Classes: Takeaways

Syntax

DEFINING A CLASS

- To define a class:

```
classDataset:

    def __init__(self):

        self.type= "csv"
```

- To initialize a class:

```
new_dataset= Dataset()
```

PASSING ADDITIONAL ARGUMENTS TO THE INITIALIZER

- Adding a variable to the initializer:

```
classDataset:

    def __init__(selfdata):

        self.data= data
```

- Initializing a class and accessing an attribute:

```
csv_dataset= Dataset(csv_data)

print(csv_dataset.data[:10])
```

ADDING BEHAVIORS

- Adding a method to our class:

```
classDataset:

    def__init__(selfdata):

        self.data= data

    defprint_data(self):

        # Newmethod**rememberto addself**.

        print(self.data[:10])
```

- Using the method from our class:

```
nfl_dataset= Dataset(nfl_data)

nfl_dataset.print_data#)Printsthe first10 rows.
```

ENHANCING THE INITIALIZER

- Adding a header variable:

```
def extract_header(self):

    self.header= self.data[0]

    self.data= self.data[1:]# set data
```

- Accessing this header variable:

```
nfl_dataset= Dataset(nfl_data)

nfl_header= nfl_dataset.header
```

MAKING OBJECTS READABLE

- To use a special method to print:

```
classDataset:

    def__init__(selfdata):

        self.header= data[0]

        self.data= data[1:]

    def__str__(self):

        data_string= self.data[:10]

        returnstr(data_string)
```

Concepts

- Python is an **object-oriented programming** language. Everything we use in python is created from a class. Think of a class as a **blueprint** used to construct objects.
- Each blueprint shares the same functions. A function defined in a class is called a **method**.
- A class bundles up logically grouped functions and variables. These groups are called **attributes**. This promotes code **abstraction** which helps us avoid repeating the same code.
- The initialization method creates the instance of the new object and sets those attributes to the instance.
- Whenever we instantiate a new class, we will need to define a **self** variable. `self` is required to define the instance of class.

Resources

- Python Documentation on Classes
- A list of all the built-in methods in Python Classes.