Mutable Default Parameters

```
def foo(n, x=[]):
    x.append(n)
    print(x)



foo(1, [4])  # => [4, 1]
foo(3)  # => [3]
foo(3)  # => [3, 3]
foo(3)  # => [3, 3, 3]
```

```
def foo(n, x=None):
    if x is None:
        x = []
    x.append(n)
    print(x)

foo(1, [4])  # => [4, 1]
foo(3)  # => [3]
foo(3)  # => [3]
foo(3)  # => [3]
```

Magic Methods for Custom Classes

```
class Vector():
    def __init__(self, elems):
        self.elems = elems

    def size(self):
        return len(self.elems)

v = Vector([1,2])
len(v)  # => fails
```

```
class Vector():
    def __init__(self, elems):
        self.elems = elms

    def __len__(self):
        return len(self.elems)

v = Vector([1,2])
len(v)  # => succeeds
```