Program to Demonstrate Recursive Linear Search

recursive_linear.c - Code::Blocks 20.03

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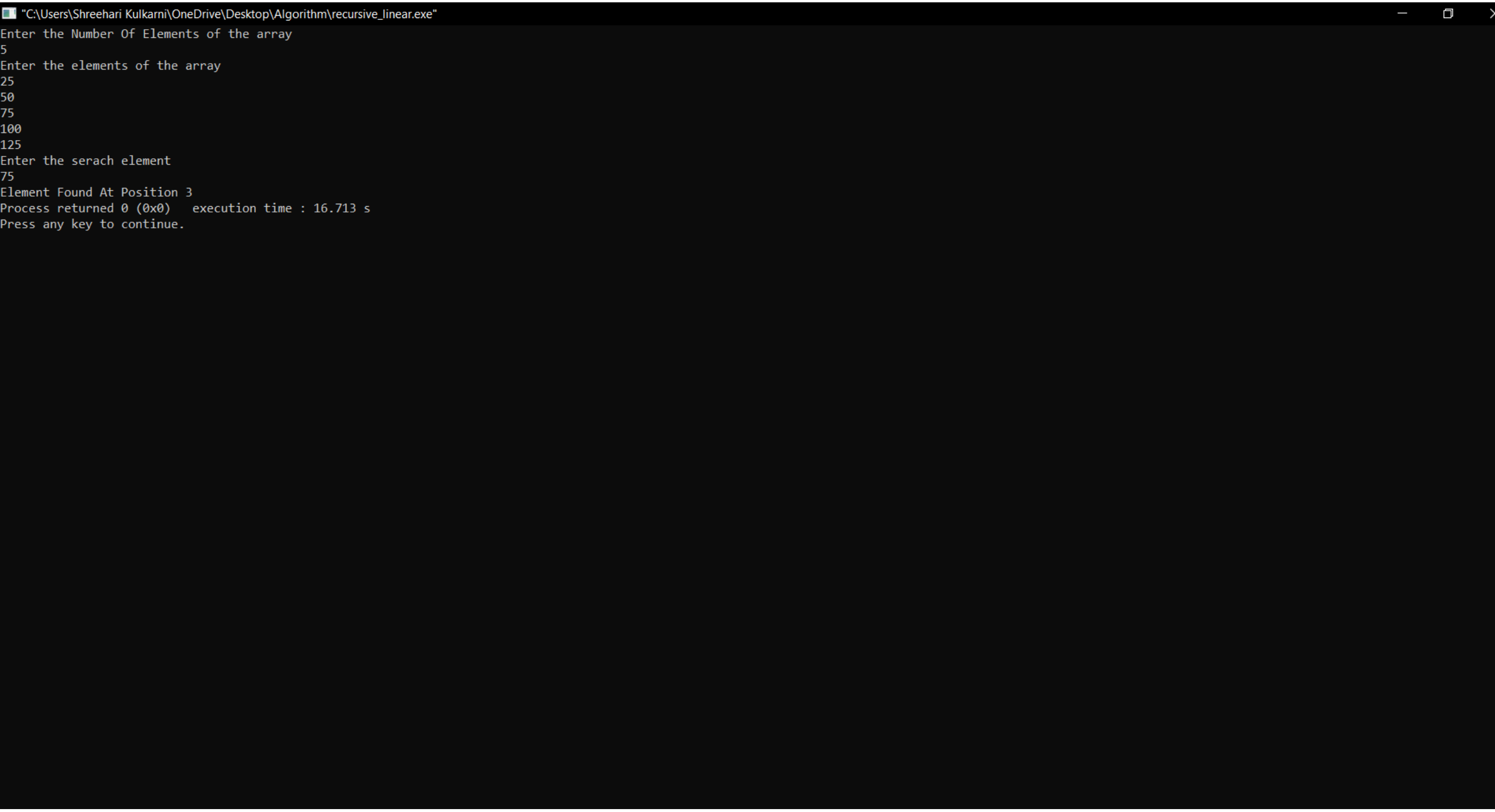
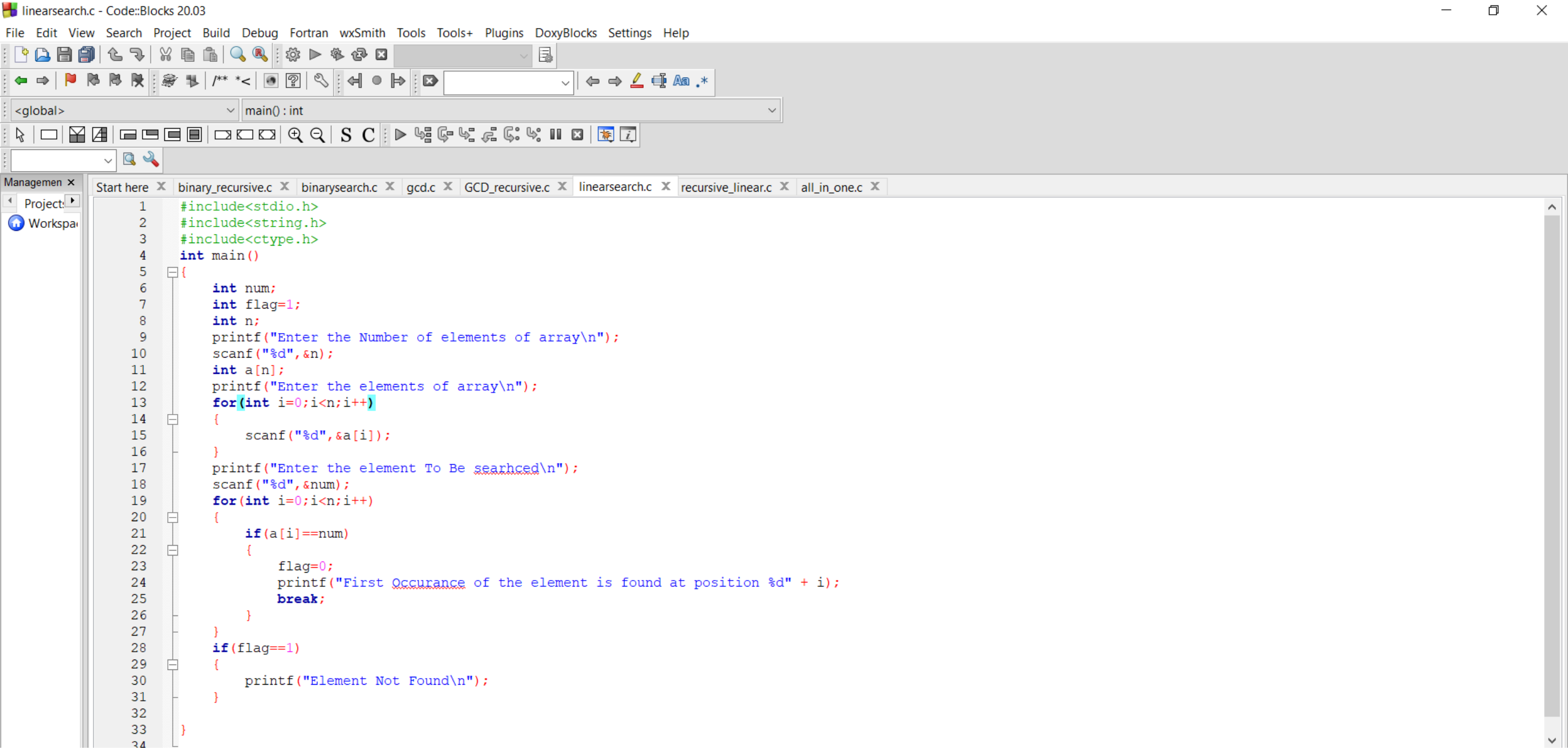
<global> search(int a[]) : void

Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c

```
12  {
13      printf("Enter the Number Of Elements of the array\n");
14      scanf("%d",&n);
15      printf("Enter the elements of the array\n");
16      for(int i=0;i<n;i++)
17      {
18          scanf("%d",&a[i]);
19      }
20      printf("Enter the serach element\n");
21      scanf("%d",&num);
22      search(a);
23  }
24  void search(int a[])
25  {
26      if(a[i]!=num&&i>=n)
27      {
28          printf("Element Not Found\n");
29          return;
30      }
31
32      if(a[i]==num)
33      {
34          flag=0;
35          printf("Element Found At Position %d",(i+1));
36          return;
37      }
38      else
39      {
40          i++;
41          search(a);
42      }
```


"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\recursive_linear.exe"
Enter the Number Of Elements of the array
5
Enter the elements of the array
25
50
75
100
125
Enter the serach element
75
Element Found At Position 3
Process returned 0 (0x0)   execution time : 16.713 s
Press any key to continue.

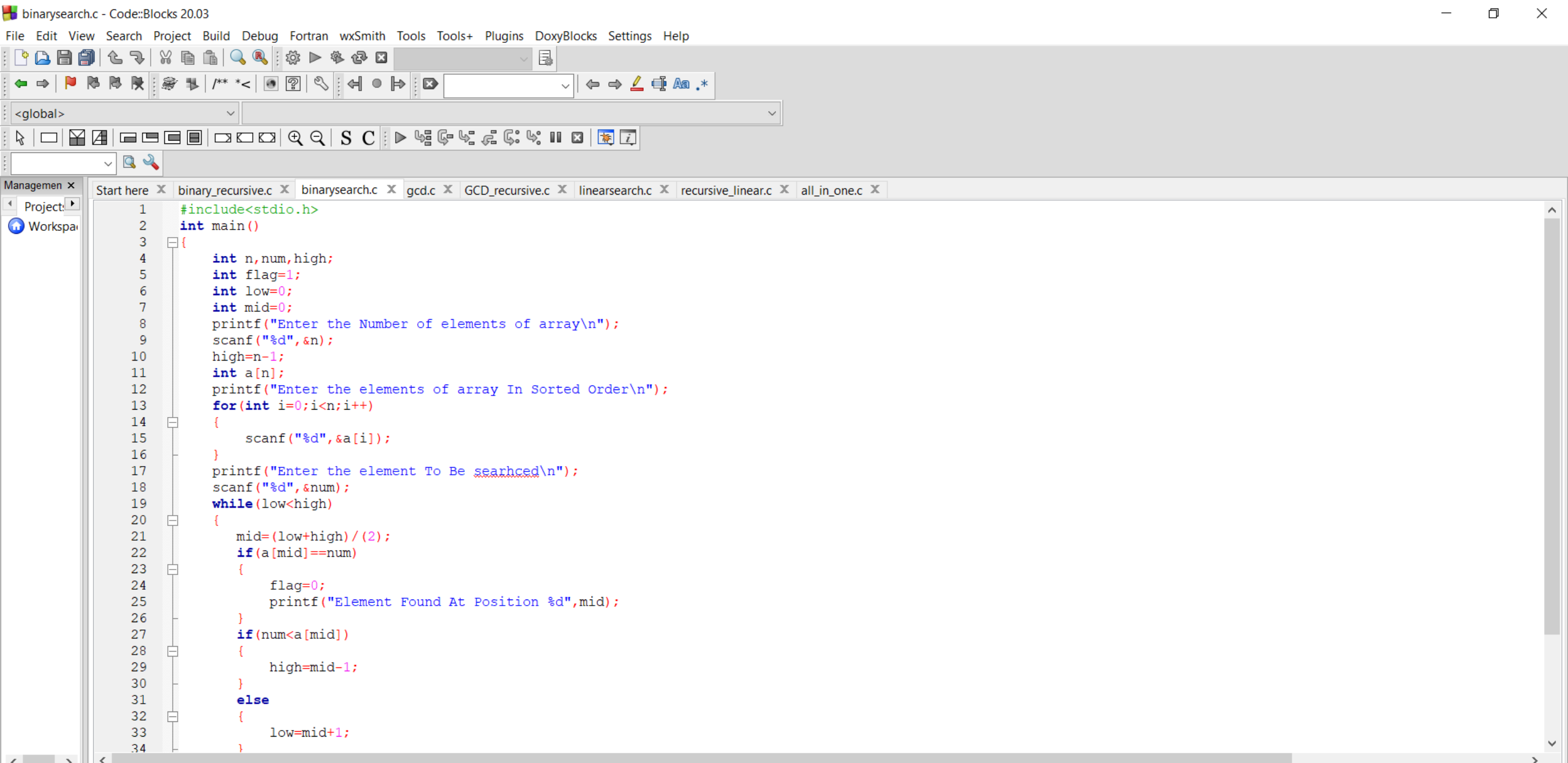
Program To Demonstrate Linear Search Iteratively



"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\linearsearch.exe"

```
Enter the Number of elements of array
5
Enter the elements of array
25
30
35
40
45
Enter the element To Be searhced
35
rst Occurance of the element is found at position 2
Process returned 0 (0x0)   execution time : 19.607 s
Press any key to continue.
```

Binary Search Iteratively



binarysearch.c - Code::Blocks 20.03

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<global>

Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c | all_in_one.c

```
9       scanf("%d",&n);
10      high=n-1;
11      int a[n];
12      printf("Enter the elements of array In Sorted Order\n");
13      for(int i=0;i<n;i++)
14      {
15          scanf("%d",&a[i]);
16      }
17      printf("Enter the element To Be searhced\n");
18      scanf("%d",&num);
19      while(low<high)
20      {
21         mid=(low+high)/(2);
22         if(a[mid]==num)
23         {
24             flag=0;
25             printf("Element Found At Position %d",mid);
26         }
27         if(num<a[mid])
28         {
29             high=mid-1;
30         }
31         else
32         {
33             low=mid+1;
34         }
35      }
36      if(flag==1)
37      {
38          printf("Element Not Found");
39      }
40  }
41
```

Logs & others

Code::Blocks | Search results | Cccc | Build log | Build messages | CppCheck/Vera++ | CppCheck/Vera++ messages | Cscope | Debugger | DoxyBlocks | Fortran info | Closed files list | Thread search

C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\binarysearch.c | C/C++ | Windows (CR+LF) | WINDOWS-1252 | Line 1, Col 1, Pos 0 | Insert | Read/Write | default

"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\binarysearch.exe"

```
Enter the Number of elements of array
5
Enter the elements of array In Sorted Order
25
30
35
40
45
Enter the element To Be searhced
40
Element Found At Position 3
Process returned 0 (0x0)   execution time : 17.721 s
Press any key to continue.
```

Binary Search Recursive

binary_recursive.c - Code::Blocks 20.03

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Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c | all_in_one.c

```c
#include<stdio.h>
#include<string.h>
#include<ctype.h>
#define MAX 10
int a[MAX];
int flag;
int binary(int a[],int low,int high);
int num;
int main()
{
    int n;
    printf("Enter the Number of elements of the array\n");
    scanf("%d",&n);
    printf("Enter the elements of the array In Sorted order\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Enter the element You Want To Search\n");
    scanf("%d",&num);
    int low=0;
    int high=n-1;
    int ans=binary(a,low,high);
    if(ans==0)
    {
        printf("Element Not Found\n");
    }

}
int binary(int a[],int low,int high)
{

    int mid=(low+high)/(2);
    if(a[mid]==num)
```

binary_recursive.c - Code::Blocks 20.03

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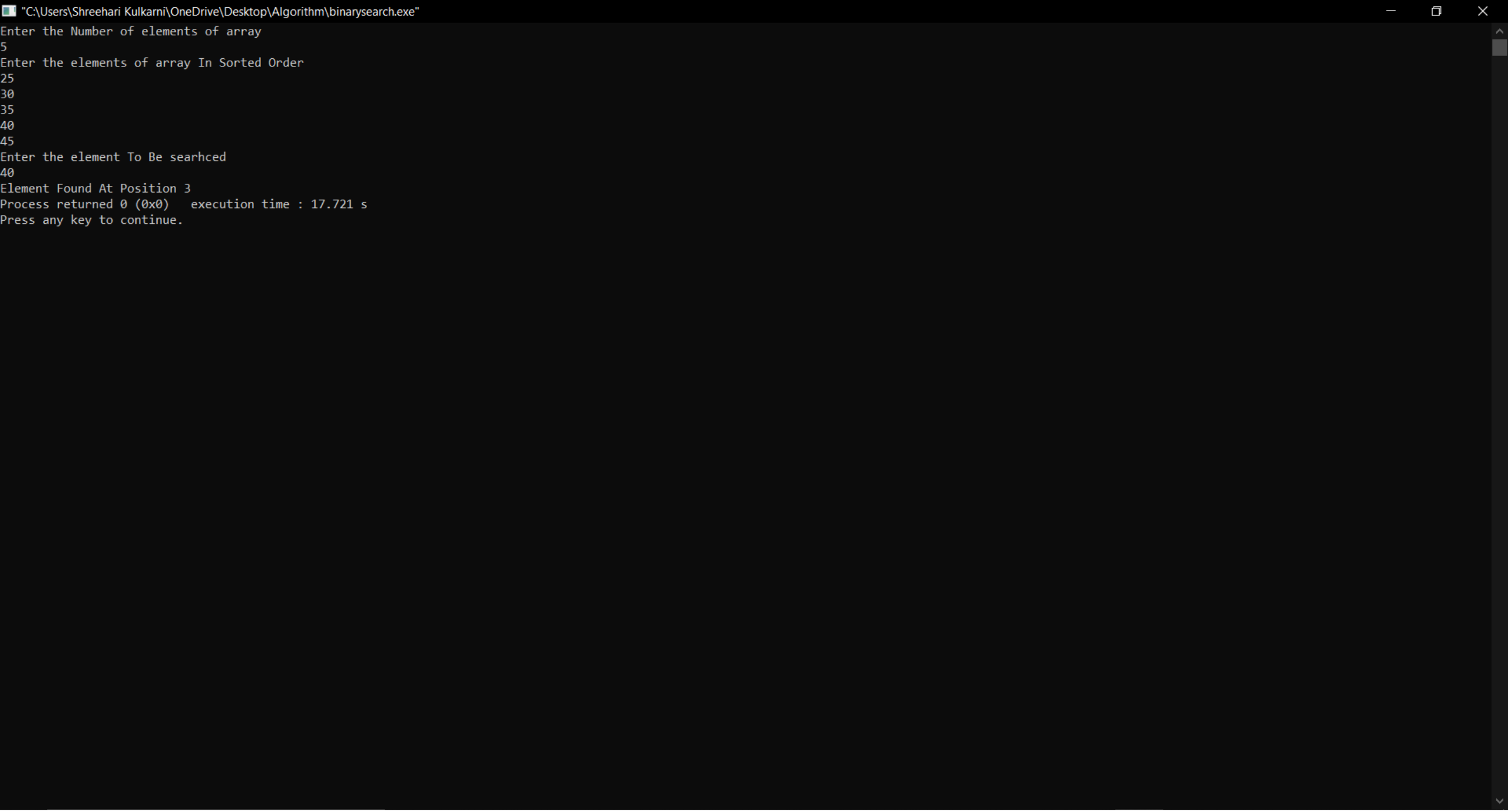
Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c | all_in_one.c

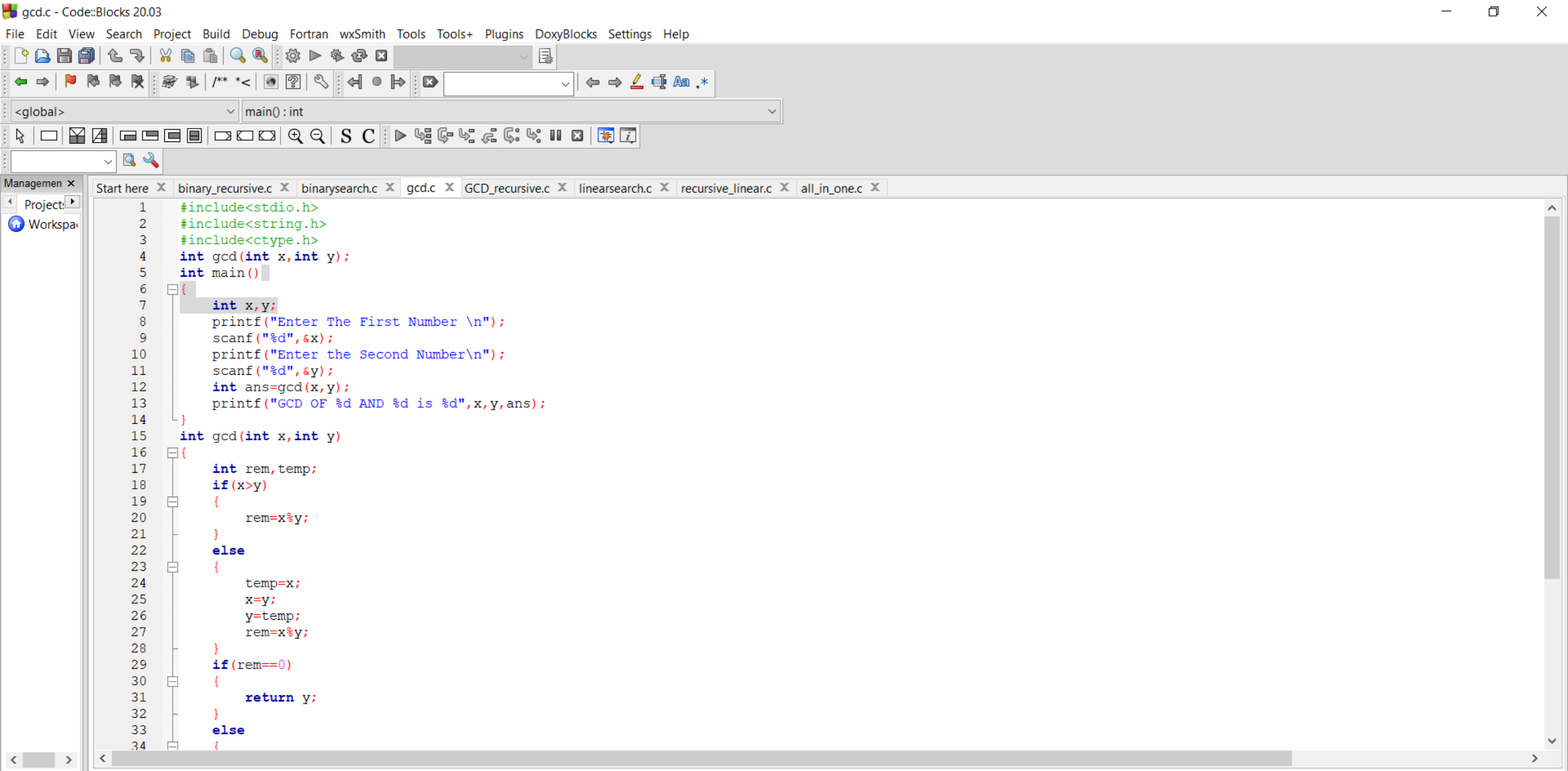
```
27      }
28
29  }
30  int binary(int a[],int low,int high)
31  {
32
33      int mid=(low+high)/(2);
34      if(a[mid]==num)
35      {
36          flag=1;
37          printf("First Occurance of Element Found At Positon %d",mid);
38          return 1;
39      }
40      else if(num<a[mid])
41      {
42          high=mid-1;
43          binary(a,low,high);
44      }
45      else if(num>a[mid])
46      {
47          low=mid+1;
48          binary(a,low,high);
49      }
50      else
51      {
52          return 0;
53      }
54  }
55
56
57
58
59
```

Logs & others

Code::Blocks | Search results | Cccc | Build log | Build messages | CppCheck/Vera++ | CppCheck/Vera++ messages | Cscope | Debugger | DoxyBlocks | Fortran info | Closed files list | Thread search


"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\binarysearch.exe"
Enter the Number of elements of array
5
Enter the elements of array In Sorted Order
25
30
35
40
45
Enter the element To Be searhced
40
Element Found At Position 3
Process returned 0 (0x0)   execution time : 17.721 s
Press any key to continue.

Iterative GCD



gcd.c - Code::Blocks 20.03

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<global> main() : int

Managemen

Project

Workspa

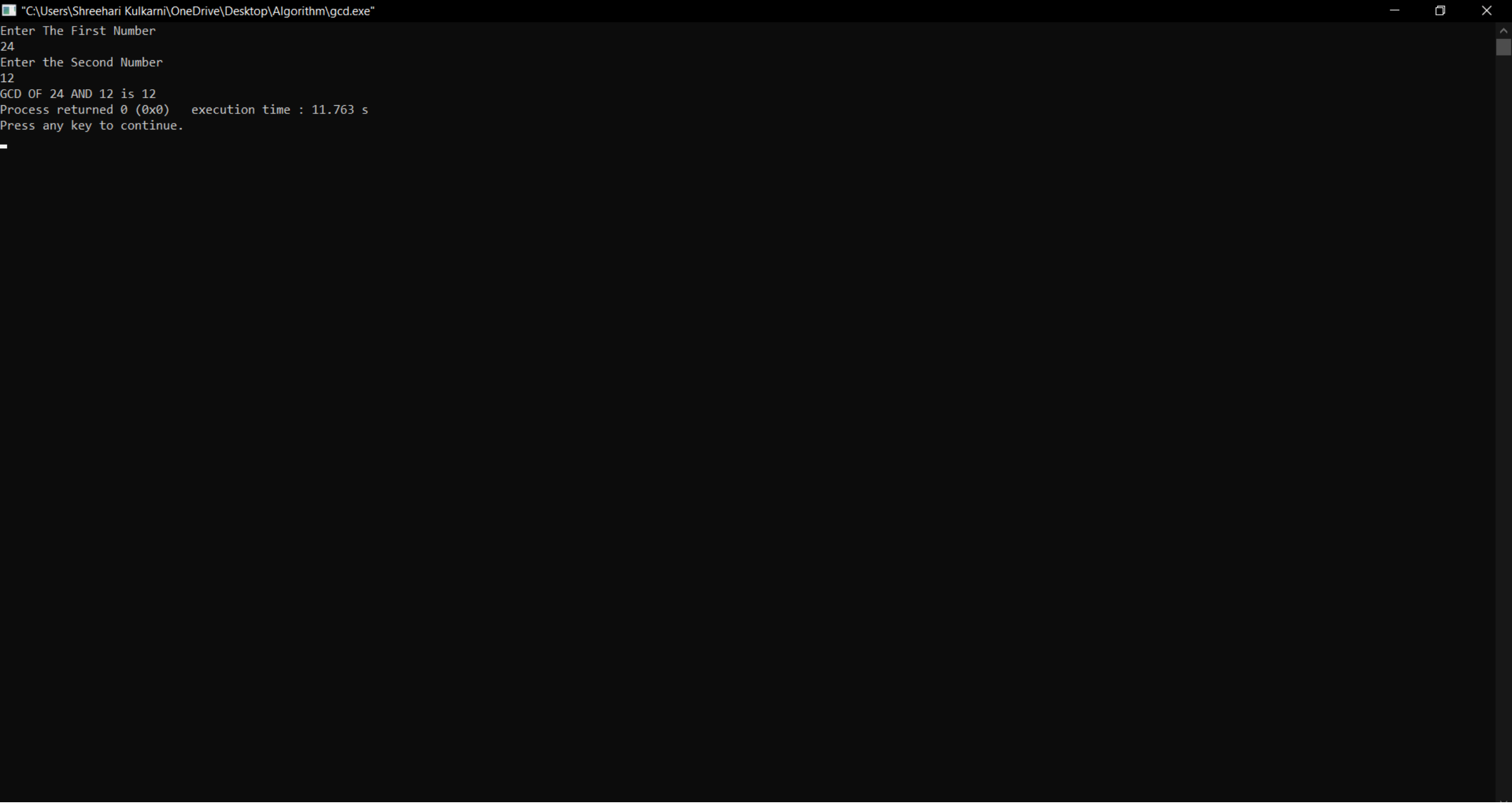
Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c | all_in_one.c

```
15  int gcd(int x,int y)
16  {
17      int rem,temp;
18      if(x>y)
19      {
20          rem=x%y;
21      }
22      else
23      {
24          temp=x;
25          x=y;
26          y=temp;
27          rem=x%y;
28      }
29      if(rem==0)
30      {
31          return y;
32      }
33      else
34      {
35
36          while(rem!=0)
37          {
38              x=y;
39              y=rem;
40              rem=x%y;
41          }
42          return y;
43      }
44
45  }
46
47
```

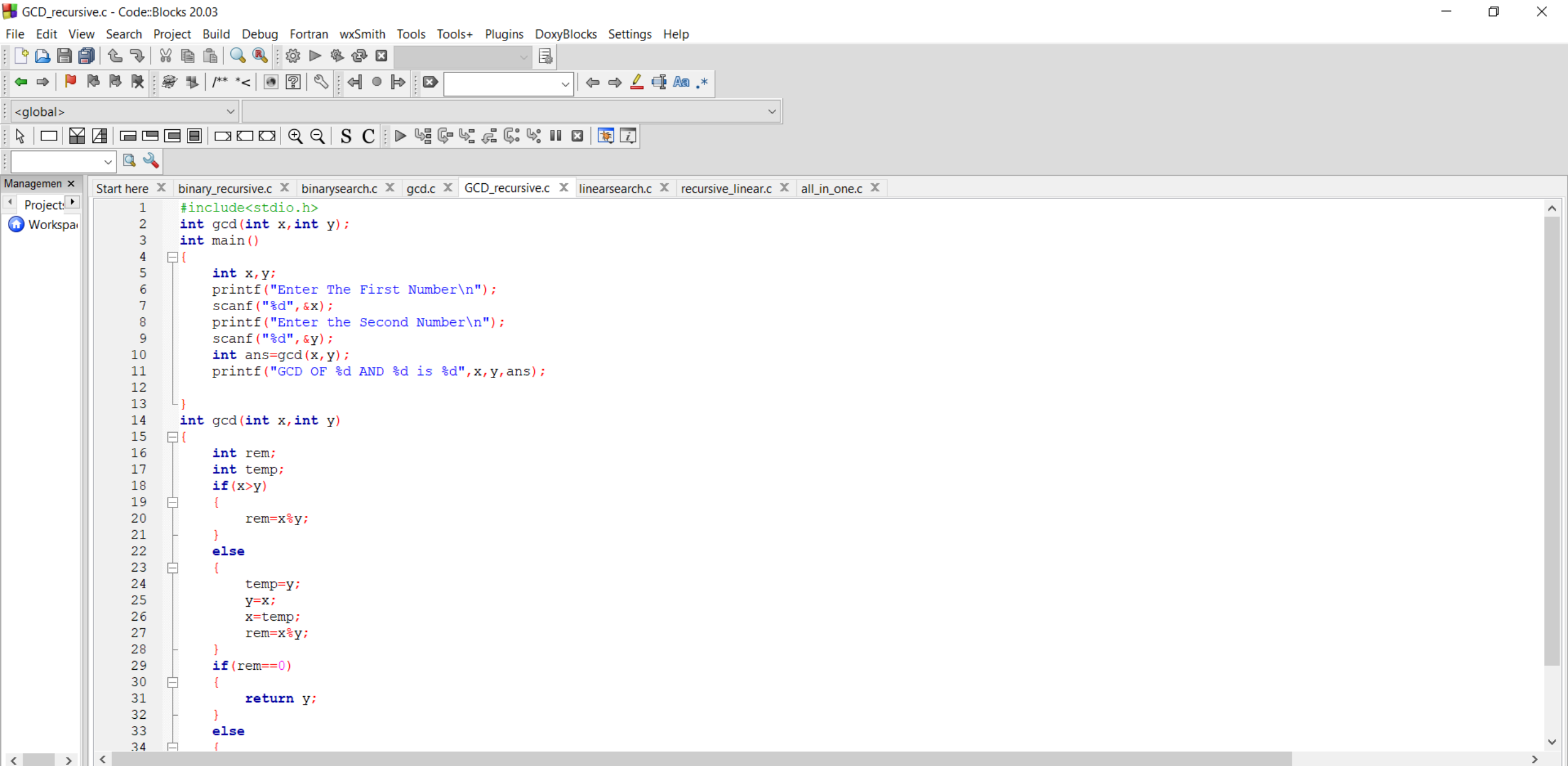
Logs & others

Code::Blocks | Search results | Cccc | Build log | Build messages | CppCheck/Vera++ | CppCheck/Vera++ messages | Cscope | Debugger | DoxyBlocks | Fortran info | Closed files list | Thread search

C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\gcd.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 7, Col 13, Pos 108 Insert Read/Write default


"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\gcd.exe"
Enter The First Number
24
Enter the Second Number
12
GCD OF 24 AND 12 is 12
Process returned 0 (0x0)   execution time : 11.763 s
Press any key to continue.

GCD Recursive



GCD_recursive.c - Code::Blocks 20.03

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<global>

Managemen

Project

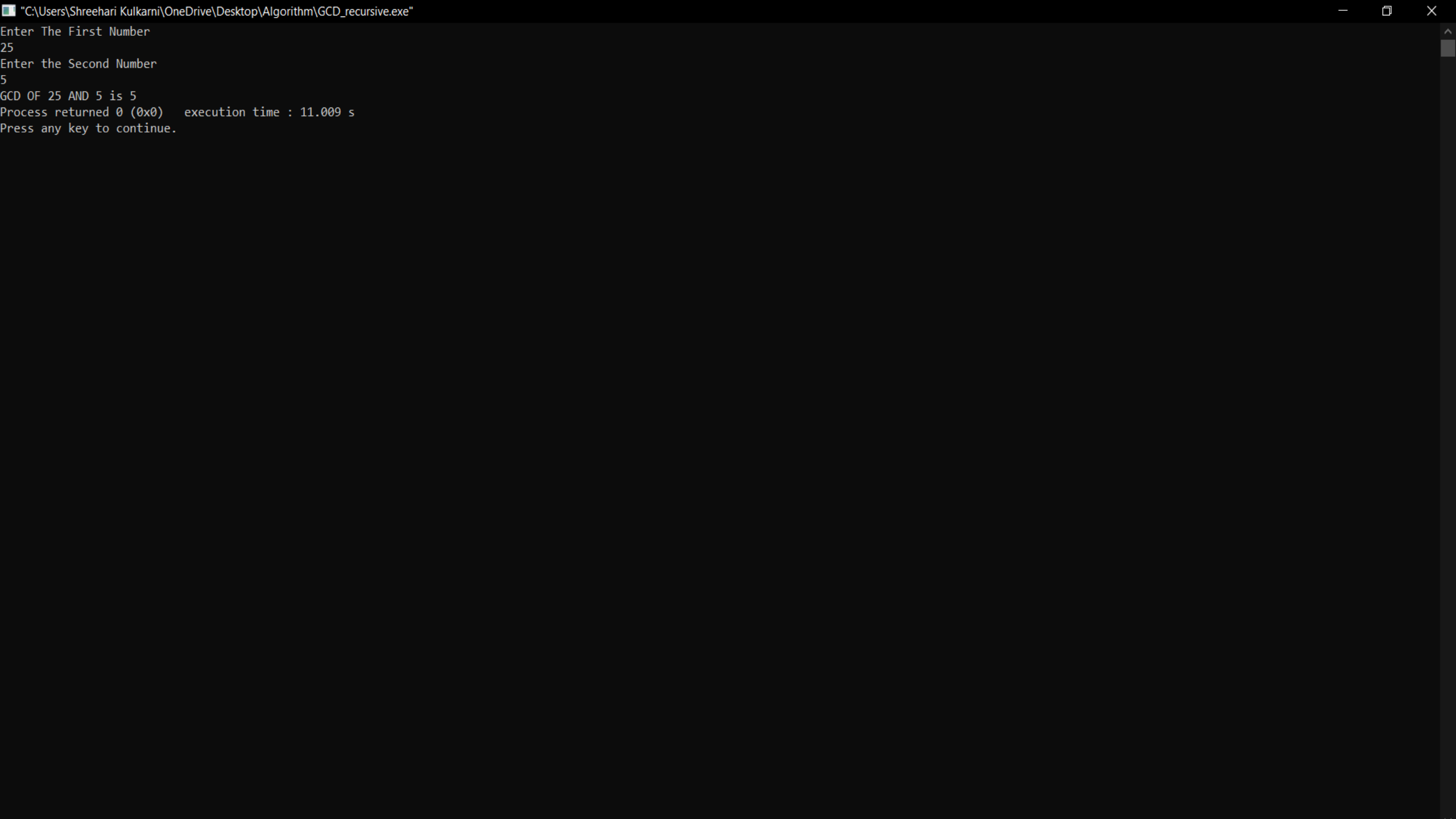
Workspa

Start here | binary_recursive.c | binarysearch.c | gcd.c | GCD_recursive.c | linearsearch.c | recursive_linear.c | all_in_one.c

```
6       printf("Enter The First Number\n");
7       scanf("%d",&x);
8       printf("Enter the Second Number\n");
9       scanf("%d",&y);
10      int ans=gcd(x,y);
11      printf("GCD OF %d AND %d is %d",x,y,ans);
12
13  }
14  int gcd(int x,int y)
15  {
16      int rem;
17      int temp;
18      if(x>y)
19      {
20          rem=x%y;
21      }
22      else
23      {
24          temp=y;
25          y=x;
26          x=temp;
27          rem=x%y;
28      }
29      if(rem==0)
30      {
31          return y;
32      }
33      else
34      {
35          return gcd(y,rem);
36      }
37  }
38
```

Logs & others

Code::Blocks | Search results | Cccc | Build log | Build messages | CppCheck/Vera++ | CppCheck/Vera++ messages | Cscope | Debugger | DoxyBlocks | Fortran info | Closed files list | Thread search


"C:\Users\Shreehari Kulkarni\OneDrive\Desktop\Algorithm\GCD_recursive.exe"
Enter The First Number
25
Enter the Second Number
5
GCD OF 25 AND 5 is 5
Process returned 0 (0x0)   execution time : 11.009 s
Press any key to continue.