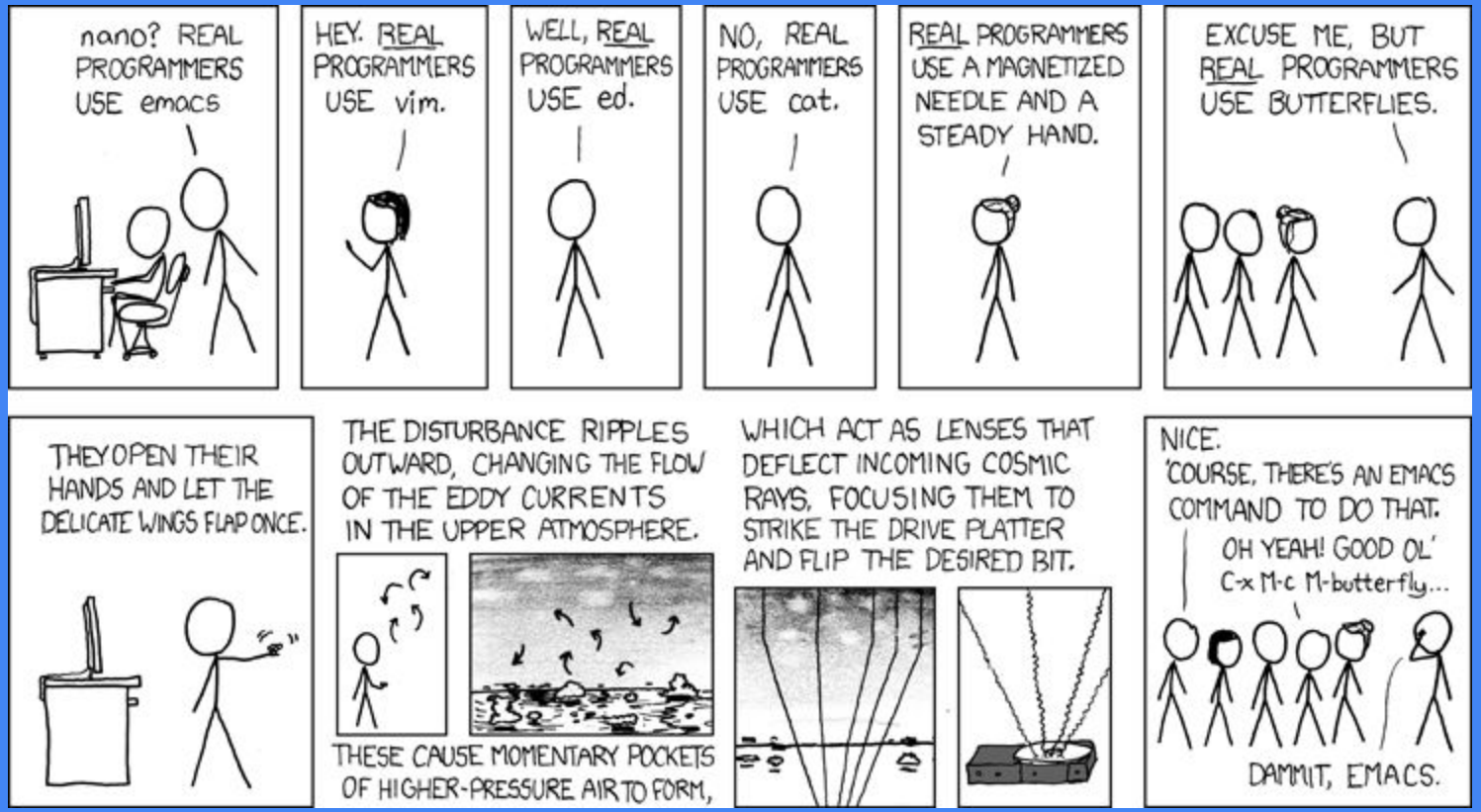
ITSE-1402 Intermediate Python

Class 3: Classes and Objects | Project 1

June 8, 2017



Real programmers set the universal constants at the start such that the universe evolves to contain the disk with the data they want.

https://xkcd.com/378/

- What are classes?
- What are they used for?
- Using classes to create types

- **What are classes?**
- What are they used for?
- Using classes to create types

- Classes are the *object* in OOP
- Classes create new types of objects
- Classes contain methods or functions to modify the objects they create

- What are classes?
- **What are they used for?**
- Using classes to create types

- We know the different default python types:
  - string
  - int
  - float
  - list
  - dict
  - etc.
- They have methods such as:
  - str.count(arg)
  - list.pop()
  - etc.

- What are classes?
- **What are they used for?**
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Example Class:

```
class BankAccount(object):
        def __init__(self):
                self.balance = 0

        def withdraw(self,amount):
                self.balance -= amount

        def deposit(self,amount):
                self.balance += amount

a = BankAccount()
a.deposit(100)
```

- What are classes?
- What are they used for?
- **Using classes to create types**

Move to Chapter 15 in book

Classes Encourage Atrocities

- Oauth2 implementation
- http://code.google.com/p/google-api-python-client/source/browse/
- 10,000 SLOC, 115 modules, 207 classes
- *"I decline any responsibility for Google API client code."* -- Guido Van Rossum

```
class Flow(object):
    """Base class for all Flow objects."""
    pass

class Storage(object):
    def put(self, data): _abstract()
    def get(self): _abstract()

def _abstract(): raise NotImplementedError
```