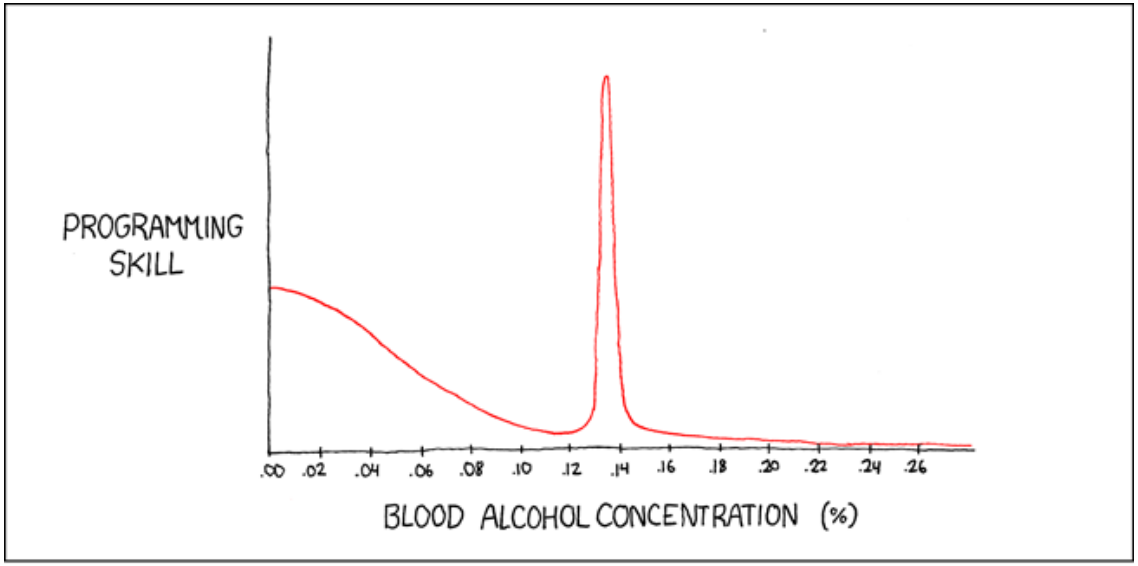
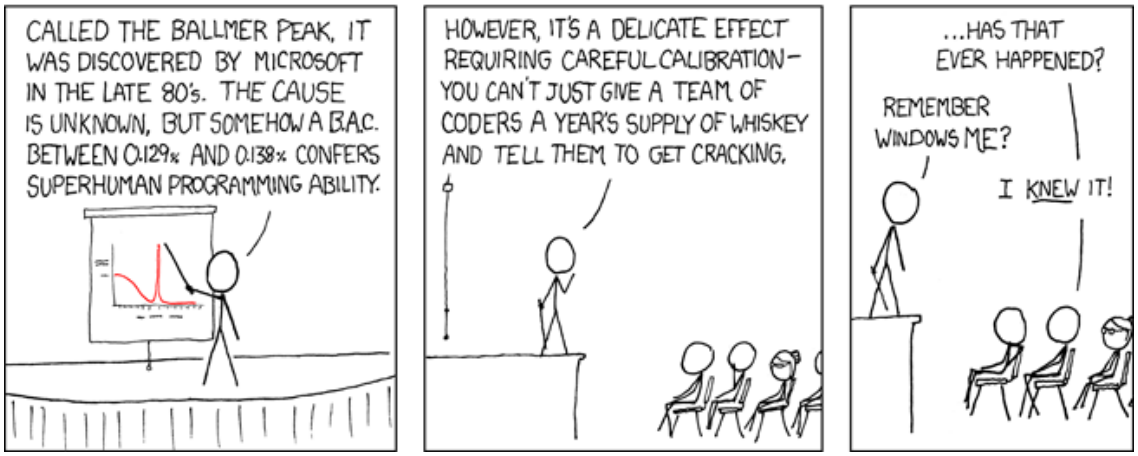
WTF is an **Object**?

A (brief) introduction to objects in python.





A quick **for** loop refresher.

```
myList = [1, 4, 2, 3, 5, 3, 2, 4, 3]
myCount = 0
for item in myList:
    if item == 3:
        myCount = myCount + 1

print(myCount)
```

A quick **for** loop refresher.

```
myList = [1, 4, 2, 3]
myNewList = []
for item in myList:
        myNewList.append(item**2)

print(NewList)
```

Python functions can have default options. (TempConverter in the homework)

```
getNumber(myList, n=0):
    return(myList[n])
```

```
myList = [3, 6, 23, 6, 1]

print(getNumber(myList, 2))

print(getNumber(myList, 1))

print(getNumber(myList))
```

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Specific function		

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Notice no file extension (.py)

Entire library	import math math.sqrt(10)	import workshop1_homework workshop1_homework.factorial(10)
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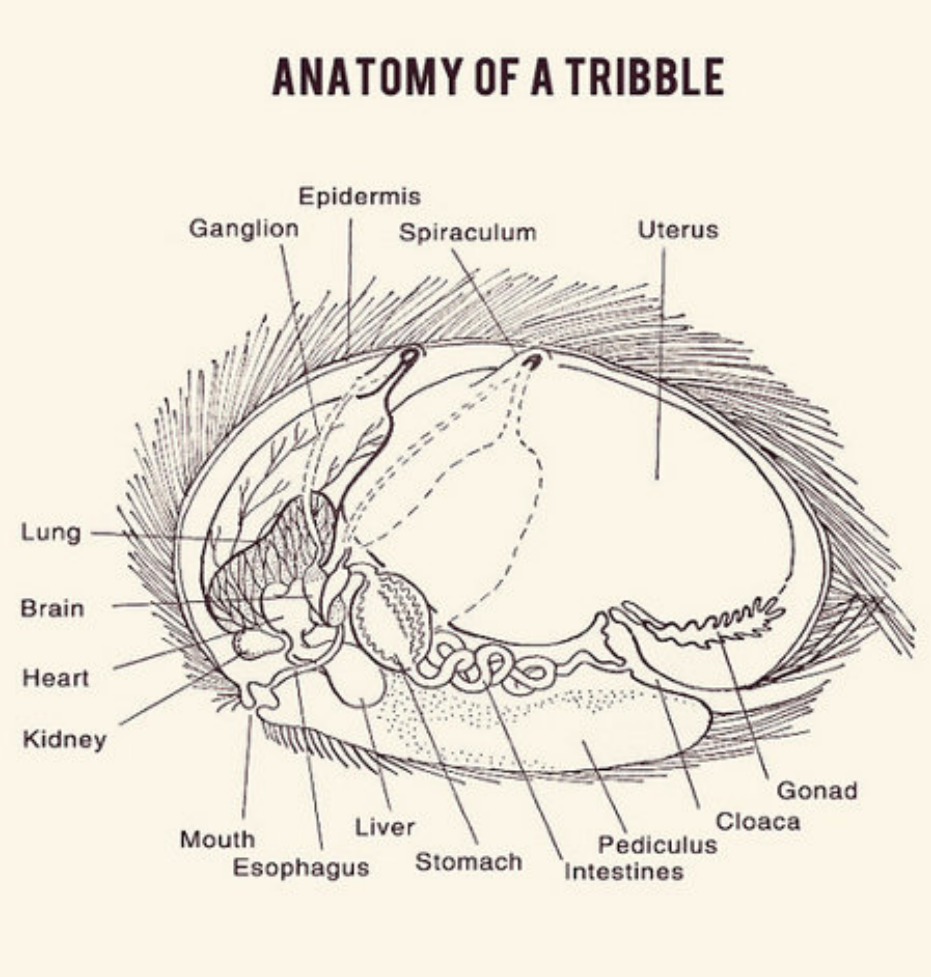


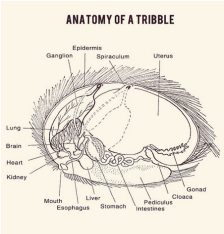
Thinking about objects, what are some attributes and functions of Tribbles?

color

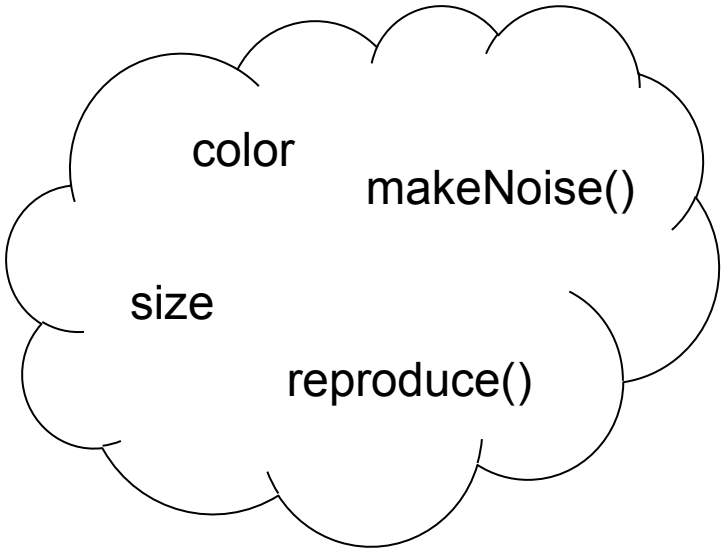
makeNoise()

size

reproduce()



How would we tell our Tribble to do things?



myTribble = Tribble()

fred = Tribble()

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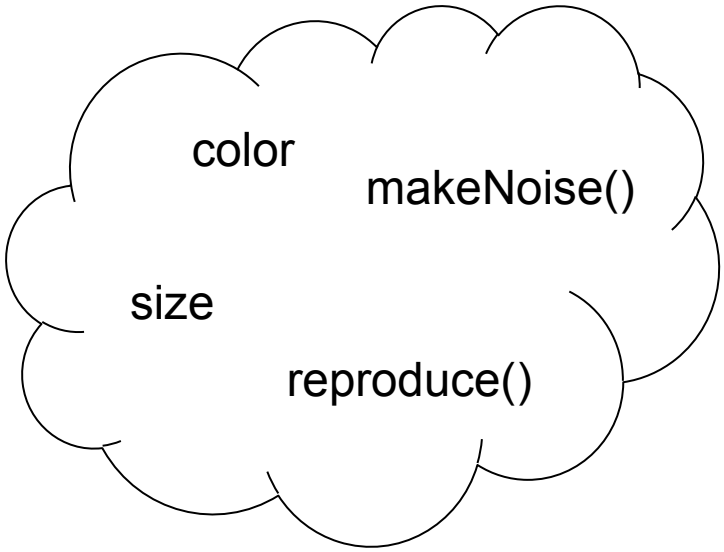

Tribble.color

Tribble.size

Tribble.makeNoise()

Tribble.reproduce()

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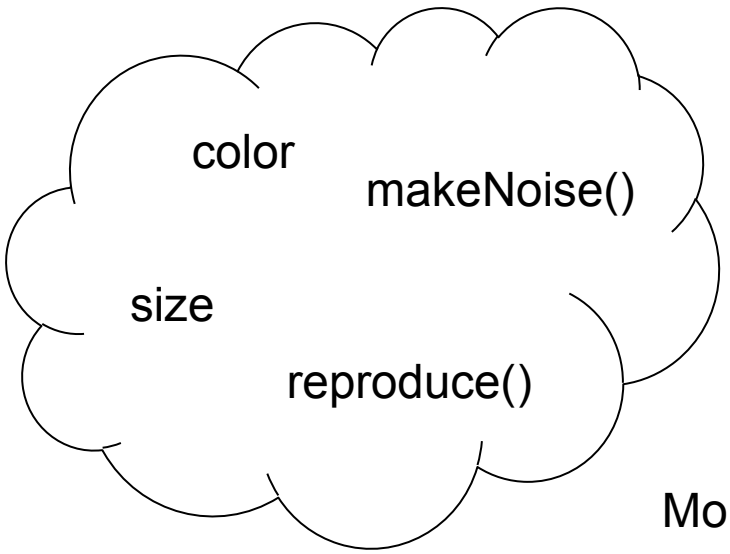


Tribble.color

Tribble.size

Tribble.makeNoise()

Tribble.reproduce()

More specifically, if we wanted Fred's attributes:

fred.color

fred.size

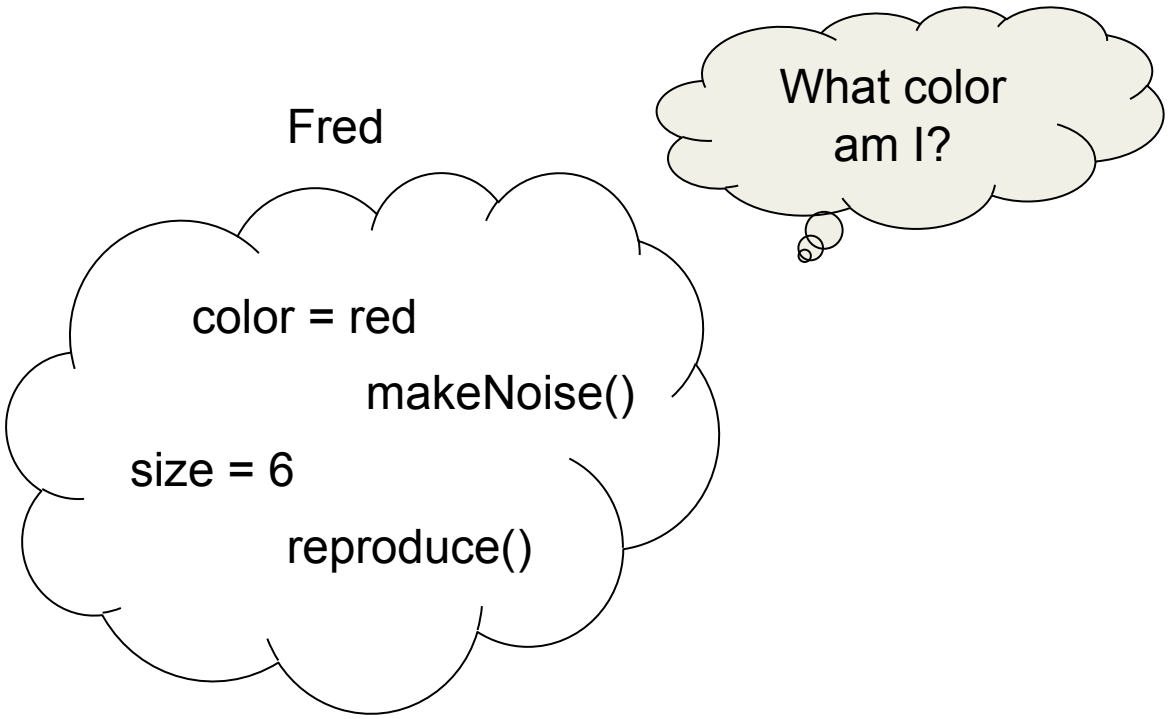
fred.makeNoise()

fred.reproduce()

myTribble = Tribble()

fred = Tribble()

But how does a particular Tribble refer to his own attributes?



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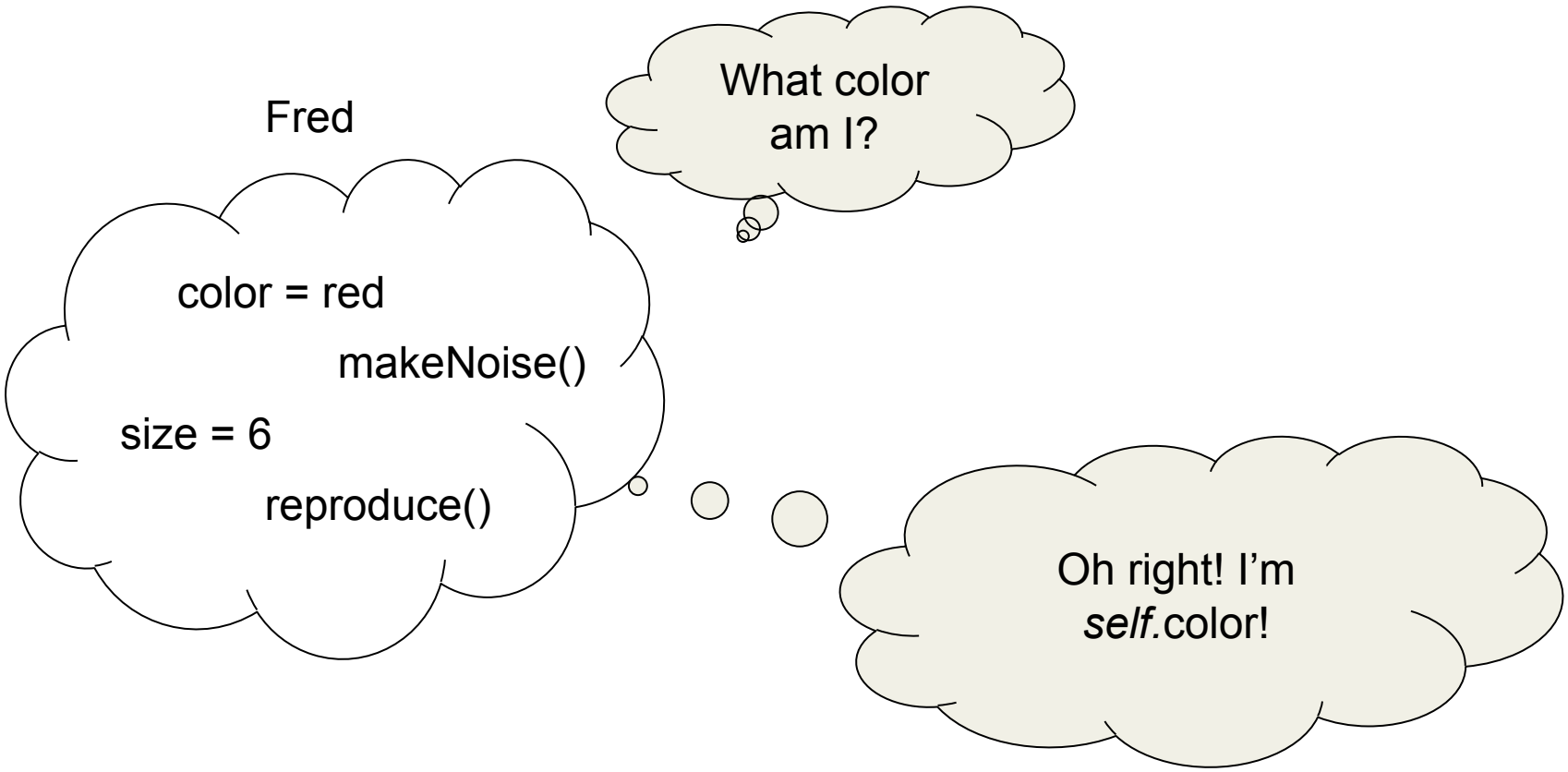

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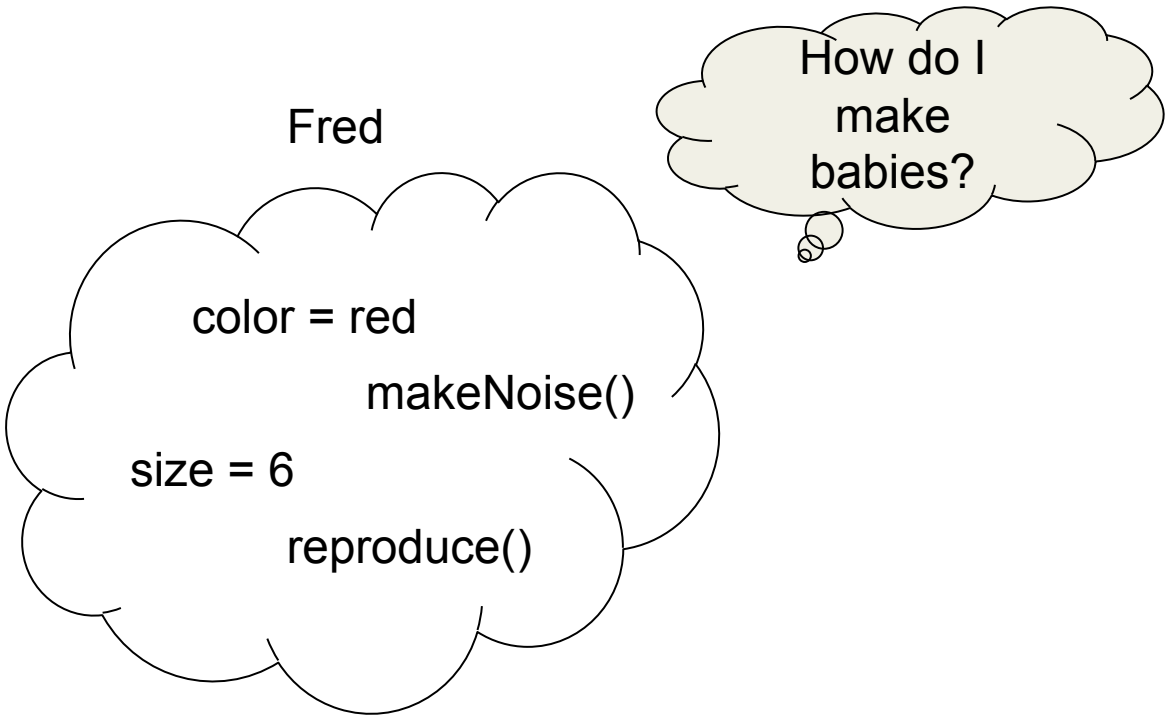

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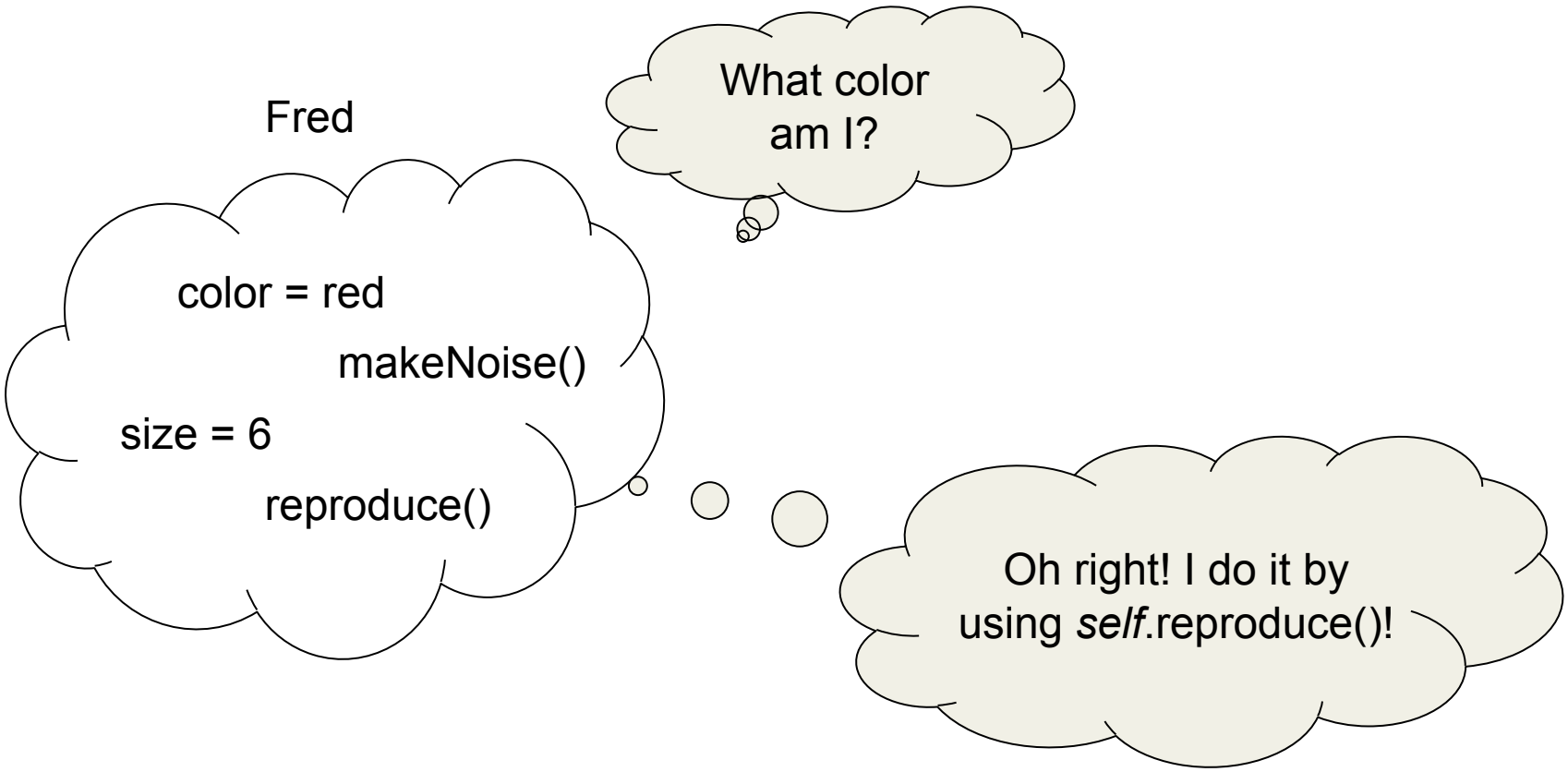


Referring to attributes within a Tribble

*self.*color
self.size

*self.*makeNoise()

*self.*reproduce()

Referring to attributes from outside a Tribble:

fred = Tribble()

fred.color
fred.size

fred.makeNoise()

fred.reproduce()

Functions defined within classes:

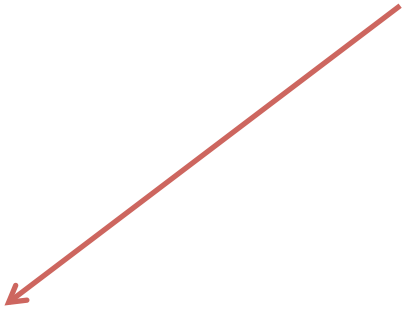
```
class Tribble:

    …

    def reproduce(self):
        baby = Tribble()
        baby.color = self.color
        baby.size = 1
        return baby
```

Functions defined within classes:

All functions defined within a class take *self* as the first argument.



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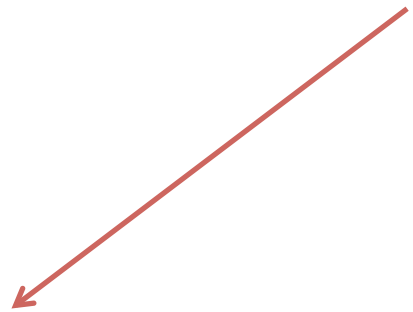

All functions defined within a class take *self* as the first argument.

Otherwise, functions in classes act exactly like all other functions.

Initializing classes: using the __init__ function

```
class Tribble:

    def __init__(self):
        self.color = “red”
        self.size = 10
```

Initializing classes: using the __init__ function

All classes must define the __init__ function

```
class Tribble:

    def __init__(self):
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Initializing classes: using the __init__ function