It’s a MAD world! Contract Testing can help!

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1. Testing Model

How do we talk about Contract Testing compared to other testing?
The "Test Pyramid" is a metaphor that tells us to group software tests into buckets of different granularity.

- Ham Vocke

Article [Practical Test Pyramid](http://martinfowler.com/articles/practicalTestPyramid.html) on Martin Fowler’s site
Testing Cone

Mix heavy on brittle UI end-to-end automation scripts has long build times and is not deployment pipeline-friendly.
The common testing pyramid is about a **balanced** testing portfolio

Article [Test Pyramid](http://example.com) on Martin Fowler’s site
but what we want is a different sort of early warning...
2. Contract Testing

How does adding Contract Testing change what we do?
Who cares about a “contract”?

**Consumer**
The service **asking** the questions.

**Provider**
The service **answering** the questions.
API Service Conversation

Consumer

Question (request)

Behavior

Provider

Answer (response)
Who cares about a “contract”?

Consumer
What kinds of questions can I ask?

Provider
What kinds of answers can I provide?
Enter the contract!

A formal agreement about how communication will flow
What’s in a contract?

- Calls services can make
- The shape of the requests
- The shape of the responses

Just enough information to tell us:

“Could it work?”
What are Mad Libs?

Grammar

Game
What are Mad Libs?

These are the parts of speech in the fill-in-the-blank sentence (like a Mad Libs phrasal template) that you will complete together:

noun  verb  adjective
What are Mad Libs?

We are uncovering adjective ways of developing noun by doing it and helping others verb it.

You may recognize this sentence ... courtesy of Agile Manifesto
Provide all the words without the context

Example of Mad Libs Apps
Workshop Time!
The common testing pyramid is about a balanced testing portfolio.

Article [Test Pyramid](https://martinfowler.com/articles/testPyramid.html) on Martin Fowler’s site.
Microservices & Contracts
CONSUMER-DRIVEN
I’ll give you the questions and how to answer them.
Then, you can build the service.

PROVIDER-DRIVEN
I’ll tell you how to ask questions and what kinds of answers I’ll give.
I’ll build the service and you’re welcome to use it.
Contract Options

CONSUMER-DRIVEN
I’ll give you the questions and how to answer them.
Then, you can build the service.

PROVIDER-DRIVEN
I’ll tell you how to ask questions and what kinds of answers I’ll give.
I’ll build the service and you’re welcome to use it.
Requests (questions) drive the contract
If the consumer doesn’t ask, we don’t build it
We know the use cases & everything is directed toward delivering value

(Does this sound familiar? Rings of Test-Driven Development or TDD)
Consumer—Driven Conversation

Consumer

Here’s the Question (request)

Here’s the Behavior the Answer drives

Provider

Here’s how I want the Answer (response)
Here’s the Question
(request)

Here’s how I want the Answer
(response)

Hey, PACT, hold this for me!
Hey, PACT Broker, does this still work?
Demo time!

PACT is an open-source consumer-driven contract testing (CDCT) tool
Contract Options

CONSUMER-DRIVEN
I’ll give you the questions and how to answer them.
Then, you can build the service.

PROVIDER-DRIVEN
I’ll tell you how to ask questions and what kinds of answers I’ll give.
I’ll build the service and you’re welcome to use it.
CONSUMER-DRIVEN

I’ll give you the questions and how to answer them.
Then, you can build the service.

PROVIDER-DRIVEN

I’ll tell you how to ask questions and what kinds of answers I’ll give.
I’ll build the service and you’re welcome to use it.
Responses (answers) drive the contract
If we build it, they will come
We hope this enables delivering value

(More like test-after than test-driven)
Provider–Driven Conversation

Consumer

You can ask these Questions (requests)

Here’s the Behavior you can have

Provider

Here’s how I will Answer (responses)
Here's the Question (request)

Here's how I want the Answer (response)

Create Postman Collection with Mock Server
Here’s the Question
(request)

Here’s how I want
the Answer
(response)

Travis CI evaluates Postman Collection
Demo time!

Postman Collections describe the structure and interactions of an API.
Any questions?

You can find me at @aclairefication & claire@aclairefication.com

Code at https://github.com/aclairefication/gomad
Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](https://slidescarnival.com)
- Photographs by [Unsplash](https://unsplash.com)