Módulo 3: Utilizing Classes

Adding classes to a package

Anatomy of a class

Según PEP8, una clase se debe nombrar usando camel case; nunca deben contener underscore

```
# Define a minimal class with an attribute
class MyClass:
    """A minimal example class

    :param value: value to set as the ``attribute`` attribute
    :ivar attribute: contains the contents of ``value`` passed in init
    """

    # Method to create a new instance of MyClass
    def __init__(self, value):
        # Define attribute with the contents of the value param
        self.attribute = value
```

Using a class in a package

working in `work_dir/my_package/__init__.py`

```
from .my_class import MyClass
```

working in `work_dir/my_script.py`

```
import my_package

# Create instance of MyClass
my_instance = my_package.MyClass(value='class attribute value')

# Print out class attribute value
print(my_instance.attribute)
```

Según PEP8, los métodos no públicos (privados) deben nombrarse iniciando con un único underscore. Simboliza que los usuarios no deberían usar esos métodos sino que se usan por flujo en sí mismo.

DRY principle

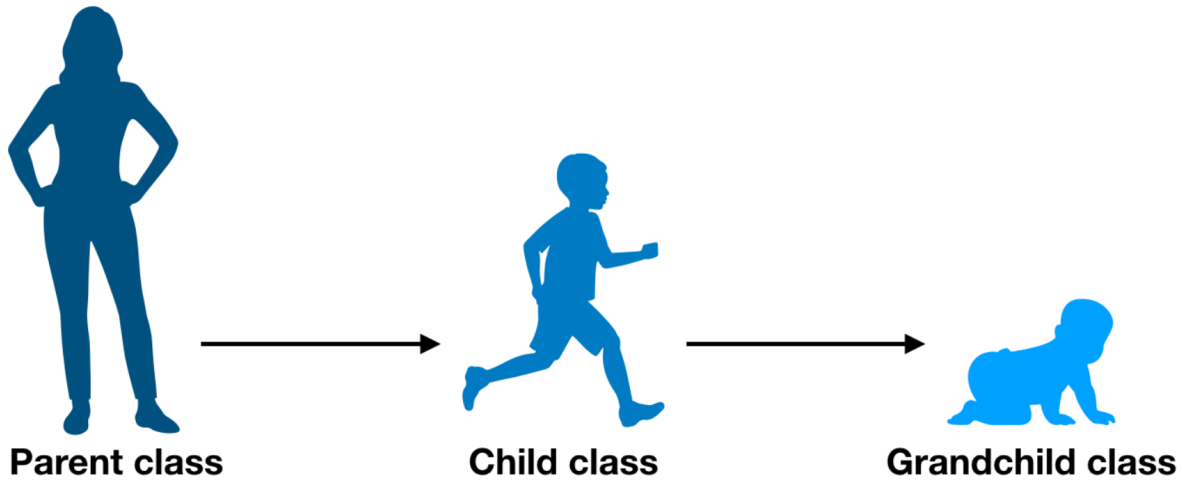
Don’t Repeat Yourself

Una buena forma de aplicar este principio es con la herencia.

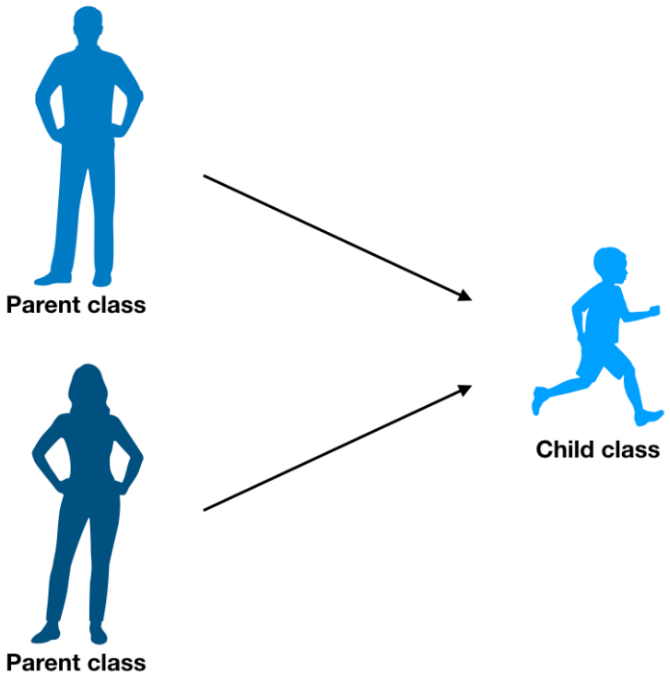
Inheritance in Python

```python
# Import ParentClass object
from .parent_class import ParentClass

# Create a child class with inheritance
class ChildClass(ParentClass):
    def __init__(self):
        # Call parent's __init__ method
        ParentClass.__init__(self)
        # Add attribute unique to child class
        self.child_attribute = "I'm a child class attribute!"

# Create a ChildClass instance
child_class = ChildClass()
print(child_class.child_attribute)
print(child_class.parent_attribute)
```

Multilevel inheritance



Multiple inheritance



Multilevel inheritance and super

```
class Parent:
    def __init__(self):
        print("I'm a parent!")

class SuperChild(Parent):
    def __init__(self):
        super().__init__()
        print("I'm a super child!")

class Grandchild(SuperChild):
    def __init__(self):
        super().__init__()
        print("I'm a grandchild!")

grandchild = Grandchild()
```

```
I'm a parent!
I'm a super child!
I'm a grandchild!
```

Keeping track of inherited attributes

```
# Create an instance of SocialMedia
sm = SocialMedia('@DataCamp #DataScience #Python #sklearn')
# What methods does sm have?  ¯\_(?)_/¯
dir(sm)
```

```
['__class__', '__delattr__', '__dict__', '__dir__', '__doc__', '__eq__',
'__format__', '__ge__', '__getattribute__', '__gt__', '__hash__', '__init__',
'__init_subclass__', '__le__', '__lt__', '__module__', '__ne__', '__new__',
'__reduce__', '__reduce_ex__', '__repr__', '__setattr__', '__sizeof__',
'__str__', '__subclasshook__', '__weakref__', '_count_hashtags',
'_count_mentions', '_count_words', '_tokenize', 'hashtag_counts',
'mention_counts', 'text', 'tokens', 'word_counts']
```