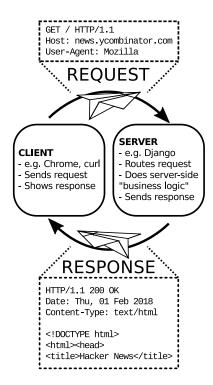
REQUESTS & RESPONSES



TERMINOLOGY

Protocol An agreed-upon standard or set of "formalities" of how computers should talk to each other and exchange data

IP address Internet Protocol address, a "phone number" for computers

Domain name E.g. google.com, a mnemonic that's turns into the IP address of a server

TCP The way computers "call each other up" and send data to each other over the internet (transmission control protocol)

request, containing a particular method and path to a server, which in turn replies with a response.

Headers & body Requests and responses both are split into extra info (headers), and data (body).

Method The first text in the request, conventionally is one of 4 words The backend gets in all caps. to decide how to process different HTTP methods differently.

HTTP METHODS

GET Fetch information without modifying anything

POST Create a new item

PUT Update an existing item

DELETE Delete an item

Python requests

import requests

```
url = "https://api.openaq.org" +
     "/v1/measurements" +
     "?location=Oakland"
resp = requests.get(url)
d = resp.json()
print(d["results"][0]["value"])
```

DJANGO ROUTING

```
def hi_world(request):
   return HttpResponse("""
        <h1>Hello Django World!</h1>
```

from django.urls import path

API TERMINOLOGY

urlpatterns = [

API Application programming interface: The interface that software uses to communicate with other software. Some APIs are free, others might cost money.

REST API The most common type of API, REST APIs are based on HTTP, utilizing the different request methods to allow third party software to connect over the inter-

API Key A unique identifier for a user of an API (like a username).

API Secret Some APIs require this, basically a password for an API.

HEROKU

```
pipenv shell
heroku local
# Create a new app
heroku create
# Ensure git is hooked up
git remote -v
# Deploy to Heroku via qit
git push heroku master
# Check site in browser
heroku open
# Debug (view remote logs)
heroku logs
# Inspect environment variables
heroku config
# SSH into remote Heroku bash
heroku ps:exec
```

Test Procfile locally

Advanced Python

Try / except exceptions Handle or ignore errors. from django.http import HttpResponse

```
a = [1, 2]
try:
    lucky_13 = a[13]
except Exception as e:
    print("It broke:", e)
```

path("hello-world/", hi_world), List comprehension Like a for-loop, but also creates a new list

```
names = ["John", "Paul", "G"]
long_names = [
    n.lower() for n in names
    if len(n) > 2
    # = ["john", "paul"]
```

Unpacking assignment Can assign to two or more at once, in both loops and elsewhere

```
pairs = [(10, 5), (8, 100)]
for left, right in pairs:
   print(left * right)
x, y = [35, 15]
```

Variable length arguments Can provide "catch-alls" for positional and named arguments.

```
def do_all(*args, **kwargs):
    print(args, kwargs)
    return sum(args)
do_all(3, 5, b=3)
```