

# Computer Science

C program homework- 2071/10/27



1. Write a program to find simple interest using function.

Solution :

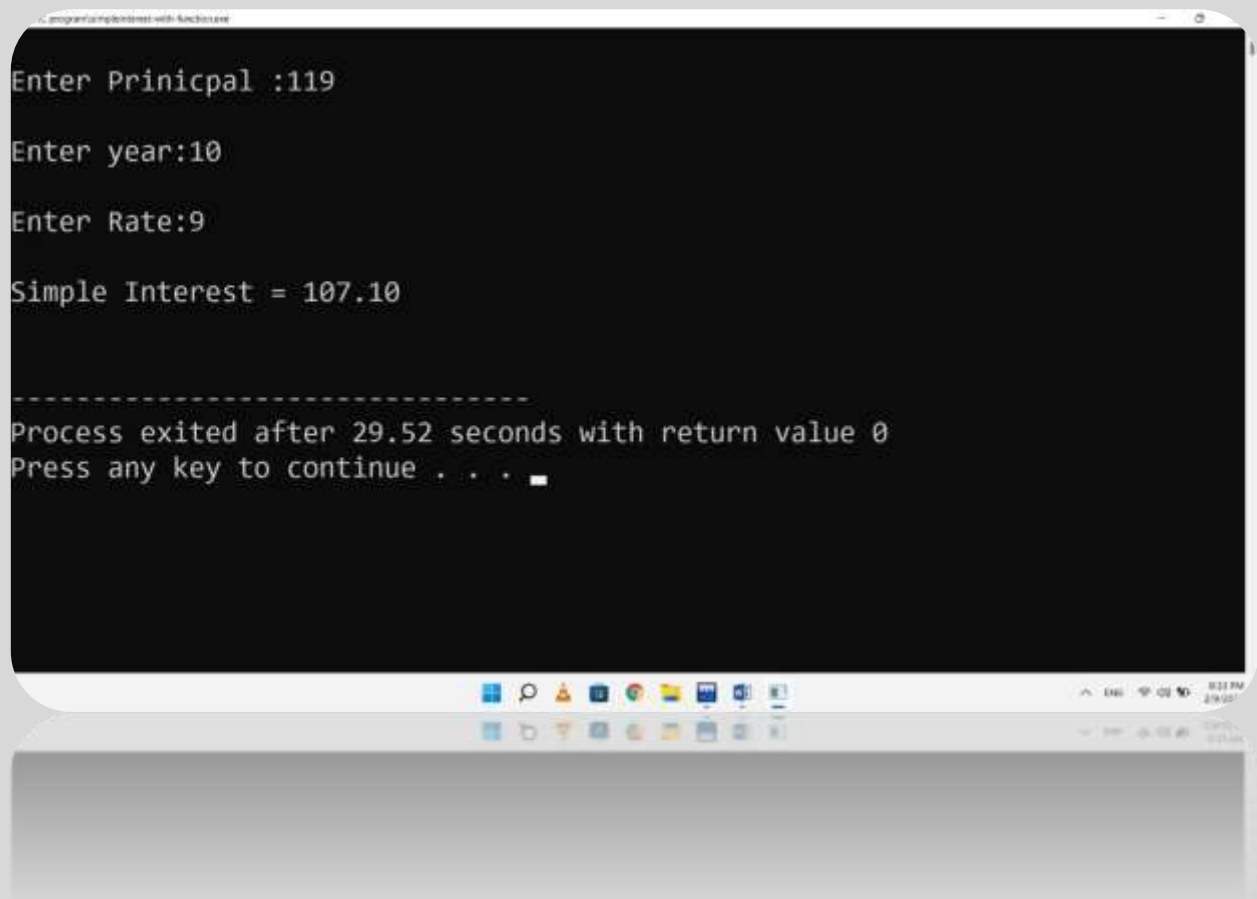
```
#include<stdio.h>

float Simple_int(float a, float b, float c)
{
    float si;
    si = (a * b * c)/100;
    return si;
}

int main()
{
    float a,b,c;
    float intrest;
    printf("\nEnter Prinicpal :");
    scanf("%f",&a);
    printf("\nEnter year:");
    scanf("%f",&b);
    printf("\nEnter Rate:");
```

```
scanf("%f",&c);  
intrest = Simple_int(a,b,c);  
printf("\nSimple Interest = %.2f\n", intrest);  
printf("\n");  
return 0;  
}
```

## OUTPUT:



```
program\simpleinterest-with-function.exe  
Enter Prinicpal :119  
Enter year:10  
Enter Rate:9  
Simple Interest = 107.10  
-----  
Process exited after 29.52 seconds with return value 0  
Press any key to continue . . .
```

2. Write a program to find greatest number among four different numbers .

**Solution:**

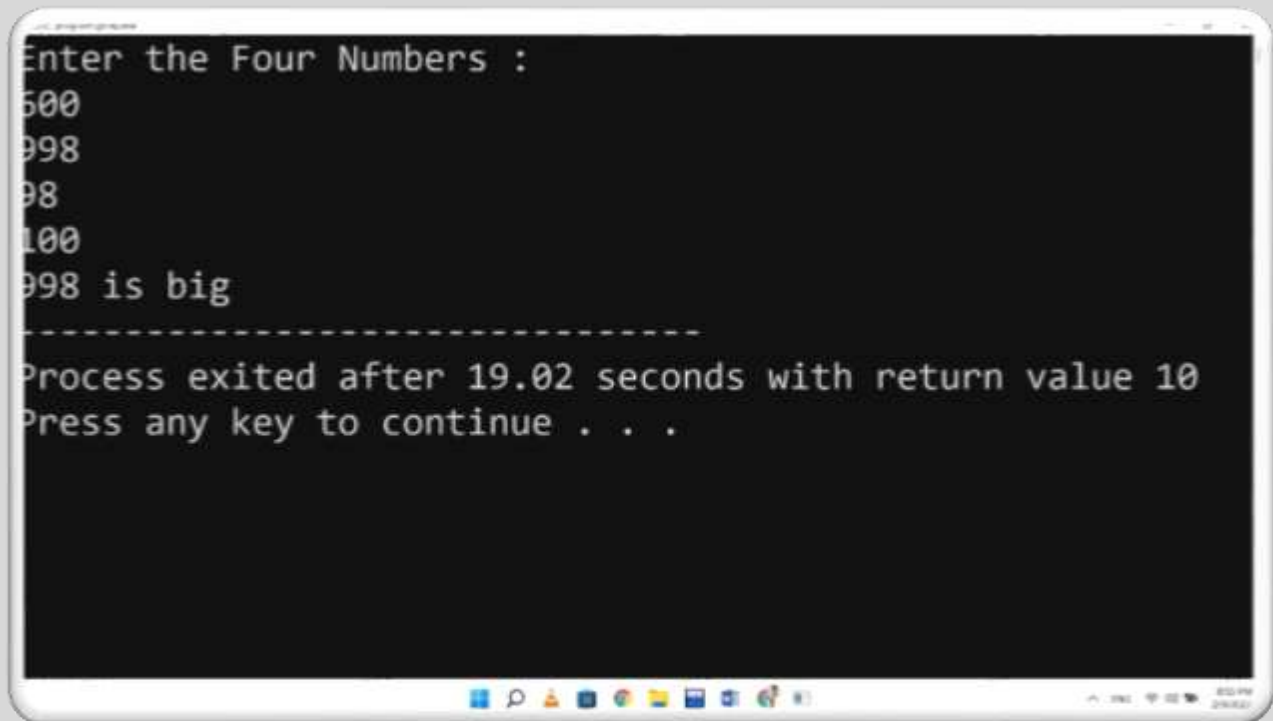
```
#include<stdio.h>

int main()
{
    int a,b,c,d;
    printf("Enter the Four Numbers :\n");
    scanf("%d %d %d %d",&a,&b,&c,&d);
    if(a>b)
    {
        if(a>c)
        {
            if(a>d)
            {
                printf("%d is big",a);
            }
        }
        else
```

```
        {  
            printf("%d is big",d);  
        }  
    }  
}  
else if(b>c)  
    {  
        if(b>d)  
        {  
            printf("%d is big",b);  
        }  
        else  
        {  
            printf("%d is big",d);  
        }  
    }  
else if(c>d)  
    {  
        printf("%d is big",c);  
    }
```

```
        }  
    else  
    {  
        printf("%d is big",d);  
    }  
}
```

## Output:



```
Enter the Four Numbers :  
500  
998  
98  
100  
998 is big  
-----  
Process exited after 19.02 seconds with return value 10  
Press any key to continue . . .
```

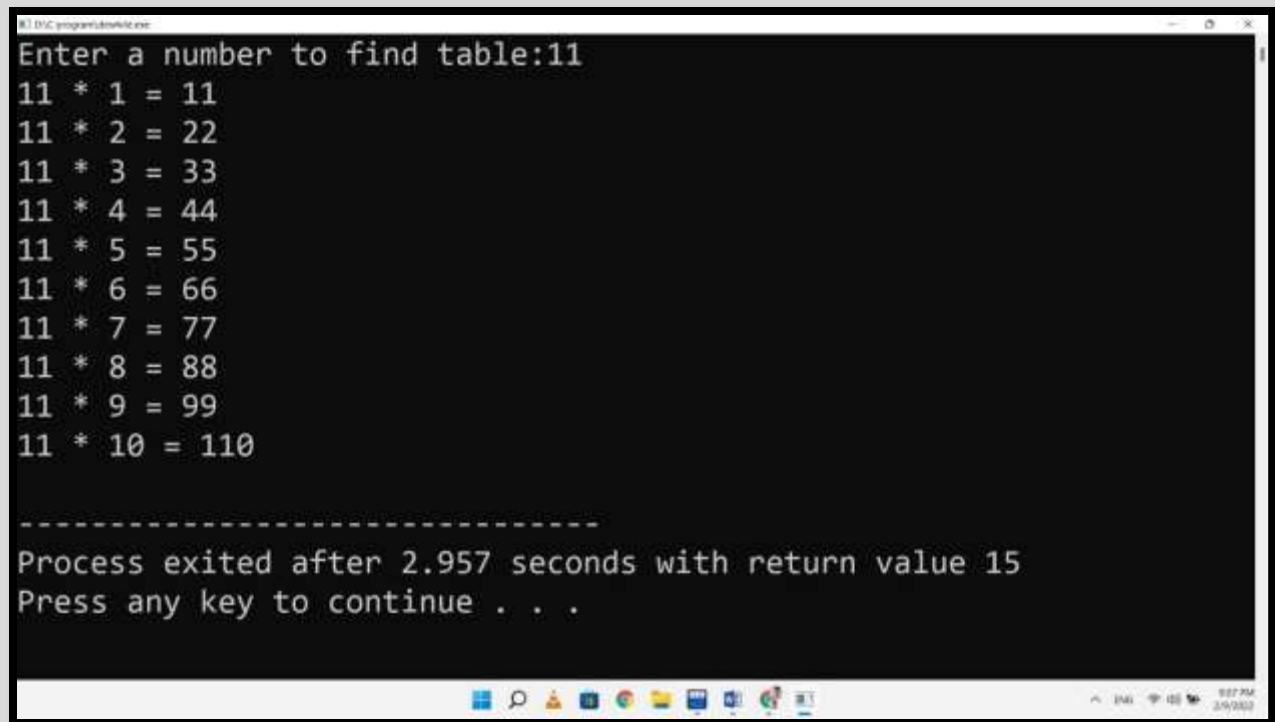
3. Write a program to display the multiplication table of given numbers.

**Solution:**

```
#include<stdio.h>

void main()
{
    int a=1,b,c;
    printf("Enter a number to find table:");
    scanf("%d",&b);
    do{
        c=b*a;
        printf("%d * %d = %d \n",b,a,c);
        a++;
    }
    while(a<=10);
}
```

## Output :



```
Enter a number to find table:11
11 * 1 = 11
11 * 2 = 22
11 * 3 = 33
11 * 4 = 44
11 * 5 = 55
11 * 6 = 66
11 * 7 = 77
11 * 8 = 88
11 * 9 = 99
11 * 10 = 110

-----
Process exited after 2.957 seconds with return value 15
Press any key to continue . . .
```

4. Write a program using user defined function to calculate y raise power to x .

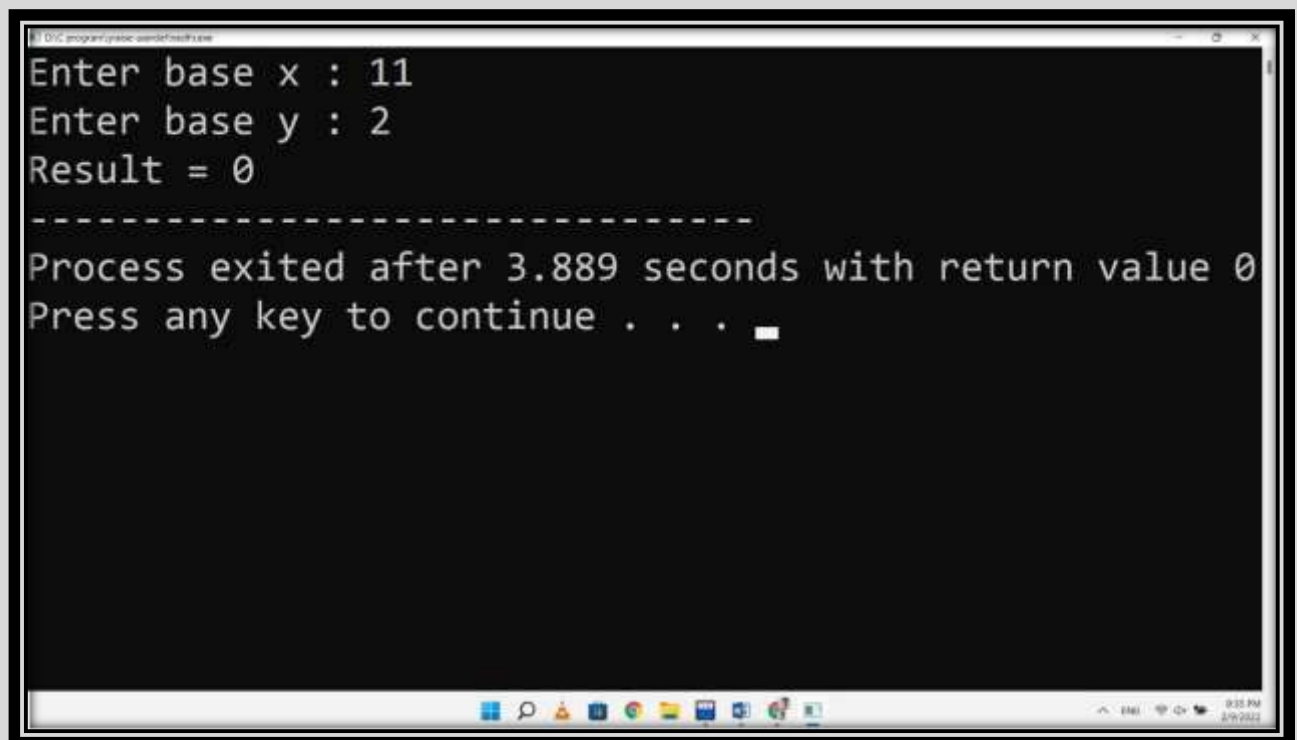
**Solution:**

```
#include<stdio.h>
#include<math.h>
int main()
{
    int num1, num2;
```



```
printf("Enter base x : ");  
scanf("%d",&num1);  
printf("Enter base y : ");  
scanf("%d",&num2);  
printf("Result = %d",pow(num1, num2));  
  
return 0;  
}
```

## OUTPUT:



```
D:\C program\genc\world\test1.exe  
Enter base x : 11  
Enter base y : 2  
Result = 0  
-----  
Process exited after 3.889 seconds with return value 0  
Press any key to continue . . .
```

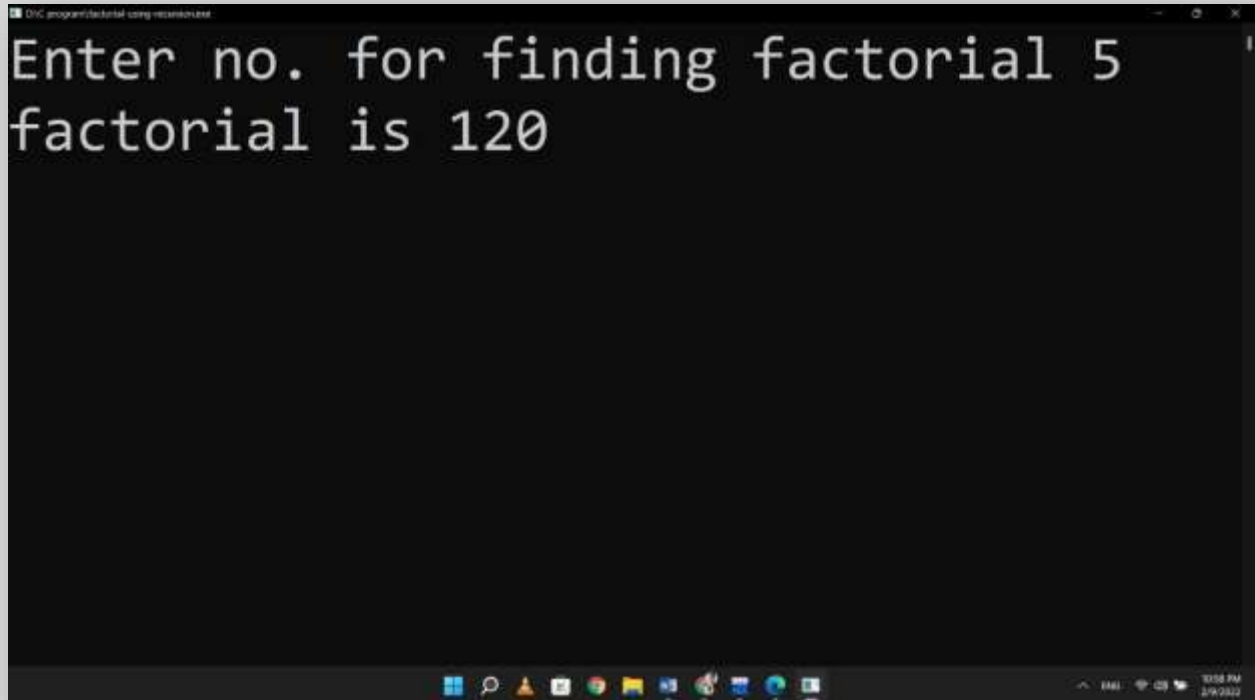
5. Write a program to find the factorial of a number using recursion .

**Solution:**

```
#include<stdio.h>
#include<conio.h>
int fact(int);
void main(){
    int n,f;
    printf("Enter no. for finding factorial");
    scanf("%d",&n);
    f=fact(n);
    printf("factorial is %d",f);
    getch();
}
int fact(int n){
    if(n==0){
        return(1);
    }
```

```
    else{  
        return(n*fact(n-1));  
    }  
}
```

Output:



6. Write a program to display the Fibonacci series using recursion .

## Solution:

```
#include<stdio.h>

int Fibonacci(int);

int main()
{
    int n, i = 0, c;

    printf("Enter how many fibonacci series you want : ");
    scanf("%d",&n);

    printf("Fibonacci series\n");

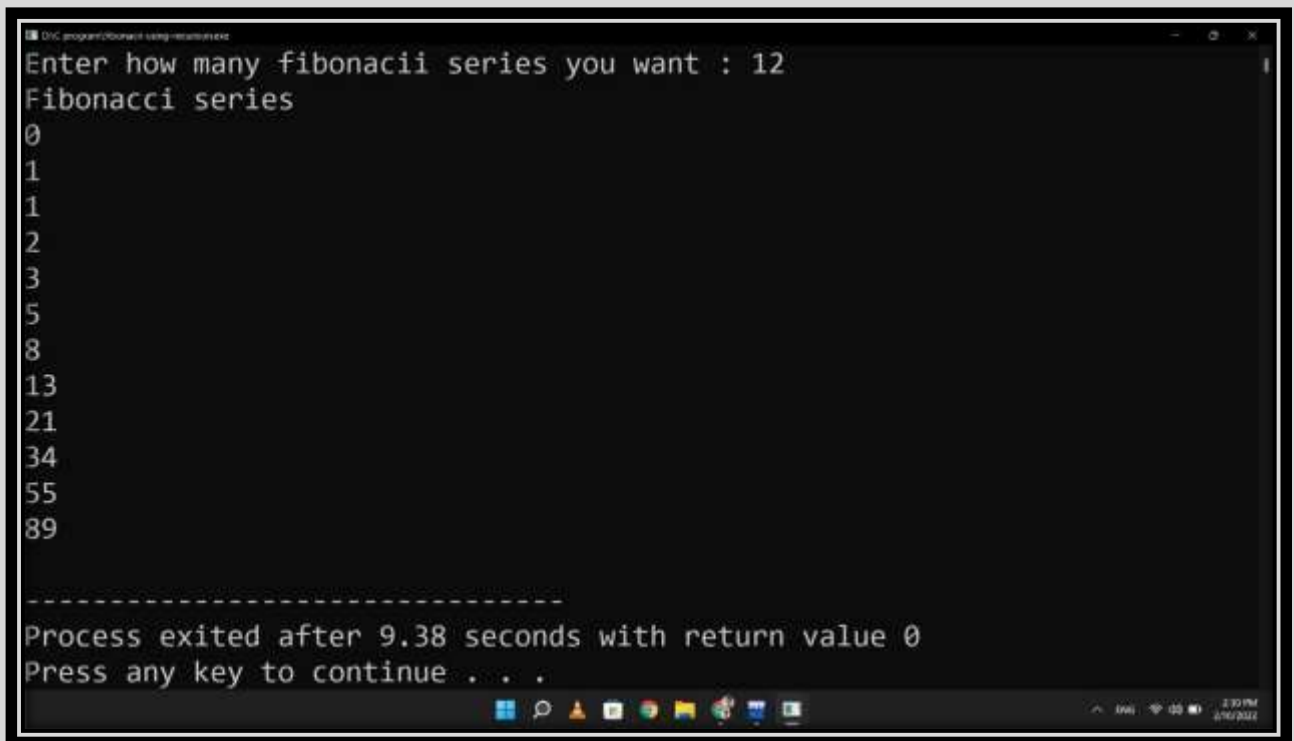
    for ( c = 1 ; c <= n ; c++ )
    {
        printf("%d\n", Fibonacci(i));
        i++;
    }

    return 0;
}

int Fibonacci(int n)
```

```
{  
    if ( n == 0 )  
        return 0;  
    else if ( n == 1 )  
        return 1;  
    else  
        return ( Fibonacci(n-1) + Fibonacci(n-2) );  
}
```

## OUTPUT:



```
C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Python\Python38\python.exe  
Enter how many fibonacci series you want : 12  
Fibonacci series  
0  
1  
1  
2  
3  
5  
8  
13  
21  
34  
55  
89  
-----  
Process exited after 9.38 seconds with return value 0  
Press any key to continue . . .
```

7. Write a program to find sum and average of n numbers using array and function .

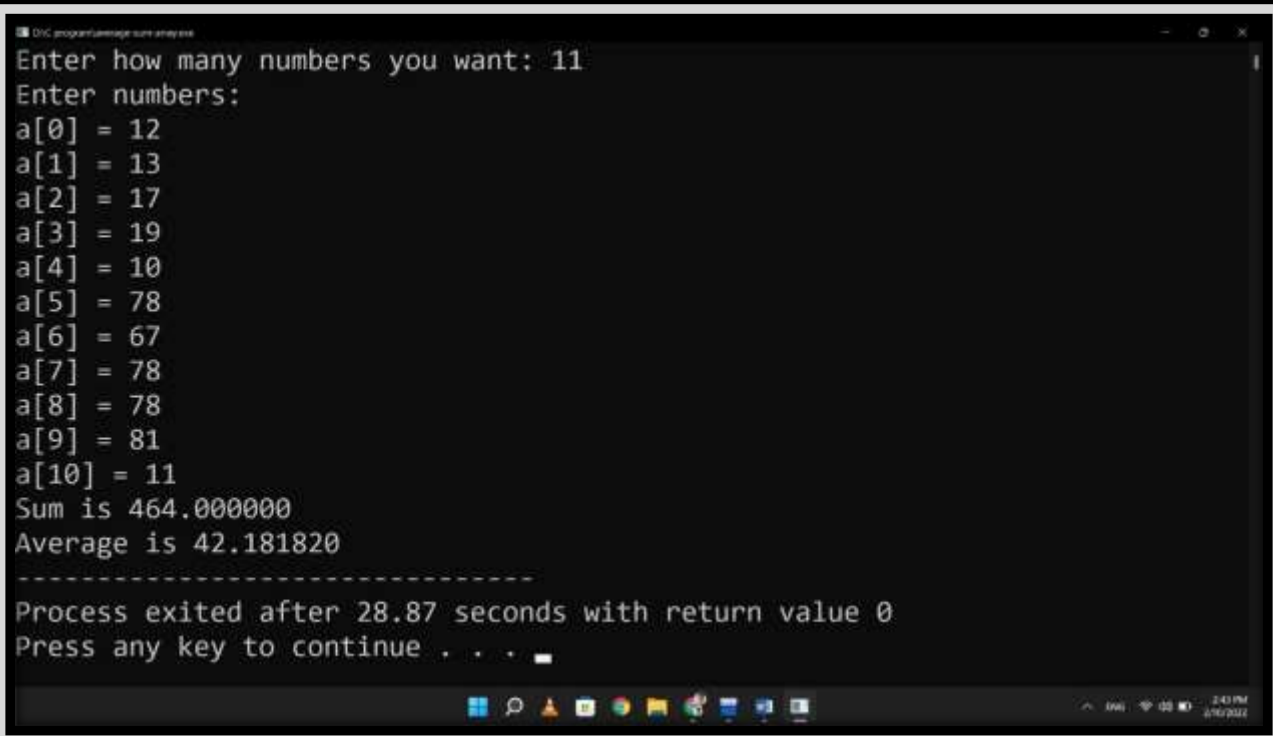
**Solution:**

```
#include<stdio.h>

int main()
{
    float a[100], sum=0, avg;
    int i, n;
    printf("Enter n: ");
    scanf("%d", &n);
    printf("Enter numbers:\n");
    for(i=0; i< n; i++)
    {
        printf("a[%d] = ", i);
        scanf("%f", &a[i]);
    }
    for(i=0; i< n; i++)
    {
```

```
    sum = sum + a[i];  
}  
avg = sum/n;  
printf("Sum is %f\n", sum);  
printf("Average is %f", avg);  
  
return 0;  
}
```

## OUTPUT:



```
D:\C program\average sum array.exe  
Enter how many numbers you want: 11  
Enter numbers:  
a[0] = 12  
a[1] = 13  
a[2] = 17  
a[3] = 19  
a[4] = 10  
a[5] = 78  
a[6] = 67  
a[7] = 78  
a[8] = 78  
a[9] = 81  
a[10] = 11  
Sum is 464.000000  
Average is 42.181820  
-----  
Process exited after 28.87 seconds with return value 0  
Press any key to continue . . .
```

8. Write a program to print greatest number among n numbers using array and function.

**Solution:**

```
#include<stdio.h>

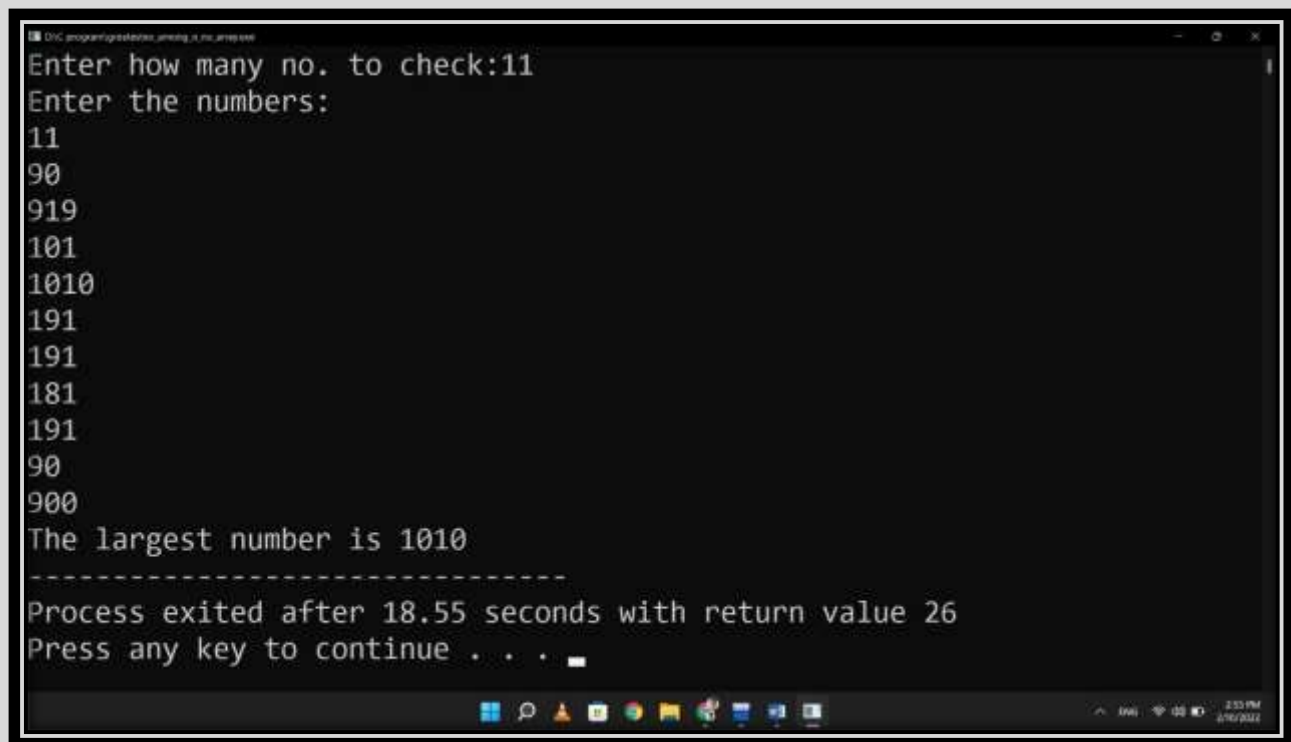
void main()
{
    int maximum(int a[],int n);
    int max,i,n;
    int a[50];
    printf("Enter how many no. to check:");
    scanf("%d",&n);
    printf("Enter the numbers:\n");
    for(i=0;i<n;i++)
        scanf("%d",&a[i]);
    max=maximum(a,n);
    printf("The largest number is %d",max);
}

int maximum(int a[],int n)
```



```
{  
int i,m=0;  
for(i=0;i<n;i++)  
{  
if(a[i]>m)  
m=a[i];  
}  
return m;  
}
```

**OUTPUT:**



```
Enter how many no. to check:11  
Enter the numbers:  
11  
90  
919  
101  
1010  
191  
191  
181  
191  
90  
900  
The largest number is 1010  
-----  
Process exited after 18.55 seconds with return value 26  
Press any key to continue . . .
```

9. Write a program to print transpose of matrices(2\*2 type) using array and function.

**Solution:**

```
#include<stdio.h>

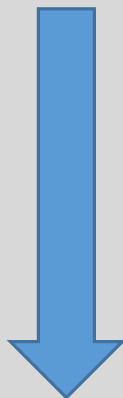
void main()
{
    int mat[12][12],transpose[12][12];
    int i;
        int j;
        int row=2;
        int col=2;
        printf("Transpose of 2*2 matrix\n");
        printf("Enter the elements of the matrix\n");
        for(i=0;i<row;i++)
        {
            for(j=0;j<col;j++)
            {
                scanf("%d",&mat[i][j]);
```

```
    }  
}
```

```
printf("The matrix\n");  
for(i=0;i<row;i++)  
{  
    for(j=0;j<col;j++)  
    {  
        printf("%d\t",mat[i][j]);  
    }  
    printf("\n");  
}  
for(i=0;i<row;i++)  
{  
    for(j=0;j<col;j++)  
    {  
        transpose[j][i]=mat[i][j];  
    }  
}
```

```
}  
  
printf("The transpose of the matrix is\n");  
for(i=0;i<col;i++)  
{  
    for(j=0;j<row;j++)  
    {  
        printf("%d\t",transpose[i][j]);  
    }  
    printf("\n");  
}  
}
```

**OUTPUT:**



```
program to transpose matrix.c
transpose of 2*2 matrix
Enter the elements of the matrix
11
11
13
56
The matrix
11      11
13      56
The transpose of the matrix is
11      13
11      56

-----
Process exited after 5.553 seconds with return value 2
Press any key to continue . . .
```

10. Write a program to find sum of two matrices(2\*2 type) using array and function.

**Solution:**

```
#include<stdio.h>

int main()
{
    int a[2][2];
    int b[2][2];
    int c[2][2];
    int i;
    int j;
    printf("Enter value in first matrix :\n ");
    for(i=0;i<2;i++)
    {
        for(j=0;j<2;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
```

```
}
```

```
    printf("Enter value in second matrix :\n ");  
    for(i=0;i<2;i++)  
    {  
        for(j=0;j<2;j++)  
        {  
            scanf("%d",&b[i][j]);  
        }  
    }
```

```
    printf("\nThe first matrix is:\n ");  
    for(i=0;i<2;i++)  
    {  
        for(j=0;j<2;j++)  
        {  
            printf("%d\t",a[i][j]);  
        }  
        printf("\n");  
    }
```

```
}
```

```
printf("\nThe Second matrix is:\n ");
```

```
for(i=0;i<2;i++)
```

```
{
```

```
    for(j=0;j<2;j++)
```

```
    {
```

```
        printf("%d\t",b[i][j]);
```

```
    }
```

```
    printf("\n");
```

```
}
```

```
printf("\n Addition of 2*2 matrix is:\n");
```

```
for(i=0;i<2;i++)
```

```
{
```

```
    for(j=0;j<2;j++)
```

```
    {
```

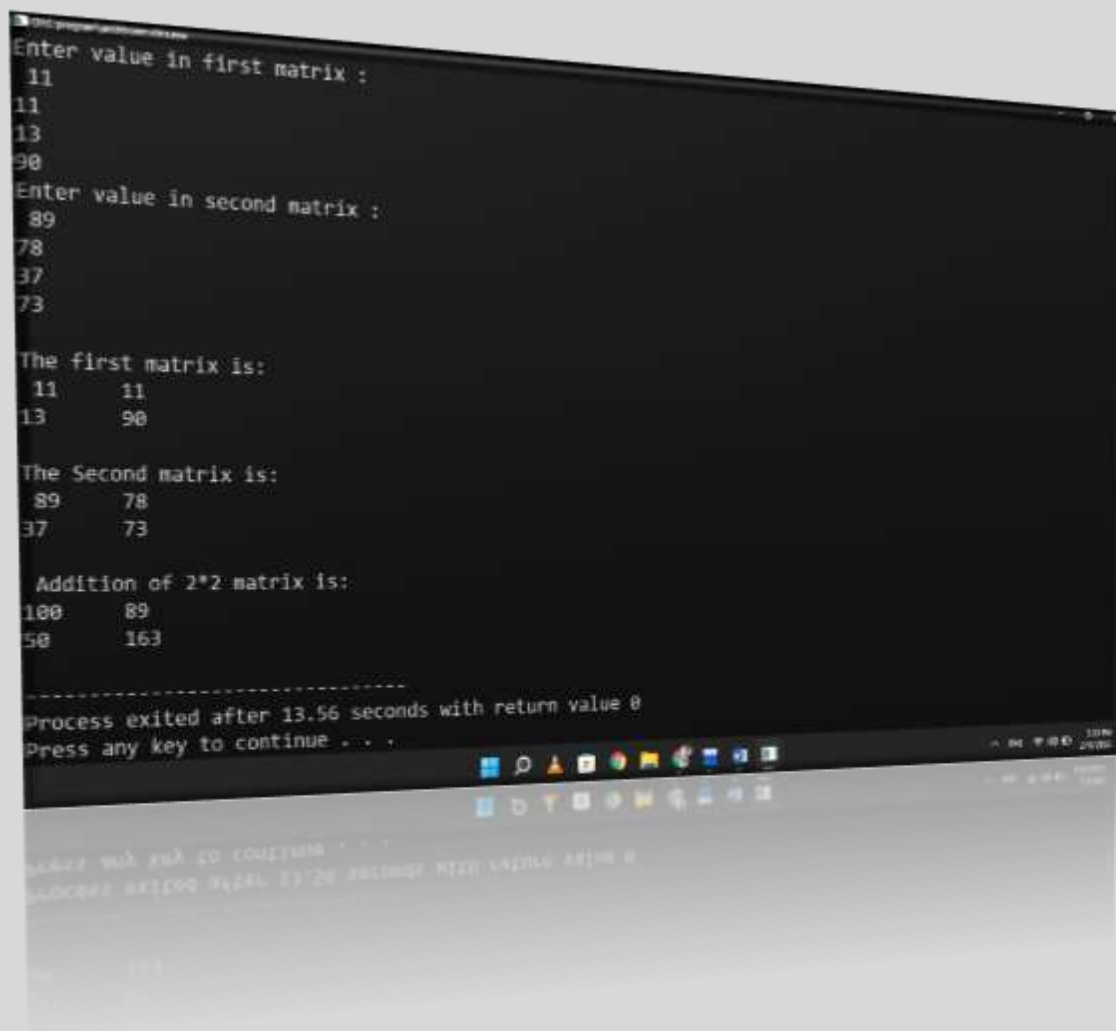
```
        c[i][j]=a[i][j]+b[i][j];
```

```
        printf("%d\t",c[i][j]);
```



```
    }  
    printf("\n");  
}  
return 0;  
}
```

## OUTPUT:



The screenshot shows a Windows command prompt window with a dark background. The text in the window is as follows:

```
Enter value in first matrix :  
11  
11  
13  
90  
Enter value in second matrix :  
89  
78  
37  
73  
  
The first matrix is:  
11    11  
13    90  
  
The Second matrix is:  
89    78  
37    73  
  
Addition of 2*2 matrix is:  
100   89  
50    163  
  
-----  
Process exited after 13.56 seconds with return value 0  
Press any key to continue . . .
```

The window's taskbar is visible at the bottom, showing various application icons and the system clock in the bottom right corner.

