02.06-lists

February 21, 2020

1

Python
    [] ,

```
In [5]: l = [1, 2.0, 'hello']
        print(l)

[1, 2.0, 'hello']
```

    [] list()

```
In [6]: empty_list = []
        empty_list

Out[6]: []

In [7]: empty_list = list()
        empty_list

Out[7]: []
```

1.1

1.1.1

 len

```
In [8]: len(l)

Out[8]: 3
```

1.1.2

```
In [9]: a = [1, 2, 3]
        b = [3.2, 'hello']
        a + b

Out[9]: [1, 2, 3, 3.2, 'hello']
```

```
In [10]: l * 2

Out[10]: [1, 2.0, 'hello', 1, 2.0, 'hello']
```

1.1.3

```
In [11]: a = [10, 11, 12, 13, 14]
         a[0]

Out[11]: 10
```

```
In [12]: a[-1]

Out[12]: 14
```

```
In [13]: a[2:-1]

Out[13]: [12, 13]
```

Python

```
In [15]: s = "hello world"
         #  h
         s[0] = 'H'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)

<ipython-input-15-53d5e2ea1490> in <module>
```

```
      1 s = "hello world"
      2 #  h
----> 3 s[0] = 'H'
```

```
   TypeError: 'str' object does not support item assignment
```

In [17]: a = [10, 11, 12, 13, 14]
         a[0] = 100
         print(a)

[100, 11, 12, 13, 14]

23

In [18]: a[1:3] = [1, 2]
         a

Out[18]: [100, 1, 2, 13, 14]

1 **Python** [11,12] [1,2,3,4]

In [20]: a = [10, 11, 12, 13, 14]
         a[1:3] = [1, 2, 3, 4]
         print(a)

[10, 1, 2, 3, 4, 13, 14]

In [24]: a = [10, 1, 2, 11, 12]
         print(a[1:3])
         a[1:3] = []
         print(a)

[1, 2]
[10, 11, 12]

step1

In [25]: a = [10, 11, 12, 13, 14]
         a[::2] = [1, 2, 3]
         a

```
Out[25]: [1, 11, 2, 13, 3]


In [26]: a[::2] = []


         ---------------------------------------------------------------------------

         ValueError                                Traceback (most recent call last)

         <ipython-input-26-29c2e240c5c6> in <module>
     ----> 1 a[::2] = []


         ValueError: attempt to assign sequence of size 0 to extended slice of size 3
```

1.1.4

Python ʹdelʹ

```
In [27]: a = [1002, 'a', 'b', 'c']
         del a[0]
         print(a)

['a', 'b', 'c']
```

    2

```
In [28]: a = [1002, 'a', 'b', 'c']
         del a[1:]
         a

Out[28]: [1002]


In [29]: a = ['a', 1, 'b', 2, 'c']
         del a[::2]
         a

Out[29]: [1, 2]
```

1.1.5

 in not in

```
In [31]: a = [10, 11, 12, 13, 14]
         print(10 in a)
         print(10 not in a)

True
False
```

```
In [34]: s = 'hello world'
         print('he' in s)
         print('world' not in s)

True
False
```

```
In [35]: a = [10, 'eleven', [12, 13]]
         a[2]

Out[35]: [12, 13]
```

   a[2]

```
In [36]: a[2][1]

Out[36]: 13
```

1.2

1.2.1

count l.count(ob) ob

```
In [37]: a = [11, 12, 13, 12, 11]
         a.count(11)

Out[37]: 2
```

index `l.index(ob)` ob ob l

```
In [38]: a.index(12)

Out[38]: 1
```

```
In [40]: a.index(1)
```

```
        ---------------------------------------------------------------------------

        ValueError                                Traceback (most recent call last)

        <ipython-input-40-4cb73546dbcc> in <module>
    ----> 1 a.index(1)


        ValueError: 1 is not in list
```

1.2.2

`l.append(ob)` ob l

```
In [42]: a = [10, 11, 12]
         a.append(11)
         print(a)

[10, 11, 12, 11]
```

append

```
In [43]: a.append([11, 12])
         print(a)

[10, 11, 12, 11, [11, 12]]
```

`l.extend(lst)` lst l l += lst

```
In [45]: a = [10, 11, 12, 11]
         a.extend([1, 2])
         print(a)

[10, 11, 12, 11, 1, 2]
```

```
l.insert(idx, ob) idx ob
```

```
In [47]: a = [10, 11, 12, 13, 11]
         # 3 'a'
         a.insert(3, 'a')
         print(a)
```

```
[10, 11, 12, 'a', 13, 11]
```

```
l.remove(ob) ob ob l
```

```
In [49]: a = [10, 11, 12, 13, 11]
         # 11
         a.remove(11)
         print(a)
```

```
[10, 12, 13, 11]
```

```
l.pop(idx) idx
```

```
In [50]: a = [10, 11, 12, 13, 11]
         a.pop(2)
```

```
Out[50]: 12
```

```
l.sort()
```

```
In [53]: a = [10, 1, 11, 13, 11, 2]
         a.sort()
         print(a)
```

```
[1, 2, 10, 11, 11, 13]
```

```
sorted
```

```
In [54]: a = [10, 1, 11, 13, 11, 2]
         b = sorted(a)
         print(a)
         print(b)
```

```
[10, 1, 11, 13, 11, 2]
[1, 2, 10, 11, 11, 13]
```

```
  l.reverse()

In [56]: a = [1, 2, 3, 4, 5, 6]
         a.reverse()
         print(a)

[6, 5, 4, 3, 2, 1]




In [58]: a = [1, 2, 3, 4, 5, 6]
         b = a[::-1]
         print(a)
         print(b)

[1, 2, 3, 4, 5, 6]
[6, 5, 4, 3, 2, 1]




In [59]: a.sort?
```