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Objects - Part 4

Python for Everybody

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Inheritance

- When we make a new class - we can reuse an existing class and inherit all the capabilities of an existing class and then add our own little bit to make our new class
- Another form of store and reuse
- Write once - reuse many times
- The new class (child) has all the capabilities of the old class (parent) - and then some more

Inheritance is we're going to
make more than one template.

Terminology: Inheritance

'Subclasses' are more specialized versions of a class, which inherit attributes and behaviors from their parent classes, and can introduce their own.

http://en.wikipedia.org/wiki/Object-oriented_programming

A subclass is a more specialized version of a parent class.

```
class PartyAnimal:
   x = 0
   name = ""
   def __init__(self, nam):
     self.name = nam
     print(self.name,"constructed")

   def party(self) :
     self.x = self.x + 1
     print(self.name,"party count",self.x)

class FootballFan(PartyAnimal):
   points = 0
   def touchdown(self):
      self.points = self.points + 7
      self.party()
      print(self.name,"points",self.points)
```

```
s = PartyAnimal("Sally")
s.party()

j = FootballFan("Jim")
j.party()
j.touchdown()
```

FootballFan is a class which extends PartyAnimal. It has all the capabilities of PartyAnimal and more.

And so that's really what inheritance is there for.

```
class PartyAnimal:
   x = 0
   name = ""
   def __init__(self, nam):
     self.name = nam
     print(self.name,"constructed")

   def party(self) :
     self.x = self.x + 1
     print(self.name,"party count",self.x)

class FootballFan(PartyAnimal):
   points = 0
   def touchdown(self):
      self.points = self.points + 7
      self.party()
      print(self.name,"points",self.points)
```

```
s = PartyAnimal("Sally")
s.party()

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```

And so that's the basic idea of extension.

```
class PartyAnimal:
    x = 0
    name = ""
    def __init__(self, nam):
      self.name = nam
      print(self.name,"constructed")

    def party(self) :
      self.x = self.x + 1
      print(self.name,"party count",self.x)

class FootballFan(PartyAnimal):
    points = 0
    def touchdown(self):
       self.points = self.points + 7
       self.party()
       print(self.name,"points",self.points)
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s = PartyAnimal("Sally")
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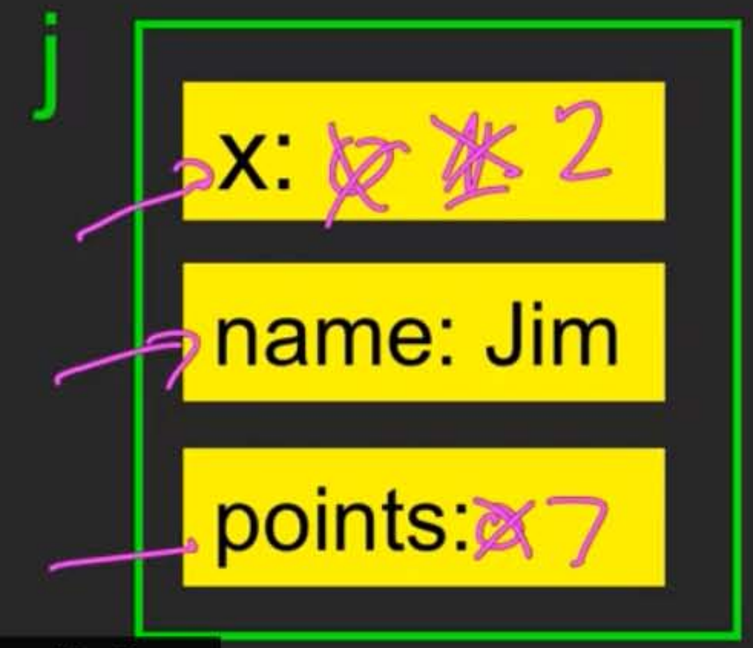

And so this j object has everything that the s object had and then some.

Definitions

Class - a template

Attribute – A variable within a class

Method - A function within a class

Object - A particular instance of a class

Constructor – Code that runs when an object is created

Inheritance - The ability to extend a class to make a new class.

I just want you to get these words, classes, we have attributes and methods.