Green University of Bangladesh
Department of Computer Science and Engineering(CSE)

Faculty of Sciences and Engineering

Semester: (Spring, Year:2021), B.Sc. in CSE (Day)

LAB REPORT NO 01

Course Title: Algorithms Lab

Course Code: 206 Section: DB

Lab Experiment Name: 1. Linear Search
2. Binary Search
3. Bubble Sort

Student Details

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Lab Date : 22/06/2021

Submission Date : 22/06/2021

Course Teacher's Name : Monoshi Kumar Roy

[For Teachers use only: Don't Write Anything inside this box]

Lab Report Status Marks: ……

Signature:……

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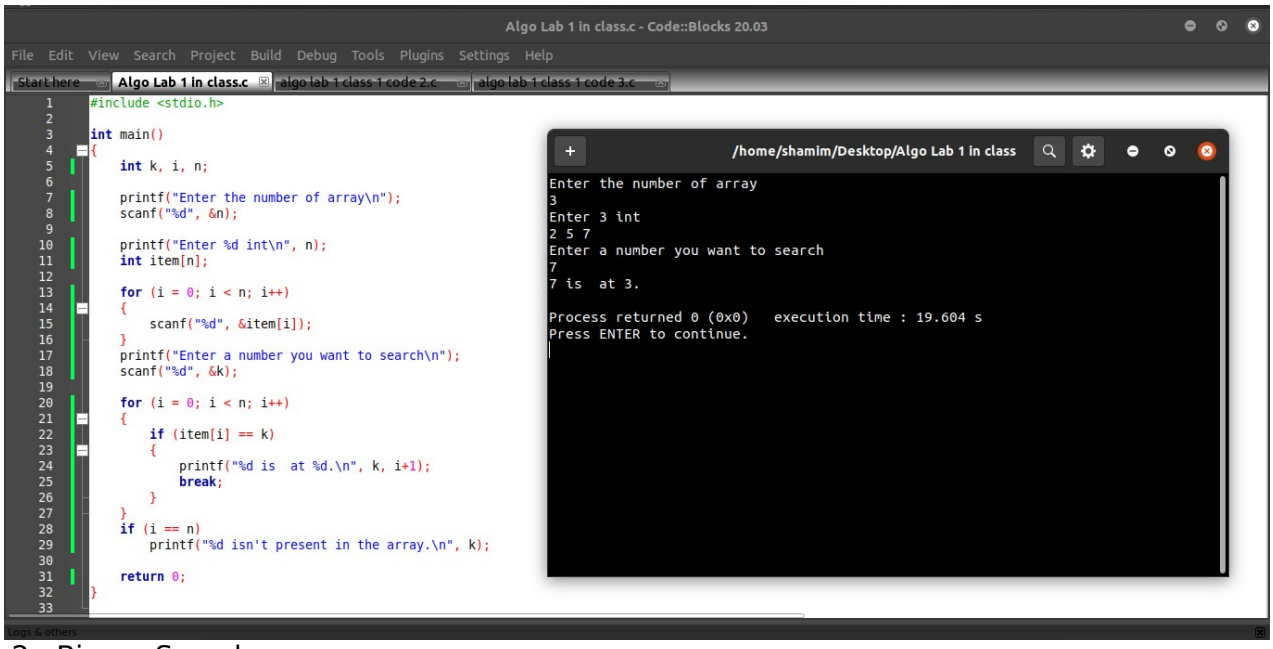
1.Linear Search

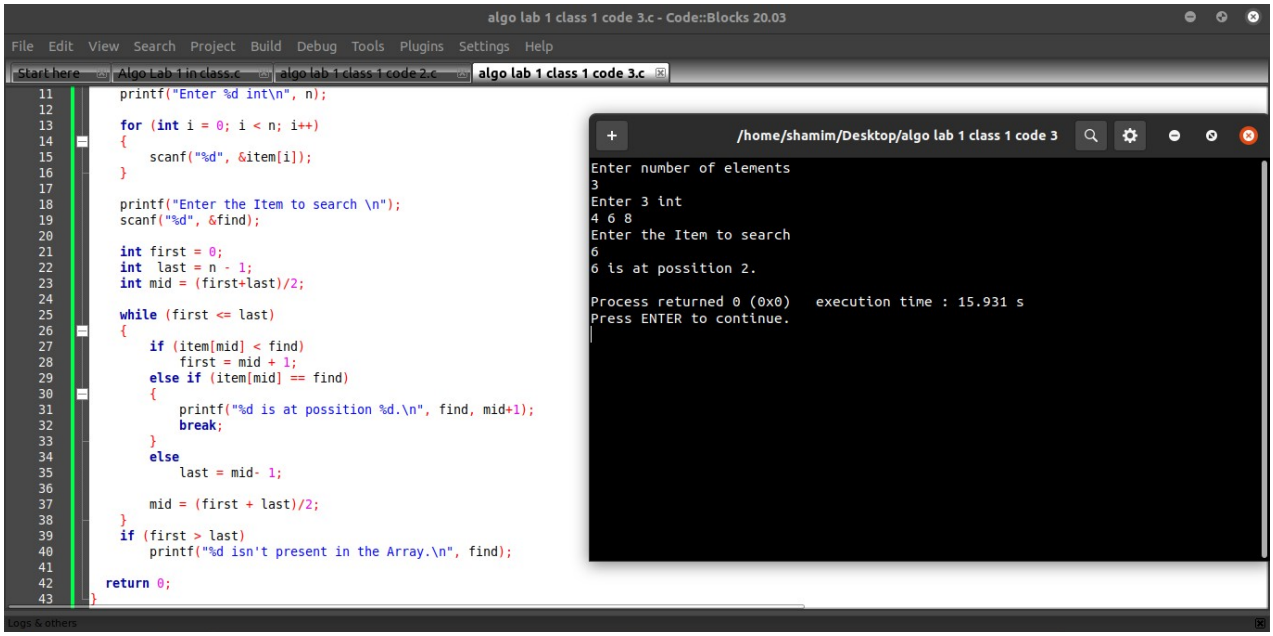
```
#include <stdio.h>

int main()
{
   int k, i, n;

   printf("Enter the number of array\n");
   scanf("%d", &n);

   printf("Enter %d int\n", n);
   int item[n];

   for (i = 0; i < n; i++)
   {
      scanf("%d", &item[i]);
   }
   printf("Enter a number you want to search\n");
   scanf("%d", &k);

   for (i = 0; i < n; i++)
   {
      if (item[i] == k)
      {
         printf("%d is  at %d.\n", k, i+1);
         break;
      }
   }
   if (i == n)
      printf("%d isn't present in the array.\n", k);

   return 0;
}
```



2. Binary Search

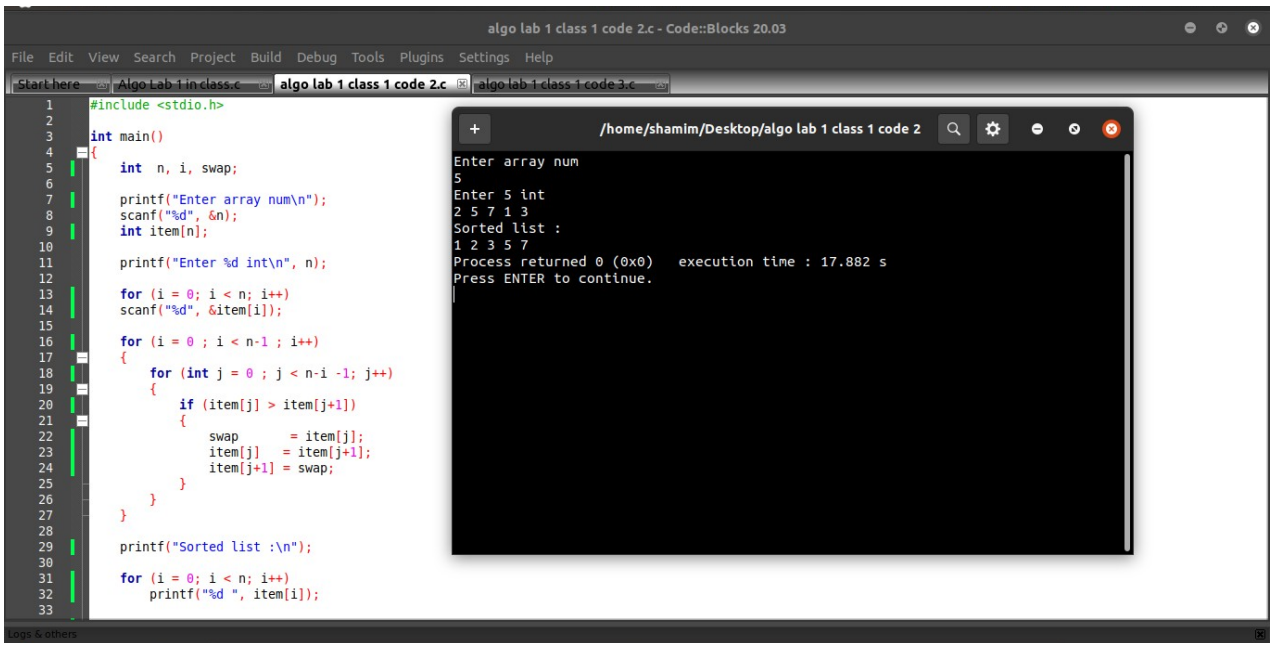
```
#include <stdio.h>
```

```
int main()
{
   int  n, find;
   printf("Enter number of elements\n");
   scanf("%d", &n);

   int item[n];

   printf("Enter %d int\n", n);

   for (int i = 0; i < n; i++)
   {
      scanf("%d", &item[i]);
   }

   printf("Enter the Item to search \n");
   scanf("%d", &find);

   int first = 0;
   int  last = n - 1;
   int mid = (first+last)/2;

   while (first <= last)
   {
      if (item[mid] < find)
         first = mid + 1;
      else if (item[mid] == find)
      {
         printf("%d is at possition %d.\n", find, mid+1);
         break;
      }
      else
         last = mid- 1;

      mid = (first + last)/2;
   }
   if (first > last)
      printf("%d isn't present in the Array.\n", find);

  return 0;
}
```



3. Bubble Sort

```
#include <stdio.h>

int main()
{
   int  n, i, swap;

   printf("Enter array num\n");
   scanf("%d", &n);
   int item[n];

   printf("Enter %d int\n", n);

   for (i = 0; i < n; i++)
   scanf("%d", &item[i]);

   for (i = 0 ; i < n-1 ; i++)
   {
      for (int j = 0 ; j < n-i -1; j++)
      {
         if (item[j] > item[j+1])
         {
            swap       = item[j];
            item[j]   = item[j+1];
            item[j+1] = swap;
         }
      }
   }

   printf("Sorted list :\n");

   for (i = 0; i < n; i++)
      printf("%d ", item[i]);

   return 0;
}
```


algo lab 1 class 1 code 2.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Tools Plugins Settings Help
Start here
Algo Lab 1 in class.c
algo lab 1 class 1 code 2.c
algo lab 1 class 1 code 3.c
#include <stdio.h>
int main()
{
int n, i, swap;
printf("Enter array num\n");
scanf("%d", &n);
int item[n];
printf("Enter %d int\n", n);
for (i = 0; i < n; i++)
scanf("%d", &item[i]);
for (i = 0 ; i < n-1 ; i++)
{
for (int j = 0 ; j < n-i -1; j++)
{
if (item[j] > item[j+1])
{
swap = item[j];
item[j] = item[j+1];
item[j+1] = swap;
}
}
}
printf("Sorted list :\n");
for (i = 0; i < n; i++)
printf("%d ", item[i]);
/home/shamim/Desktop/algo lab 1 class 1 code 2
Enter array num
5
Enter 5 int
2 5 7 1 3
Sorted list :
1 2 3 5 7
Process returned 0 (0x0) execution time : 17.882 s
Press ENTER to continue.
Logs & others