Linear Search

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Linear Search

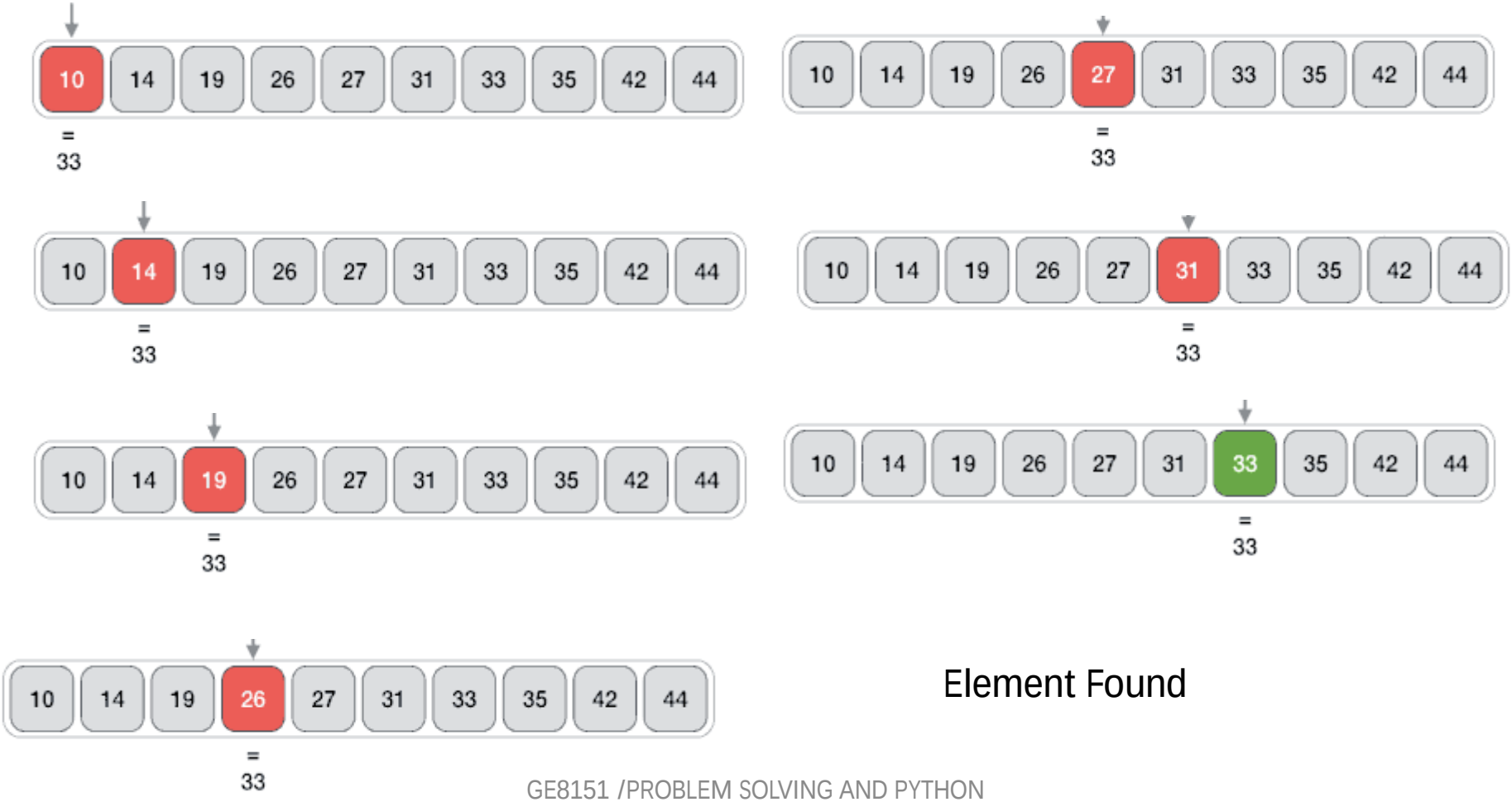
- Search is a process of finding a value in a list of values

Linear Search Algorithm

- Linear search algorithm finds given element in a list of elements with **O(n)** time complexity where **n** is total number of elements in the list
- Search process starts comparing of search element with the first element in the list
- If both are matching then results with element found otherwise search element is compared with next element in the list

Otherwise, repeat the same with the next element in the list until search element is compared with last element in the list

Example1:



Element Found

- Example2:

An array with 10 elements, search for “9”:

56	3	249	518	7	26	94	651	23	9
56	**3**	249	518	7	26	94	651	23	9
56	3	**249**	518	7	26	94	651	23	9
56	3	249	**518**	7	26	94	651	23	9
56	3	249	518	**7**	26	94	651	23	9
56	3	249	518	7	**26**	94	651	23	9
56	3	249	518	7	26	**94**	651	23	9
56	3	249	518	7	26	94	**651**	23	9
56	3	249	518	7	26	94	651	**23**	9
56	3	249	518	7	26	94	651	23	**9**

Program

```
size=int(input("enter  the number of elements:"))
lst=[]
flag=False
print("Enter the elements:")
for i in range (0, size):
   lst.append(int(input()))
print("the elements of the list are:", lst)
ele= int(input("enter the element to be searched:"))
for  i  in range (0, size):
   if ele == lst[i]:
      flag = True
      break
if flag ==  True:
   print("The element {0} was found at the position{1}".format(ele, i+1))
elif  flag == False:
   print("The element {} is not found".format(ele))
```

Output

Output 1:
enter the number of elements:5
Enter the elements:
2
4
65
1
6
('the elements of the list are:', [2, 4, 65, 1, 6])
enter the element to be searched:6
The element 6 was found at the position5

Thank You