

# A Sample Class





class is a reserved word.

Each PartyAnimal object has a bit of code.

Tell the an object to run the party() code within it.

```
class PartyAnimal:
```

```
    x = 0
```

```
    def party(self) :
```

```
        self.x = self.x + 1
```

```
        print("So far",self.x)
```

```
an = PartyAnimal()
```

```
an.party()
```

```
an.party()
```

```
an.party()
```

This is the template for making PartyAnimal objects.

Each PartyAnimal object has a bit of data.

Construct a PartyAnimal object and store in an variable

PartyAnimal.party(an)



```
class PartyAnimal:
```

```
    x = 0
```

```
    def party(self) :
```

```
        self.x = self.x + 1
```

```
        print("So far",self.x)
```

```
an = PartyAnimal()
```

```
an.party()
```

```
an.party()
```

```
an.party()
```

```
$ python party1.py
```

```
So far 1
```

```
So far 2
```

```
So far 3
```

an

self

x

party()



# Playing with `dir()` and `type()`

- The `dir()` command lists capabilities
- Ignore the ones with underscores - these are used by Python itself
- The rest are real operations that the object can perform
- It is like `type()` - it tells us something \*about\* a variable

```
>>> y = list()
>>> type(y)
<class 'list'>
>>> dir(x)
['__add__', '__class__',
 '__contains__', '__delattr__',
 '__delitem__', '__delslice__',
 '__doc__', ... '__setitem__',
 '__setslice__', '__str__',
 'append', 'clear', 'copy', 'count',
 'extend', 'index', 'insert', 'pop',
 'remove', 'reverse', 'sort']
>>>
```



# Try dir() with a String

```
>>> x = 'Hello there'
>>> dir(x)
['__add__', '__class__', '__contains__', '__delattr__', '__dir__', '__doc__',
'__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__',
'__getnewargs__', '__gt__', '__hash__', '__init__', '__iter__', '__le__',
'__len__', '__lt__', '__mod__', '__mul__', '__ne__', '__new__', '__reduce__',
'__reduce_ex__', '__repr__', '__rmod__', '__rmul__', '__setattr__',
'__sizeof__', '__str__', '__subclasshook__', 'capitalize', 'casefold',
'center', 'count', 'encode', 'endswith', 'expandtabs', 'find', 'format',
'format_map', 'index', 'isalnum', 'isalpha', 'isdecimal', 'isdigit',
'isidentifier', 'islower', 'isnumeric', 'isprintable', 'isspace', 'istitle',
'isupper', 'join', 'ljust', 'lower', 'lstrip', 'maketrans', 'partition',
'replace', 'rfind', 'rindex', 'rjust', 'rpartition', 'rsplit', 'rstrip',
'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title',
'translate', 'upper', 'zfill']
```



```
class PartyAnimal:
    x = 0

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

an = PartyAnimal()

print("Type", type(an))
print("Dir ", dir(an))
```

We can use `dir()` to find the “capabilities” of our newly created class.

```
$ python party3.py
Type <class '__main__.PartyAnimal'>
Dir  ['__class__', ... 'party', 'x']
```

# Object Lifecycle

[http://en.wikipedia.org/wiki/Constructor\\_\(computer\\_science\)](http://en.wikipedia.org/wiki/Constructor_(computer_science))





## Acknowledgements / Contributions



These slides are Copyright 2010- Charles R. Severance ([www.dr-chuck.com](http://www.dr-chuck.com)) of the University of Michigan School of Information and made available under a Creative Commons Attribution 4.0 License. Please maintain this last slide in all copies of the document to comply with the attribution requirements of the license. If you make a change, feel free to add your name and organization to the list of contributors on this page as you republish the materials.

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

... Insert new Contributors here



# Additional Source Information

- **"Snowman Cookie Cutter"** by Didriks is licensed under CC BY

<https://www.flickr.com/photos/dinnerseries/23570475099>

- **Photo from the television program *Lassie*. Lassie watches as Jeff (Tommy Rettig) works on his bike** is Public Domain

[https://en.wikipedia.org/wiki/Lassie#/media/File:Lassie\\_and\\_Tommy\\_Rettig\\_1956.JPG](https://en.wikipedia.org/wiki/Lassie#/media/File:Lassie_and_Tommy_Rettig_1956.JPG)