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# API Testing Heuristics for Developers

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# Agenda

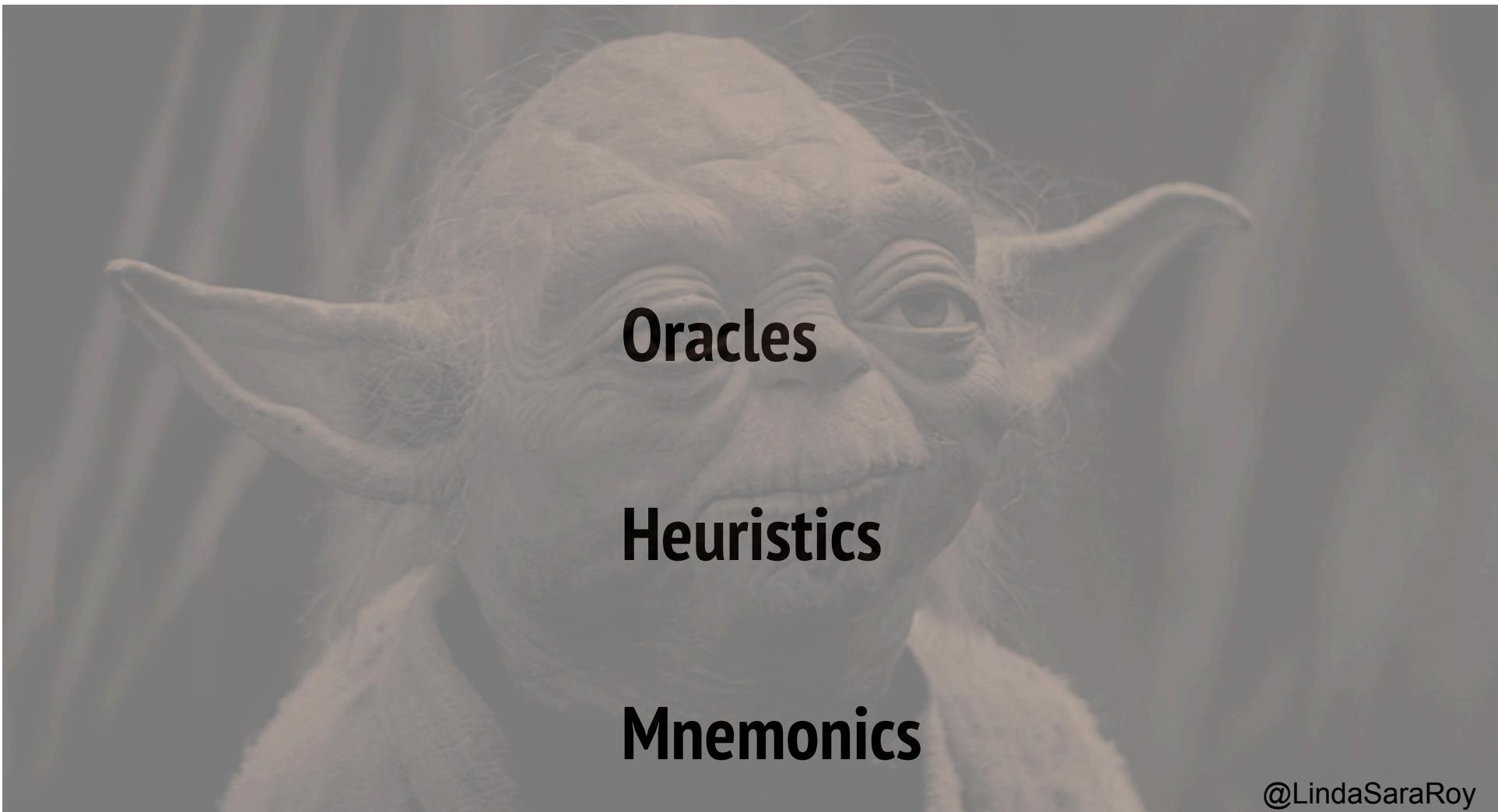
- WHY I introduced API testing heuristics
- WHAT were the API heuristics
- Takeaways





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<http://yipa.org/training/online/on-demand/telling-your-impact-story/>

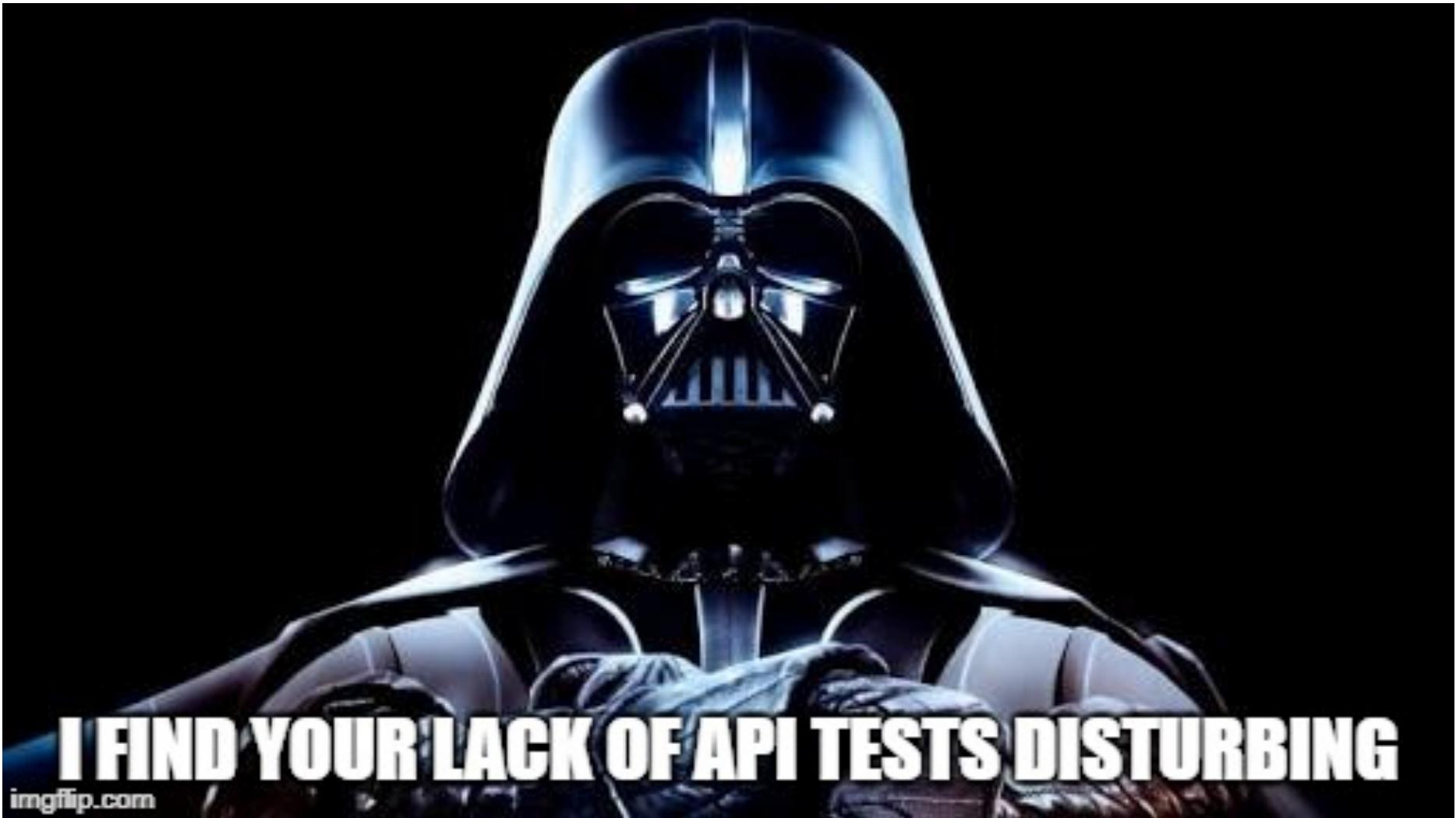


**Oracles**

**Heuristics**

**Mnemonics**

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# API Testing Heuristics

VADER :              Verbs

Authorisation/Authentication

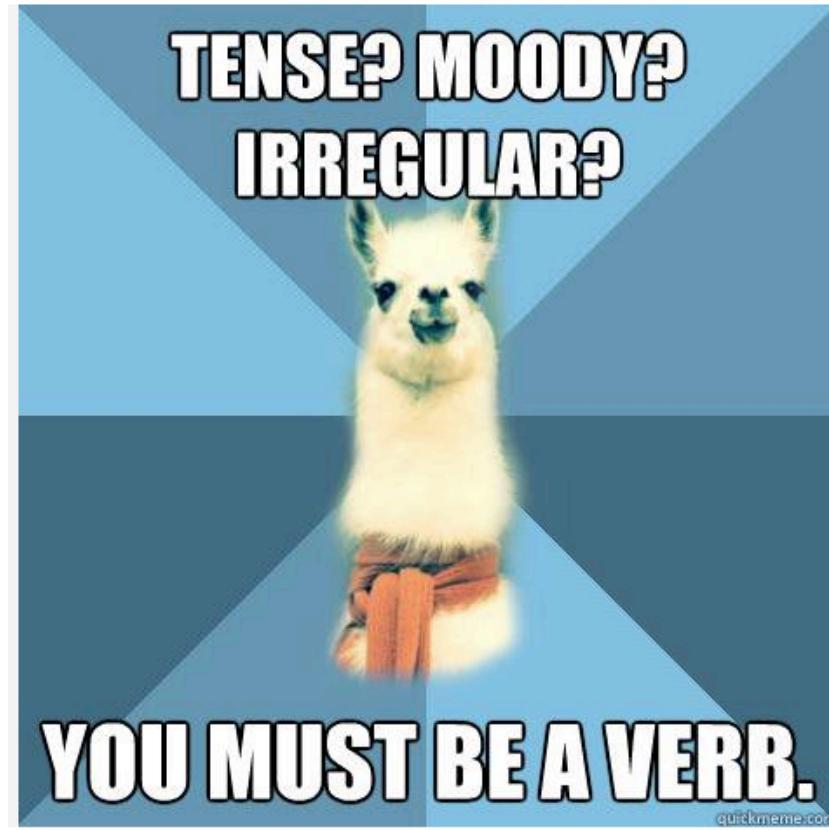
Data

Errors

Responsiveness

# Verbs

## A D E R



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<https://www.tes.com/lessons/oIVgSJ5UZHShA/repaso-go-go-verbs>

# GET



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# POST

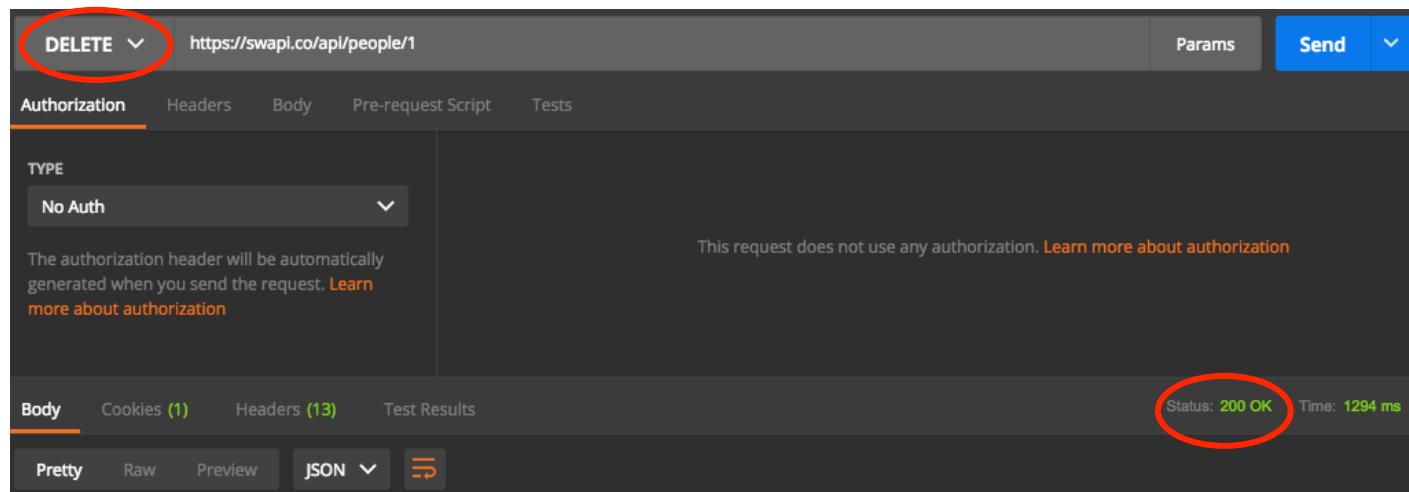
The screenshot shows the Postman application interface. At the top, there is a header bar with the method "POST" and the URL "https://swapi.co/api/people/100". To the right of the URL are buttons for "Params" and "Send". Below the header, there is a navigation bar with tabs: "Authorization", "Headers", "Body" (which is currently selected), "Pre-request Script", and "Tests". Under the "Body" tab, there are four options: "form-data", "x-www-form-urlencoded", "raw", and "binary". The "Text" dropdown is set to "JSON". The main area contains a JSON object with 20 numbered lines:

```
1 {  
2   "name": "API Tester",  
3   "height": "unknown",  
4   "mass": "unknown",  
5   "hair_color": "unknown",  
6   "skin_color": "unknown",  
7   "eye_color": "unknown",  
8   "birth_year": "unknown",  
9   "gender": "female",  
10  "homeworld": "https://swapi.co/api/planets/28/",  
11  "films": [  
12    "https://swapi.co/api/films/7/"  
13  ],  
14  "species": [],  
15  "vehicles": [],  
16  "starships": [],  
17  "created": "2015-10-13T10:35:39.229823Z",  
18  "edited": "2015-10-13T10:35:39.229894Z",  
19  "url": "https://swapi.co/api/people/88"  
20 }
```

At the bottom of the interface, there are tabs for "Body" (which is selected), "Cookies (1)", "Headers (13)", and "Test Results". To the right, the status is shown as "Status: 404 NOT FOUND" and "Time: 80ms".

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# DELETE



The screenshot shows the Postman application interface. At the top, the method "DELETE" is selected from a dropdown menu, which is highlighted with a red circle. The URL "https://swapi.co/api/people/1" is entered in the address bar. To the right of the URL are buttons for "Params" and "Send". Below the URL, there are tabs for "Authorization", "Headers", "Body", "Pre-request Script", and "Tests", with "Authorization" being the active tab. Under "Authorization", the "TYPE" dropdown is set to "No Auth", with a note below stating that an authorization header will be generated when the request is sent. To the right of this note is a link to "Learn more about authorization". In the bottom right corner of the main window, the status message "Status: 200 OK" is displayed, also circled in red. At the very bottom of the interface, there are tabs for "Body", "Cookies (1)", "Headers (13)", and "Test Results", with "Body" being the active tab. Below these tabs are buttons for "Pretty", "Raw", "Preview", and "JSON", with "JSON" currently selected.



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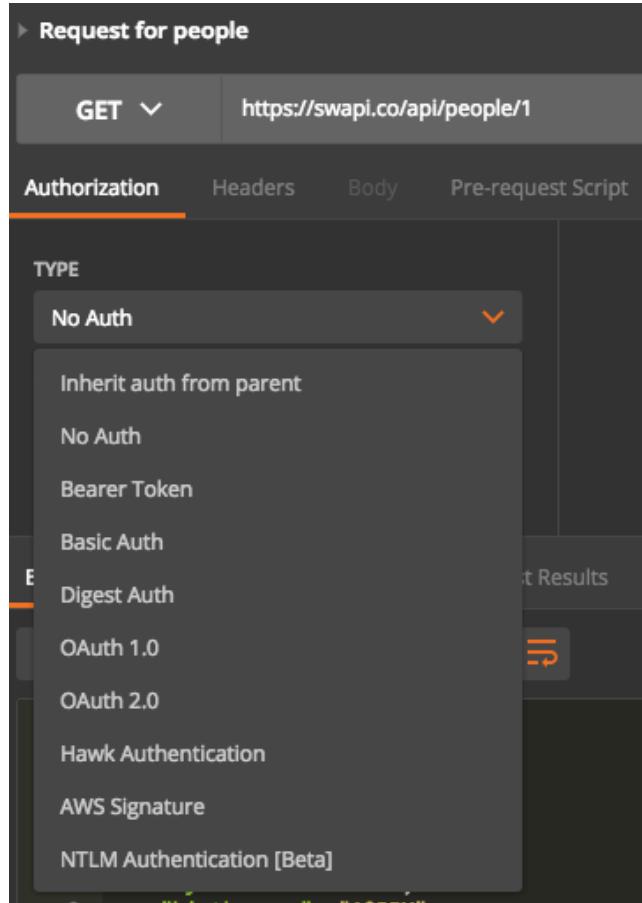
V  
D  
E  
R

# Authorisation



<http://www.quickmeme.com/meme/3tt20a>

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▶ Request for people

GET <https://swapi.co/api/people/1>

Params **Send** ▾

Authorization ● Headers (1) Body Pre-request Script Tests

TYPE

Basic Auth

The authorization header will be automatically generated when you send the request. [Learn more about authorization](#)

Username: ME  
Password:   Show Password

! Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. [Learn more about variables](#)

**Preview Request**

Body Cookies (1) Headers (13) Test Results

Status: 403 FORBIDDEN Time: 944 ms

Pretty Raw Preview JSON ▾ 

```
1 {  
2   "detail": "Invalid username/password"  
3 }
```

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V  
A  
**Data**  
E  
R



<https://www.linkedin.com/pulse/meares-digital-analytics-file-featuring-stories-voice-chris-meares>

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GET <https://swapi.co/api/people/?page=1>

Pretty Raw Preview JSON ↗ Params Send

```
1: {
2:   "count": 87,
3:   "next": "https://swapi.co/api/people/?page=2",
4:   "previous": null,
5:   "results": [
6:     {
7:       "name": "Luke Skywalker",
8:       "height": "172",
9:       "mass": "77",
10:      "hair_color": "blond",
11:      "skin_color": "fair",
12:      "eye_color": "blue",
13:      "birth_year": "19BBY",
14:      "gender": "male",
15:      "homeworld": "https://swapi.co/api/planets/1/",
16:      "films": [
17:        "https://swapi.co/api/films/2/",
18:        "https://swapi.co/api/films/6/",
19:        "https://swapi.co/api/films/3/",
20:        "https://swapi.co/api/films/1/",
21:        "https://swapi.co/api/films/7/"
22:      ],
23:      "species": [
24:        "https://swapi.co/api/species/1/"
25:      ],
26:      "vehicles": [
27:        "https://swapi.co/api/vehicles/14/",
28:        "https://swapi.co/api/vehicles/30/"
29:      ],
30:      "starships": [
31:        "https://swapi.co/api/starships/12/",
32:        "https://swapi.co/api/starships/22/"
33:      ],
34:      "created": "2014-12-09T13:50:51.644000Z",
35:      "edited": "2014-12-20T21:17:56.891000Z",
36:      "url": "https://swapi.co/api/people/1/"
37:    }

```

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V  
A  
D  
**Errors**

R



<https://www.flickr.com/photos/girliemac/sets/72157628409467125>

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Request for people

Request for people

GET https://swapi.co/api/people/100

Params Send Save Examples (0)

Authorization Headers Body Pre-request Script Tests Cookies Code

TYPE No Auth

This request does not use any authorization. [Learn more about authorization](#)

Body Cookies (1) Headers (13) Test Results Status: 404 NOT FOUND Time: 1040 ms Size: 481 B

Pretty Raw Preview JSON

```
1: {  
2:   "detail": "Not found"  
3: }
```

Request for people

Request for people

GET https://swapi.co/api/people/1

Params Send Examples (0)

Authorization Headers (1) Body Pre-request Script Tests Cookies Code

TYPE Basic Auth

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. [Learn more about variables](#)

Username ME

Password  Show Password

Status: 403 FORBIDDEN Time: 944 ms

Body Cookies (1) Headers (13) Test Results

Pretty Raw Preview JSON

```
1: {  
2:   "detail": "Invalid username/password"  
3: }
```

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V  
A  
D  
E

# Responsiveness



2011-775 © INKCINCT Cartoons [www.inkcinct.com.au](http://www.inkcinct.com.au)

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The screenshot shows the Postman application interface. At the top, there is a header bar with a dropdown for 'GET', the URL 'https://swapi.co/api/films', and buttons for 'Params', 'Send', and 'Save'. Below the header is a navigation bar with tabs: 'Authorization' (which is selected and highlighted in orange), 'Headers', 'Body', 'Pre-request Script', 'Tests', 'Cookies', and 'Code'. The main content area has a section titled 'TYPE' with a dropdown menu set to 'Inherit auth from parent'. A note below it states: 'The authorization header will be automatically generated when you send the request. [Learn more about authorization](#)'. To the right of this note, a message says: 'This request is not inheriting any authorization helper at the moment. Save it in a collection to use the parent's authorization helper.' At the bottom of the main content area, there are tabs for 'Body', 'Cookies (1)', 'Headers (13)', and 'Test Results'. On the far right, status information is displayed: 'Status: 200 OK', 'Time: 1411 ms', and 'Size: 19.73 KB'. A red oval highlights the 'Time: 1411 ms' text. Below the main content area is a footer bar with buttons for 'Pretty', 'Raw', 'Preview', 'JSON' (with a dropdown arrow), and a file icon.

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# Did It Work?

- Teammates understood quality is team's responsibility
- Mnemonics are a fun way to trigger test ideas
- Making it visible to everyone at all times

# Takeaways

- Good to get devs to test
- Mnemonics are good coaching tools
- Don't forget API testing has heuristics
- Don't go to the dark side!

# Thank you!

For more heuristics:

- [API and Microservices testing learning pathway](#) - Katrina The Tester
- [ICE OVER MAD](#)
- API testing playgrounds
  - Build.Kiva



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