Python Fundamentals

Collection Types:

Very useful in data scienc because datasets are the collection of data!
Python's collection types:

- [List](#)
- [Set](#)
- [Dictionary](#)
- [Tuple](#)

Type	Fun Facts
List	Ordered, changeable, duplicates allowed
Dictionary	Ordered, changeable, duplicates not allowed
Set	Unordered, unchangeable*, duplicates not allowed
Tuple	Unordered, unchangeable, duplicates allowed

Representing Datasets with Code:

Column-Oriented:

Grouping by features

Column Oriented Storage in Memory								
Matt	Dave	Tim	Los Angeles	San Francisco	Oakland	27	30	33

Row-Oriented:

Grouping by a single observation

Row Oriented Storage in Memory								
Matt	Los Angeles	27	Dave	San Francisco	30	Tim	Oakland	33

Indexing:

In order to access values in a collection type, we need to index it

Type	Indexing Pattern
List	name[index]
Dictionary	name[key]
Set	For Loop (next slide)
Tuple	name[index]

Iteration:

You can repeat processes with loops or recursion in Python

Python Loop Types:
- [While Loops](#)


```
while condition:
    statements
```

- [For Loops](#)


```
for thing in collection:
    statements
```

Useful Methods:

[Dictionaries](#): values(), items(), keys()

[Lists](#): len(), append(), sort()

[Other](#): range(), print(), split(), type(), int(), str()