

## Sequential Search

0 — — — — — ✓ → True/False  
→ Index

### unordered sequential search

54	25	73	12	15	2	30
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Key = 45

Data[0] == Key?

Data[1] == Key?

### unordered sequential search

54	25	73	12	15	2	30
----	----	----	----	----	---	----

Key = 45

Data[0] == Key?

Data[1] == Key?

Data[2]

[3]

⋮

[6] == Key? → False

### unordered sequential search

54	25	73	12	15	2	30
----	----	----	----	----	---	----

Key = 45

Data[0] == Key?

Data[1] == Key?

Data[2]

[3]

⋮

[6] == Key? →

Key = 73

Data[0] == Key?

[1]

[2] == 73

## sequential Search

```
In [1]: def unOrderedSearch(listData, key):  
        found=False  
        i=0  
        while i<len(listData) and not(found):  
            if listData[i]==key:  
                ind=i  
                found=True  
            i+=1  
        if found:  
            return ind  
        else:  
            return False
```

```
In [3]: a=[54,25,73,12,15,2,30]  
        unOrderedSearch(a,73)
```

Out[3]: 2

```
In [2]: a=[54,25,73,12,15,2,30]  
        unOrderedSearch(a,45)
```

Out[2]: False

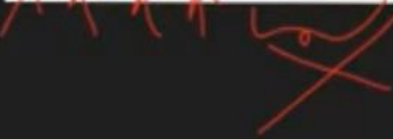
```
In [4]: a=[54,25,73,12,15,2,30,73]  
        unOrderedSearch(a,73)
```

Out[4]: 2

??

ordered sequential search

2	12	15	25	30	54	73
---	----	----	----	----	----	----



Key = 24 → False

ordered sequential search

2	12	15	25	30	54	73
---	----	----	----	----	----	----



Key = 24 → False

Key = 12 → [1]

```
In [14]: def orderedSearch(listData, key):  
        found=False  
        i=0  
        stop=False  
        count=0  
        while not(stop) and not(found):  
            if i==len(listData) or listData[i]>key:  
                stop=True  
            elif listData[i]==key:  
                ind=i  
                found=True  
            i+=1  
            count+=1  
        print('counter=', count)  
        if found:  
            return ind  
        else:  
            return False
```

```
In [17]: a=[2, 12, 15, 25, 30, 54, 73]  
        orderedSearch(a, 0)
```

counter= 1

Out[17]: False

```
In [16]: a=[54, 25, 73, 12, 15, 2, 30, 73]  
        unOrderedSearch(a, 0)
```

counter= 8

```
In [11]: a=[54, 25, 73, 12, 15, 2, 30, 73]  
        unOrderedSearch(a, 54)
```

counter= 1

Out[11]: 0

```
In [15]: a=[2, 12, 15, 25, 30, 54, 73]  
        orderedSearch(a, 54)
```

counter= 6

Out[15]: 5