

```

/*Linear search
Name: Shubham Sarang
ROII NO: 1345
Unit 2 Searching
Program: Linear search
*/
#include<iostream>
using namespace std;
int main()
{
    int i, n, arr[20];
    int target, flag=0;

    cout<<"**Linear Search**"<<endl<<endl;

    cout<<"Enter size of array: ";
    cin>>n;

    cout<<endl;

    cout<<"Enter number of elements: ";

    for(i=0; i<n; i++)
    {
        cin>>arr[i];
    }

    cout<<endl;

    cout<<"Enter element to be searched: ";
    cin>>target;

    //Logic
    for(i=0; i<n; i++)
    {
        if(arr[i] == target)
        {
            flag = 1;
            break;
        }
    }
    if(flag == 1)
    {
        cout<<"Element found at index "<< i;
    }
}

```

```

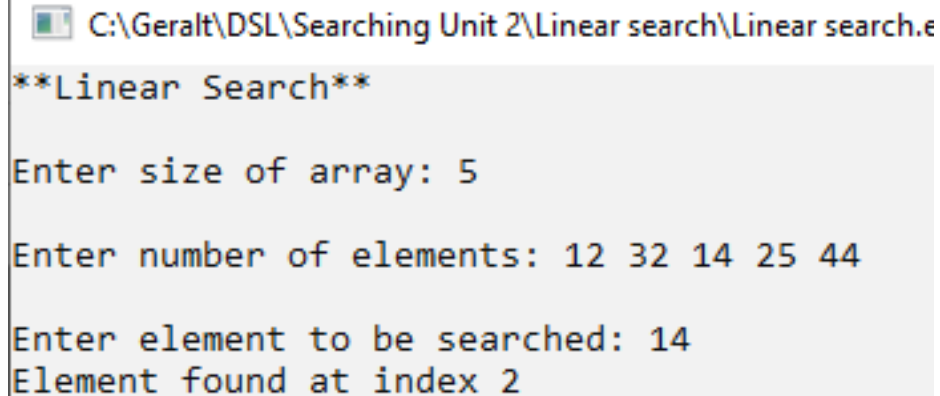
    }
    else
    {
        cout<<"Element not found";
    }

```

```

} //end main

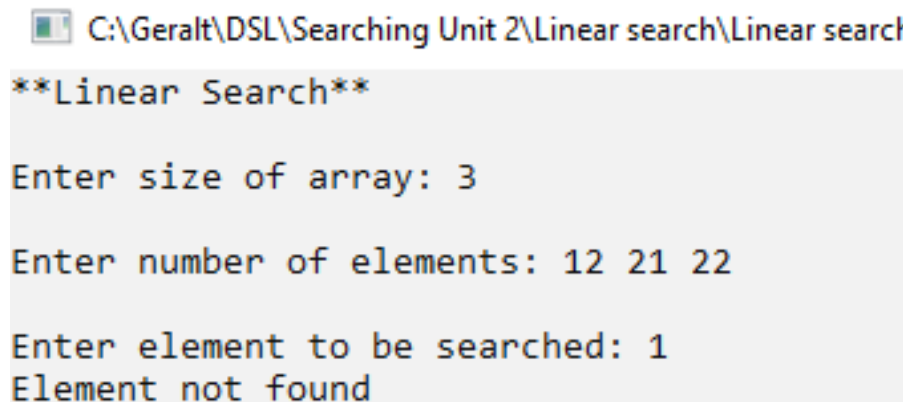
```



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C:\Geralt\DSL\Searching Unit 2\Linear search\Linear search.e
**Linear Search**
Enter size of array: 5
Enter number of elements: 12 32 14 25 44
Enter element to be searched: 14
Element found at index 2

```



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C:\Geralt\DSL\Searching Unit 2\Linear search\Linear search
**Linear Search**
Enter size of array: 3
Enter number of elements: 12 21 22
Enter element to be searched: 1
Element not found

```

```

/*

```

Name: Shubham sarang

Roll no: 1345

Unit 2: Binary search

```

*/

```

```

#include<iostream>

```

```

using namespace std;

```

```

int main()

```

```

{

```

```

    int n, i, flag=0, arr[20];

```

```

    int first, last, mid, target;

```

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    cout<<"***Binary Search***"<<endl;

```

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    cout<<"Enter size of array: ";

```

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    cin>>n;

```

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    cout<<endl;

```

```
cout<<"Enter elements of an array: ";
for(i=0;i<n;i++)
{
    cin>>arr[i];
}

cout<<endl;

cout<<"Enter target: ";
cin>>target;


//logic
first= 0;
last= n-1;

while(first <= last)
{
    mid = (first + last)/2;
    if(target<arr[mid])
    {
        last = mid - 1;
    }
    else if(target > arr[mid])
    {
        first = mid + 1;
    }
    else
    {
        flag = 1;
        break;
    }
}

cout<<endl;

if(flag==0)
{
    cout<<"Target not found";
}
else
{
    cout<<"Target found at index "<<mid;
}
```

```
}//end main
```

 C:\Geralt\DSL\Searching Unit 2\Binary search\Binary sea

```
***Binary Search***  
Enter size of array: 7  
  
Enter elements of an array: 2 4 6 8 22 40  
  
Enter target: 60  
  
Target found at index 6
```

 C:\Geralt\DSL\Searching Unit 2\Binary search\Binary sea

```
***Binary Search***  
Enter size of array: 7  
  
Enter elements of an array: 2 4 6 8 22 40  
  
Enter target: 55  
  
Target not found
```