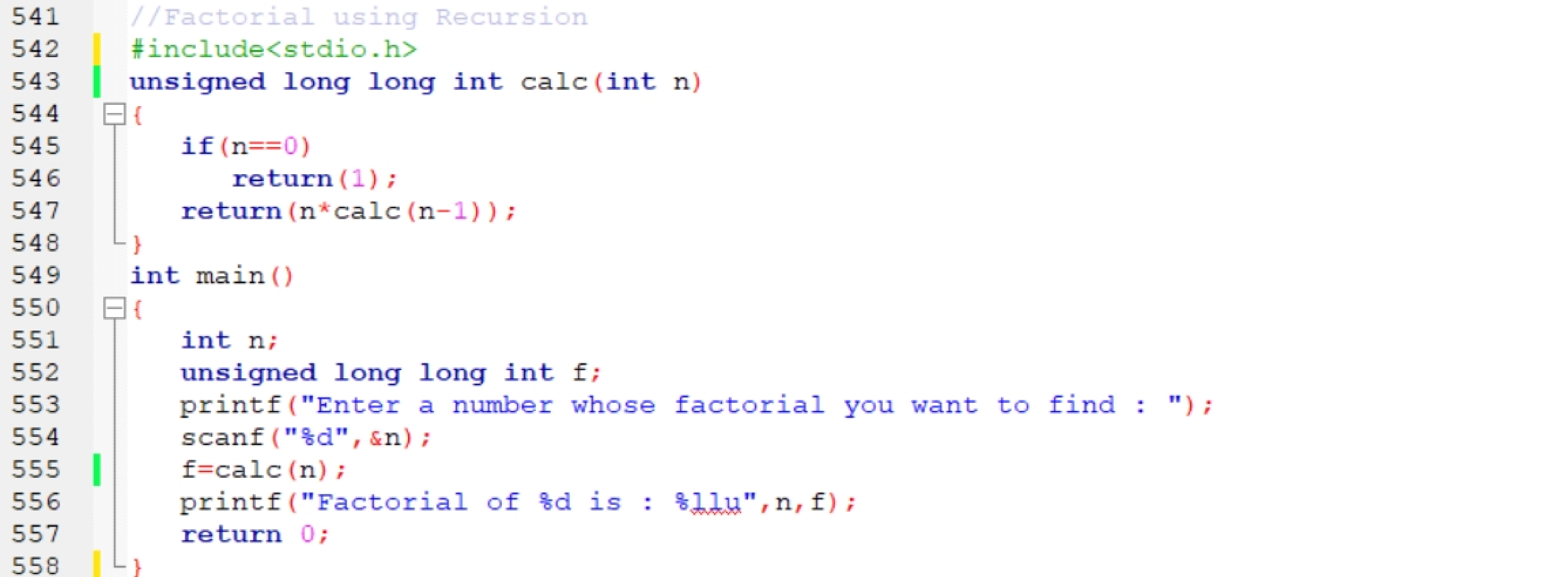
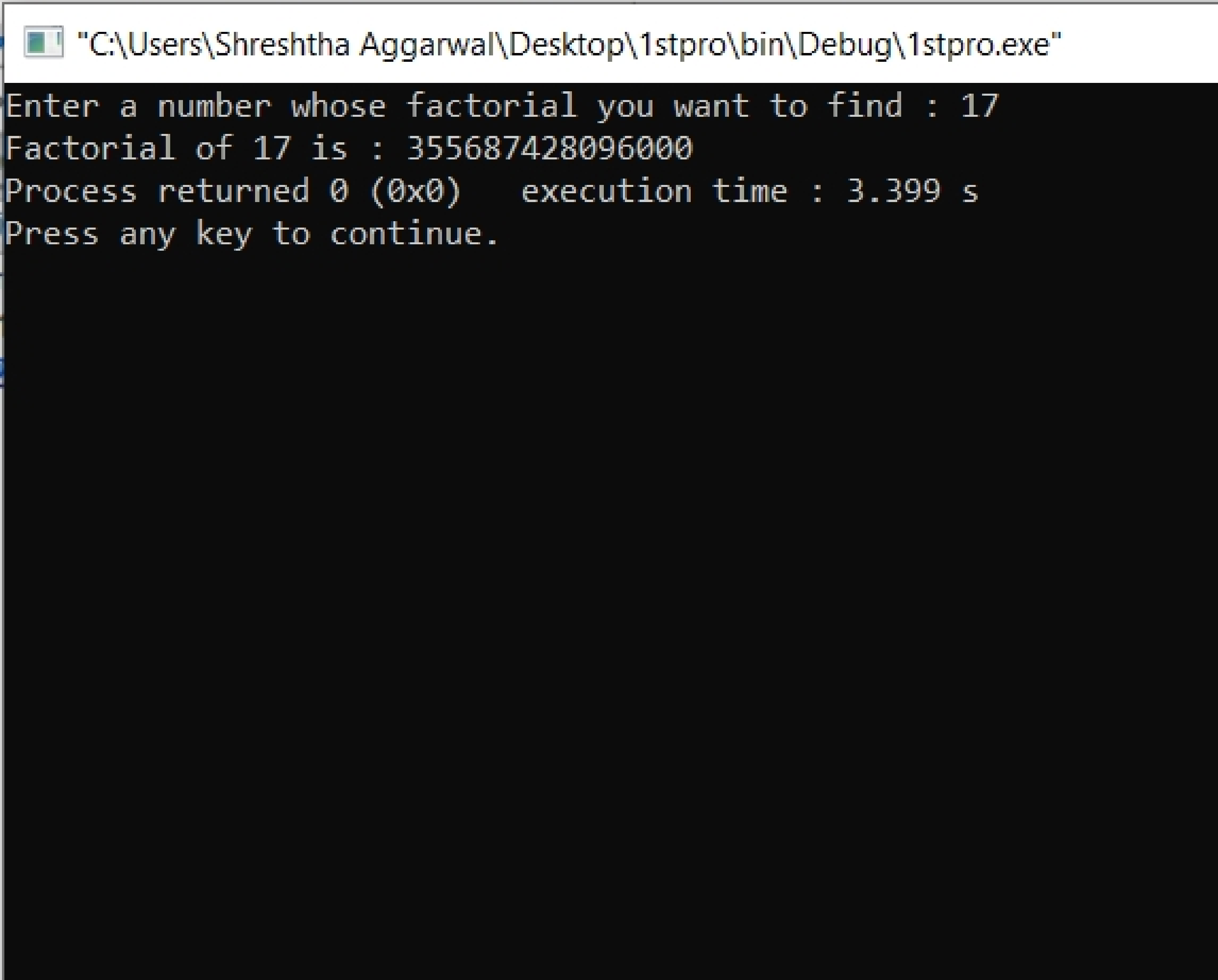
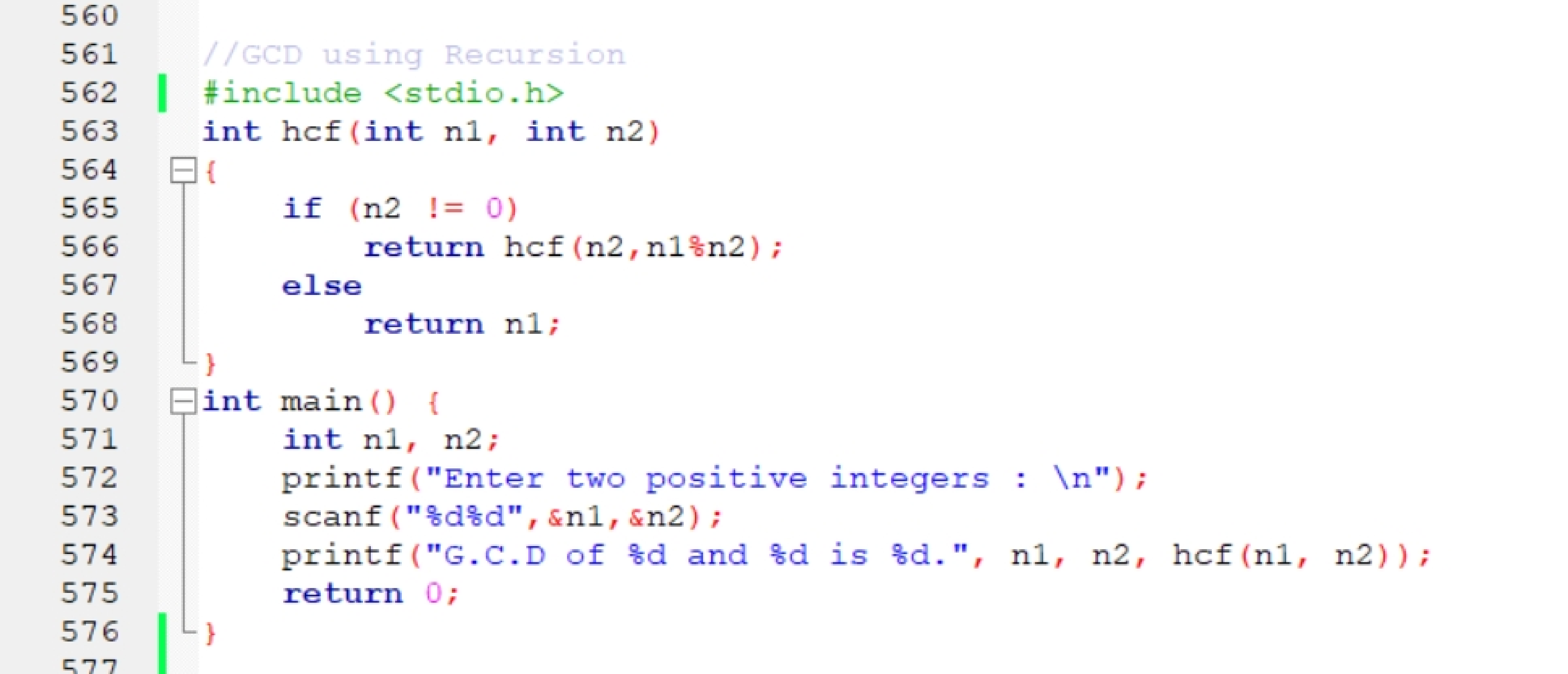


```c
//Factorial using Recursion
#include<stdio.h>
unsigned long long int calc(int n)
{
    if(n==0)
        return(1);
    return(n*calc(n-1));
}
int main()
{
    int n;
    unsigned long long int f;
    printf("Enter a number whose factorial you want to find : ");
    scanf("%d",&n);
    f=calc(n);
    printf("Factorial of %d is : %llu",n,f);
    return 0;
}
```

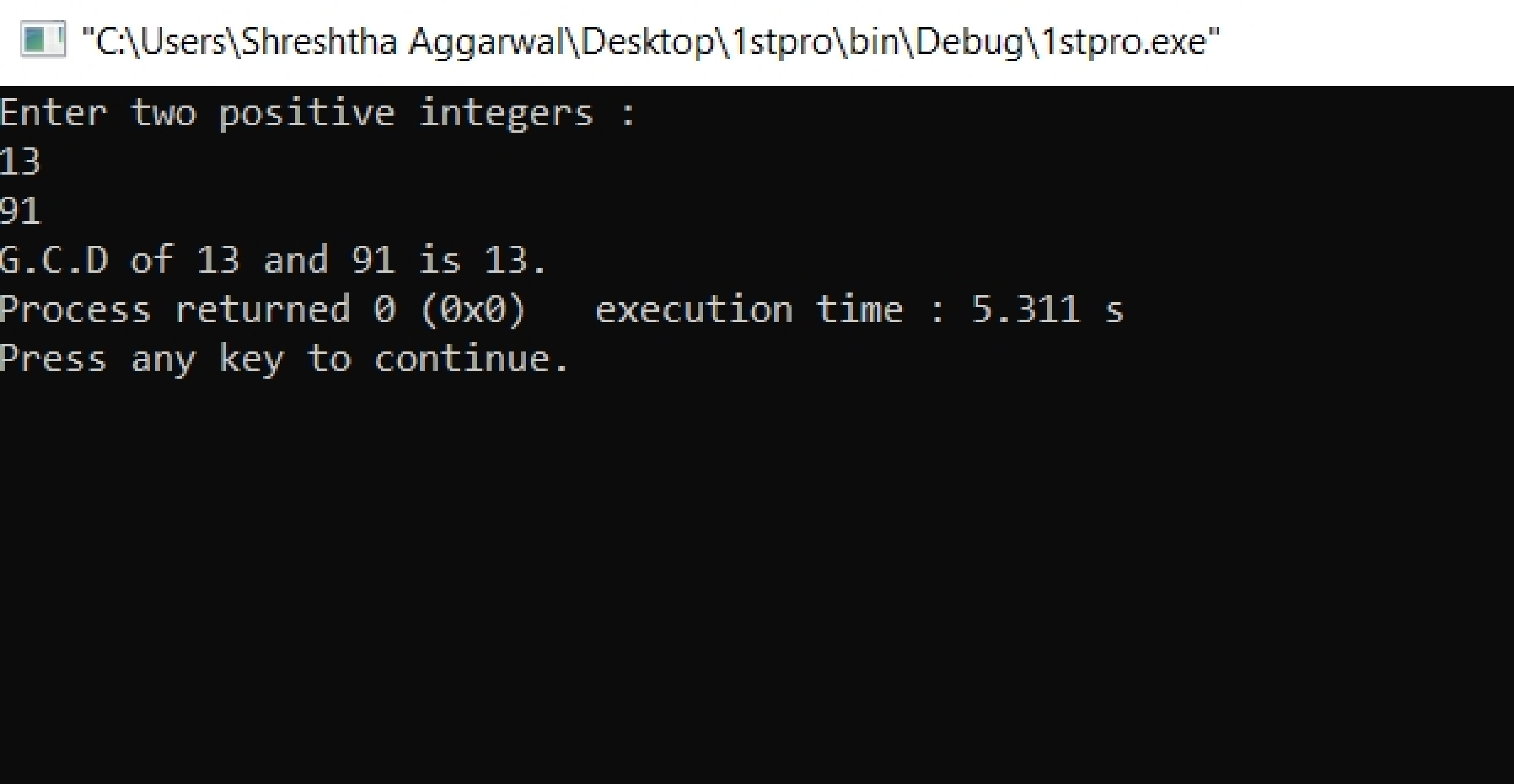


"C:\Users\Shreshtha Aggarwal\Desktop\1stpro\bin\Debug\1stpro.exe"

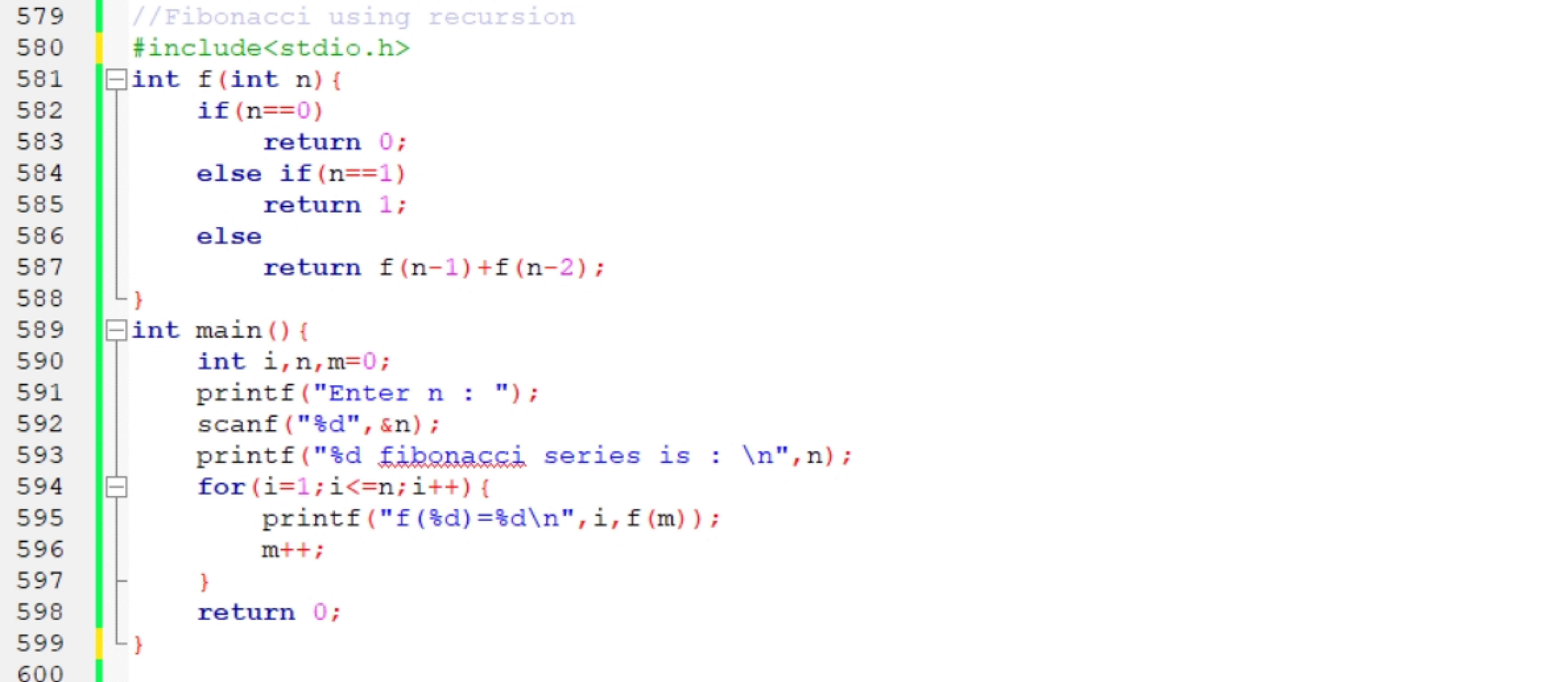
```
Enter a number whose factorial you want to find : 17
Factorial of 17 is : 355687428096000
Process returned 0 (0x0)   execution time : 3.399 s
Press any key to continue.
```



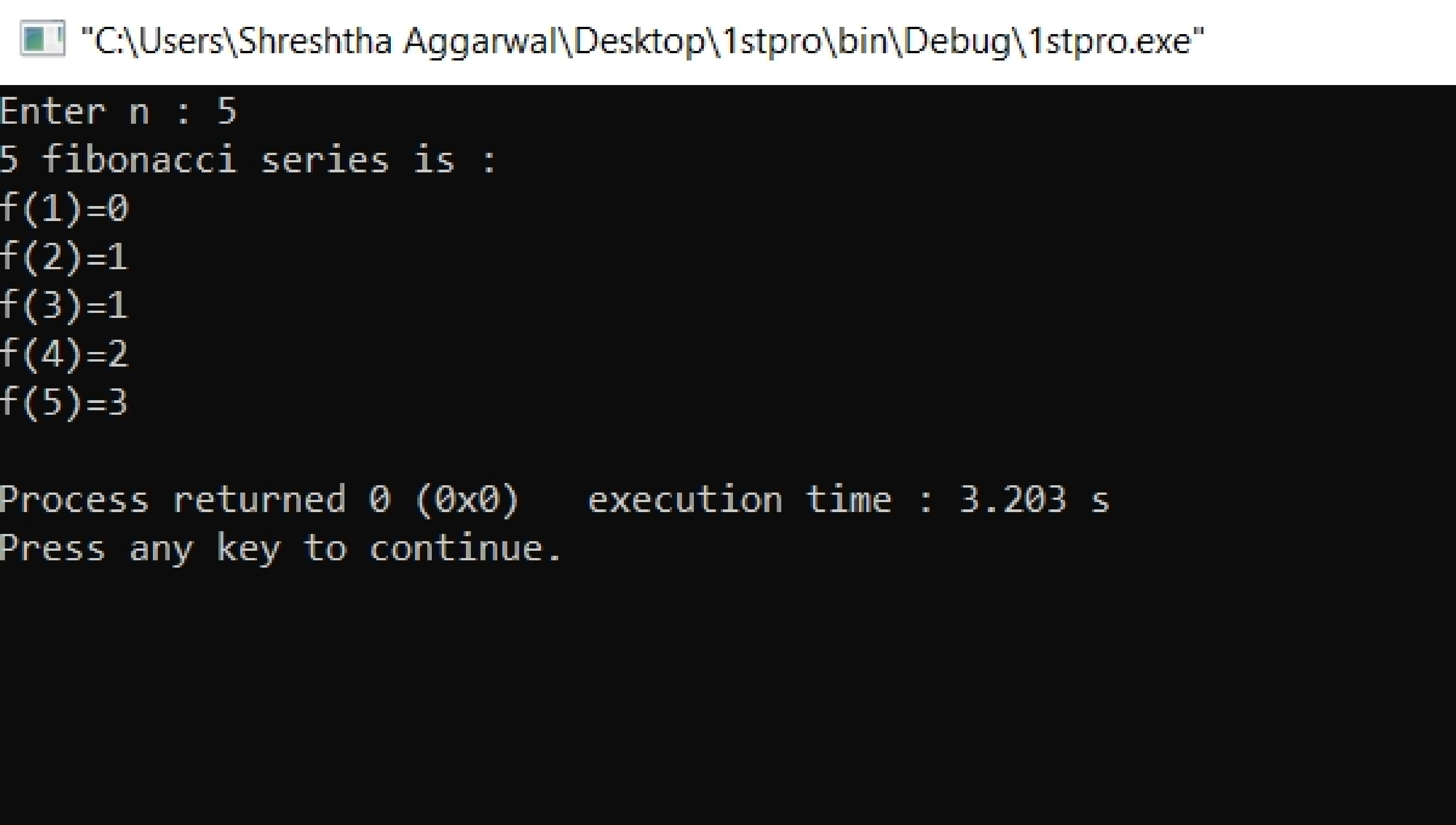
```c
//GCD using Recursion
#include <stdio.h>
int hcf(int n1, int n2)
{
    if (n2 != 0)
        return hcf(n2,n1%n2);
    else
        return n1;
}
int main() {
    int n1, n2;
    printf("Enter two positive integers : \n");
    scanf("%d%d",&n1,&n2);
    printf("G.C.D of %d and %d is %d.", n1, n2, hcf(n1, n2));
    return 0;
}
```


"C:\Users\Shreshtha Aggarwal\Desktop\1stpro\bin\Debug\1stpro.exe"

```
Enter two positive integers :
13
91
G.C.D of 13 and 91 is 13.
Process returned 0 (0x0)   execution time : 5.311 s
Press any key to continue.
```

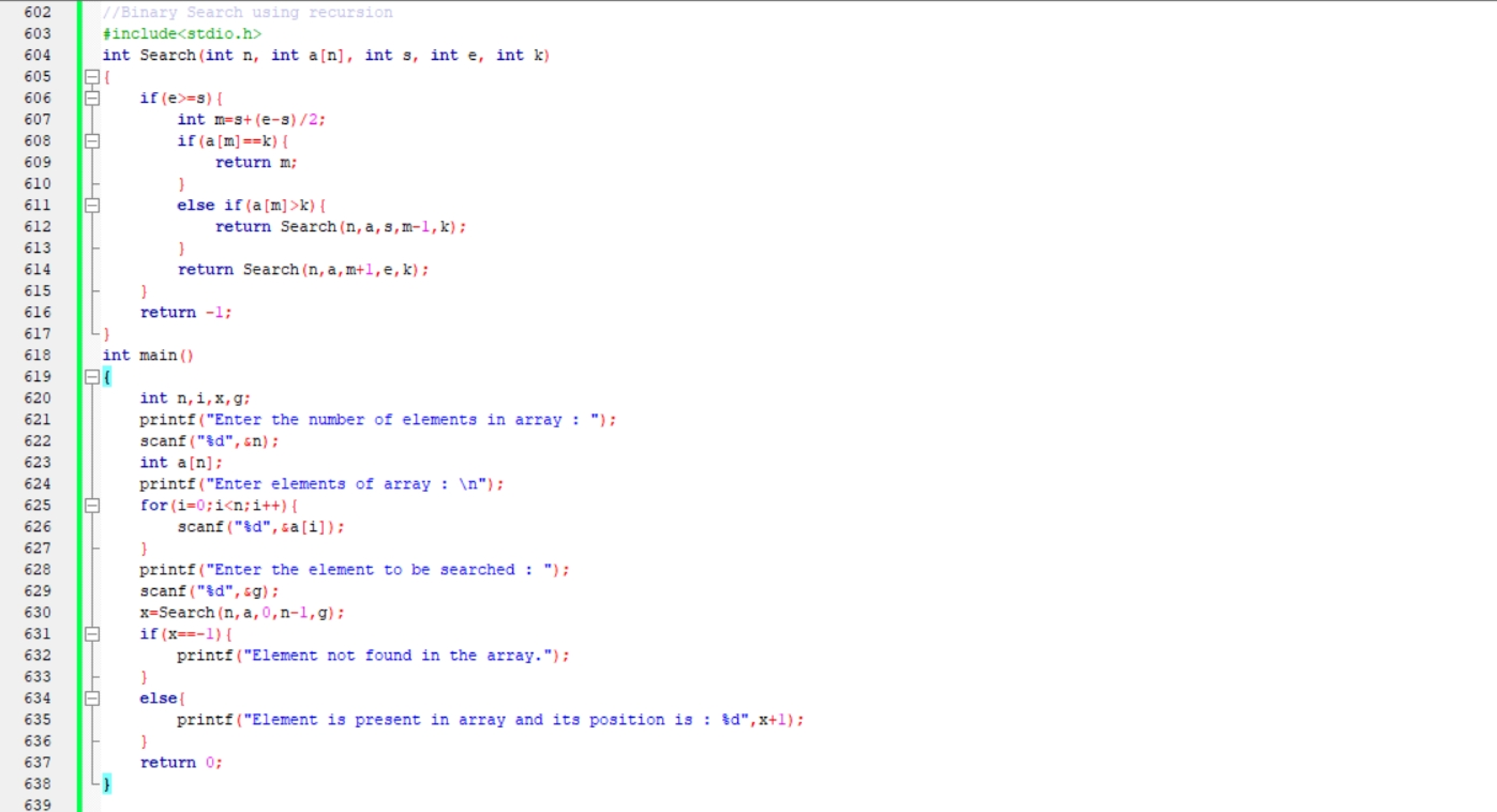


```c
//Fibonacci using recursion
#include<stdio.h>
int f(int n){
    if(n==0)
        return 0;
    else if(n==1)
        return 1;
    else
        return f(n-1)+f(n-2);
}
int main(){
    int i,n,m=0;
    printf("Enter n : ");
    scanf("%d",&n);
    printf("%d fibonacci series is : \n",n);
    for(i=1;i<=n;i++){
        printf("f(%d)=%d\n",i,f(m));
        m++;
    }
    return 0;
}
```

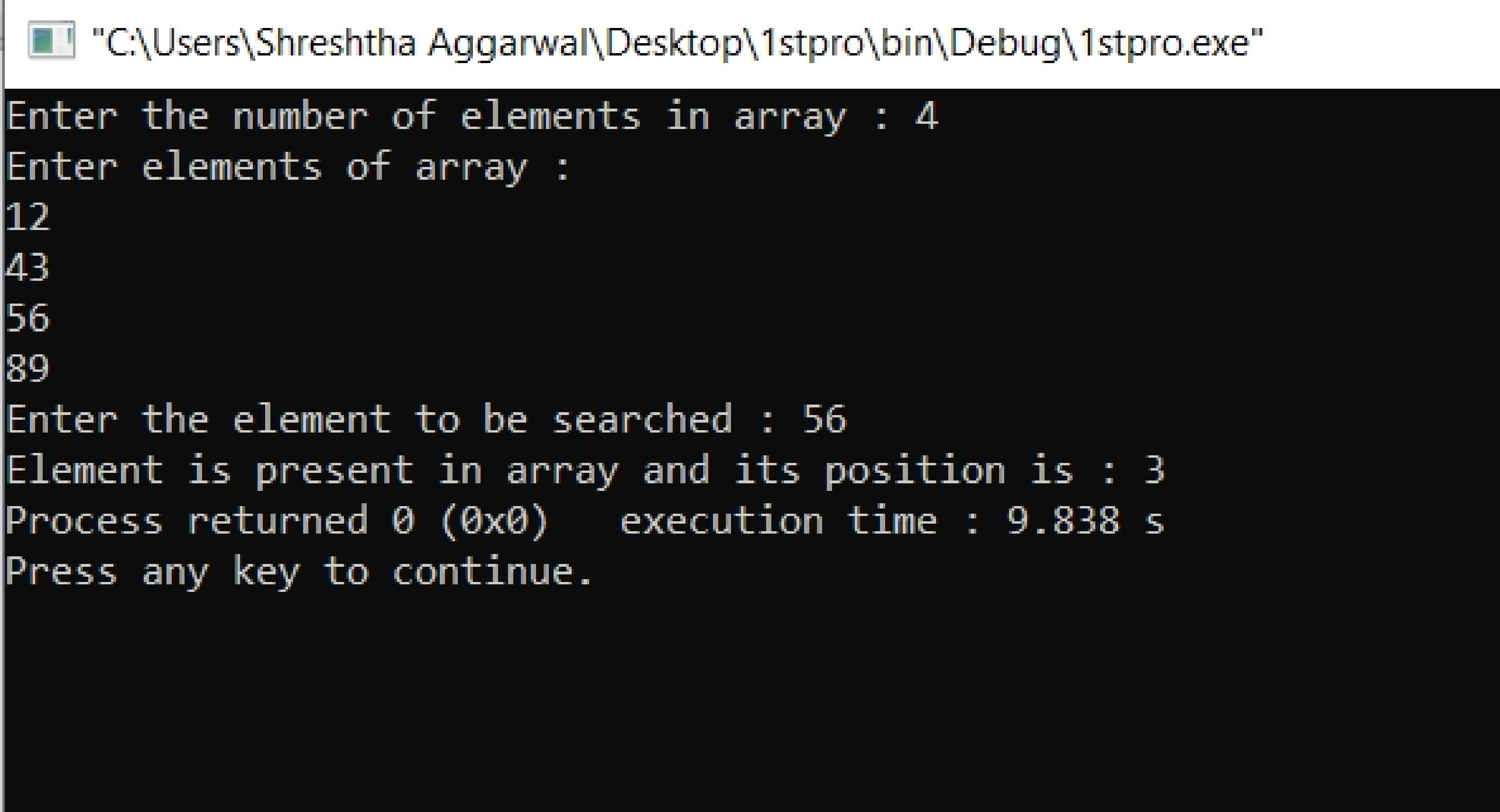

"C:\Users\Shreshtha Aggarwal\Desktop\1stpro\bin\Debug\1stpro.exe"

```
Enter n : 5
5 fibonacci series is :
f(1)=0
f(2)=1
f(3)=1
f(4)=2
f(5)=3


Process returned 0 (0x0)   execution time : 3.203 s
Press any key to continue.
```

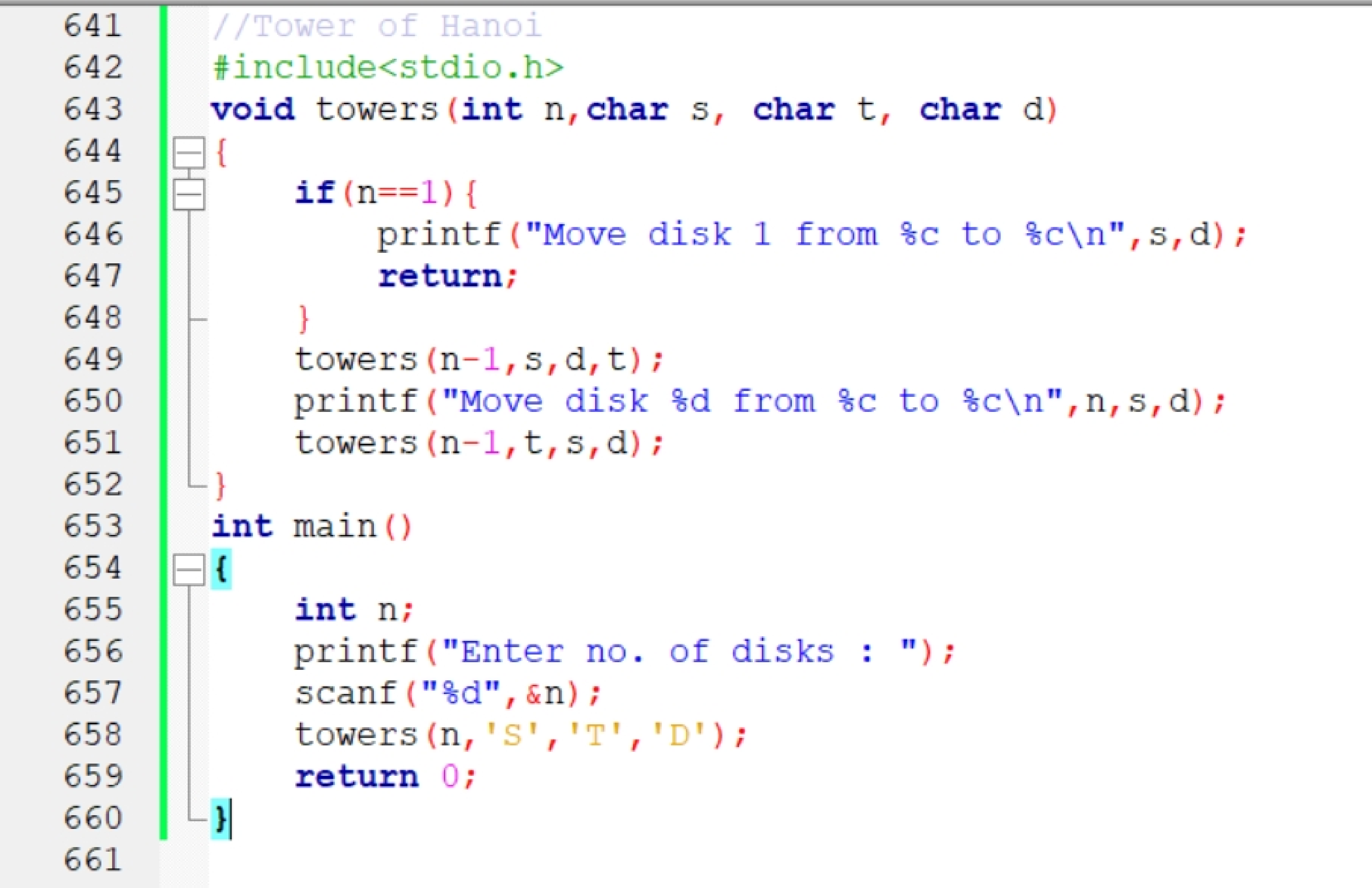


```c
//Binary Search using recursion
#include<stdio.h>
int Search(int n, int a[n], int s, int e, int k)
{
    if(e>=s){
        int m=s+(e-s)/2;
        if(a[m]==k){
            return m;
        }
        else if(a[m]>k){
            return Search(n,a,s,m-1,k);
        }
        return Search(n,a,m+1,e,k);
    }
    return -1;
}
int main()
{
    int n,i,x,g;
    printf("Enter the number of elements in array : ");
    scanf("%d",&n);
    int a[n];
    printf("Enter elements of array : \n");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Enter the element to be searched : ");
    scanf("%d",&g);
    x=Search(n,a,0,n-1,g);
    if(x==-1){
        printf("Element not found in the array.");
    }
    else{
        printf("Element is present in array and its position is : %d",x+1);
    }
    return 0;
}
```

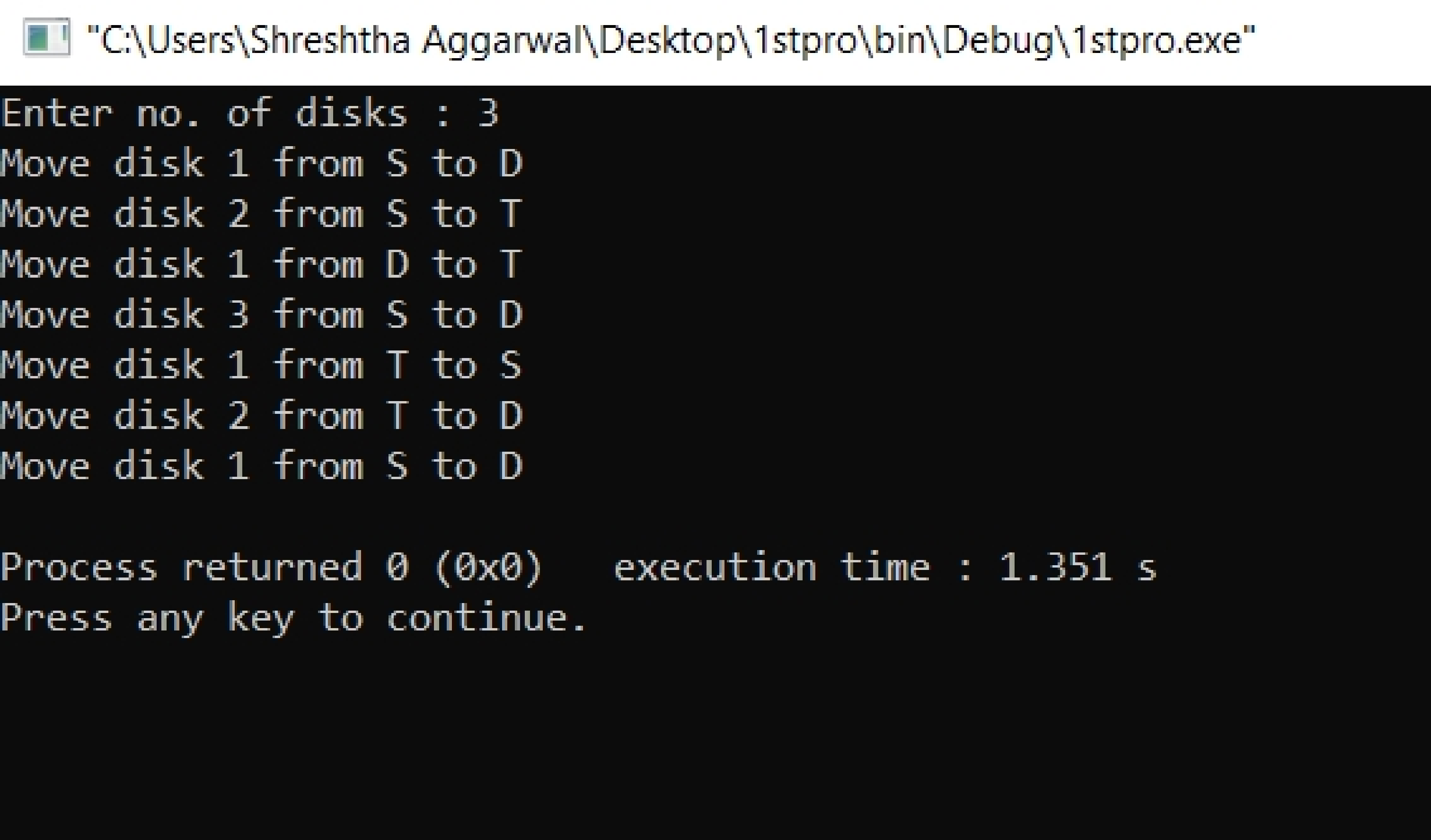


"C:\Users\Shreshtha Aggarwal\Desktop\1stpro\bin\Debug\1stpro.exe"

```
Enter the number of elements in array : 4
Enter elements of array :
12
43
56
89
Enter the element to be searched : 56
Element is present in array and its position is : 3
Process returned 0 (0x0)   execution time : 9.838 s
Press any key to continue.
```



```c
//Tower of Hanoi
#include<stdio.h>
void towers(int n,char s, char t, char d)
{
    if(n==1){
        printf("Move disk 1 from %c to %c\n",s,d);
        return;
    }
    towers(n-1,s,d,t);
    printf("Move disk %d from %c to %c\n",n,s,d);
    towers(n-1,t,s,d);
}
int main()
{
    int n;
    printf("Enter no. of disks : ");
    scanf("%d",&n);
    towers(n,'S','T','D');
    return 0;
}
```



"C:\Users\Shreshtha Aggarwal\Desktop\1stpro\bin\Debug\1stpro.exe"

```
Enter no. of disks : 3
Move disk 1 from S to D
Move disk 2 from S to T
Move disk 1 from D to T
Move disk 3 from S to D
Move disk 1 from T to S
Move disk 2 from T to D
Move disk 1 from S to D


Process returned 0 (0x0)   execution time : 1.351 s
Press any key to continue.
```