

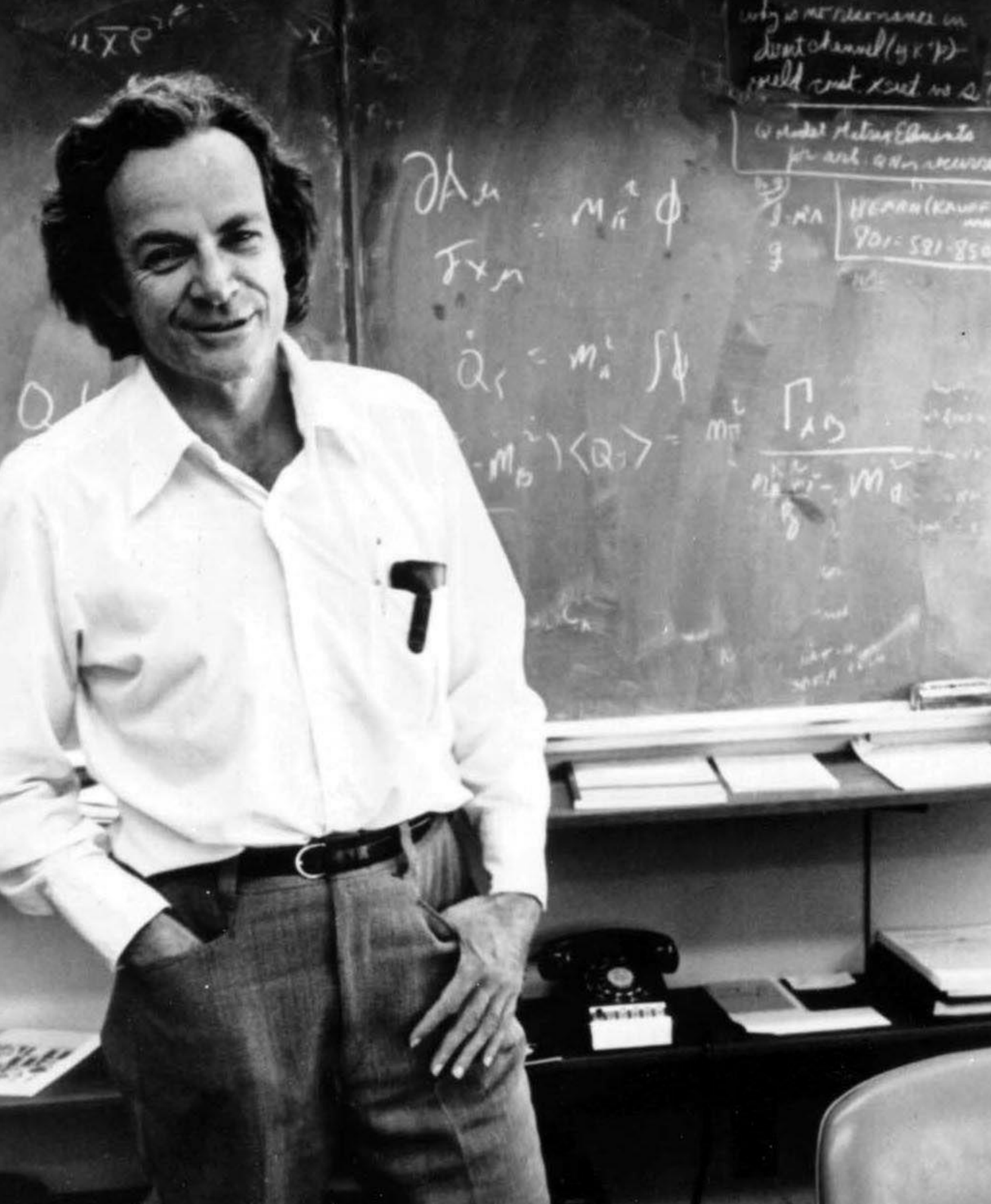
Watching the World Burn:

API Testing as an Afterthought



With  **APIFORTRESS**

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Why Are We Asking the Questions We Ask With Testing?

← Richard Feynman
1918-1988
Theoretical Physicist

How Does Feynman Apply?

**“Does the
software work?”**

**How are we asking this
question and more
importantly, why?**

Unit Testing

A Real Example

```
def calculate_final_price(price, discount):  
    if discount=='30%':  
        return price-(price*0.3)  
  
    if discount=='50%':  
        return price/2  
  
    return price
```



Manual Front End Testing

API Testing

Request: POST /cart/add

```
{  
  "productId": 511,  
  "name": "Smarty pants",  
  "quantity": 1,  
  "price": 5.99,  
  "discount": "30%"
```

Response:

```
{  
  "transaction": "ok",  
  "subtotal": 4.193  
}
```

Request: POST /cart/add

```
{  
  "productId": 511,  
  "name": "Smarty pants",  
  "quantity": 1,  
  "price": 1.99,  
  "discount": "50%"
```

Response:

```
{  
  "transaction": "ok",  
  "subtotal": 0.995  
}
```

Takeaways

We are not simply testing communication.

APIs are complex beasts and can expose a huge volume of internal functionality.

```
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/images/greenicon.jpg, YES", "company_status": "Ac-
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ar number is linked
```

1.1 Billion Identities Exposed in India, **and It's Not a Hack**



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The US Postal Service Exposed
Data of 60 Million Users

A Lack of Functional Testing to Blame

A Workflow Suggestion

- 1. API devs write tests for their APIs**
- 2. Commit to Git**
- 3. QAs take their tests as a start and build:**
 - Integration Tests**
 - Data-Driven Tests**
- 4. Incorporate all into CI flow**

Best Practice: Basics

- Test Endpoints
- Test Everything
(including Response Code & Content-Type)
- Test Objects

Best Practice: Advanced

- Variabilize for Test Reuse
- Confirm Business Logic & Datatypes
- Use Dynamic Data
- Integration / End-to-End Test
- Confirm Response Matches Request

Key Takeaways

Test Everything

(headers, objects, datatypes)

Test Smart

(business logic, dynamic data sources, integration tests)

Test Constantly

(CI/CD & Monitoring)

Standardize

(Devs and QAs)

<https://apifortress.com/nordicapis2019>

<https://apifortress.com/ebook>

Key Takeaways When Choosing a Platform

- Which Team(s) Will Do the Work?
- Reporting Needs
- Existing Systems Integrations
- Cloud vs On-Premises



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