Lists and For vs. While

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Lists

Creating a list of numbers

```
numbers = [1, 2, 3, 4, 5]
```

Iterating over a list

```python
numbers = [1, 2, 3, 4, 5]
for number in numbers:
    print(number)
```

```python
numbers = [1, 2, 3, 4, 5]
i = 0
while i < len(numbers):
    print(numbers[i])
    i += 1
```

Notables:

- for ... in ...
- len

Looping over a range of numbers

```
for i in range(1, 6):
    print(i)
```

```
i = 1
while i <= 5:
    print(i)
    i += 1
```

Notables:

▶ range

Looping over a range of numbers with stepping

```python
for i in range(1, 11, 2):
    print(i)
```

```python
i = 1
while i < 11:
    print(i)
    i += 2
```

Notables:

- range with a positive stepping value

Looping over a range of numbers with stepping

```python
for i in range(10, 0, -2):
    print(i)
```

```python
i = 10
while i > 0:
    print(i)
    i -= 2
```

Notables:

- ▶ range with a negative stepping value

Lists of things other than numbers

Creating a list

```
fruits = ['apple', 'banana', 'orange', 'grape', 'kiwi']
```

Iterating over a list

```
for fruit in fruits:
    print(fruit)
```

Accessing elements in a list

```
print(fruits[0])
print(fruits[1])
print(fruits[2])
```

Slicing a list

```
print(fruits[1:3])
```

Modifying a list

```
fruits[1] = 'pear'
print(fruits)
```

Adding an element to a list

```
fruits.append('nectarine')
print(fruits)
```

Removing an element from a list

```
fruits.remove('banana')
print(fruits)
```