

Object Lifecycle

[http://en.wikipedia.org/wiki/Constructor_\(computer_science\)](http://en.wikipedia.org/wiki/Constructor_(computer_science))

Object Lifecycle

- Objects are created, used and discarded
- We have special blocks of code (methods) that get called
 - At the moment of creation (constructor)
 - At the moment of destruction (destructor)
- Constructors are used a lot
- Destructors are seldom used

Constructor

- The primary purpose of the constructor is to set up some instance variables to have the proper initial values when the object is created

```
class PartyAnimal:
    x = 0

    def __init__(self):
        print('I am constructed')

    def party(self) :
        self.x = self.x + 1
        print('So far',self.x)

    def __del__(self):
        print('I am destructed', self.x)

an = PartyAnimal()
an.party()
an.party()
an = 42
print('an contains',an)
```

```
$ python party4.py
I am constructed
So far 1
So far 2
I am destructed 2
an contains 42
```

The constructor and destructor are optional. The constructor is typically used to set up variables. The destructor is seldom used.

Constructor



- In **object oriented programming**, a **constructor** in a class is a special block of statements called when an **object is created**

[http://en.wikipedia.org/wiki/Constructor_\(computer_science\)](http://en.wikipedia.org/wiki/Constructor_(computer_science))

Many Instances

- We can create **lots of objects** - the class is the template for the object
- We can store each **distinct object** in its own variable
- We call this having multiple **instances** of the same class
- Each **instance** has its own copy of the **instance variables**


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

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

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

j = PartyAnimal("Jim")
j.party()
s.party()
```

Constructors can have additional **parameters**. These can be used to set up **instance variables** for the particular instance of the class (i.e., for the particular object).

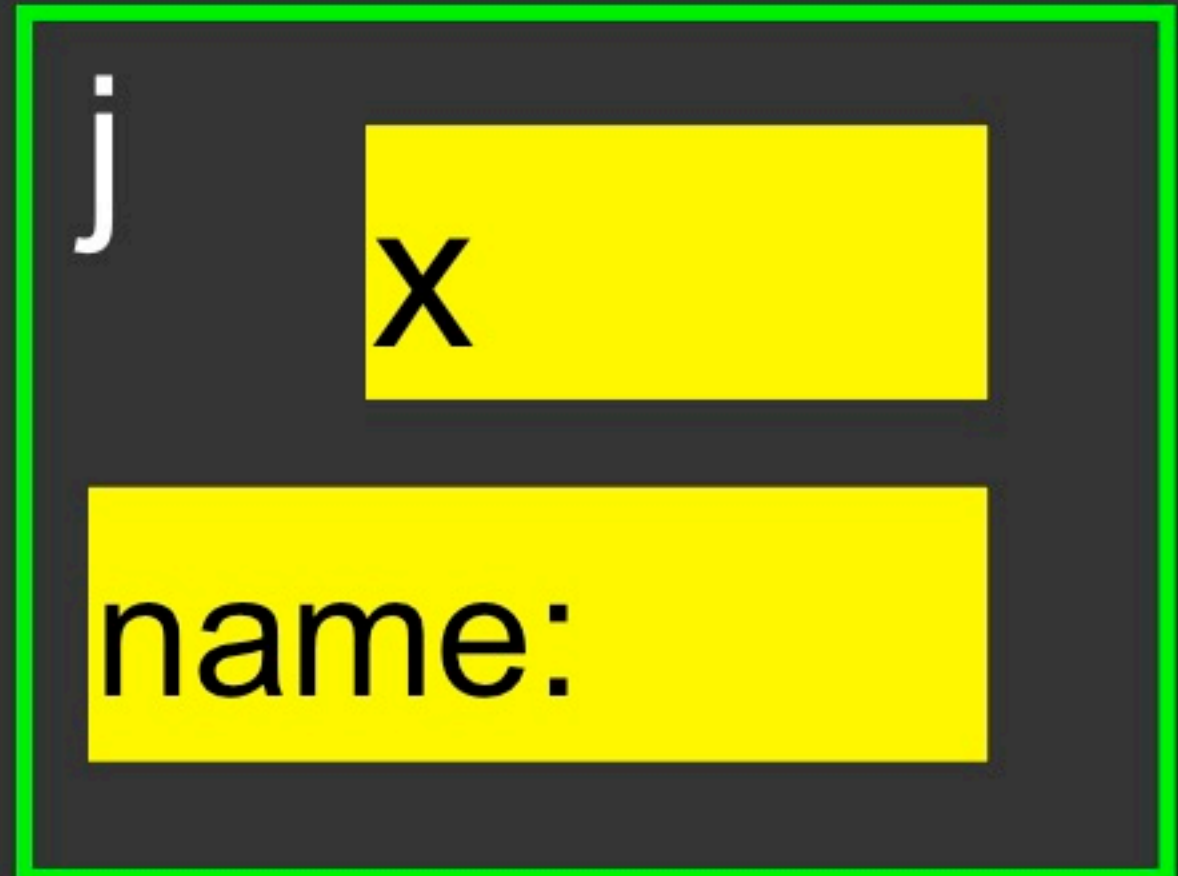
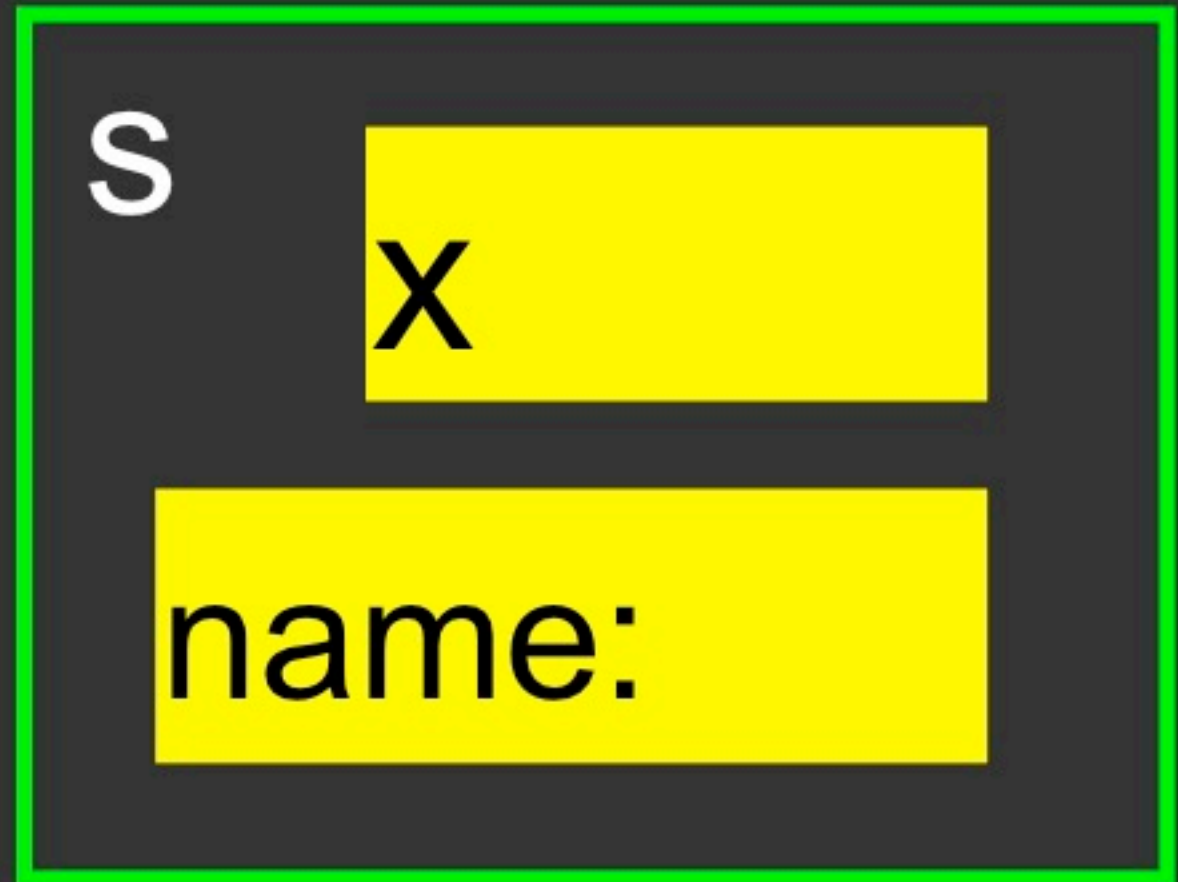

```
class PartyAnimal:
    x = 0
    name = ""
    def __init__(self, z):
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    def party(self) :
        self.x = self.x + 1
        print(self.name, "party count", self.x)

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

j = PartyAnimal("Jim")
j.party()
s.party()
```

We have two
independent
instances.



Inheritance

<http://www.ibiblio.org/g2swap/byteofpython/read/inheritance.html>



Acknowledgements / Contributions



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Initial Development: Charles Severance, University of Michigan School of Information

... Insert new Contributors here

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