Computer Science

C program homework- 2071/10/27

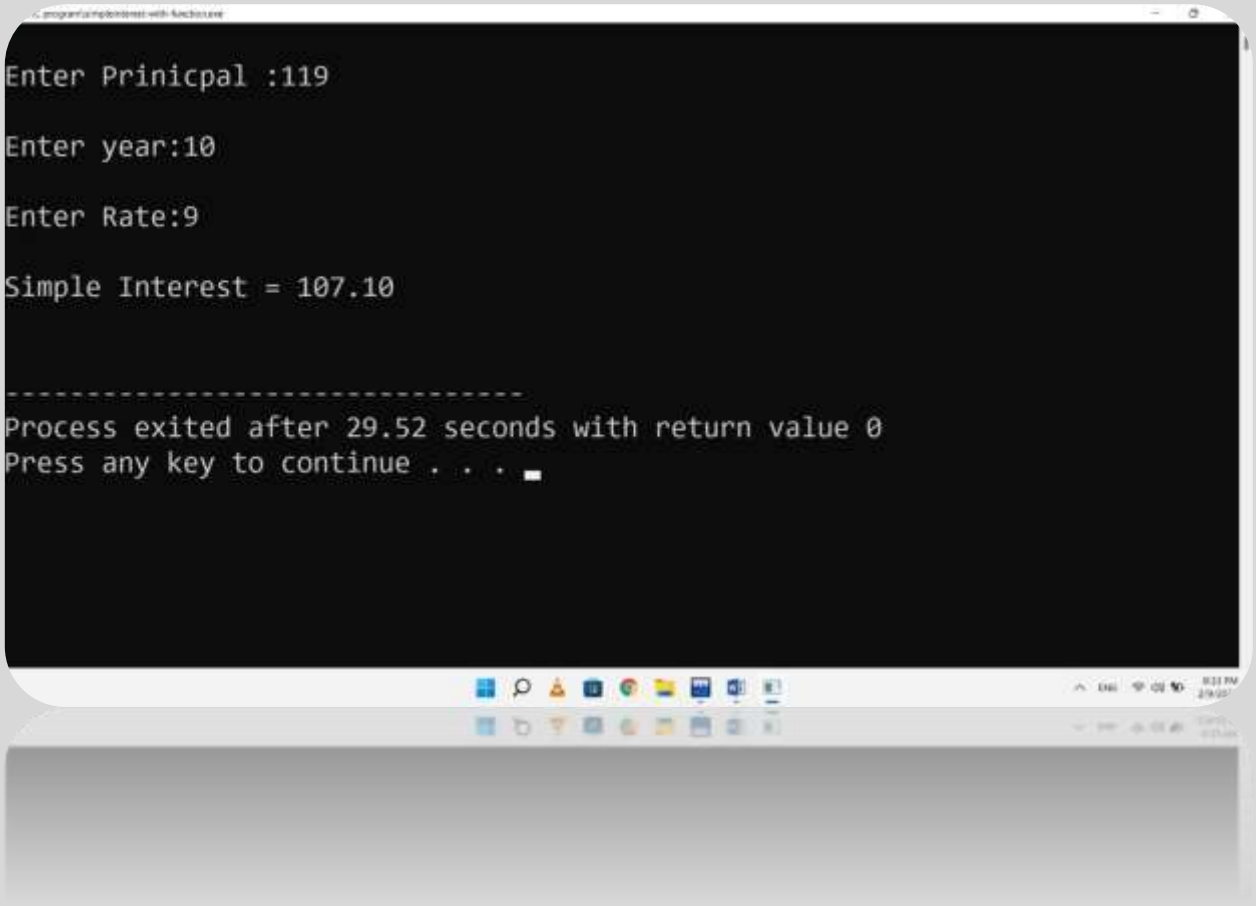
1.Write a program to find simple interest using function.

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:



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

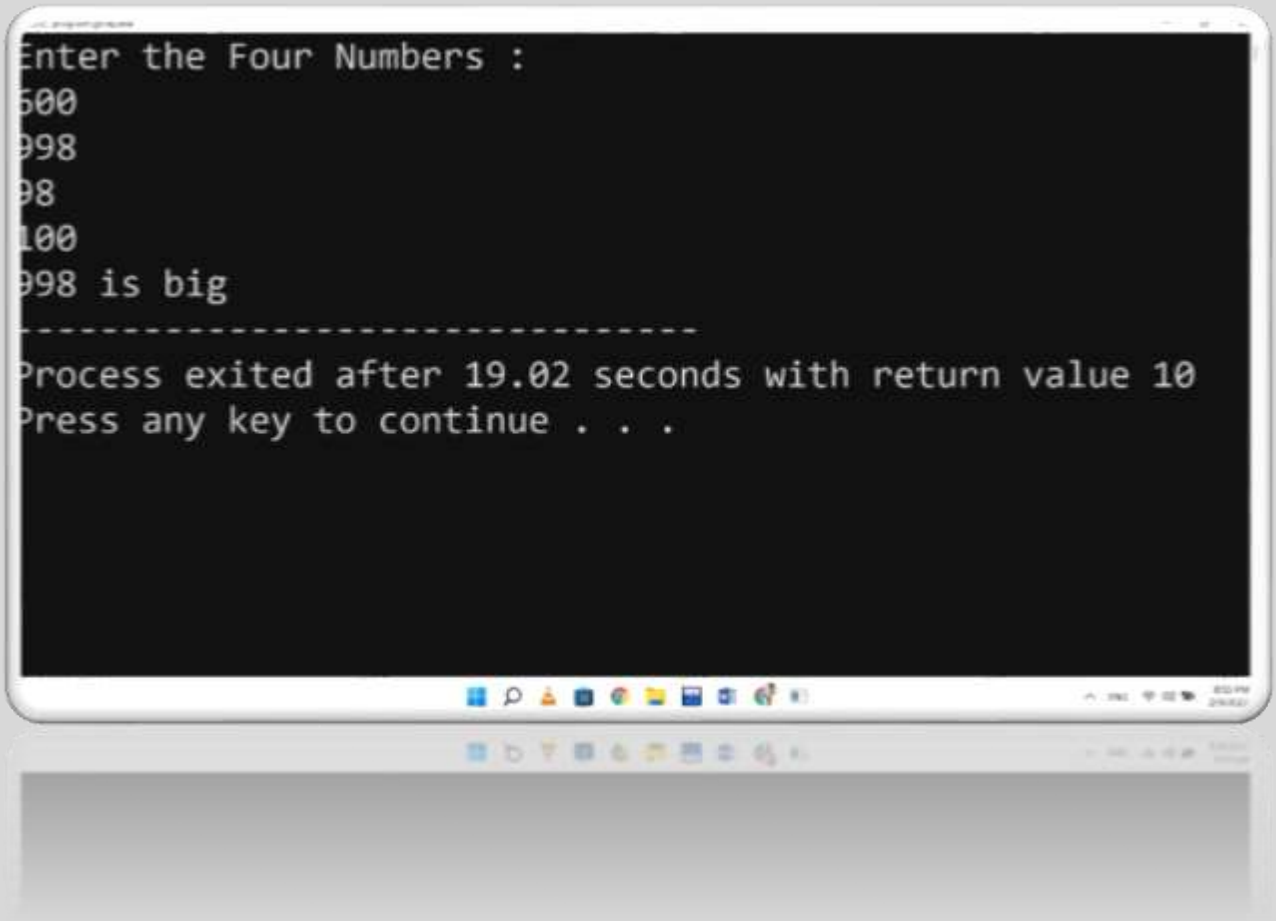
Solution:

```
#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:

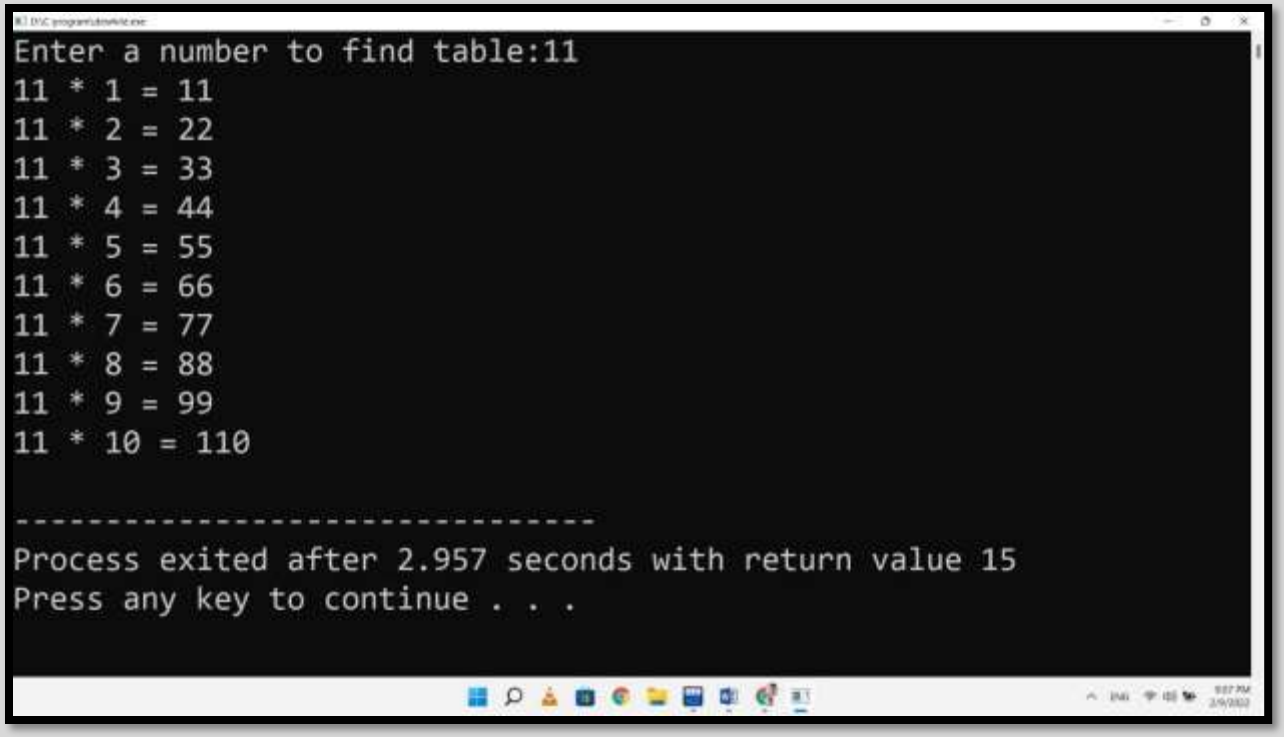


3. Write a program to display the multiplication table of given numbers.

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 :



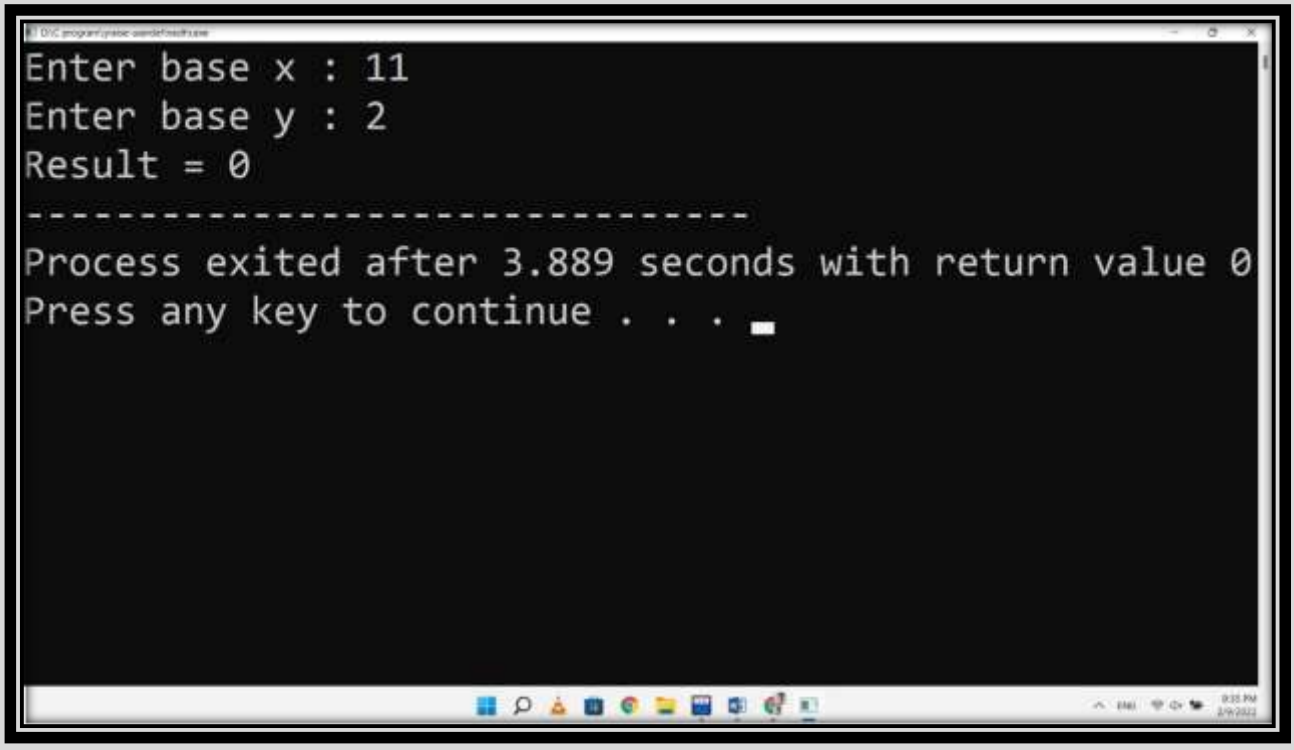
4. Write a program using user defined function to calculate y raise power to x .

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 :



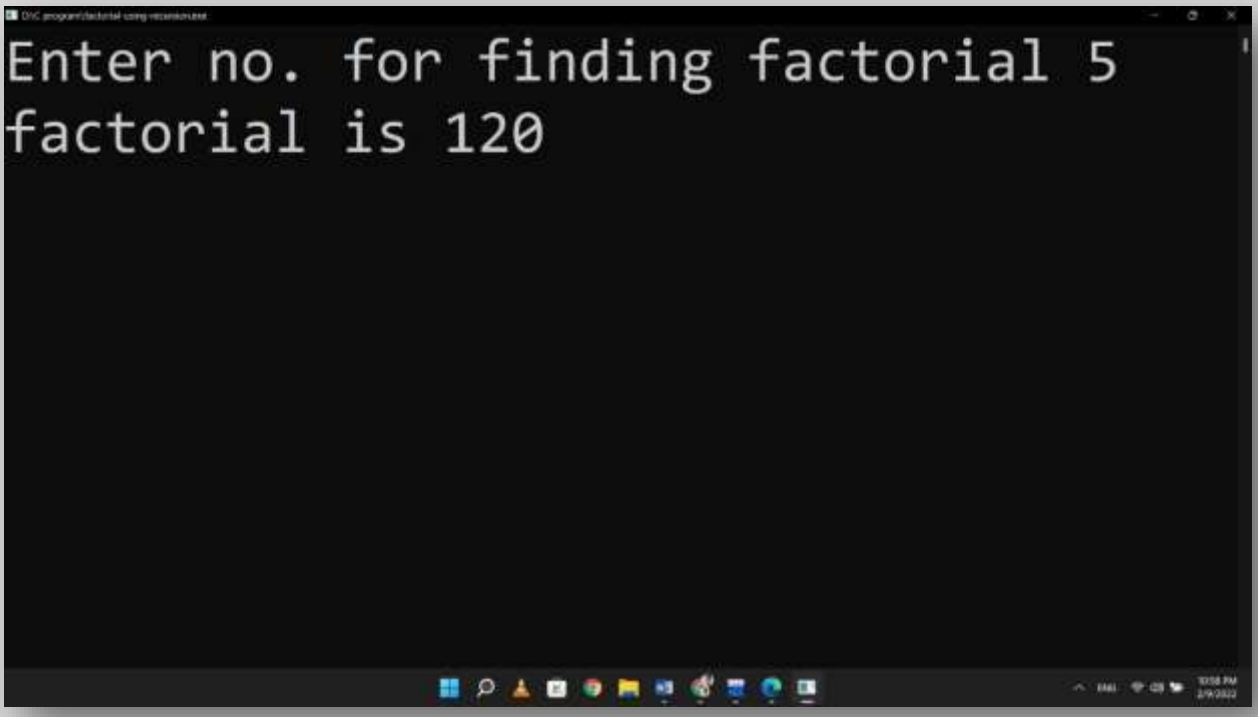
5.Write a program to find the factorial of a number using recursion .

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:



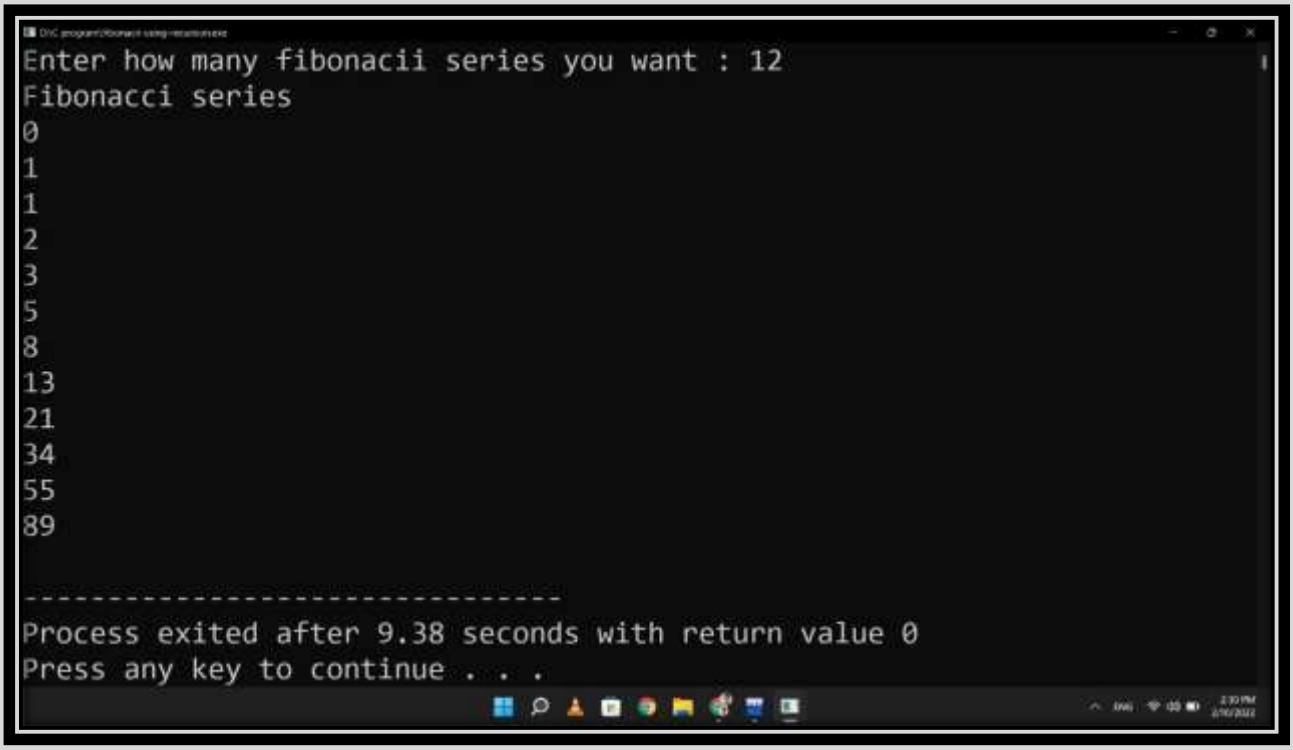
6.Write a program to display the Fibonacci series using recursion .

Solution:

```
#include<stdio.h>
int Fibonacci(int);
int main()
{
  int n, i = 0, c;
  printf("Enter how many fibonacii 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:



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:

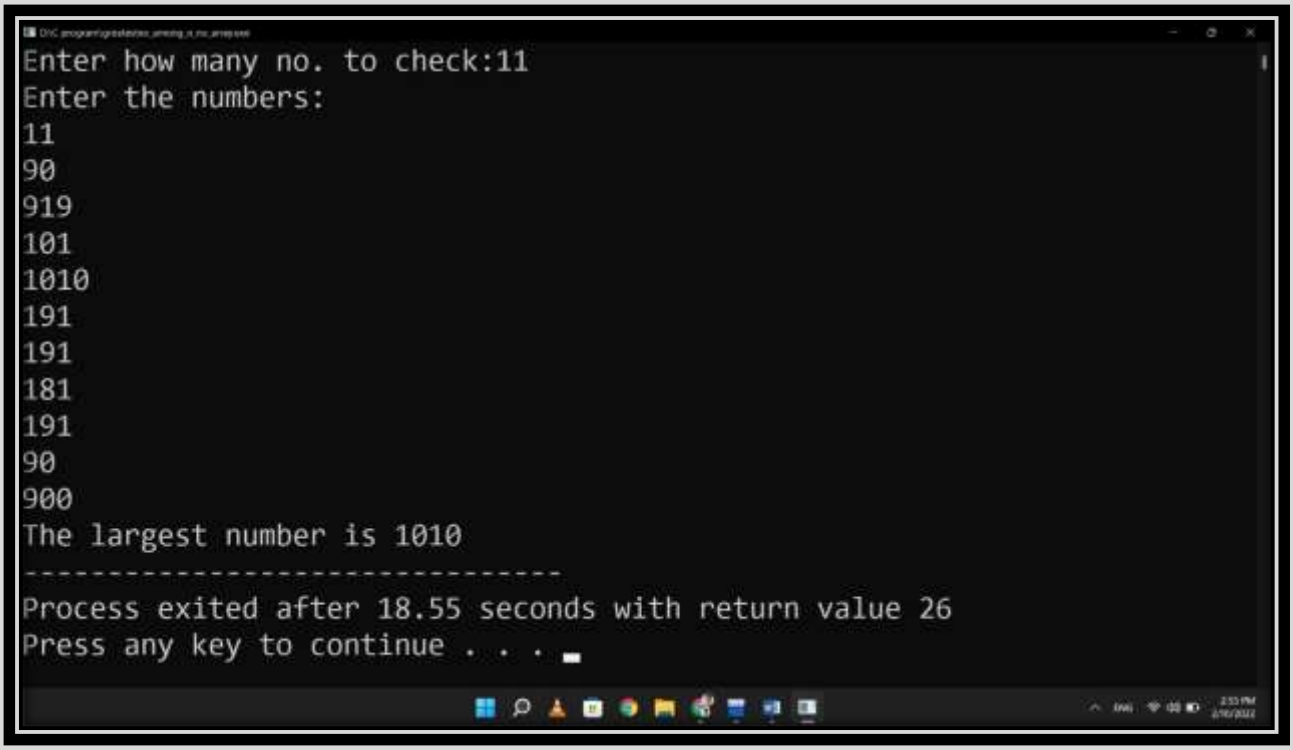
8.Write a program to print greatest number among n numbers using array and function.

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:



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

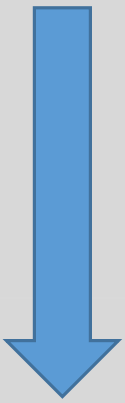
Solution:

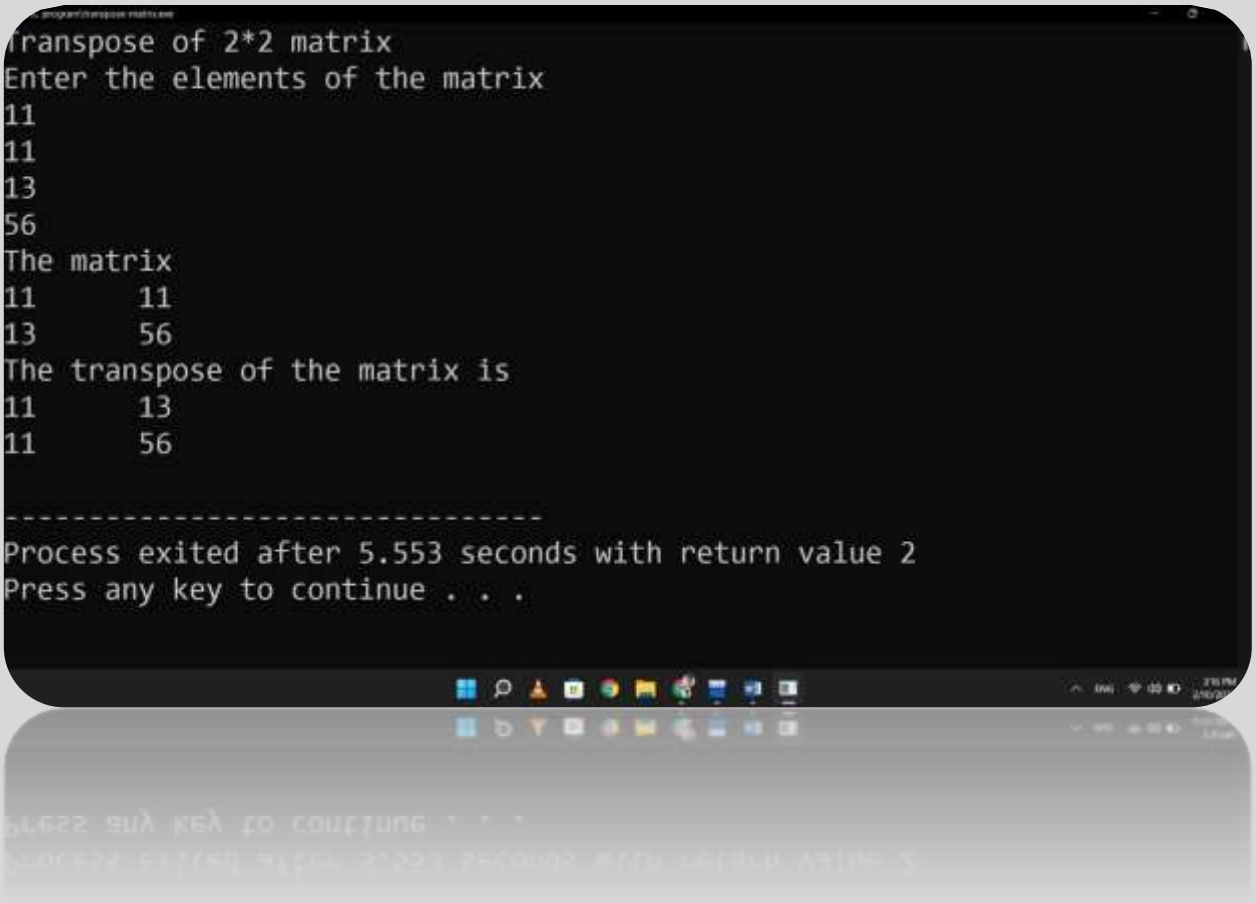
```
#include<stdio.h>
void main()
{
   int mat[12][12],transpose[12][12];
   int i;
      int j;
      int row=2;
      int col=2;
      printf("Transpose of 2*2 matrix\n");
   printf("Enter the elements of the matrix\n");
   for(i=0;i<row;i++)
   {
      for(j=0;j<col;j++)
      {
         scanf("%d",&mat[i][j]);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

```
    }
}


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:




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 . . .

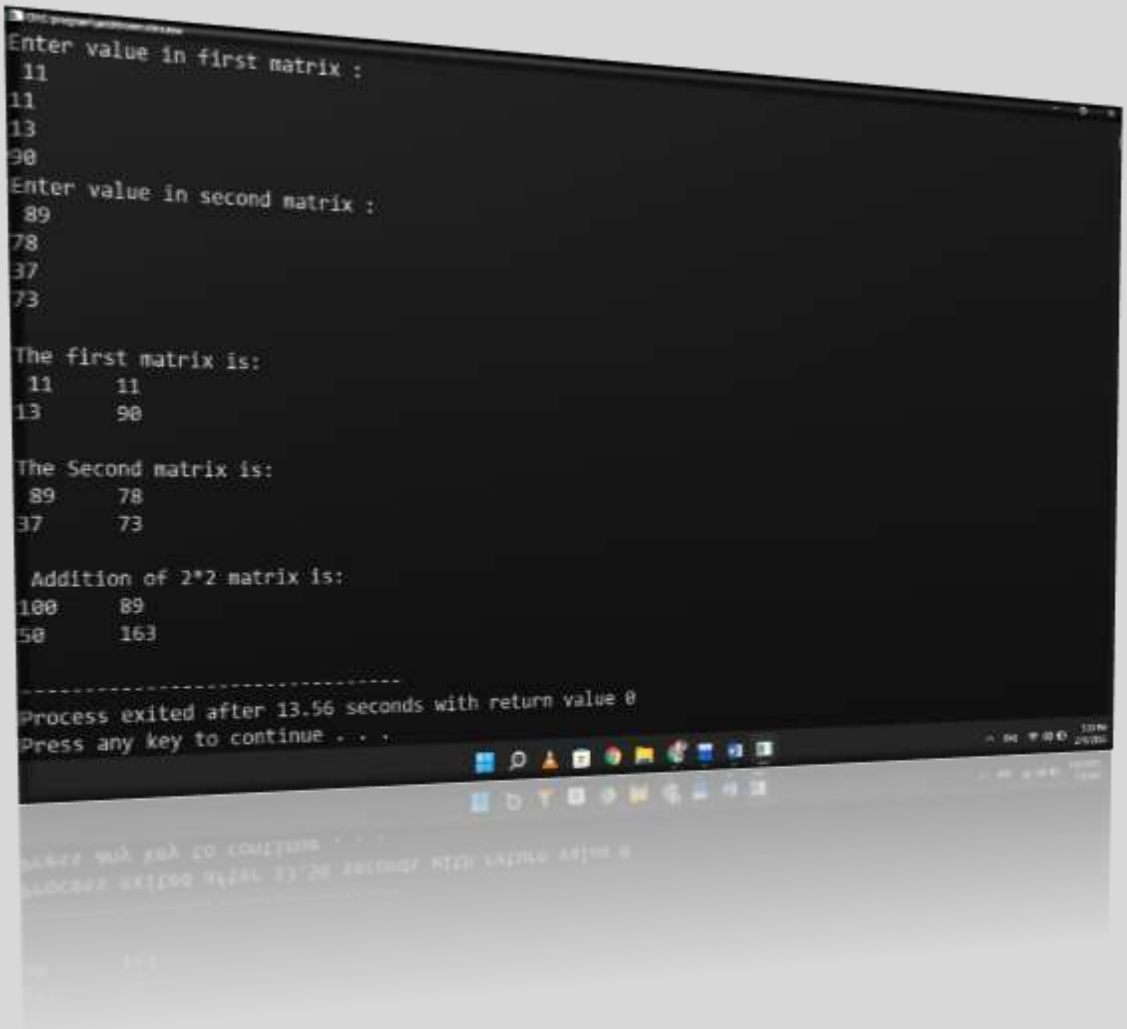
10. Write a program to find sum of two matrices(2*2 type) using array and function.

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: