

Intro to APIs

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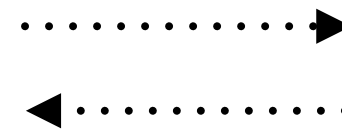
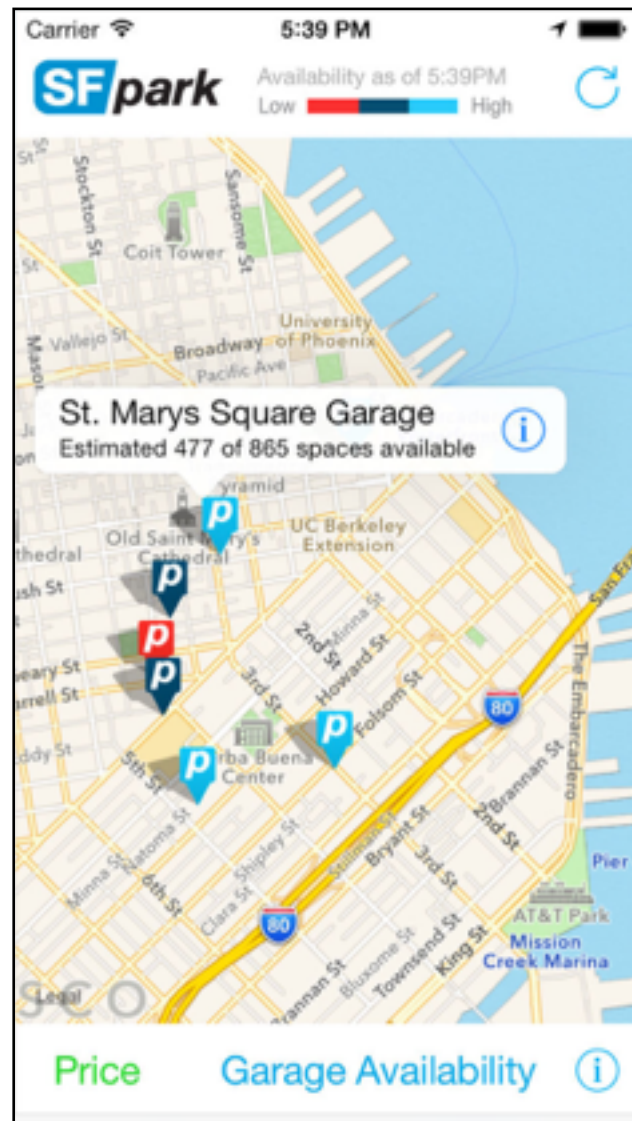
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What's an API?

- “Application Programming Interface”
- A **code-based interface** for outside developers to interact with a piece of software, anything from a code library to a website to a database system

APIs in action



SFpark
API

Parking app

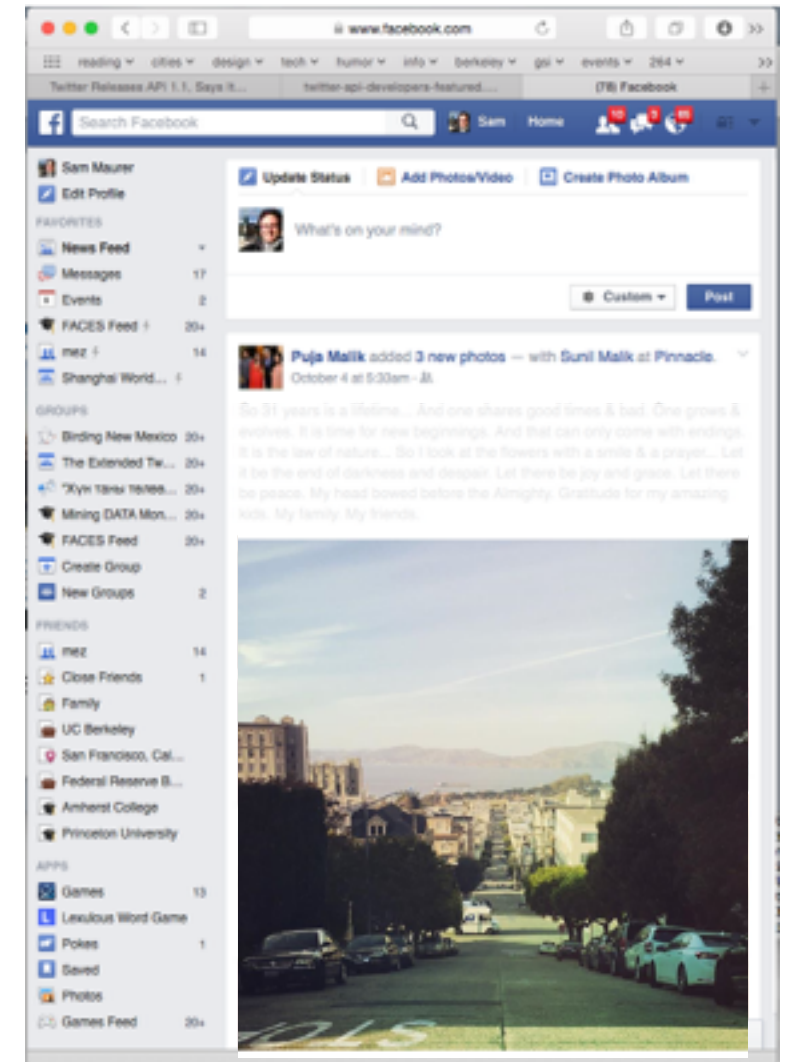
APIs in action



Instagram photo

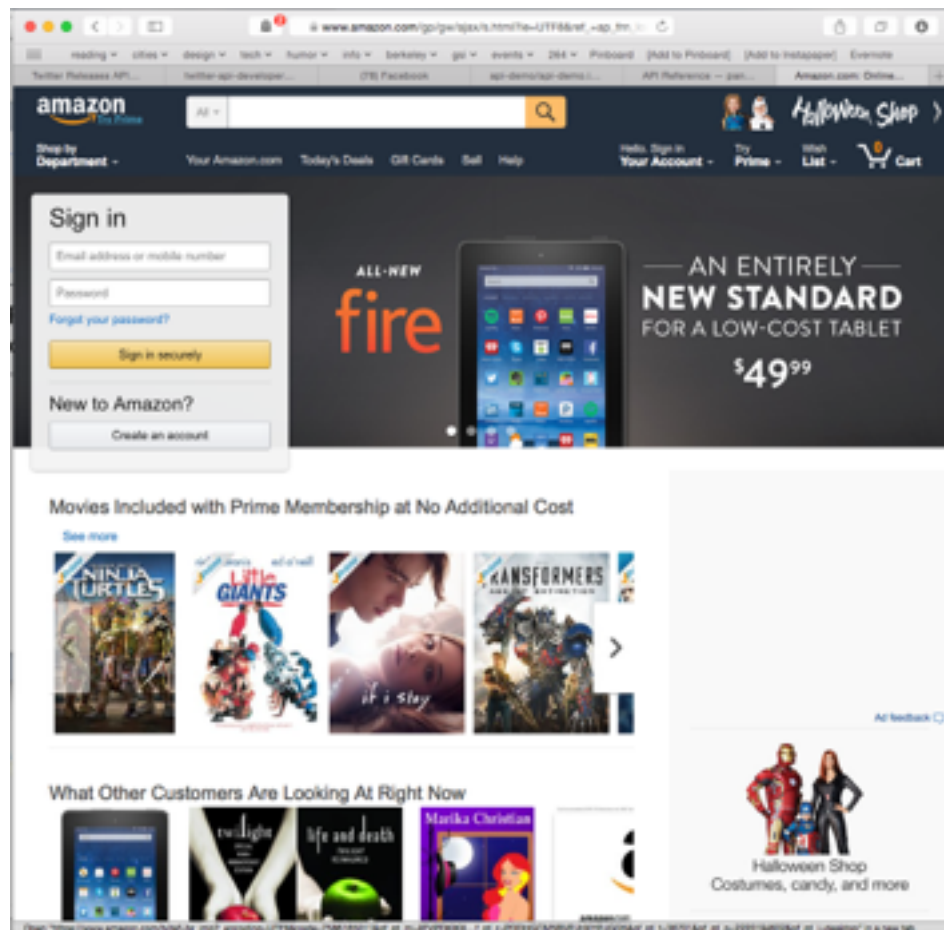


Facebook
Graph API



Posted to Facebook

APIs in action



Amazon Recommendations API

APIs in action

```
df = pd.DataFrame()
```



Pandas
API



	depth	magnitude
0	48.82	4.50
1	9.52	4.70
2	11.18	2.97
3	4.09	2.65
4	26.07	4.60

Summary 1

- An API is a **code-based interface** for outside developers to interact with a piece of software
- APIs create a **clear menu of access points**, shielding the inner workings of the software from outside view and allowing them to change as needed
- APIs are usually **transactional**: you submit a query and then receive something in return

Categories of APIs

APIs in a coding language

Functions:

`my_function()`

Arguments:

`my_function(args="x")`

**Function returns
a value**

APIs over the web

URL endpoints:

`http://my.domain/endpoint`

Query parameters:

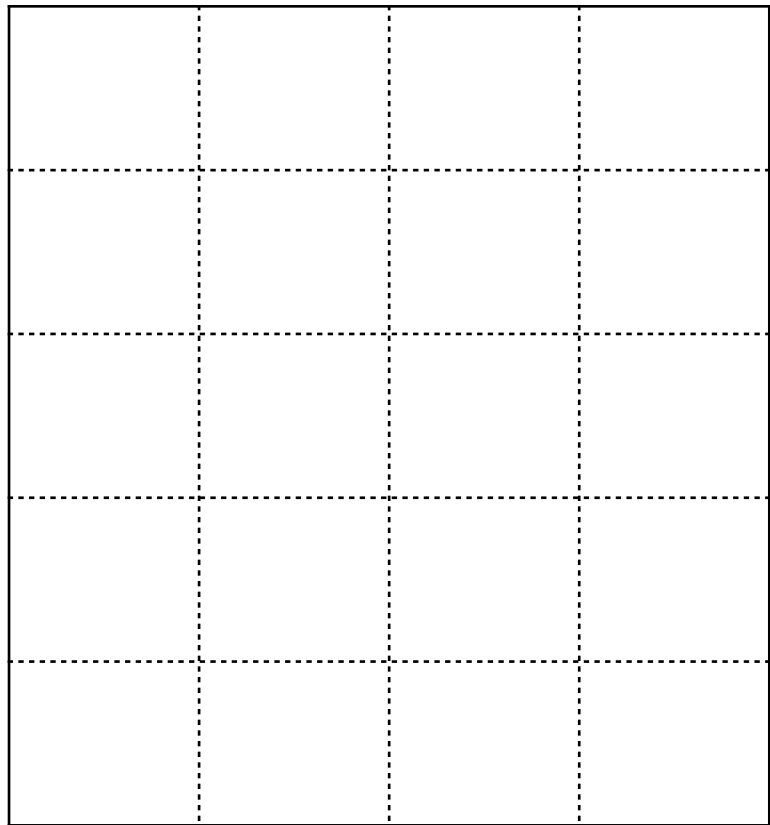
`?args=x`

**Web request
returns a value**

Data formats

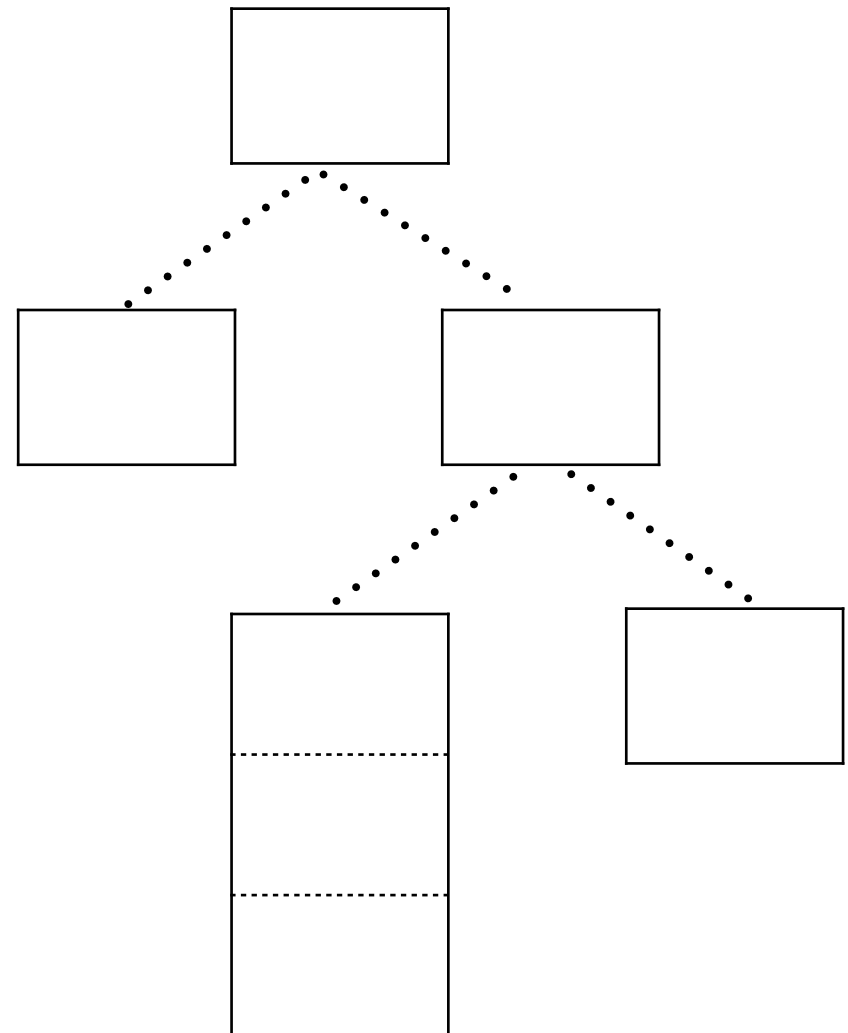
Table

(CSV, DataFrame)



Nested arrays

(JSON, XML)



Summary 2

- APIs that operate over the web have **URL endpoints** and **query parameters**, which are similar to functions and arguments
- They usually return data as **nested arrays** in JSON format, which you can reassemble into tables

Demo!