

worst-case runtime $O(n^2)$

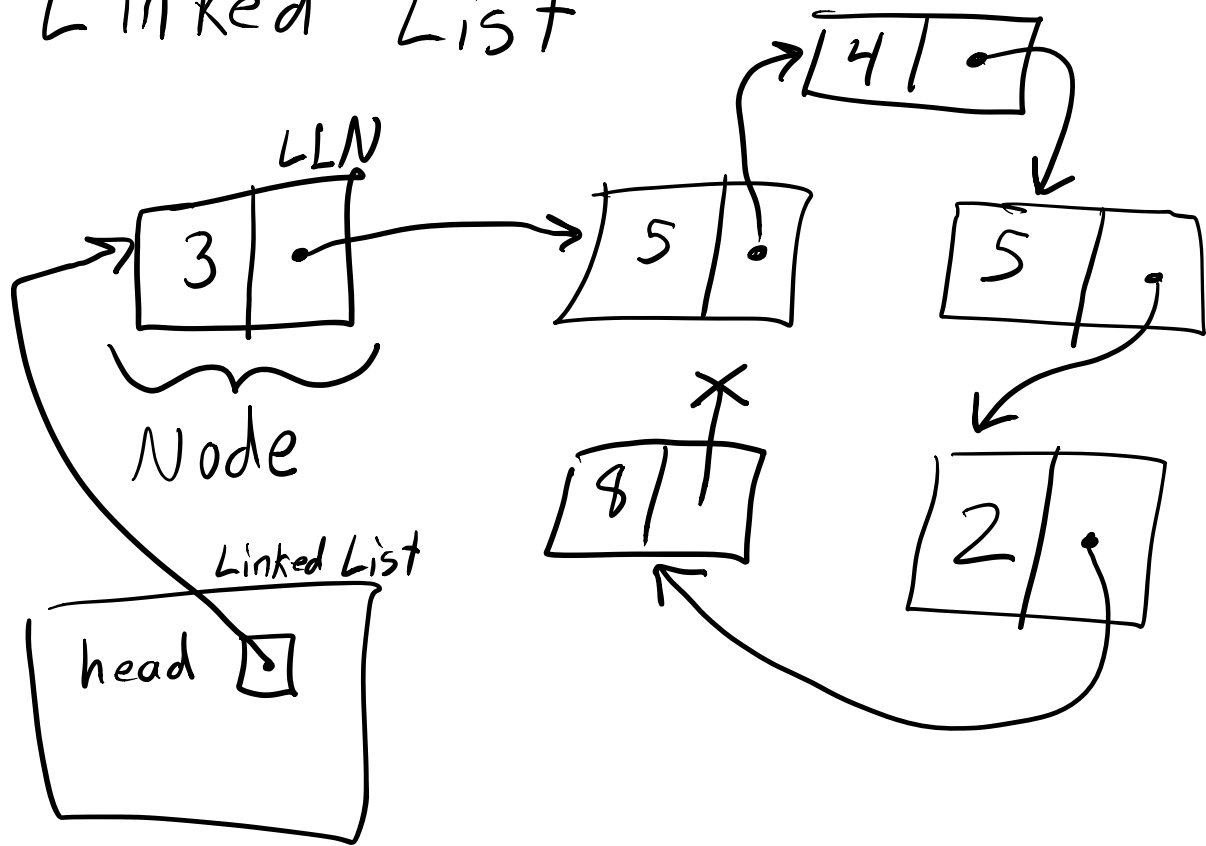
expected worst-case runtime $O(n \log n)$

List :

- get item at index
 - set item at index
 - get size
 - insert item
 - remove item
 - ...
- check index
-

Abstract Data Type ADT

Linked List



Method `getSize()`:

```
if (head is null):  
    return 0
```

```
len = 1
```

```
node_ptr = head
```

```
while (!(node_ptr -> next == null_ptr))
```

```
    node_ptr = node_ptr -> next
```

```
    len ++
```

```
end while  
return len
```

Invariant:

this->size always stores
the number of nodes in this list