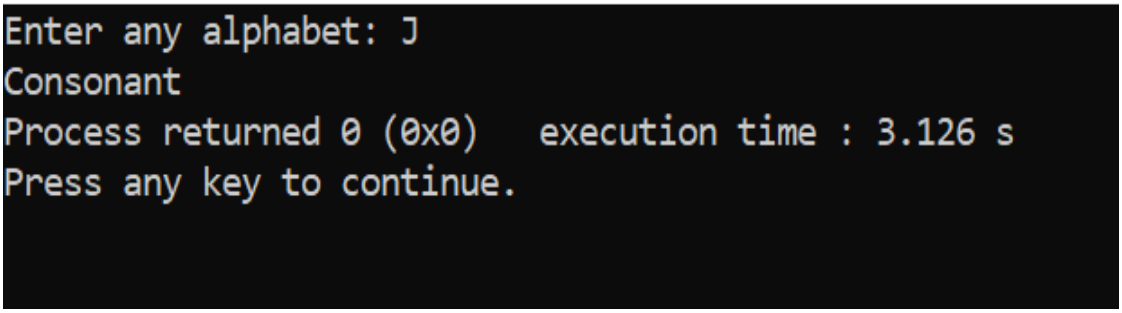
```
#include <stdio.h>
 int main()
 {
 char ch;
 printf("Enter any alphabet: ");
 scanf("%c", &ch);
 switch(ch)
 {
 case 'a':
case 'e':
 case 'i':
 case 'o':
 case 'u':
 {
  printf("Vowel");
 }
  break;
 case 'A':
 case 'E':
 case 'I':
 case 'O':
 case 'U':
 {
  printf("Vowel");
 }
  break;
 default:
 {
```

```
  printf("Consonant");
 }
}
return 0;
}
```

PROGRAM OUTPUT SCREENSHOT:







5. PROGRAM NAME: EVEN NUMBERS FROM M TO N

PROGRAM CODE:

EVEN NUMBERS FROM M TO N

```
#include <stdio.h>
 int main()
{
int m;
int n;
int i;
printf("Enter the value of m =  ");
scanf("%d",&m);
printf("Enter the value of n = ");
scanf("%d",&n);
for("i=m;i<=n;i++)
{
if(i%2==0)
{
Printf("Even numbers from %d to %d = %d\n",m,n,i);
}
}
return 0;
}
```

PROGRAM OUTPUT SCREENSHOT:

```
Enter the value of m =  1
Enter the value of n = 20
Even numbers from 1 to 20 = 2
Even numbers from 1 to 20 = 4
Even numbers from 1 to 20 = 6
Even numbers from 1 to 20 = 8
Even numbers from 1 to 20 = 10
Even numbers from 1 to 20 = 12
Even numbers from 1 to 20 = 14
Even numbers from 1 to 20 = 16
Even numbers from 1 to 20 = 18
Even numbers from 1 to 20 = 20

Process returned 0 (0x0)   execution time : 10.470 s
Press any key to continue.
```

```
Enter the value of m =  0
Enter the value of n = 13
Even numbers from 0 to 13 = 0
Even numbers from 0 to 13 = 2
Even numbers from 0 to 13 = 4
Even numbers from 0 to 13 = 6
Even numbers from 0 to 13 = 8
Even numbers from 0 to 13 = 10
Even numbers from 0 to 13 = 12

Process returned 0 (0x0)   execution time : 5.296 s
Press any key to continue.
```

```
Enter the value of m =  5
Enter the value of n = 25
Even numbers from 5 to 25 = 6
Even numbers from 5 to 25 = 8
Even numbers from 5 to 25 = 10
Even numbers from 5 to 25 = 12
Even numbers from 5 to 25 = 14
Even numbers from 5 to 25 = 16
Even numbers from 5 to 25 = 18
Even numbers from 5 to 25 = 20
Even numbers from 5 to 25 = 22
Even numbers from 5 to 25 = 24

Process returned 0 (0x0)   execution time : 4.668 s
Press any key to continue.
```

6. PROGRAM NAME: SUM OF SQUARES OF ODD NUMBERS

PROGRAM CODE:

SUM OF SQUARES OF ODD NUMBERS

```
#include <stdio.h>
 int main()
{
   int i, n,sum=0;
   printf("Enter any number = ");
   scanf("%d", &n);
   for(i=1; i<=n;i++)
   {
   sum += (2*i - 1) * (2*i - 1);
   }
   printf("Sum of square of odd numbers = %d", sum);
   return 0;
}
```

PROGRAM OUTPUT SCREENSHOT:

```
Enter any number = 10
Sum of square of odd numbers = 1330
Process returned 0 (0x0)   execution time : 9.440 s
Press any key to continue.
```

```
Enter any number = 5
Sum of square of odd numbers = 165
Process returned 0 (0x0)   execution time : 3.851 s
Press any key to continue.
```

```
Enter any number = 20
Sum of square of odd numbers = 10660
Process returned 0 (0x0)   execution time : 3.416 s
Press any key to continue.
```

7. PROGRAM NAME: ADDTION OF TWO MATRICES

PROGRAM CODE:

ADDTION OF TWO MATRICES

```
#include<stdio.h>
int main()
{
        int i,j,r,c,a[10][10], b[10][10];
        int add[10][10];
        printf("Please Enter Number of rows and columns  =  ");
        scanf("%d %d", &i, &j);
        printf("Please Enter the First Matrix Elements\n");
        for(r=0;r<i;r++)
        {
                for(c=0;c<j;c++)
        {
                scanf("%d",&a[r][c]);
        }
        }
        printf("\nPlease Enter the Second Matrix Elements\n");
        for(r=0; r<i;r++)
        {
                for(c=0;c<j;c++)
        {
                scanf("%d", &b[r][c]);
        }
        }
        for(r=0;r<i;r++)
        {
                for(c=0;c<j;c++)
        {
```

```
                add[r][c] = a[r][c] + b[r][c];
                }
        }
        printf("The Sum of Two Matrix a and b = a + b \n");
        for(r=0;r<i;r++)
        {
                for(c=0;c<j;c++)
        {
                printf("%d \t ", add[r][c]);
        }
        printf("\n");
        }
        return 0;
}
```

PROGRAM OUTPUT SCREENSHOT:

```
Please Enter Number of rows and columns  =  3 3
Please Enter the First Matrix Elements
1 1 1
2 2 2
3 3 3

Please Enter the Second Matrix Elements
1 0 0
0 1 0
0 0 1
The Sum of Two Matrix a and b = a + b
2        1       1
2        3       2
3        3       4

Process returned 0 (0x0)   execution time : 39.691 s
Press any key to continue.
```

```
Please Enter Number of rows and columns  =  2 2
Please Enter the First Matrix Elements
20 20
20 20

Please Enter the Second Matrix Elements
30 30
30 30
The Sum of Two Matrix a and b = a + b
50        50
50        50

Process returned 0 (0x0)   execution time : 27.393 s
Press any key to continue.
```

```
Please Enter Number of rows and columns  =  2 4
Please Enter the First Matrix Elements
5 8 3 0
6 5 2 1

Please Enter the Second Matrix Elements
0 7 4 1
2 5 8 0
The Sum of Two Matrix a and b = a + b
5         15       7         1
8         10       10        1

Process returned 0 (0x0)   execution time : 72.200 s
Press any key to continue.
```

8. PROGRAM NAME: ADDTION OF TWO MATRICES

PROGRAM CODE:

COPYING ONE STRING TO ANOTHER

```
#include <stdio.h>
int main()
{
   char s1[100],s2[50], i,j,l;
   printf("Enter any String = ");
   gets(s1);
   printf("Enter another string =  ");
   gets(s2);
   while(s1[i]!='\0')
   i++;
   l=i;
   while(s2[j]!='\0')
   {
   s1[i]=s2[j];
   i++;
   j++;
   }
   l=i;
    printf("Length of the string=%d\n",l);
   s1[i]='\0';
   printf("After copying the string = ");
   puts(s1);
   return 0;
   }
```

PROGRAM OUTPUT SCREENSHOT:

```
Enter any String = My name is
Enter another string =   Jhanavi L
Length of the string=21
After copying the string = My name is  Jhanavi L

Process returned 0 (0x0)   execution time : 19.494 s
Press any key to continue.
```

```
Enter any String = Welcome to C
Enter another string =   Programming
Length of the string=24
After copying the string = Welcome to C Programming

Process returned 0 (0x0)   execution time : 24.092 s
Press any key to continue.
```

```
Enter any String = Hi,
Enter another string =   How are you
Length of the string=15
After copying the string = Hi, How are you

Process returned 0 (0x0)   execution time : 19.268 s
Press any key to continue.
```

9. PROGRAM NAME: STUDENT DETAILS USING STRING

PROGRAM CODE:

STUDENT DETAILS USING STRING

```
#include<stdio.h>
void main()
{
   struct student
   {
      int rollno;
      char name[20];
      char sec[3];
      char dept[20];
      int totalmarks;
   }
   student1,student2;
    printf("Enter the name of student 1 and student 2\n");
   scanf("%s%s",student1.name,student2.name);
   printf("Enter the roll number of student 1 and student 2\n");
   scanf("%d%d",&student1.rollno,&student2.rollno);
   printf("Enter section of student 1 and student 2\n");
   scanf("%s%s",student1.sec,student2.sec);
   printf("Enter the department of student 1 and student 2\n");
   scanf("%s%s",student1.dept,student2.dept);
   printf("Enter the total marks of student 1 and student 2\n");
   scanf("%d%d",&student1.totalmarks,&student2.totalmarks);
   printf("********STUDENT 1 DETAILS********\n");
   printf("Name = %s\n",student1.name);
   printf("Roll no = %d\n",student1.rollno);
```

```
    printf("Section = %s\n",student1.sec);
    printf("Department = %s\n",student1.dept);
    printf("Total marks = %d\n",student1.totalmarks);
    printf("********STUDENT 2 DETAILS********\n");
    printf("Name = %s\n",student2.name);
    printf("Roll no = %d\n",student2.rollno);
    printf("Section = %s\n",student2.sec);
    printf("Department = %s\n",student2.dept);
    printf("Total marks = %d\n",student2.totalmarks);
    if(student1.totalmarks>student2.totalmarks)
    {
       printf("\nStudent 1 got highest marks\n");
    }
    else
    {
       printf("\nStudent 2 got highest marks\n");
    }
}
```

PROGRAM OUTPUT SCREENSHOT:

```
Enter the name of student 1 and student 2
Jhanavi
Anushree
Enter the roll number of student 1 and student 2
55
06
Enter section of student 1 and student 2
CN
CN
Enter the department of student 1 and student 2
ISE
CSE
Enter the total marks of student 1 and student 2
99
98
********STUDENT 1 DETAILS********
Name = Jhanavi
Roll no = 55
Section = CN
Department = ISE
Total marks = 99
********STUDENT 2 DETAILS********
Name = Anushree
Roll no = 6
Section = CN
Department = CSE
Total marks = 98

Student 1 got highest marks

Process returned 0 (0x0)   execution time : 84.650 s
Press any key to continue.
```

```
Enter the name of student 1 and student 2
Inchara
Anvitha
Enter the roll number of student 1 and student 2
01
45
Enter section of student 1 and student 2
CN
CN
Enter the department of student 1 and student 2
CSE
ISE
Enter the total marks of student 1 and student 2
95
100
********STUDENT 1 DETAILS********
Name = Inchara
Roll no = 1
Section = CN
Department = CSE
Total marks = 95
********STUDENT 2 DETAILS********
Name = Anvitha
Roll no = 45
Section = CN
Department = ISE
Total marks = 100

Student 2 got highest marks

Process returned 0 (0x0)   execution time : 60.452 s
Press any key to continue.
```

```
Enter the name of student 1 and student 2
Naksha
Nitya
Enter the roll number of student 1 and student 2
59
18
Enter section of student 1 and student 2
CN
CN
Enter the department of student 1 and student 2
ISE
ISE
Enter the total marks of student 1 and student 2
96
90
********STUDENT 1 DETAILS********
Name = Naksha
Roll no = 59
Section = CN
Department = ISE
Total marks = 96
********STUDENT 2 DETAILS********
Name = Nitya
Roll no = 18
Section = CN
Department = ISE
Total marks = 90

Student 1 got highest marks

Process returned 0 (0x0)   execution time : 112.728 s
Press any key to continue.
```

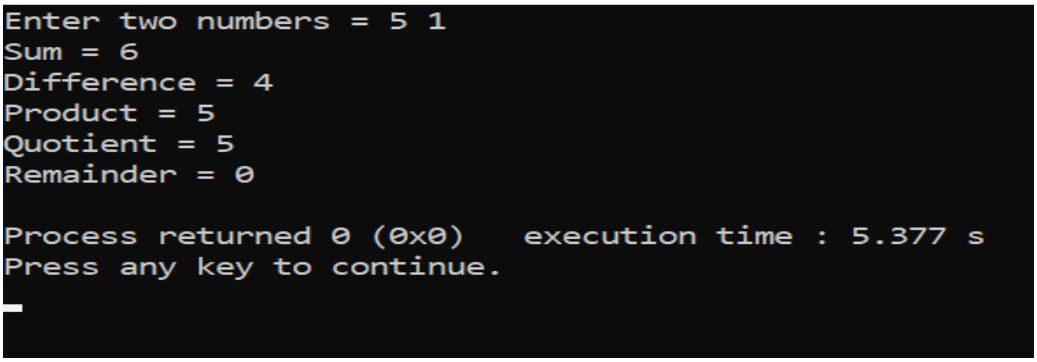
10. PROGRAM NAME: ARITHMATIC OPERATORS USING POINTERS

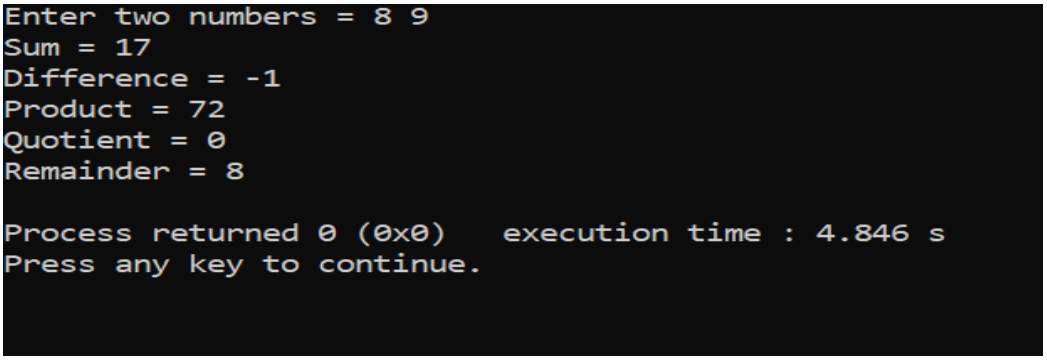
PROGRAM CODE:

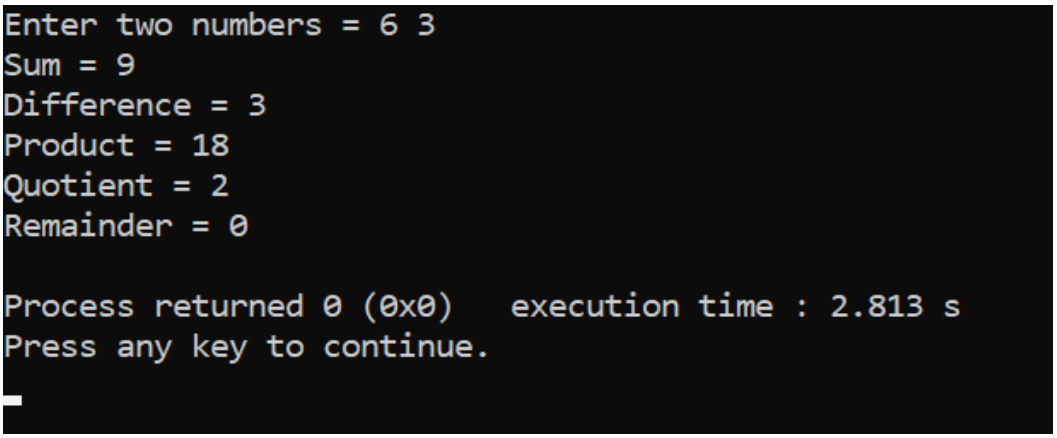
ARITHMATIC OPERATORS USING POINTERS

```
#include <stdio.h>
int main()
{
   int num1, num2;
   int *ptr1, *ptr2;
   int sum, diff, mul, div,remainder;
   ptr1=&num1;
   ptr2=&num2;
   printf("Enter two numbers = ");
   scanf("%d%d", ptr1, ptr2);
   sum=(*ptr1) + (*ptr2);
   diff=(*ptr1) - (*ptr2);
   mul=(*ptr1) * (*ptr2);
   div=(*ptr1) / (*ptr2);
   remainder=((*ptr1) % (*ptr2));
   printf("Sum = %d\n", sum);
   printf("Difference = %d\n", diff);
   printf("Product = %d\n", mul);
   printf("Quotient = %d\n", div);
   printf("Remainder = %d\n",remainder);
   return 0;
}
```

PROGRAM OUTPUT SCREENSHOT:







THANK YOU