

COMP10020

Introduction to Programming II

Simple Searching

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LINEAR SEARCH

Linear Search Pseudocode

```
linearSearch( A : list of sortable items,  
             item: the item to be found)
```

```
n = len(A)
```

```
item_index = -1
```

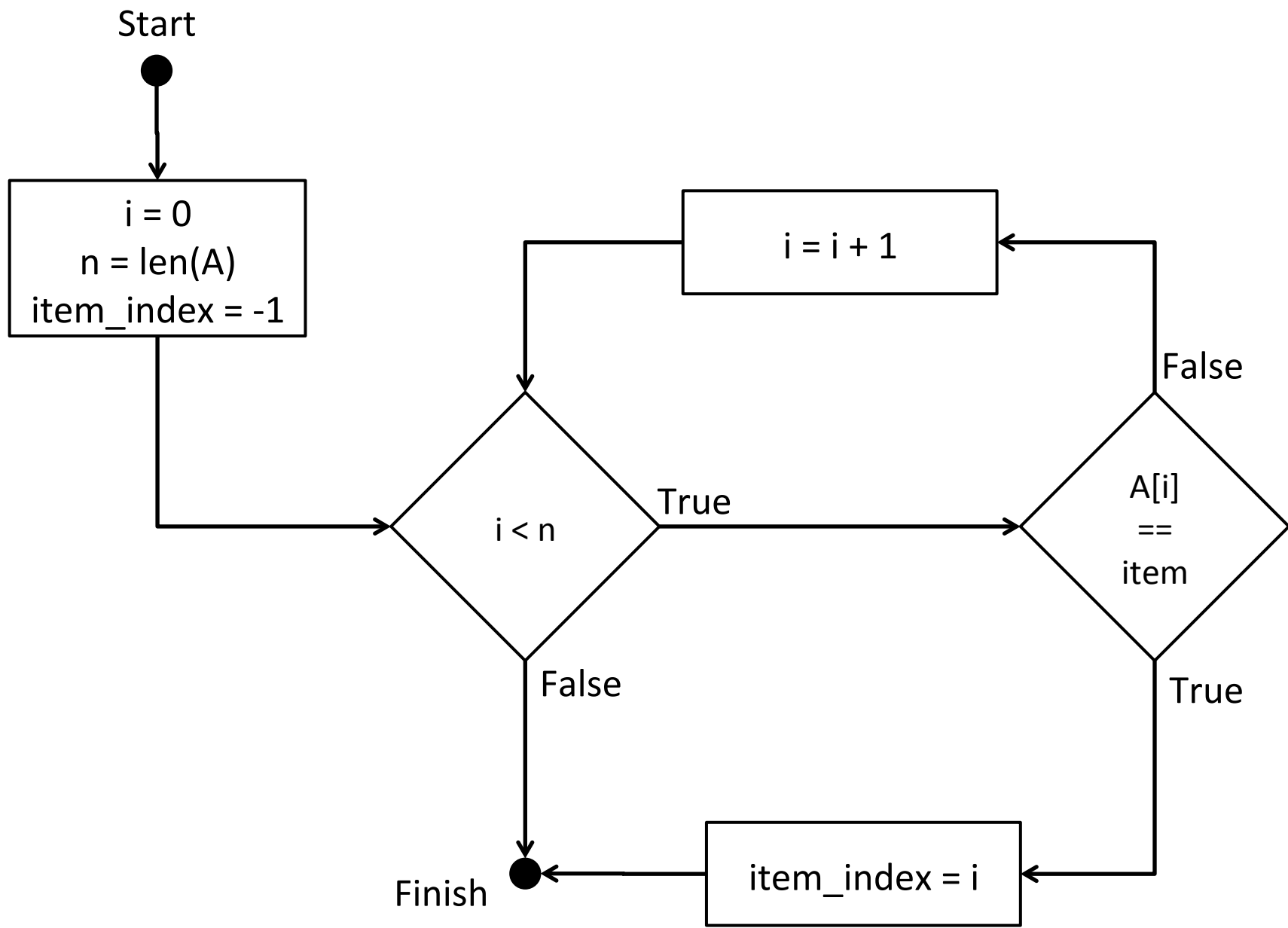
```
for i in 0 to n - 1:
```

```
if(A[i] == item):
```

```
item_index = i
```

break

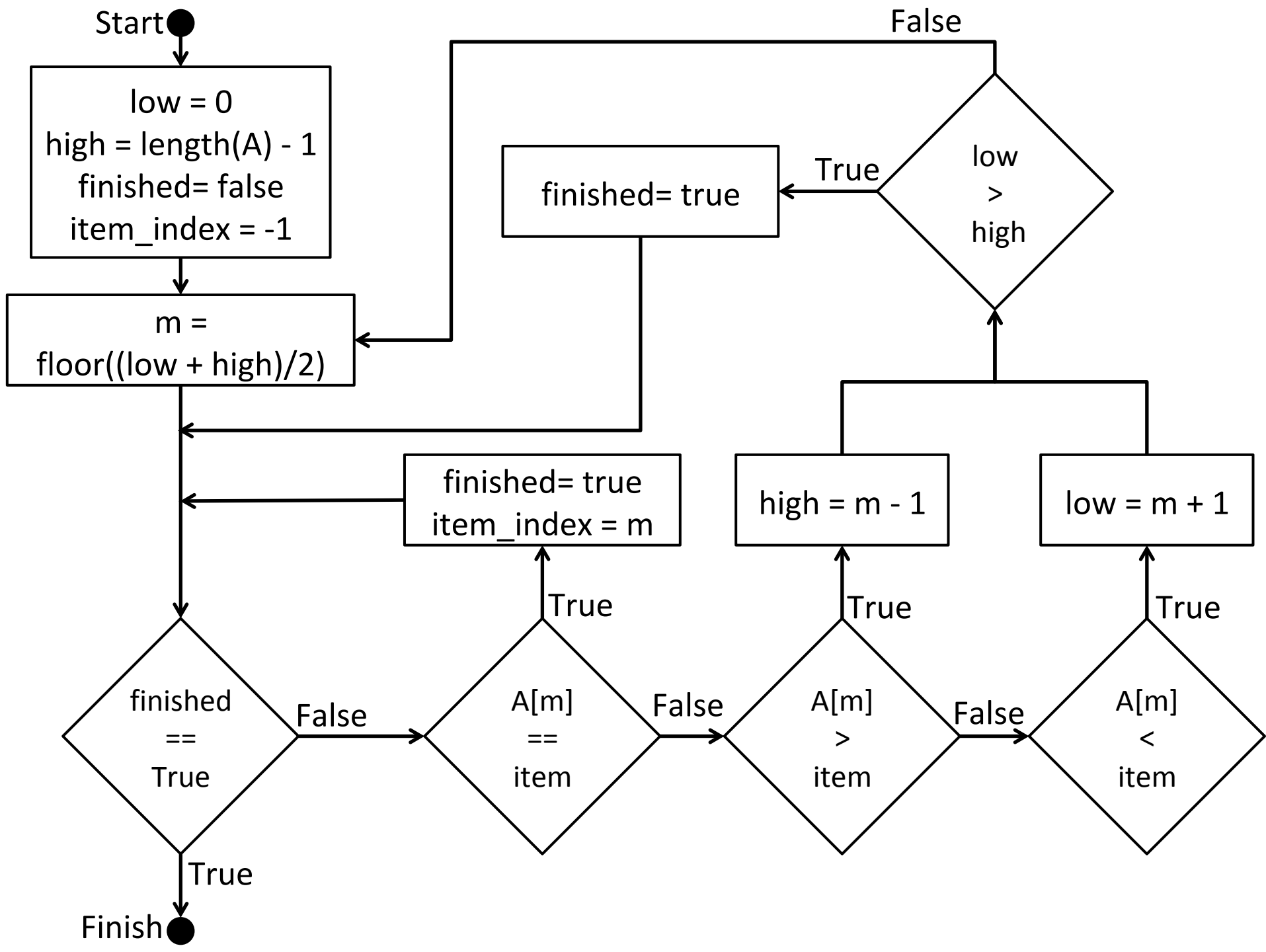
```
return item_index
```

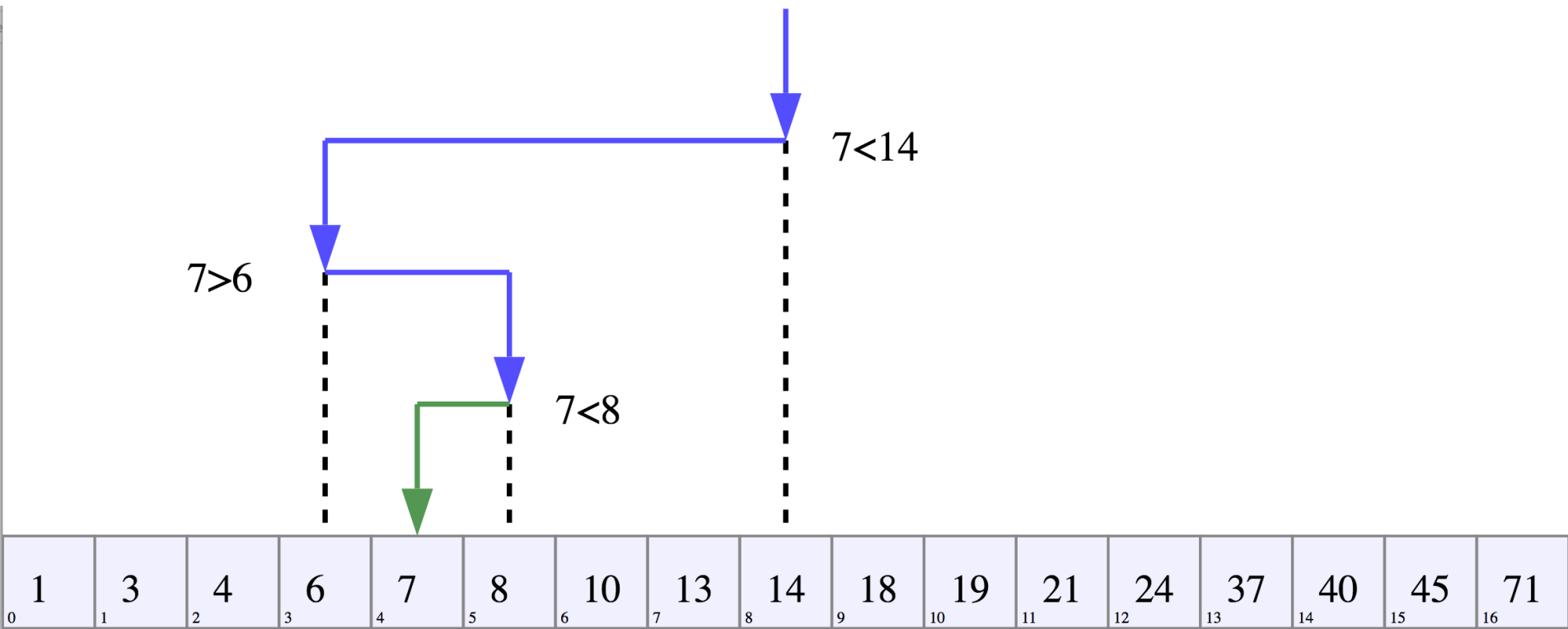


BINARY SEARCH

Binary Search Pseudocode

```
binarySearch( A : list of sortable items,  
              item: the item to be found)  
  
    low = 0                      high = length(A) - 1  
    finished= false              item_index = -1  
    while not finished:  
        m = floor( (low + high) / 2 )  
        if A[m] == item:  
            finished= true  
            item_index = m  
        else if A[m] > item:  
            high = m - 1  
        else if A[m] < item:  
            low = m + 1  
    if low < high  
        finished = True
```





SUMMARY

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Sorting algorithms are a great way to start thinking about moving from simply **writing code** to **solving problems with code**