

Lecture 8: lists and searching

Predicting 1

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Let `l = list('sub pop')`. What does `l` equal after the following operations?

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l.insert(3, '*')
l[len(l)-2] = 'u'
l.append('!')
l.append(l.pop())
```

Predicting l

Let `l = list(range(10))`. What does `l` equal after the following operations?

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del l[0]
l.remove(1)
```

Let `l = list('sub pop')`. What does `l` equal after the following operations?

```
l.insert(3, '*')      ['s', 'u', 'b', '*', ' ',
l[len(l)-2] = 'u'     'p', 'u', 'p', '!']
l.append('!')
l.append(l.pop())
```

linear search

```
l = ["The Strokes", "Bon Iver", "Arcade Fire",  
     "The Black Keys", "Pixies", "The White Stripes",  
     "Neutral Milk Hotel", "The National", "Yo La Tengo"]
```

```
1 def find_startswith(lst,searchstr):  
2     for s in lst:  
3         if s.startswith(searchstr):  
4             return s  
5     return None
```

binary search

```
l = ['Arcade Fire', 'Bon Iver', 'Neutral Milk Hotel',  
     'Pixies', 'The Black Keys', 'The National',  
     'The Strokes', 'The White Stripes', 'Yo La Tengo']
```

```
1 def find_startswith(lst, searchstr):  
2     low = 0  
3     high = len(lst)-1  
4     while (low <= high):  
5         mid = (high + low) // 2  
6         if lst[mid].startswith(searchstr):  
7             return lst[mid]  
8         elif lst[mid] < searchstr:  
9             low = mid+1  
10        else:  
11            high = mid-1  
12        return None
```