Lecture 7: lists and searching

Predicting l

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

```
l.append(11)
del l[0]
l.remove(1)
```

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

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