VOXXED DAYS Romania, Bucharest 2021

Respectful
REST APIs

'Sunset' and 'Deprecation' HTTP Headers

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Blog
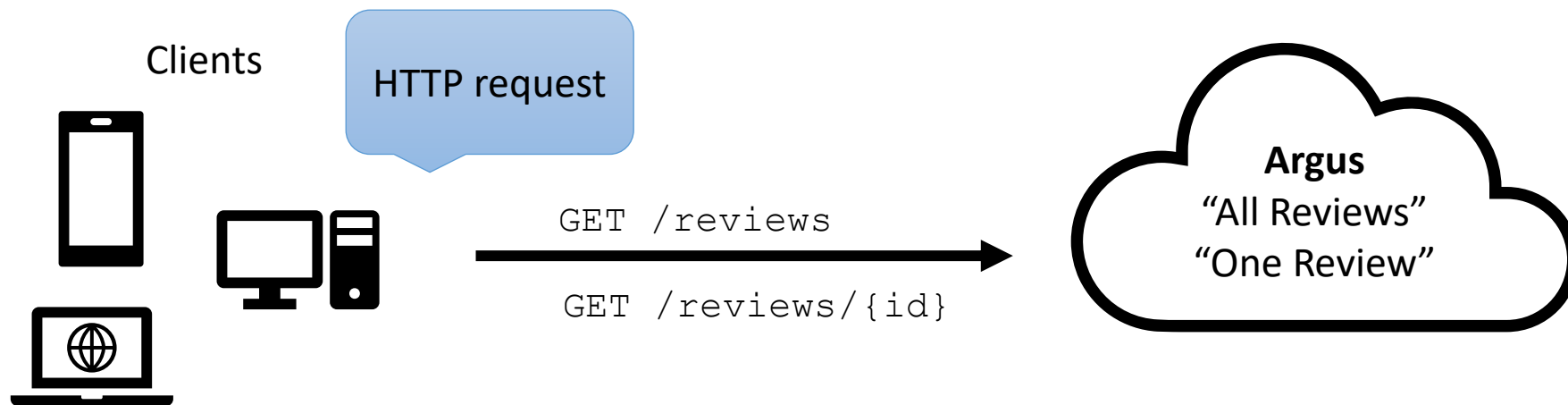
https://imhoratiu.wordpress.com

@horatiucd

Today To Dos

- API Perspectives

- 'Sunseting' and 'Deprecation'

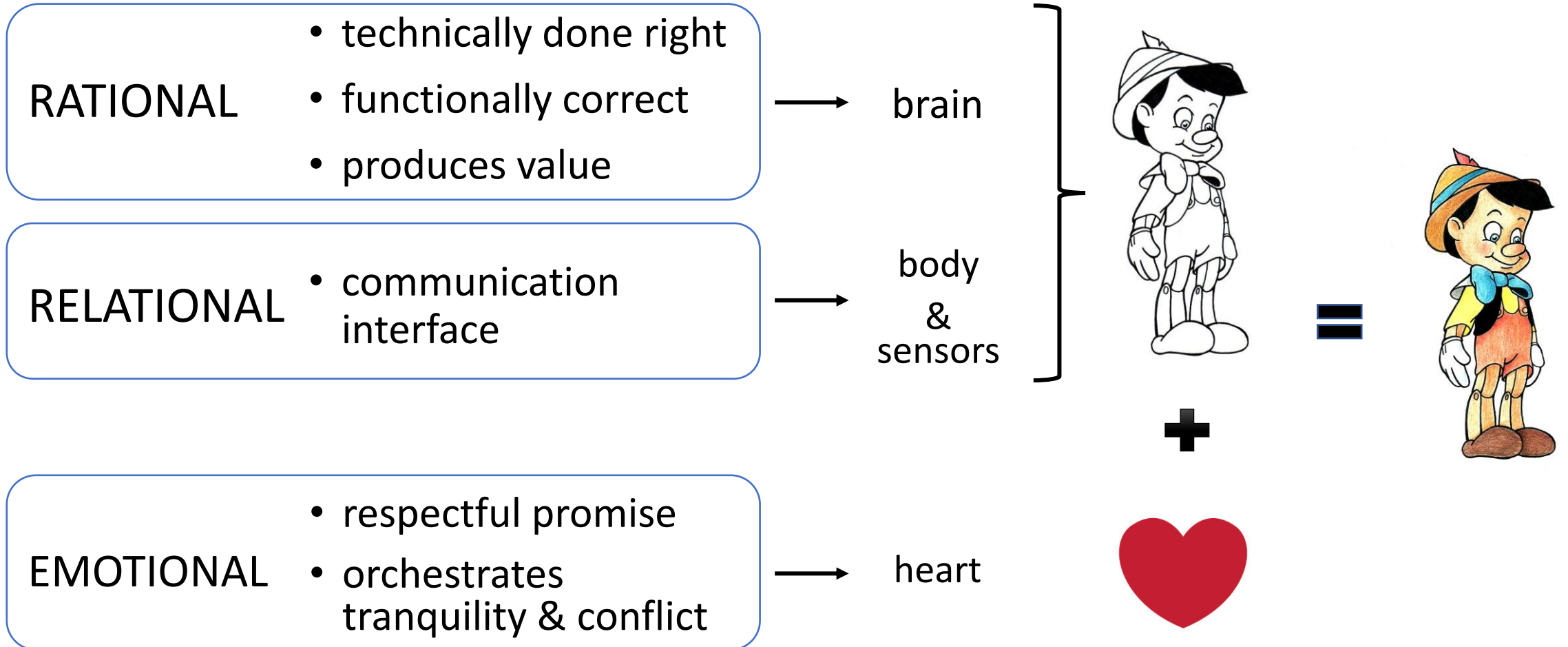- Effectively leverage 'Sunset' and 'Deprecation' HTTP headers

Context

APIs = software products ⟶ lifecycle

Resource = the target of an HTTP request *

Clients

HTTP request

`GET /reviews`

`GET /reviews/{id}`

Argus
"All Reviews"
"One Review"

*

API Perspectives

RATIONAL
- technically done right
- functionally correct
- produces value

→ brain

RELATIONAL
- communication interface

→ body & sensors

EMOTIONAL
- respectful promise
- orchestrates tranquility & conflict

→ heart

Deprecation and Sunsetting

- **Deprecation**
  - Resource is still operational but no longer recommended

- **Sunsetting**
  - Resource is decommissioned, not reachable any longer
    - Temporary (short or long term)
    - Effectively ends deprecation

deprecation date   sunset date

t1   t2   time

Concerns

- **Temporary Resource Handling**
- **Resource Retention**

'Sunset' HTTP header

- **Resources Deprecation** ⟶ 'Sunset' + 'Deprecation' HTTP headers

'Deprecation' and 'Sunset' HTTP Headers

Optional response headers

- **Deprecation - Draft**

```
Deprecation: 01 Jan 2021 00:00:00 UTC
Link: https://favor/this; rel="alternate",
      https://more-context.ro/deprecation-policy; rel="deprecation"
```

- **Sunset - RFC8594**

```
Sunset: 31 Dec 2022 00:00:00 UTC
```
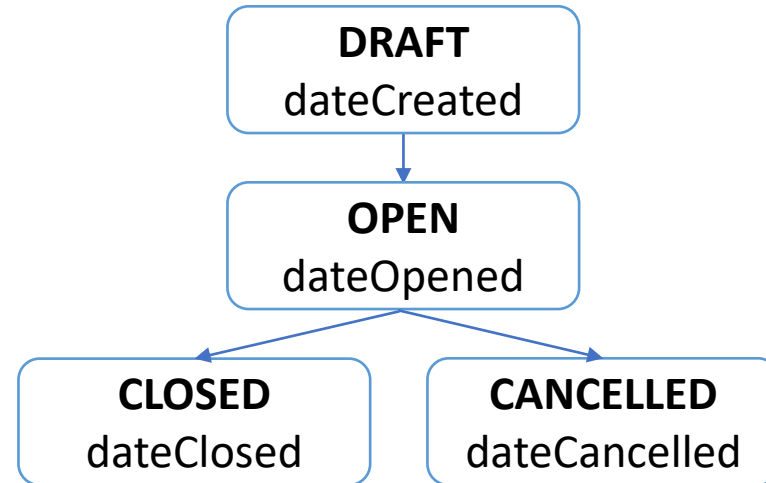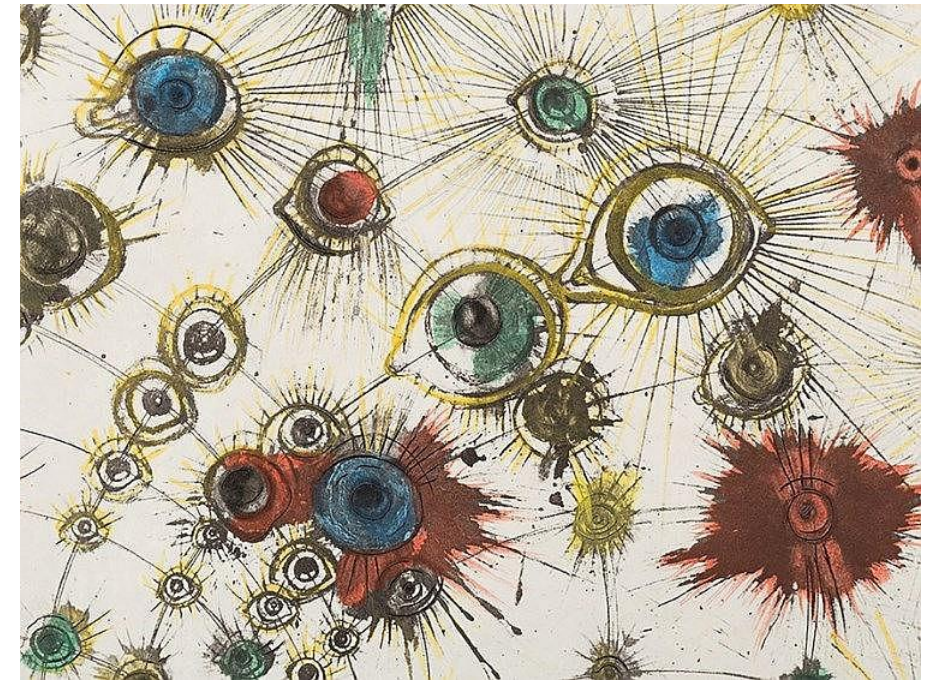
Demo Project - Argus

Domain - Review

Review Status


```
┌─────────────┐
│   DRAFT     │
│ dateCreated │
└─────────────┘
       │
       ▼
┌─────────────┐
│   OPEN      │
│ dateOpened  │
└─────────────┘
    ╱      ╲
   ▼        ▼
┌──────────┐  ┌──────────────┐
│ CLOSED   │  │ CANCELLED    │
│dateClosed│  │dateCancelled │
└──────────┘  └──────────────┘
```

Salvador Dali, 'Argus', France, 1963

Endpoints
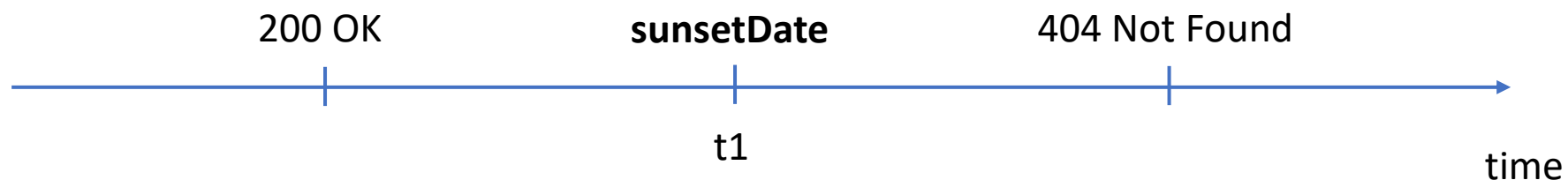
- `GET /reviews`
- `GET /reviews/{id}`

* source

Words sound, deeds thunder.
Let's code ...

Use Case

- **If a DRAFT review is not opened within 2 days, it is deleted.**

  = Temporary Resource Handling

- **A CANCELLED review is kept for 1 year, then purged.**

  = Resource Retention

```
GET /reviews/{id}
```

200 OK   **sunsetDate**   404 Not Found

t1

time

Solution

'Sunset' HTTP header is present for each DRAFT or CANCELLED review.


```
                         Response
Headers

             Sunset: sunsetDate
```
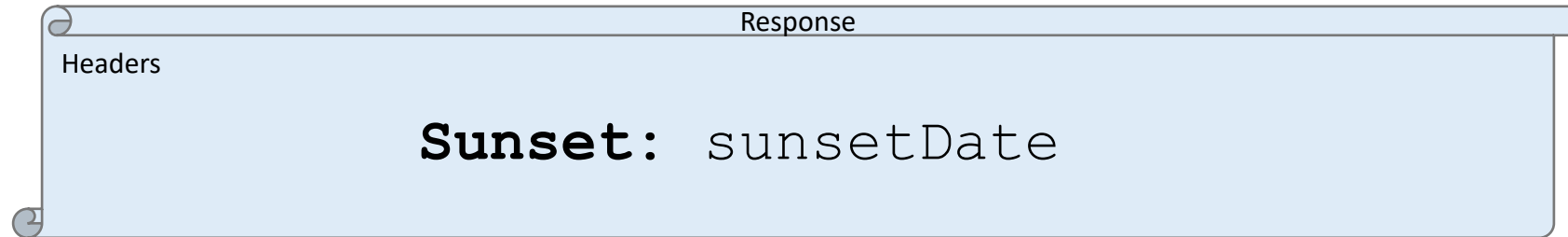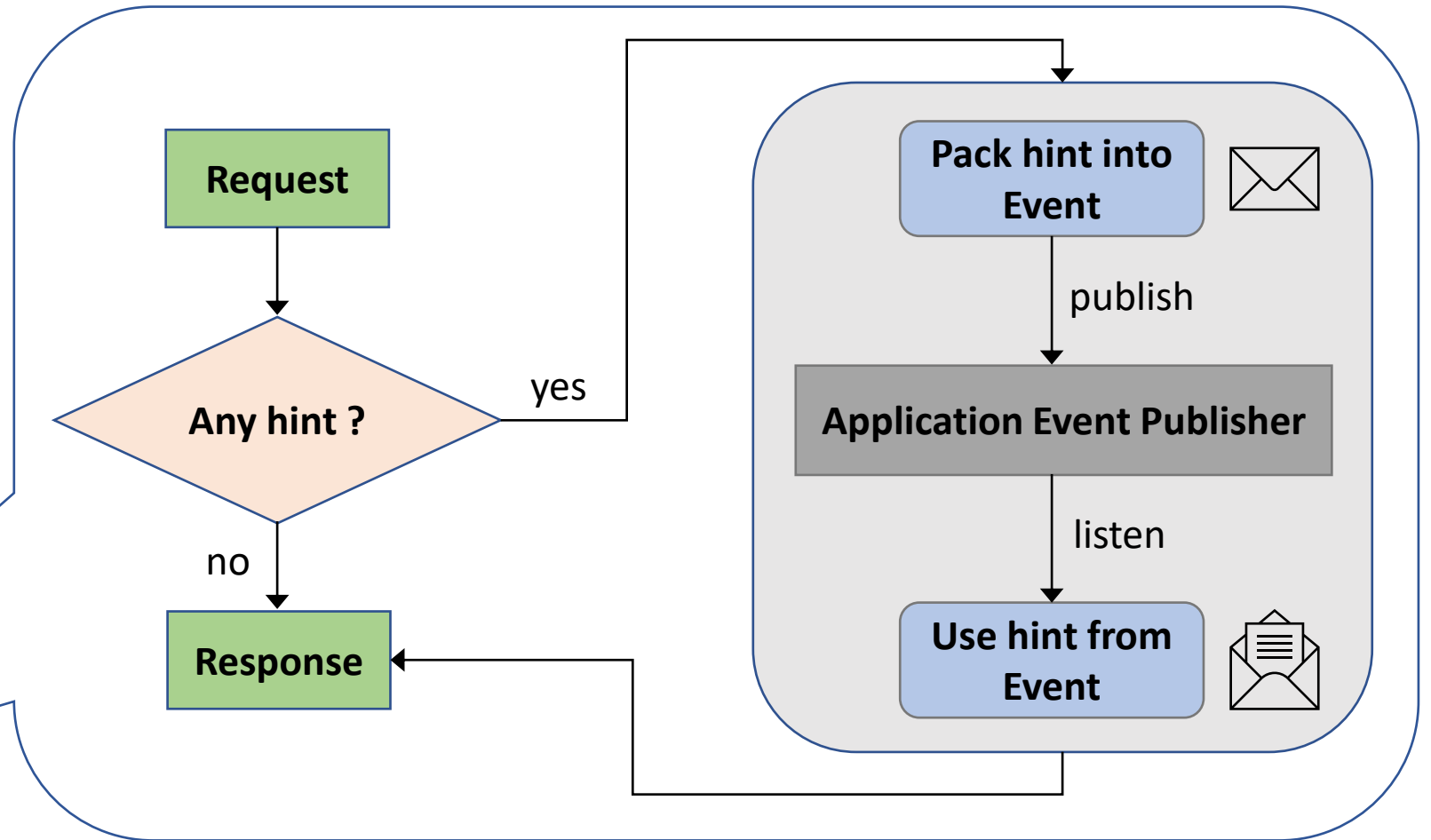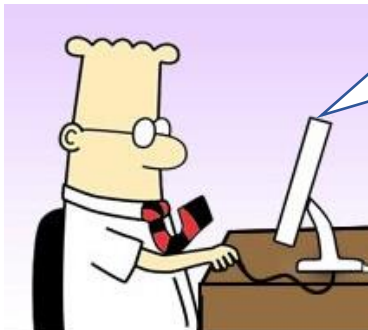
Interpretation → "After the sunset date, the resource is not available anymore"

Let's code …
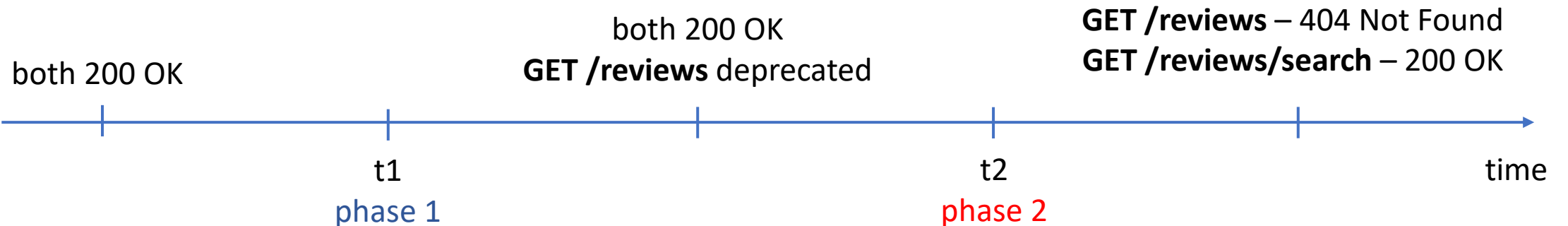
Concerns:

- Temporary resources
- Resource retention

Request → **Any hint ?**

yes → **Pack hint into Event** → *publish* → **Application Event Publisher** → *listen* → **Use hint from Event**

no → **Response**

Use Case

- **'Get all reviews' REST operation is replaced.**

  = Resource Deprecation

```
GET /reviews

GET /reviews/search?filter=pattern
```

both 200 OK
GET /reviews deprecated

GET /reviews – 404 Not Found
GET /reviews/search – 200 OK

both 200 OK

t1

phase 1

t2

phase 2

time

Solution

Phase 1 - **GET /reviews** response contains the 'Deprecation' and 'Link' headers.

```
                                    Response
Headers


Deprecation: 22 Oct 2021 00:00:00 UTC
Link: http://reviews/search?filter=pattern; rel="alternate",
      https://tech-correct.eu/policy; rel="deprecation"
```

Interpretation → "The endpoint is (will be) deprecated since (at);
alternative and details are provided"

Solution

- **GET /reviews** response additionally contains the 'Sunset' header.

```
                              Response

Headers


Deprecation: 01 Jan 2021 00:00:00 GMT
Link: http://reviews/search?filter=pattern; rel="alternate",
        https://tech-correct.eu/policy; rel="deprecation"
Sunset: 31 Dec 2021 23:59:59 GMT
```
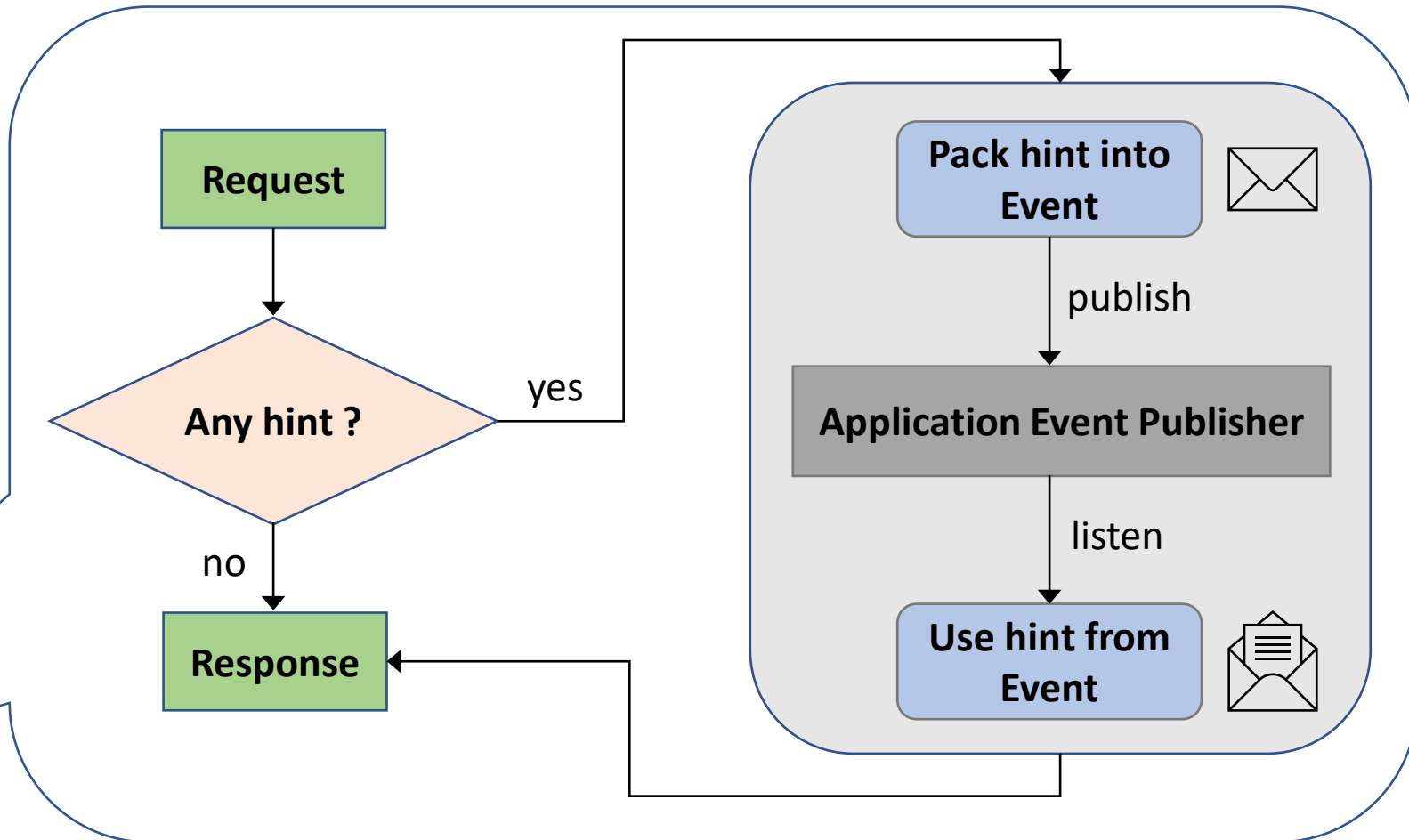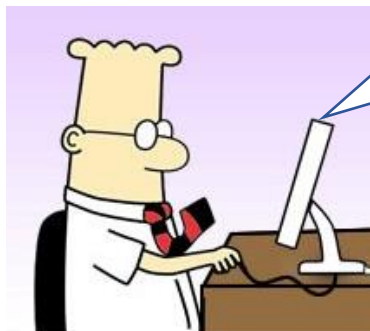
Interpretation → "The endpoint is responsive until this date, then decommissioned."

Let's code …

Concerns:

- Resource deprecation

Request → **Any hint ?**

Any hint ? — no → **Response**

Any hint ? — yes → **Pack hint into Event**

Pack hint into Event — publish → **Application Event Publisher**

Application Event Publisher — listen → **Use hint from Event** → **Response**

All in All

APIs:

- **shall** be **technically correct**
  - keep the promise to the clients and never break the contract

- **should** be **respectful, courteous**
  - include hints that make contract more "pleasant"

"It's nice to be important, but more important to be nice." – Roger Federer

Resources

- RFC8594 – The Sunset HTTP Header Field – https://tools.ietf.org/html/rfc8594

- draft-dalal-deprecation-header-03 – The Deprecation HTTP Header Field – https://tools.ietf.org/html/draft-dalal-deprecation-header-03

- "An API is a promise", by Erik Wilde, December 16th, 2020 – https://apifriends.com/api-management/an-api-is-a-promise/

- Source Code - https://github.com/horatiucd/argus

Thank you!

Source Code - https://github.com/horatiucd/argus

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