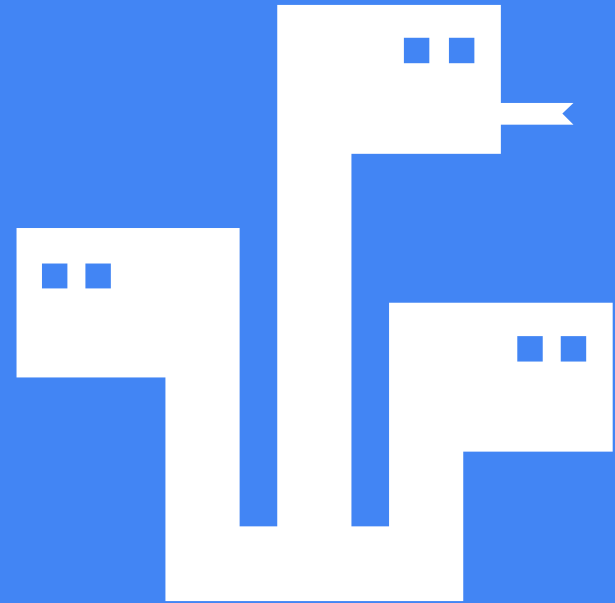


Loops

Python - Nick Reynolds
September 31, 2017



This Class

- Loops
- Loop Types
- Assignment 1

Loops



What's a loop?

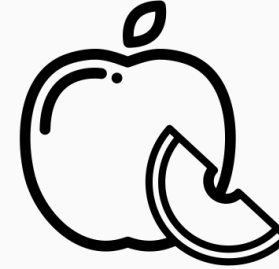
I have a shopping list:

- Apple
- Banana
- Orange

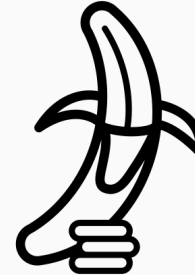
I want to pick up each one in order.

Logically I loop through each until I'm done.

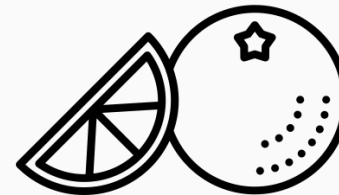
What's next on the list?



What's next on the list?



What's next on the list?



What's next on the list?

Nothing! Finished!

For Loops

```
>>> shopping = ['Apple', 'Orange', 'Banana']
```

```
>>> for item in shopping:  
...     print(item)
```

```
Apple  
Orange  
Banana
```

- Most common loop in Python

For Loops

```
>>> shopping = ['Apple', 'Orange', 'Banana']
```

Temporary loop variable



```
>>> for item in shopping:  
...     print(item)
```

```
Apple
```

```
Orange
```

```
Banana
```

- Most common loop in Python
- Item is a temporary variable that will hold the value for each loop. e.g.

Loop 1: Item = 'Apple'


Loop 2: Item = 'Orange'

Loop 3: Item = 'Banana'

For Loops

```
>>> shopping = ['Apple', 'Orange', 'Banana']
```

Temporary loop variable



```
>>> for item in shopping:  
...     print(item)
```

```
Apple  
Orange  
Banana
```

```
>>> for <variable> in <list>:  
...     # do stuff
```

- Most common loop in Python
- Item is a temporary variable that will hold the value for each loop. e.g.

Loop 1: Item = 'Apple'

Loop 2: Item = 'Orange'

Loop 3: Item = 'Banana'

Pen and Paper

Checkpoint



While Loops

```
>>> shopping = ['Apple', 'Orange', 'Banana']
>>> n = 0

>>> while n < len(shopping):
...     print(shopping[n])
...     n = n + 1

Apple
Orange
Banana
```

- Continues until the condition is false
- Used when the loop condition is more complex

Loop 1: Item = 'Apple'

Loop 2: Item = 'Orange'

Loop 3: Item = 'Banana'

While Loops

```
>>> shopping = ['Apple', 'Orange', 'Banana']
>>> n = 0
      Condition
>>> while n < len(shopping):
...     print(shopping[n])
...     n = n + 1

Apple
Orange
Banana
```

```
>>> while <condition>:
...     # do stuff
```

- Item is a temporary variable that will hold the value for each loop. e.g.

Loop 1: Item = 'Apple'

Loop 2: Item = 'Orange'

Loop 3: Item = 'Banana'

Pen and Paper

Checkpoint



Practical



Assignment 1



References

- <http://pwp.stevecassidy.net/python/more-python.html>
- <https://thenounproject.com/>