02.15-loops

February 21, 2020

1

1.1 while

```
while <condition>:
    <statesments>
```

Python`<statesments><condition>`
01000000

```
In [1]: i = 0
        total = 0
        while i < 1000000:
            total += i
            i += 1
        print (total)
```

499999500000

False while

```
In [2]: plays = set(['Hamlet', 'Macbeth', 'King Lear'])
        while plays:
            play = plays.pop()
            print ('Perform', play)
```

```
Perform Macbeth
Perform King Lear
Perform Hamlet
```

plays plays

1.2 for

```
for <variable> in <sequence>:
    <indented block of code>
```

```
for <sequence>
```

```
In [3]: plays = set(['Hamlet', 'Macbeth', 'King Lear'])
        for play in plays:
            print ('Perform', play)

Perform Macbeth
Perform King Lear
Perform Hamlet
```

```
for plays
for
```

```
In [4]: total = 0
        for i in range(100000):
            total += i
        print (total)

4999950000
```

1.3 continue

```
continue
```

```
In [5]: values = [7, 6, 4, 7, 19, 2, 1]
        for i in values:
            if i % 2 != 0:
                #
                continue
            print (i/2)

3.0
2.0
1.0
```

1.4 break

```
break
```

```
In [6]: command_list = ['start',
                        'process',
                        'process',
                        'process',
                        'stop',
                        'start',
                        'process',
                        'stop']
        while command_list:
            command = command_list.pop(0)
            if command == 'stop':
                break
            print(command)
```

```
start
process
process
process
```

```
    'stop'
```

1.5   else

`if while for else break`

- else
- break else

```
In [7]: values = [7, 6, 4, 7, 19, 2, 1]
        for x in values:
            if x <= 10:
                print ('Found:', x)
                break
        else:
            print ('All values greater than 10')
```

```
Found: 7
```

```
In [8]: values = [11, 12, 13, 100]
        for x in values:
            if x <= 10:
                print ('Found:', x)
                break
        else:
            print ('All values greater than 10')
```

All values greater than 10