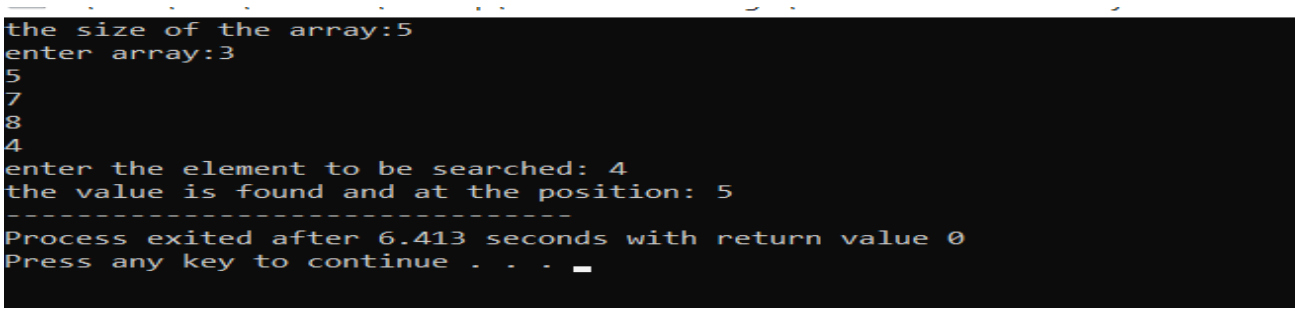
Date:04-07-2022

Program 2: Write A Program to implement Linear Search.

Code:

```
#include<stdio.h>
int main()
{
   int size,a[20],i,value;
   printf("the size of the array:");
   scanf("%d",&size);
   printf("enter array:");
   for(i=0;i<size;i++)
   {
      scanf("%d",&a[i]);
   }
   printf("enter the element to be searched: ");
   scanf("%d",&value);
   for(i=0;i<size;i++)
   {
      if(a[i]==value)
      {
         printf("the value is found and at the position: %d",i+1);
      }
   }
   return 0;
}
```

Output:



Program 3: Write A Program to implement Binary Search.

Code:

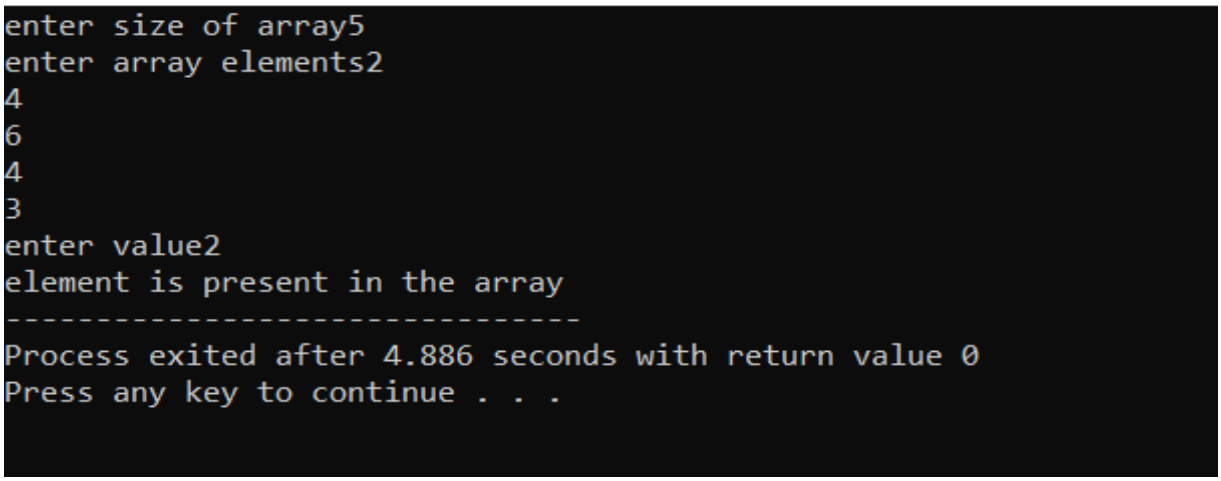
```
#include <stdio.h>
int main()
{
   int a[20],ub,lb=0,mid=(lb+ub)/2,value,i;
   printf("enter size of array");
   scanf("%d",&ub);
   printf("enter array elements");
   for(i=0;i<ub;i++)
   {
     scanf("%d",&a[i]);
   }
   printf("enter value");
   scanf("%d",&value);

   while (lb<=ub)
   {
      if (a[mid]==value)
      {
         printf("element is present in the array");
         break;
      }
      else if (a[mid]>value)
      {
         ub=mid-1;
      }
      else
      {
         lb=mid+1;
```

```
    }
    mid=(lb+ub)/2;
  }

  return 0;
}
```

Output:



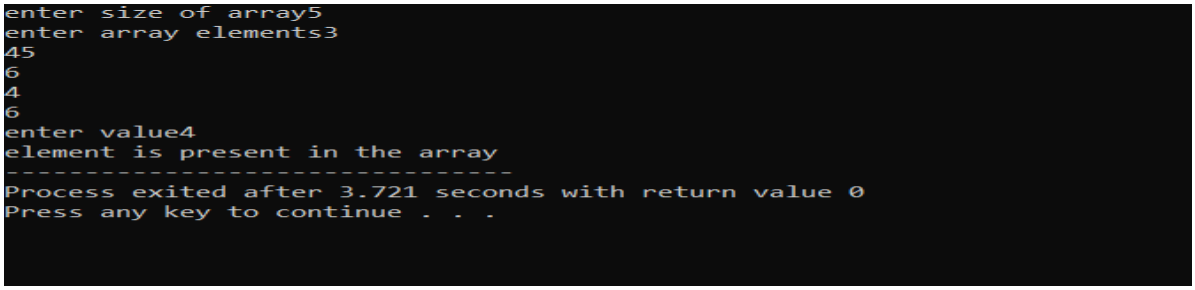
Program 3: Write A Program to implement Binary Search.

Code:

```
#include <stdio.h>
int main()
{
   int a[20],ub,lb=0,mid=(lb+ub)/2,value,size,temp,i,j;
   printf("enter size of array:");
   scanf("%d",&size);
   printf("enter array elements:");
   scanf("%d",&a[i]);
   for(i=1;i<size;i++)
   {
      scanf("%d",&a[i]);
   }
   for(i=0;i<size-1;i++)
   {
       for(j=0;j<size-1;j++)
       {
          if(a[j]>a[j+1])
          {
             temp=a[j];
             a[j]=a[j+1];
             a[j+1]=temp;
          }
       }
   }
   printf("the sorted list is:");
   for(i=0;i<size;i++)
   {
      printf("%d\n",a[i]);
```

```
    }
    printf("enter the element to be searched: ");
    scanf("%d",&value);
    ub=size;
    while (lb<=ub)
    {
        if (a[mid]>value)
        {
            ub=mid-1;
        }
        else
        {
            lb=mid+1;
        }
        mid=(lb+ub)/2;
    }
    if (a[mid]=value)
    {
        printf("element is present in the array at the position:%d",mid);
    }
    else
    {
        printf("the element is not found");
    }
    return 0;
}
```

Output:


enter size of array5
enter array elements3
45
6
4
6
enter value4
element is present in the array

Process exited after 3.721 seconds with return value 0
Press any key to continue . . .