

THE LORD OF API DESIGNS

BY

ARNAUD LAURET

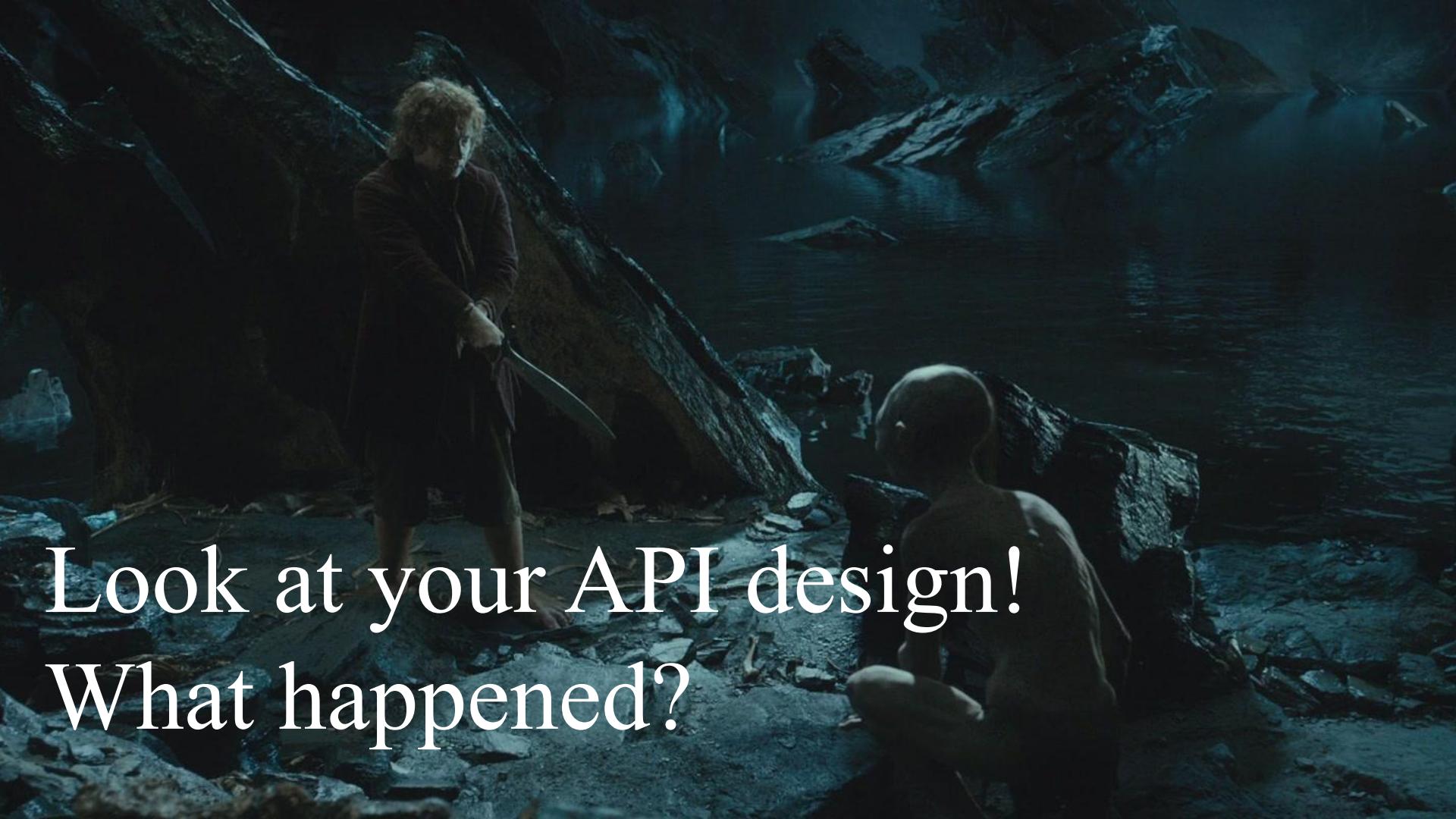
@APIHANDYMAN

APIHANDYMAN.IO

APISTYLEBOOK.COM

Chapter I

THE SHADOW OF
API DESIGN



Look at your API design!
What happened?

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His expression is one of intense alarm, despair, or realization. The background is dark and out of focus.

My precious
API design!
What have we
done?

A scene from the movie "The Hobbit: Desolation of Smaug". In the foreground, Bilbo Baggins (played by Martin Freeman) stands prominently, looking slightly to his right with a serious expression. He has long, wavy, reddish-brown hair and is wearing a green waistcoat over a light-colored shirt, with a red velvet jacket draped over his shoulders. He holds a wooden staff in his right hand. Behind him, a group of dwarves, all with beards and wearing brown tunics, are visible, some holding axes or spears. The background shows a stone wall and trees, with sunlight filtering through the leaves.

First API

A dramatic, close-up shot of a person's face, likely a woman, with a look of intense fear or shock. Her eyes are wide and bulging, looking directly at the viewer. Her hands are raised to her cheeks, fingers pressed against her temples. The lighting is low and moody, with deep shadows and a bluish-green tint, suggesting a night scene or a dreamlike state. The background is dark and out of focus.

But after that
the nightmare
started



First API
updated

A dramatic, close-up photograph of a person's face. The person has pale skin, wide eyes with dark pupils, and a look of intense surprise or shock. Their hands are raised to their cheeks, fingers covering their ears. The lighting is low and moody, with strong shadows and highlights on the face. The background is dark and out of focus.

More and
more public
and private
APIs!



Second API

Third API ...



Fourth API ...





... Nth API

A close-up of Gollum's face from Lord of the Rings, looking shocked with his mouth open.

What's the
problem with
these APIs?

A close-up of Gollum's face from Lord of the Rings, looking shocked with hands to his cheeks.

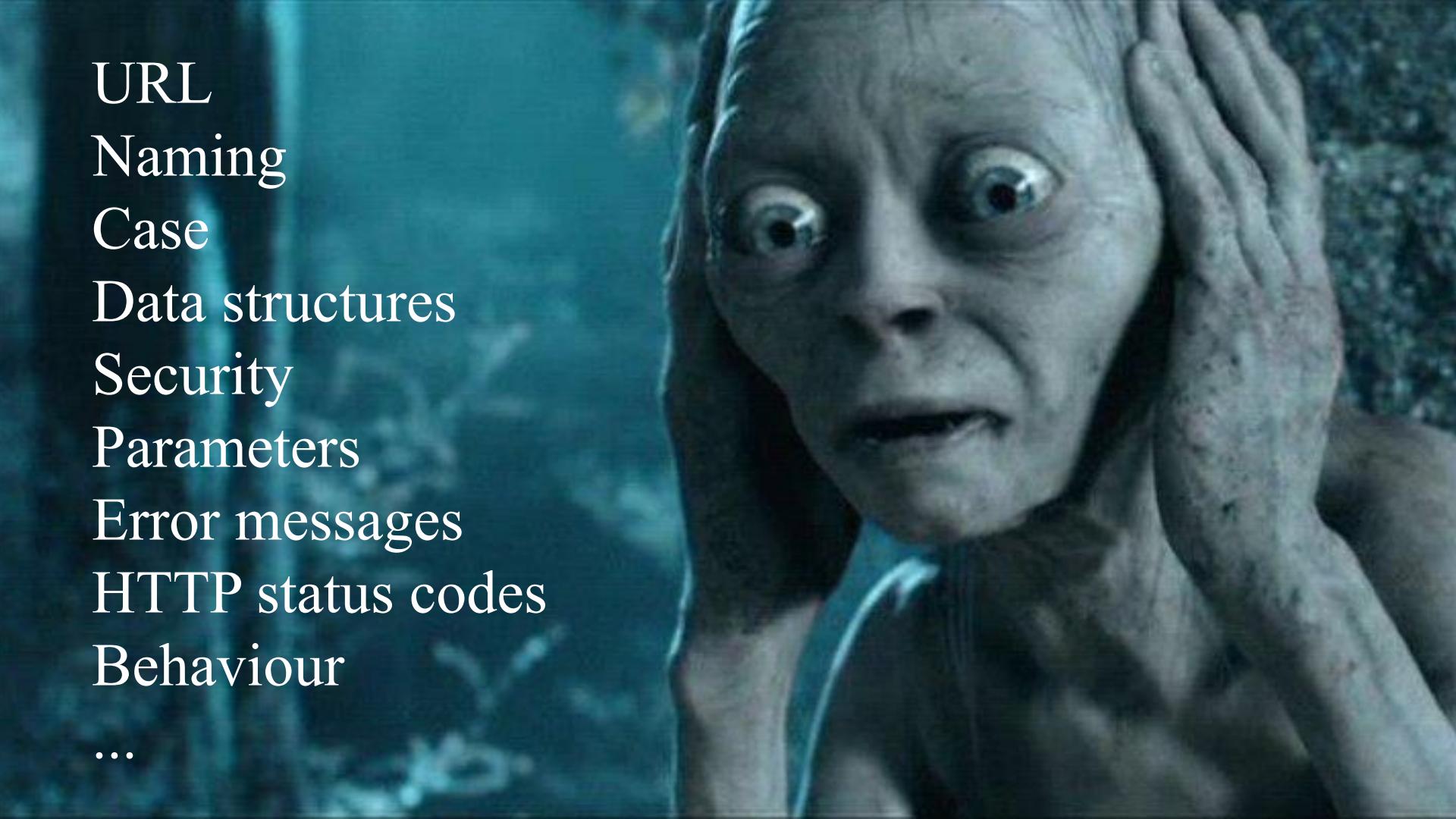
/heroes/{bilbo}

/characters/heroes/{bilbo}

/api/hero/{bilbo}

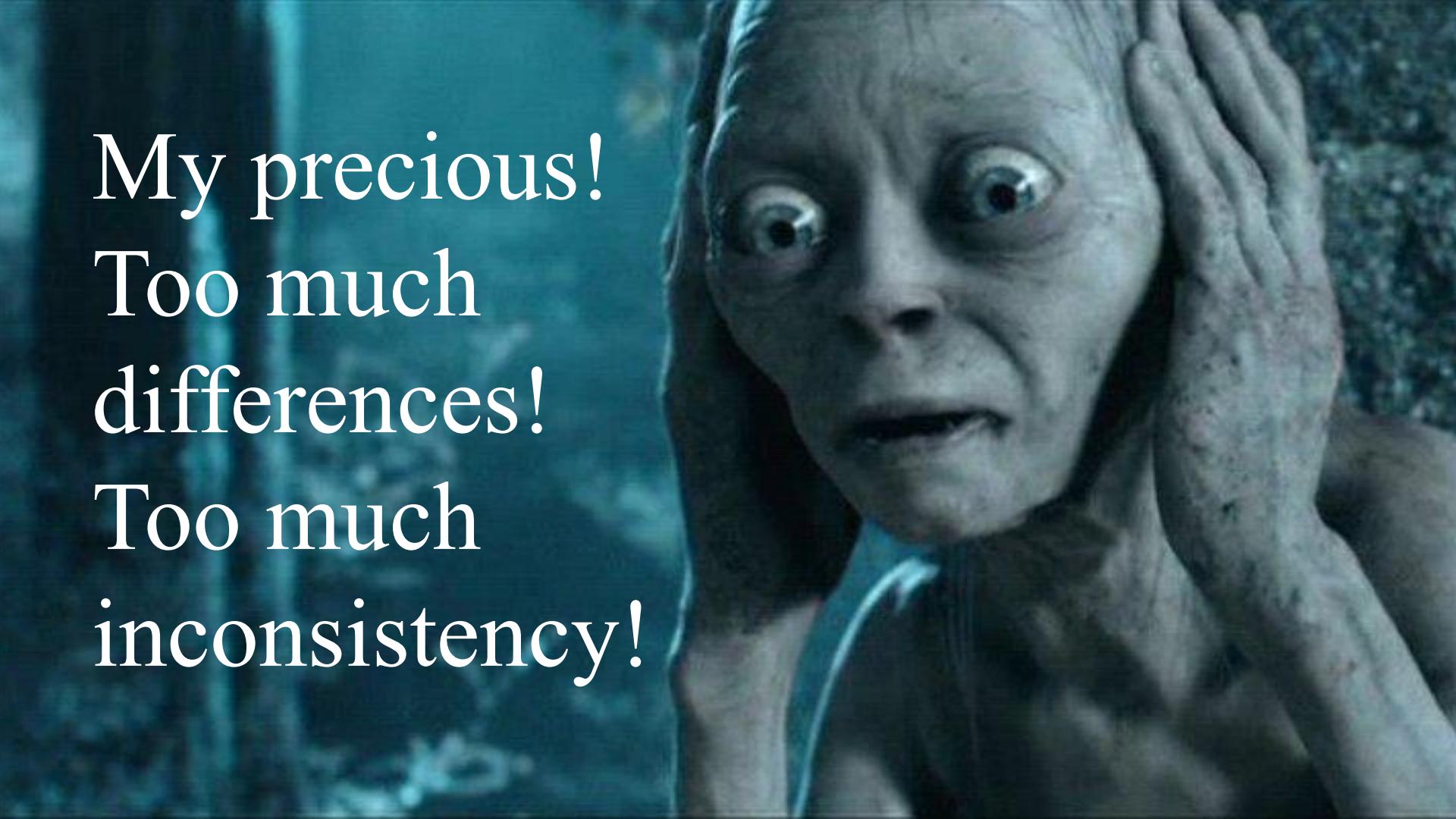


“name”: “Baggins, Bilbo”
“FirstnameLastname”: “Bilbo Baggins”
“character-name”: “bilbo baggins”
“character_name”: “BILBO BAGGINS”
“fnLn”: “B. Baggins”

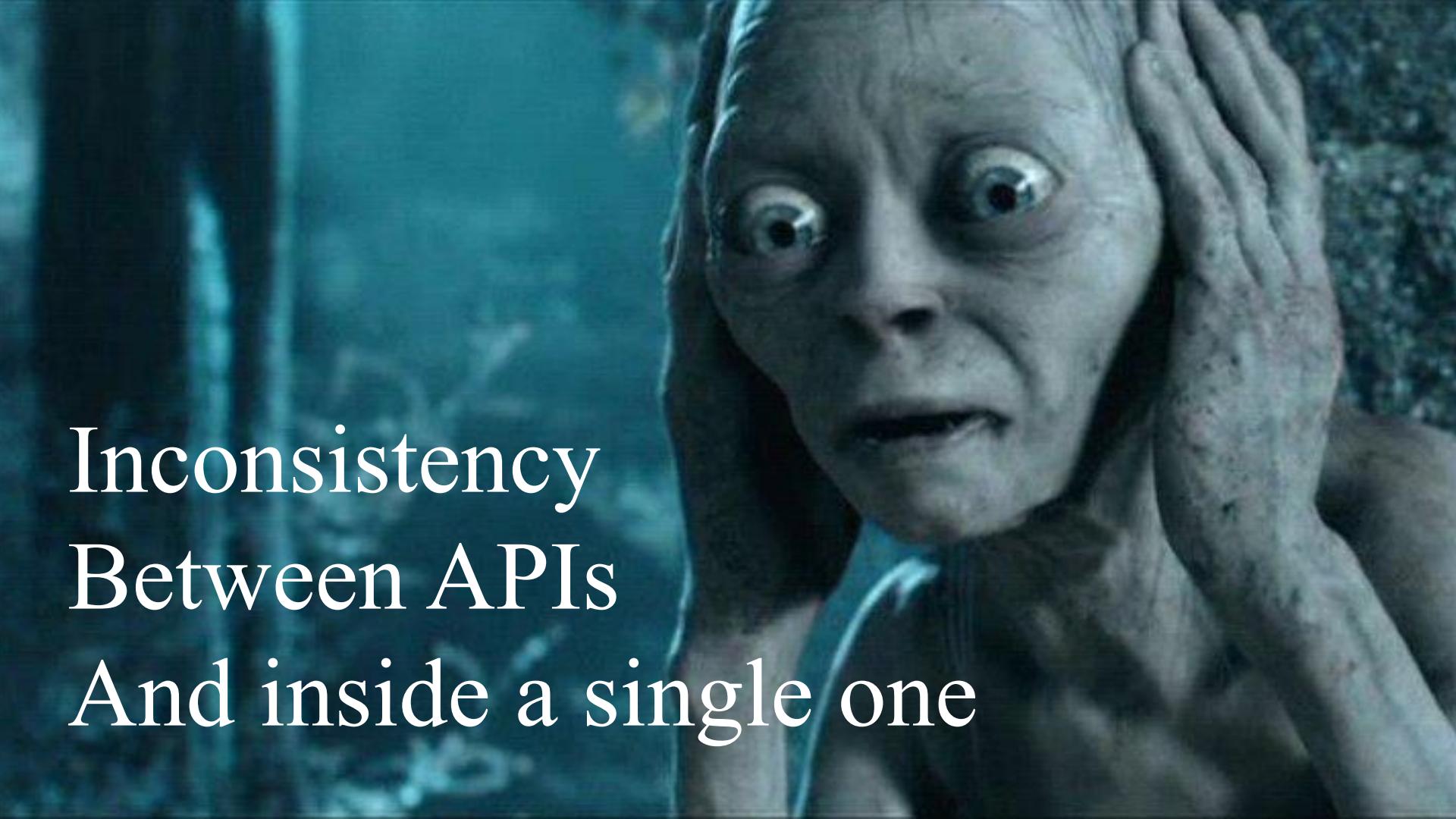
A dramatic, close-up photograph of a person's face. The person has pale skin, wide blue eyes, and a shocked or distressed expression. Their hands are raised to their cheeks, fingers covering their ears. The lighting is low and moody, with strong shadows and highlights on the face.

URL
Naming
Case
Data structures
Security
Parameters
Error messages
HTTP status codes
Behaviour

...



My precious!
Too much
differences!
Too much
inconsistency!

A dramatic, close-up photograph of a person's face, likely a woman, with a look of intense surprise or shock. Her eyes are wide open, looking directly at the viewer. Her hands are raised to her cheeks, framing her face. The lighting is low-key and moody, with strong shadows and highlights on her skin. The background is dark and out of focus.

Inconsistency
Between APIs
And inside a single one

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His expression is one of intense surprise or alarm. The background is dark and out of focus.

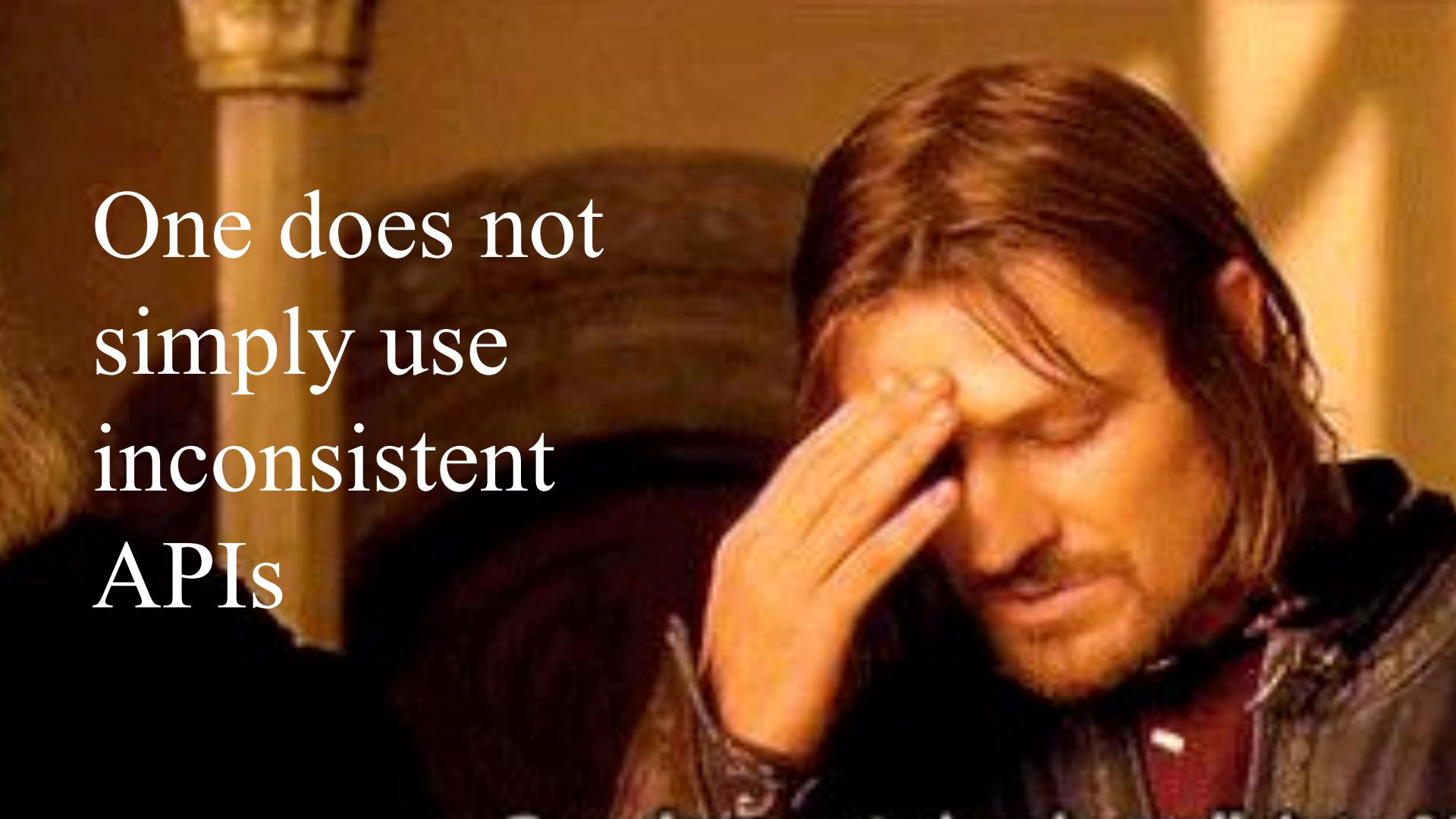
But what's the
problem with
inconsistency?

A photograph of a Hobbiton house, featuring a large circular green door set into a yellow wall with a red brick arch. The house is built into a grassy hillside, with a small window to the left and a larger one to the right. The foreground is filled with lush green grass and various colorful flowers, including yellow, white, and orange ones.

Why do you almost
always know how to
open a door?



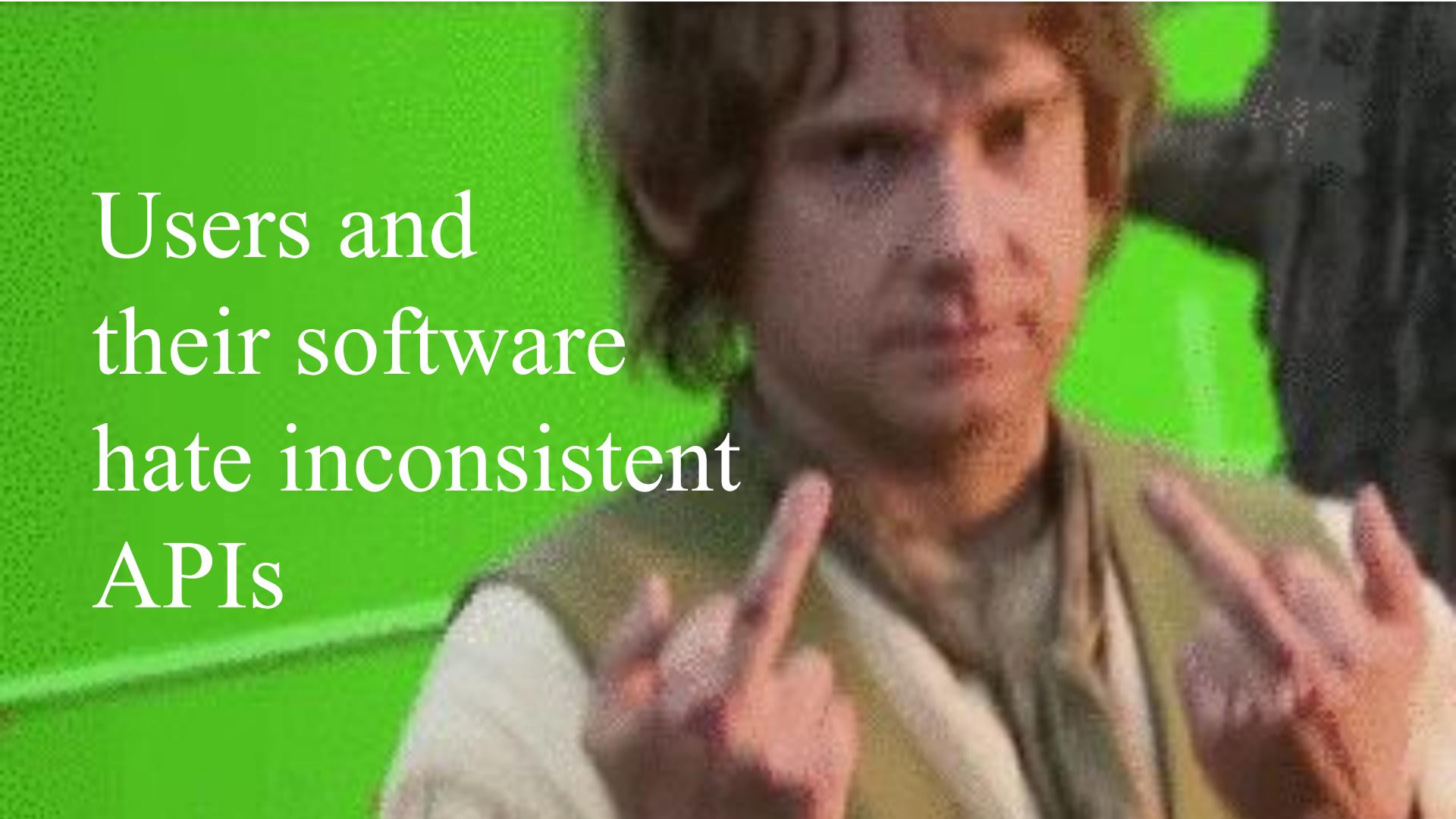
Why Gandalf hates
Moria's door?

A dramatic, low-key lighting photograph of a man with long, wavy brown hair and a full beard. He is wearing a dark, possibly leather, jacket. His right hand is raised to his forehead, with his fingers partially covering his eyes, suggesting distress, exhaustion, or deep thought. The background is dark and out of focus.

One does not
simply use
inconsistent
APIs

A person wearing a dark hooded cloak is crouching in a dense, green forest. The person's face is partially visible, looking down and slightly to the side with a serious expression. The background is filled with out-of-focus green foliage and trees.

Using each new endpoint or
API is a totally new adventure

A close-up photograph of a man with a beard and short brown hair. He is wearing a light-colored, possibly beige or cream, button-down shirt. His hands are raised in front of him, fingers spread, as if he is emphasizing a point or gesturing during a conversation. The background is blurred, showing what appears to be a green lawn and some dark foliage.

Users and
their software
hate inconsistent
APIs

A dramatic, close-up photograph of a man's face. He has a wide-eyed, shocked expression, with his hands pressed against his cheeks. The lighting is low-key, with strong highlights on his forehead, nose, and hands, creating a dramatic and intense look.

So much
time lost!

So much
users lost!

So much
money lost!

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His expression is one of intense surprise or shock. The background is dark and out of focus.

Is that the
work of a
single API
designer?

At the
beginning
yes...



A dramatic scene from a movie or video game. A Viking warrior with long blonde hair and a horned helmet is shouting with his mouth wide open. He is wearing detailed armor, including shoulder guards and a chest plate. He is pointing a large, ornate sword forward with his right hand. The background is filled with smoke and fire, suggesting a battlefield or a burning building.

Let's
forget what I've
just doooone!!!!

... But we
needed more
and more API
designers and
things get
even worse!





Endless discussions

Repeated endless discussions





Let's
reinvent
the wheeeeeel!



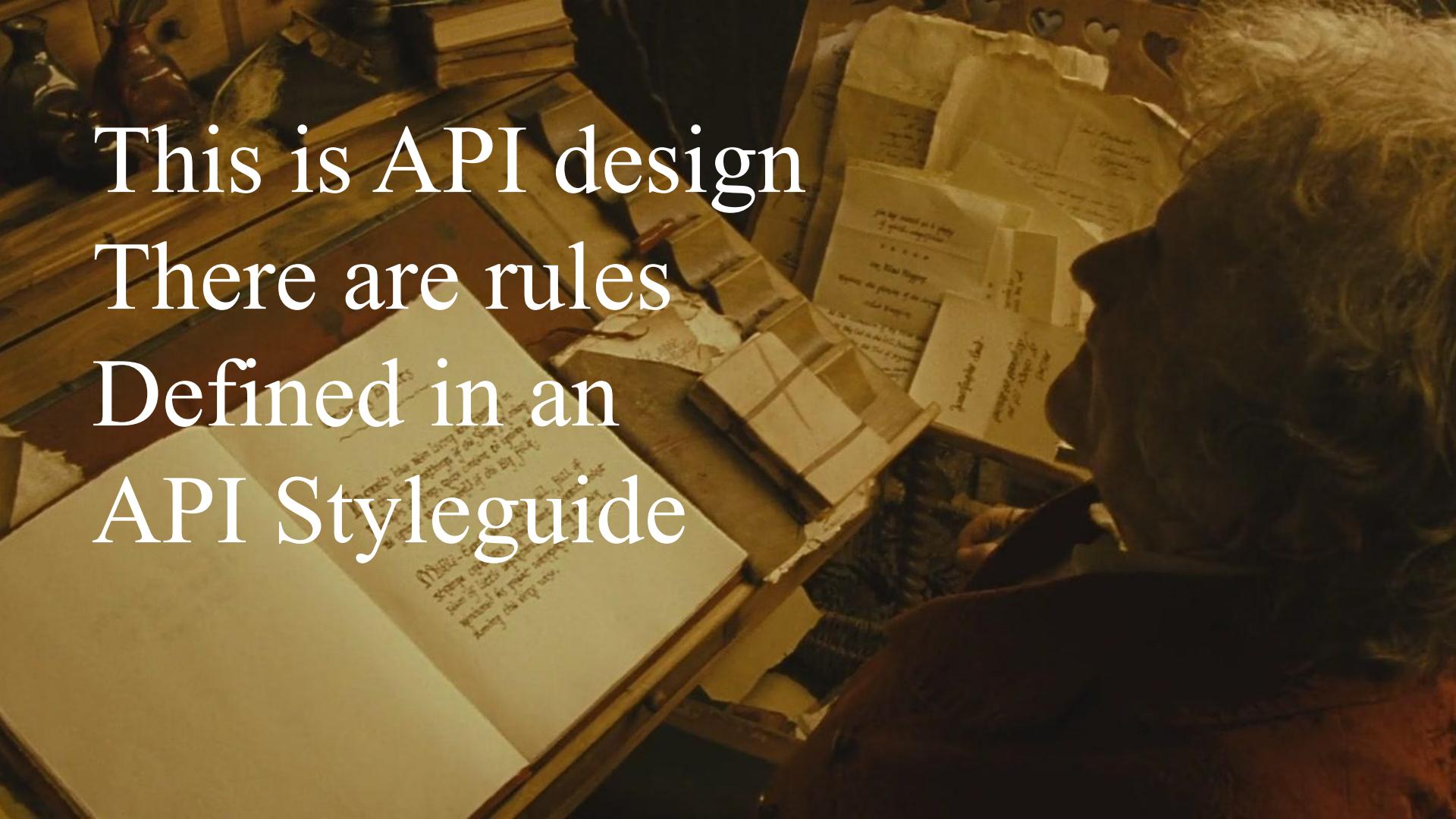
My precious!
More
inconsistency!
And so much
time loosed!

But what can
we do my
precious?

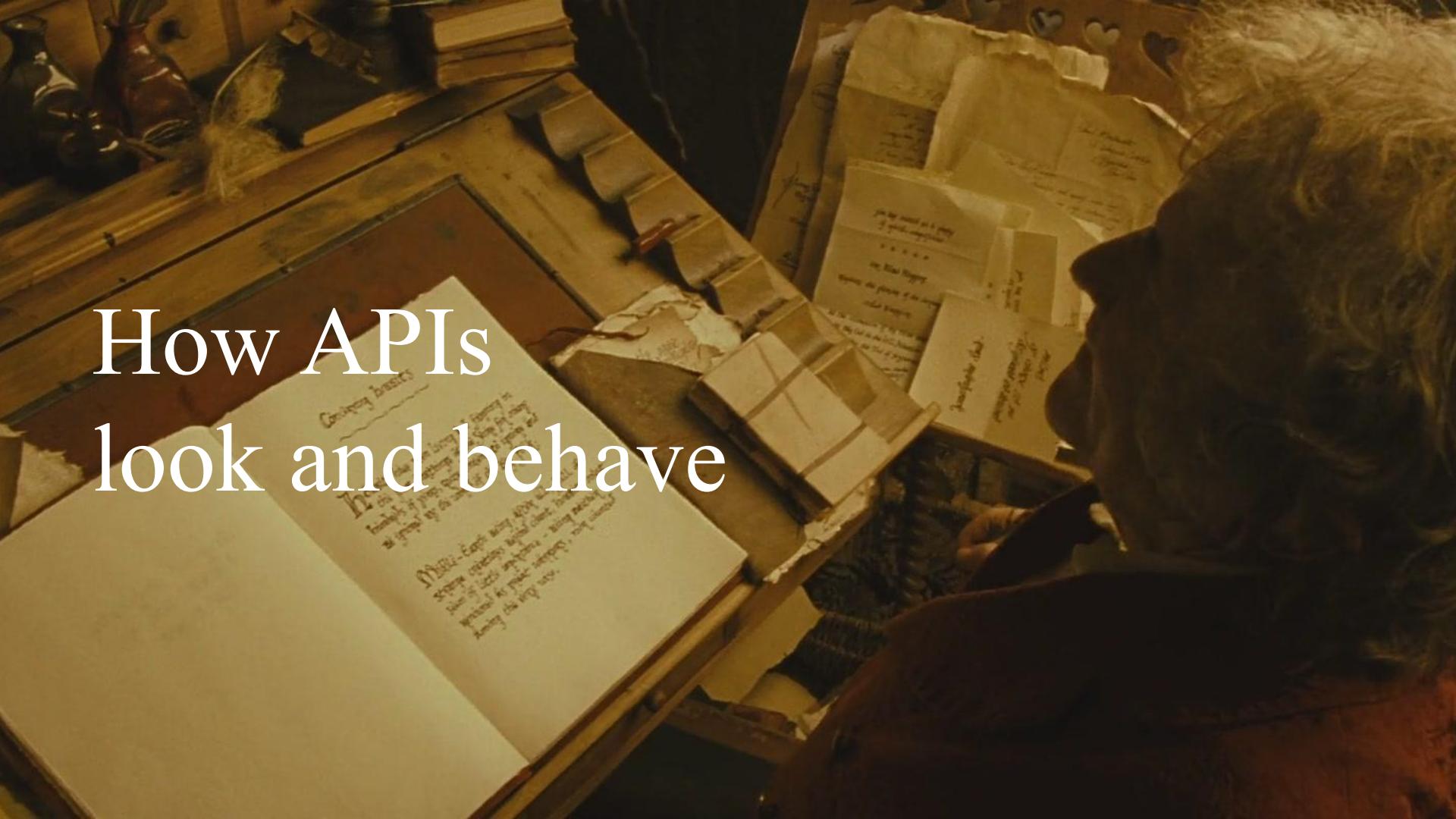


Chapter II

A LONG-EXPECTED
API STYLEGUIDE

A person with long, curly hair is shown from the side, wearing a dark hooded cloak. They are holding an open book and writing in it with a quill pen. The book has aged, yellowish pages filled with handwritten text in a cursive script. In the background, there are more books stacked on shelves, some with small heart-shaped stickers on them. The lighting is warm and focused on the person's hands and the book.

This is API design
There are rules
Defined in an
API Styleguide

A photograph of a person with curly hair sitting at a desk, reading an open book. They are holding a red pen over the page. The desk is cluttered with several other books, some stacked and some lying flat. In the background, there is a vase with dried flowers and a small framed picture on the wall.

How APIs look and behave

How to design APIs



A person with curly hair is sitting at a wooden desk, looking down at an open book and writing in a notebook. The desk is cluttered with various items, including a small vase with dried flowers, a quill pen, and some papers. The lighting is warm and focused on the person's hands and the book.

How to create but also update an API

A person with curly hair is sitting at a desk, reading an open book. The book is written in a cursive script, likely calligraphy. A quill pen rests on the book. In the background, there are more books on shelves and some decorative items.

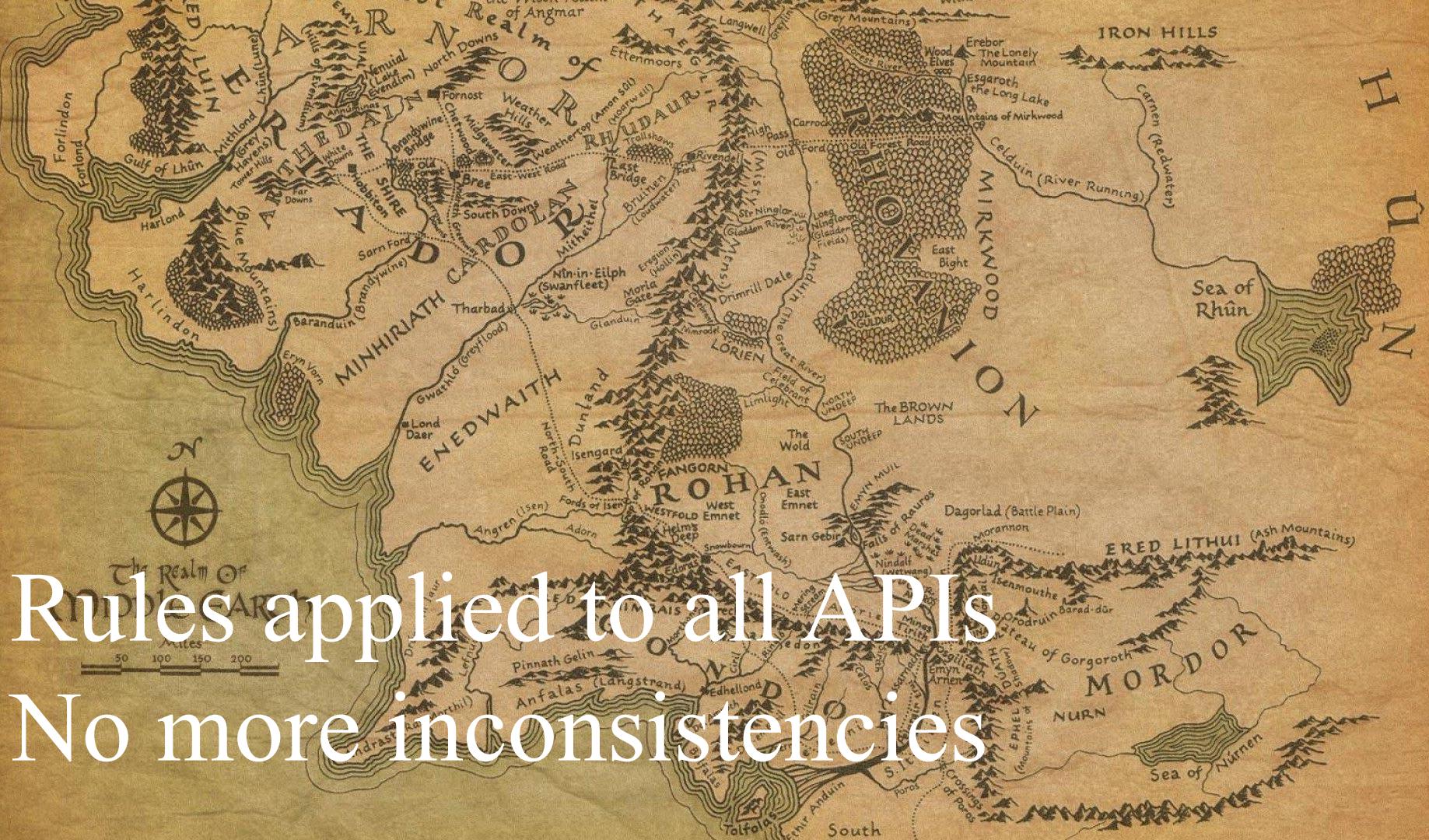
How to handle the API lifecycle



All needed rules
to ensure consistency

A scene from The Lord of the Rings: The Return of the King. In the foreground, a group of men in medieval-style clothing are gathered in a large, dimly lit stone hall. One man in the center-right is seated on a high stone throne, wearing a golden crown and a brown robe. He is looking down at a document he is holding. To his left, several other men are standing or sitting, some with their hands clasped. The background features tall, thin columns and a large, ornate metal gate with intricate circular patterns. The lighting is dramatic, with strong shadows and highlights coming from the side.

Rules discussed once
No more time loosed
Focus on what's really important



Rules applied to all APIs
No more inconsistencies

A painting of two men in 18th-century attire, one holding a pipe, looking at a small object.

Both users and designers
are happy

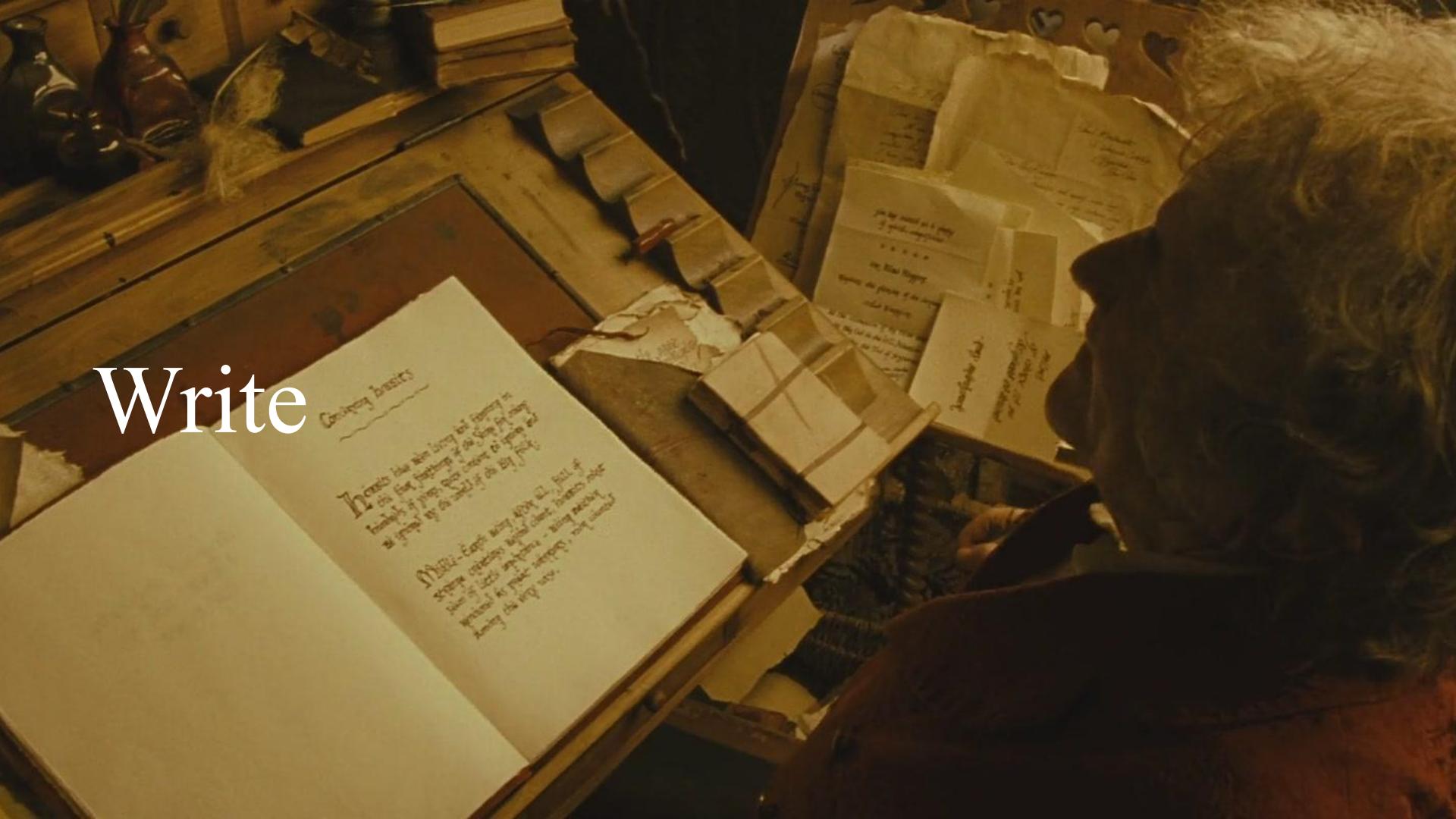
A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His expression is one of intense anger or aggression. The background is dark and out of focus.

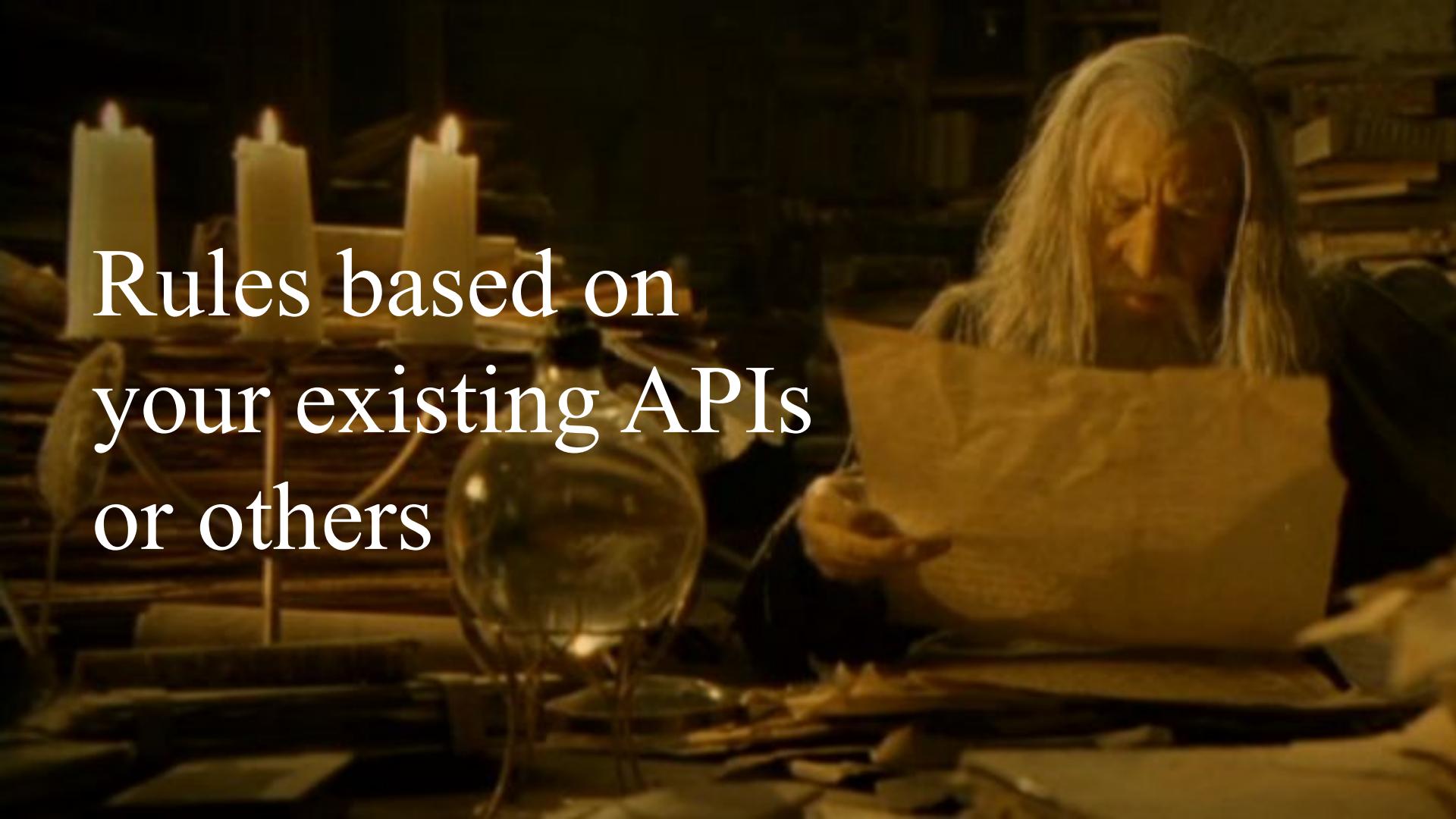
So all we
have to do is
describe rules
in a styleguide?

Chapter III

THE BATTLE OF THE
API STYLEGUIDE

Write



A scene from a Harry Potter film showing Albus Dumbledore in his study. He is an elderly man with long white hair and a beard, wearing a robe. He is looking down at a large, open book he is holding. In the background, there are several tall, lit candles on stands, and a large, antique-style globe sits on a stand to the left. The room is filled with shelves of books, creating a scholarly atmosphere.

Rules based on
your existing APIs
or others



Based on existing
API styleguides
apistylebook.com
(shameless plug)

A photograph from a movie showing three large, hairy, orange-skinned characters (resembling Gollum or Hodor) gathered around a campfire at night. They are sitting on the ground, facing a small fire. The character on the left is leaning forward, looking down at the flames. The character in the center is looking directly at the camera with a slightly open mouth. The character on the right is looking off to the side. The scene is dimly lit by the fire, with orange and yellow flames visible.

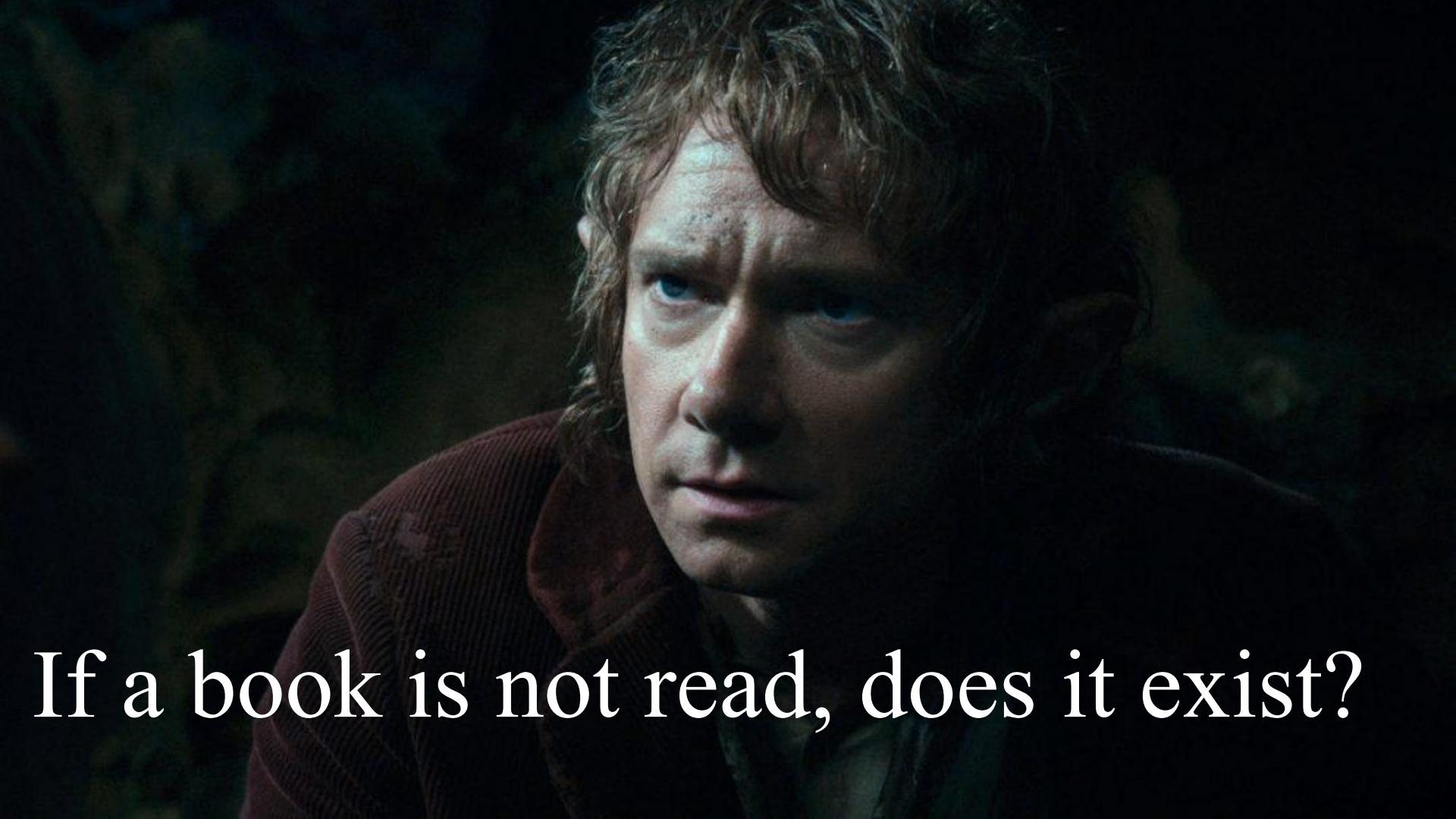
And don't forget your
fellow API designers

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His hands are clasped together in front of him. The background is a dark, forested area.

And it's done?



No, it's only the beginning



If a book is not read, does it exist?

A Hobbit character from The Lord of the Rings is standing in a lush, green landscape. He is wearing a brown velvet jacket over a white shirt and a green vest, with brown breeches and stockings. He has a large, round belly and is barefoot. He is looking towards the camera with a slight smile. In the background, there are rolling green hills dotted with small, round houses built into the sides of the hills. A wooden signpost stands on the left, pointing in different directions. The overall atmosphere is idyllic and pastoral.

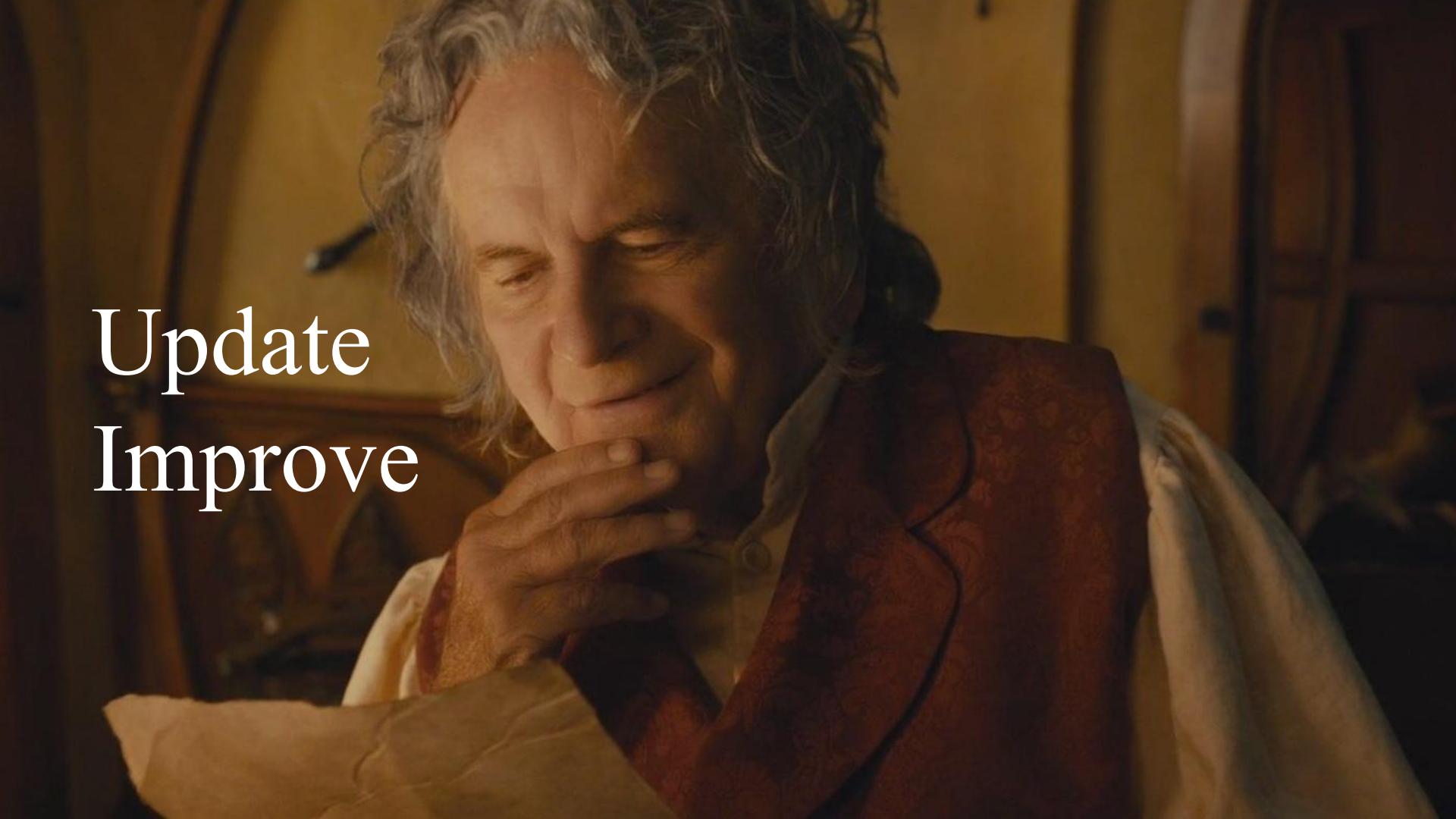
Share and promote

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His hands are clasped together in front of him. The background is a dark, forested area.

What else?

A close-up portrait of Bilbo Baggins from The Hobbit. He has his signature wild, curly brown hair and blue eyes. His expression is serious and slightly weary, with a hint of concern or determination. The lighting is dramatic, with strong shadows on one side of his face, highlighting his features against a dark, out-of-focus background.

API styleguide will need to evolve



Update
Improve

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His hands are clasped together in front of him. The background is a dark, forested area.

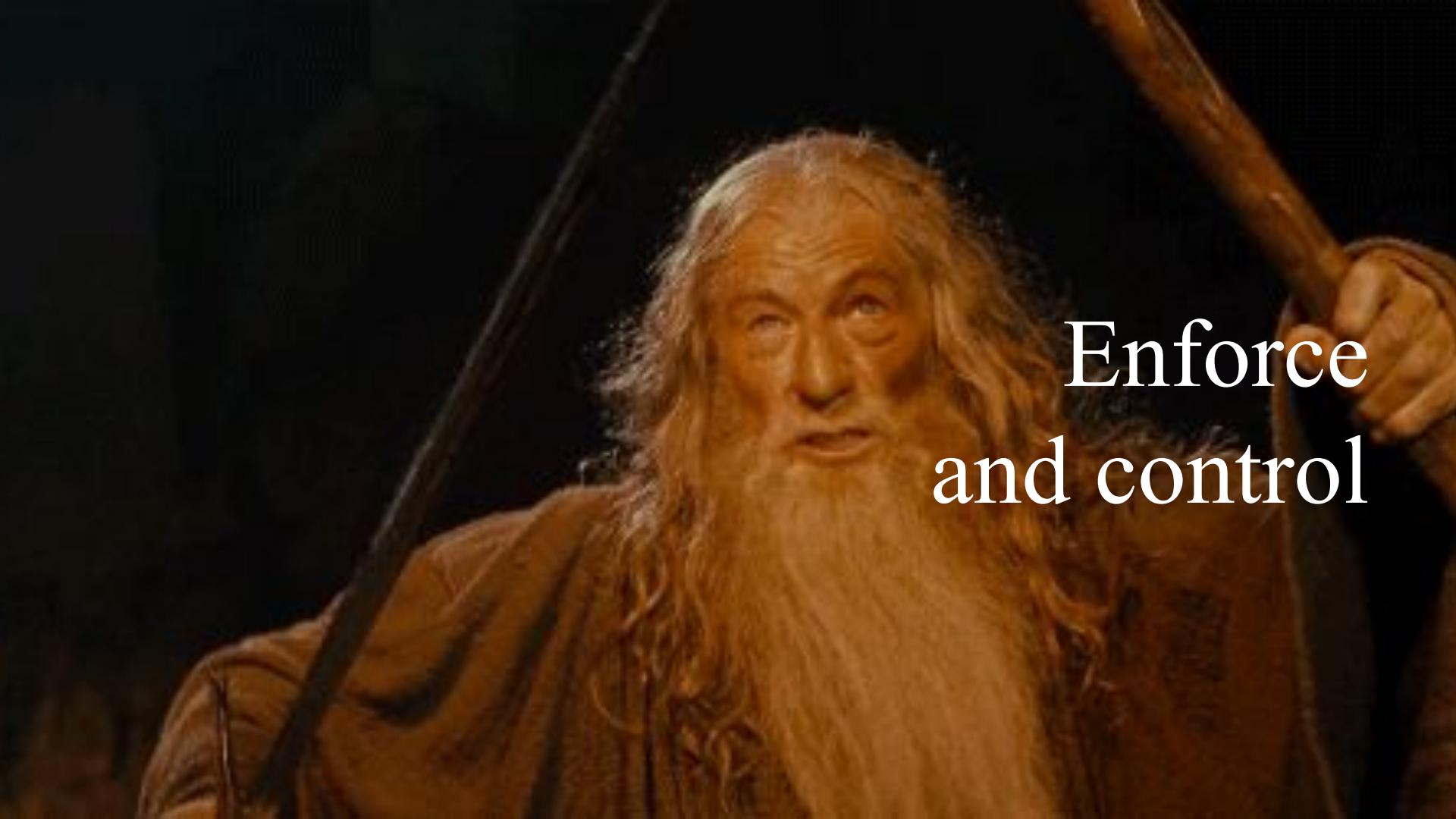
Is that all?

A close-up portrait of Bilbo Baggins, played by Martin Freeman. He has his signature wild, curly brown hair and blue eyes. He is looking slightly off-camera with a serious, contemplative expression. The lighting is dramatic, with strong highlights on his forehead and nose, while the rest of his face and the background are in deep shadow. He is wearing a dark, ribbed sweater.

One last thing

A close-up portrait of Bilbo Baggins from The Hobbit. He has his signature wild, curly brown hair and blue eyes. He is wearing a dark, ribbed tunic. The lighting is dramatic, with strong highlights on his forehead and nose, while the rest of his face and the background are in deep shadow. His expression is serious and slightly weary.

Rules may not be followed



Enforce
and control

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His expression is one of intense anger or a primal scream. The background is dark and out of focus, suggesting a forest environment.

Is this
control only
done by people?



Mostly but some try to automate
part of these controls...

Chapter IV

THE API DESIGN HAVENS



OPEN API
INITIATIVE

```
paths:  
/persons:  
  get:  
    summary: Gets some persons  
    description: Returns a list containing all persons. The list supports paging.  
    parameters:  
      - $ref: "#/parameters/pageSize"  
      - $ref: "#/parameters/pageNumber"  
    responses:  
      200:  
        description: A list of Person  
        schema:  
          $ref: "#/definitions/Persons"  
      500:  
        $ref: "#/responses/Standard500ErrorResponse"  
  post:  
    summary: Creates a person  
    description: Adds a new person to the persons list.  
    parameters:  
      - name: person  
        in: body  
        description: The person to create.  
        schema:  
          $ref: "#/definitions/Person"
```

Machine readable API description



Zalando's Zally

A minimalistic API linter

<https://github.com/zalando-incubator/zally>



Check if your **SWAGGER Schema** conforms to [Zalando's REST API Guidelines](#)

[BY URL](#) [EDITOR](#) [RULES](#)

ENTER FULL PATH TO YOUR SWAGGER FILE

`https://raw.githubusercontent.com/OAI/OpenAPI-Specification/master/examples/v2.0/json/petstore.json`

[VALIDATE](#)

[VIOLATIONS](#)

Rule #174 is violated

- MUST – Use common field names

`#/definitions/Pet: field 'id' has type 'integer' (expected type 'string')`

Rule: [/#174](#)

Paths:

- `#/definitions/Pet`

- MUST – Define and Assign Access Rights (Scopes)

Must: Use common field names and semantics [174]

There exist a variety of field types that are required in multiple places. To achieve consistency across all API implementations, you must use common field names and semantics whenever applicable.

Generic Fields

There are some data fields that come up again and again in API data:

- `id`: the identity of the object. If used, IDs must opaque strings and not numbers. IDs are unique within some documented context, are stable and don't change for a given object once assigned, and are never recycled cross entities.
- `xyz_id`: an attribute within one object holding the identifier of another object must use a name that corresponds to the type of the referenced object or the relationship to the referenced object followed by `_id` (e.g. `customer_id` not `customer_number`; `parent_node_id` for the reference to a parent node from a child node, even if both have the type `Node`)
- `created`: when the object was created. If used, this must be a `date-time` construct.
- `modified`: when the object was updated. If used, this must be a `date-time` construct.
- `type`: the kind of thing this object is. If used, the type of this field should be a string. Types allow runtime information on the entity provided that otherwise requires examining the Open API file.

Example JSON schema:

Rule #174 is defined in guidelines

```
APIHandyman:zally arnaud$ zally
NAME: This is Zally's cli tool: it reads a swagger file locally and lints it by
requesting violations check at a given Zally server.

Zally-CLI - Zally Command Line Interface
  code
    ↳ ZALLY
      ↳ README.md
      ↳ manu...
      ↳ media...
      ↳ resource...
      ↳ citigenc...
      ↳ book...
      ↳ examples...
      ↳ github-integration...
      ↳ server...
      ↳ web-ui...
      ↳ _config.yml
      ↳ .zally.yaml
      ↳ .zappy.yaml
      ↳ build-and-run.sh
      ↳ CONTRIBUTING
      ↳ docker-compose.yaml
      ↳ LICENSE

  USAGE: zally [global options] command [command options] [arguments...]
  VERSION: 1.1
  COMMANDS:
    rules      List supported rules
    lint       Lint given `FILE` with API definition
    help, h    Shows a list of commands or help for one command
  GLOBAL OPTIONS:
    --linter-service URL, -l URL          Linter service URL (default: "http://localhost:8080") [$ZALLY_URL]
    --token OAUTH2_TOKEN, -o-t OAUTH2_TOKEN OAuth2 Token OAUTH2_TOKEN [$TOKEN]
    --help, -h                            show help
    --version, -v                          print the version
```

There's also an API and a CLI

[Code](#)[Issues 33](#)[Pull requests 0](#)[Projects 1](#)[Insights](#)Branch: [master](#) ▾[zally](#) / [server](#) / [src](#) / [main](#) / [java](#) / [de](#) / [zalando](#) / [zally](#) / [rule](#) /[Create new file](#)[Find file](#)[History](#)

roxspring Imposed stable ordering on /supported-rules

Latest commit [6ff6e68](#) 21 days ago

..

AbstractRule.kt	server: implement vendor extension to ignore rules by code (#406)	3 months ago
ApiValidator.kt	server: implement api parameter to ignore rules by code (#406)	3 months ago
AvoidLinkHeadersRule.kt	server: Provide new guideline links and guideline codes #497	2 months ago
AvoidSynonymsRule.kt	adding id and link to AvoidSysnonymsRule (#537)	a month ago
AvoidTrailingSlashesRule.kt	server: Provide new guideline links and guideline codes #497	2 months ago
CommonFieldTypesRule.kt	server: Provide new guideline links and guideline codes #497	2 months ago
CompositeRulesValidator.kt	server: implement api parameter to ignore rules by code (#406)	3 months ago

You can define your own rules

A close-up of Gollum's face from the Lord of the Rings movies. He has a pale, wrinkled skin tone, large blue eyes, and a wide-open mouth showing sharp, yellowish-white teeth. His hands are clasped together in front of him. The background is a dark, out-of-focus forest.

So, no more
humans?



Such tool really helps
But we still need humans

Epilogue

THE FELLOWSHIP OF
API DESIGNERS

“**GoD**” API Design
is nothing without
consistency

No consistency
without
clearly defined rules

Rules
are nothing without
governance
(establish, share, update, control)

It's time to build your fellowship of API designers



THE LORD OF API DESIGNS

BY

ARNAUD LAURET

@APIHANDYMAN

THE END