Tools & Strategies for Consuming APIs



TITANIUM SPONSORS







Platinum Sponsors





















PLURALSIGHT



































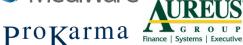


















What this talk...

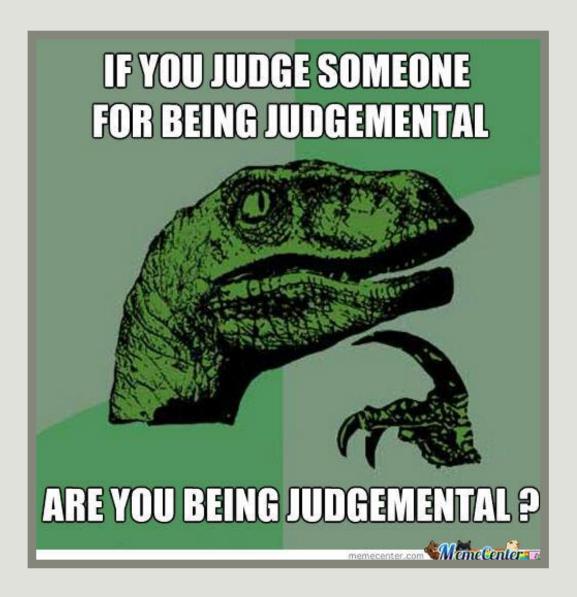
...IS

- 3rd Party Web APIs
- Types of APIs
- Tools for testing
- Coding strategies
- Communicating with owner

...ISN'T

- Building APIs
- Evaluating APIs
- Judgy

Oh... and beer



Application Programming Interface

"...a set of subroutine definitions, protocols, and tools for building application software. In general terms, it is a set of clearly defined methods of communication between various software components."

wikipedia

API types

RPC (remote procedure call)

REST (representational state transfer)

SOAP (simple object access protocol)



If we want beer...

	RPC	REST
Get all beers	GET /GetAllBeers	GET /beers
Get a single beer	GET /GetBeer?beerid=001	GET /beers/001
Add a beer	POST /AddBeer	POST /beers
Update a beer	POST /UpdateBeer?beerid=001	PUT /beers/001
Delete a beer	POST /DeleteBeer?beerid=001	DELETE /beers/001

Response types

JSON XML PHP

```
"currentPage": 1,
"numberOfPages": 1313,
"totalResults": 65638,
"data": [
        "id": "cBLTUw".
        "name": "\"18\" Imperial IPA 2",
        "nameDisplay": "\"18\" Imperial
        "description": "Hop Heads this or
            tons of US 2 Row Barley to ge
        "abv": "11.1",
        "glasswareId": 5,
        "srmId": 33,
        "styleId": 43.
        "isOrganic": "N",
        "status": "verified",
        "statusDisplay": "Verified",
        "createDate": "2013-01-20 21:38:
        "updateDate": "2016-08-17 16:05:
        "glass": {
            "id": 5,
            "name": "Pint".
            "createDate": "2012-01-03 02:
        "srm": {
            "id": 33
```

```
<?xml version="1.0" encoding="ISO-8859-1"?>
(root)
     <currentPage>1</currentPage>
     <numberOfPages>1313</numberOfPages>
    <totalResults>65638</totalResults>
    <data>
         <item>
             <id>cBLTUw</id>
             <name>&amp;quot;18&amp;quot; Imp
             <nameDisplay>&amp;quot;18&amp;quot;
             <description>Hop Heads this one&;
                 Made with tons of US 2 Row
             <abv>11.1</abv>
             <glasswareId>5</glasswareId>
             <srmId>33</srmId>
             <styleId>43</styleId>
             <isOrganic>N</isOrganic>
             <status>verified</status>
             <statusDisplay>Verified</statusD:
             <createDate>2013-01-20 21:38:15
             <updateDate>2016-08-17 16:05:54
             <glass>
                <id>5</id>
                 <name>Pint</name>
                 <createDate>2012-01-03 02:41
             </glass>
             <srm>
```

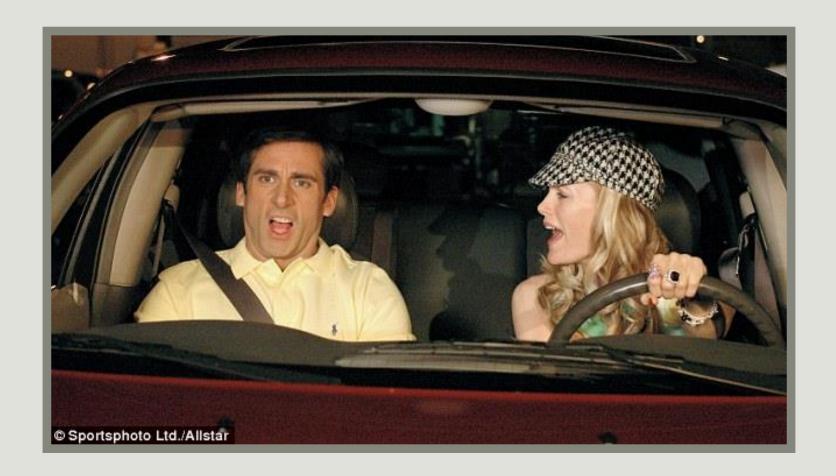
:5:{s:11:"currentPage";i:1;s:13:"numberOfPag :"description";s:246:"Hop Heads this one' US 2 Row Barley to get this to ABV 11.1%. :"createDate";s:19:"2013-01-20 21:38:15"; :2:"33";s:3:"hex";s:6:"520907";}s:5:"styl :"American-Style Imperial Stout";s:9:"sho robust. The extremely rich malty flavor malt astringency and bitterness can be mo should be absent.";s:6:"ibuMin";s:2:"50"; :"createDate";s:19:"2012-03-21 20:06:46"; :"description";s:479:"Our first beer has t is a mildly hoppy pale ale using a 2 row, addition of a roasted caramel malt gives :"verified";s:13:"statusDisplay";s:8:"Ver :"Available year round as a staple beer.' :"name";s:23:"American-Style Pale Ale";s: American-variety hop character producing sulfur-like American hop varietals. One o medium body and low to medium maltiness. temperatures.";s:6:"ibuMin";s:2:"30";s:6: :"createDate";s:19:"2012-03-21 20:06:45"; :"Milwaukee Brewing Co's take on a classi porter, rich in roasted malt flavors and Bourbon Barrels imparted a layer of vanil

le first developed this beer in 2007. Our fir

If we want beer with SOAP...

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"</p>
xmlns:tem="http://tempuri.org/"
xmlns:beer="http://schemas.datacontract.org/2004/07/BeerWithSoapService">
 <soapenv:Header/>
 <soapenv:Body>
   <tem:GetAllBeers>
    <tem:getAllBeersRequest>
      <beer:BaseRequest>
       <br/><beer:APIKey>ILoveBeer</beer:APIKey>
       <br/>
<beer:ClientCode>TonyaZen</beer:ClientCode>
       <beer:RequestId>d6502749-e425-4c71-a79d-904792ac4733
       <beer:Version>V1</beer:Version>
      </beer:BaseRequest>
    </tem:getAllBeersRequest>
   </tem:GetAllBeers>
 </soapenv:Body>
</soapenv:Envelope>
```

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
 <s:Body>
  <GetAllBeersResponse xmlns="http://tempuri.org/">
    <GetAllBeersResult xmlns:a="http://schemas.datacontract.org/2004/07/Be
      <a:BaseResponse>
       <a:DisplayErrorMessage i:nil="true"/>
       <a:RequestId>d6502749-e425-4c71-a79d-904792ac4733</a:RequestId>
       <a:ReguestTimeStamp>2017-07-24T11:58:38.9420794-04:00</a:Reguest
       <a:ResponseStatus>Success</a:ResponseStatus>
       <a:TechnicalErrorMessage i:nil="true"/>
      </a:BaseResponse>
      <a:Beers>
       <a:Beer>
        <a:Abv>6.6%</a:Abv>
        <a:Brewery>Founder's Brewing Co.</a:Brewery>
        <a:Id>1</a:Id>
         <a:Name>Red's Rye</a:Name>
```



Tools





Airborne

Apex Ping

Apigee Api Studio

Assertible

Chakram

DreddHippie

HttpMaster Express

Karate DSL

Mockbin

Postman

Pyresttest

Rest-Assured

Rest Console

RestSharp

RoboHydra Server

SoapUI

Swagger

Weblnject

Demo!

Code Review

- 1. Separate your service layer
- 2. Consider implementing an interface for your service class
- 3. Set up your logging right away
- 4. Wrap your API calls in Try/Catches
- 5. Consider using a response object that includes a call status and message
- 6. Create your own objects

Cheers to Good Communication

- 1. First... consult the documentation
- 2. Utilize their ticketing system
- 3. Provide raw request and response
- 4. Be nice

Drink Responsibly!

Questions?

Demo: https://github.com/tonyazen/OnTapNow

