02.05-indexing-and-slicing

February 21, 2020

1

1.1

Python `[]`

```
In [1]: s = "hello world"
        s[0]
```

```
Out[1]: 'h'
```

Python `0 0 1 5 4`

```
In [2]: s[4]
```

```
Out[2]: 'o'
```

Python `-2 2`

```
In [3]: s[-2]
```

```
Out[3]: 'l'
```

```
In [4]: s[11]
```

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

        <ipython-input-4-665bb6993e1f> in <module>
    ----> 1 s[11]


        IndexError: string index out of range
```

1.2

```
var[lower:upper:step]
```

lower upper [lower, upper) step 1

```
In [5]: s
Out[5]: 'hello world'
In [6]: s[1:3]
Out[6]: 'el'
```

3-1=2

```
In [7]: s[1:-2]
Out[7]: 'ello wor'
```

1 -2

lowerupperlowerupper

```
In [8]: s[:3]
Out[8]: 'hel'
In [9]: s[-3:]
Out[9]: 'rld'
In [10]: s[:]
Out[10]: 'hello world'

In [11]: s[::2]
Out[11]: 'hlowrd'
```

steplowerupper

```
In [12]: s[::-1]
Out[12]: 'dlrow olleh'
```

upperupperPython

```
In [13]: s[:100]
Out[13]: 'hello world'
```

1.3 “0”

1.3.1 [low, up)

hello el

[low, up)	(low, up]	(lower, upper)	[lower, upper]
[1,3)	(0,2]	(0,3)	[1,2]
up - low	up - low	up - low - 1	up - low + 1

hellohel

[low, up)
[0,3)
up - low

-1[low, up)

1.3.2 0-base

> Just too beautiful to ignore.
> —-Guido van Rossum

- n
  - 0-base[0, n)
  - 1-base[1, n+1)
- i+1i+n
  - 0-base[i, n+i)
  - 1-base[i+1, n+i+1)

1-base+1
Python0-base