

How F# Learned to Stop Worrying and Love the Data

Tomas Petricek

tomas@tomasp.net | @tomaspetricek

PhD Student at University of Cambridge
& Coordinator of <http://fsharp.org>

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PhD @ University of Cambridge

Tracking context-dependence
Type-providers & Reactive & Web

F# Community Contributor

Open-source libraries, F# Foundation

software stacks

trainings teaching F# user groups snippets

mac and linux community books and tutorials

F# Software Foundation

consulting open-source MonoDevelop

<http://www.fsharp.org>

contributions research support

cross-platform mailing lists

The Data



THE WORLD BANK
Working for a World Free of Poverty

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Bono and data beyond 2015: How can the Bank measure up?

Grant Cameron | Posted on 16 Nov 2012

Speaking at the World Bank on Wednesday, musician and activist Bono made the call for "open data and transparency" to "turbocharge the fight against poverty." [Read More >>](#)

7 tips for data visualization

Tariq Khokhar | Posted on 14 Oct 2012

Last week, the World Bank Data team descended on New York City for Visualized - a two day event exploring the "evolution of communication at the intersection of big data, storytelling and design." [Read More >>](#)

New data resources on poverty, gender, jobs, health and more

Maryna Taran | Posted on 7 Nov 2012

Discover Open Data specialized dashboards and tools that help investigate and compare indicators, showcase creative visualizations and reveal the stories behind the numbers. [Read More >>](#)

Updates

Doing Business

Updated 25 October 2012

Open Government Data Toolkit

Updated 10 July 2012

Open Data Services

8,000+

[Time series indicators in dataBank >>](#)

850+

[Datasets in Finances >>](#)

11,000+

[Activities in Projects & Operations >>](#)

700+

[Surveys in Microdata >>](#)

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8,174,100 (2011)
London, Population

[London - Wikipedia, the free encyclopedia](#)
en.wikipedia.org/wiki/London

In March 2011, **London** had an official **population** of 8,174,100, making it the most populous municipality in the European Union, and accounting for 12.5% of the ...

[Greater London - City of London - History of London - Demographics of London](#)



Integrate everything!

Data sources

REST & web services
Open government data

Languages and tools

“Rewrite everything” is wrong

Accessing REST services

[Home](#)[API Blueprint](#)[Blog](#)[Team](#)[Jobs](#)[Sign in ↗](#)

Cut the talk, let me [sign up!](#)

REST API documentation. Reimagined.

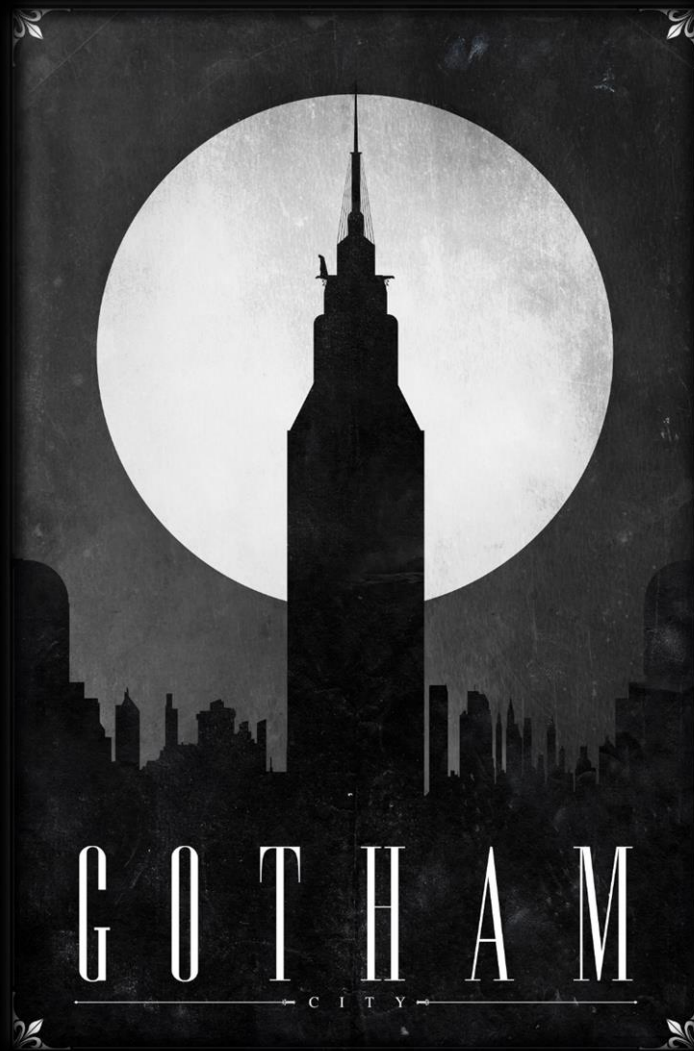
It takes more than a simple HTML page to thrill your API users. The right tools take weeks of development. Weeks that apiary.io saves.

```
GET /shopping-cart
> Accept: application/json
< 200
< Content-Type: application/json
{ "items": [
  { "url": "/shopping-cart/1", "product": "2ZPZ",
    "quantity": 1, "name": "New socks", "price": 1.25 }
] }
```

How does it work?

1

```
1 HOST: http://shop.acme.com/
2 --- Sample API v2 ---
3 ---
```



Demo: Searching movie database

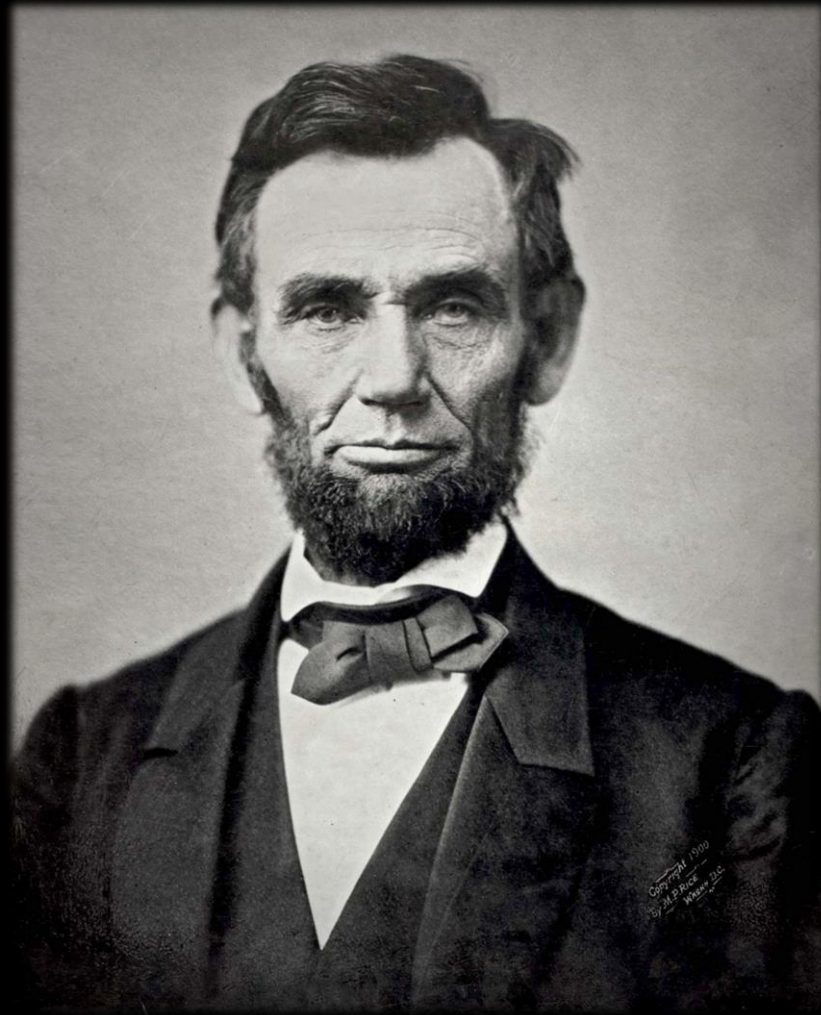
Web and JavaScript

Accessing untyped data

There is always schema
Examples work surprisingly well

Running as JavaScript

Good language still matters



Demo: US debt over the last century

Data Science

Matlab, R studio, Mathematica

Poor languages & Great tools

Data Science in F#

Great language & Poor tools

Summary

Type Providers in Action

WorldBank provider

JSON and CSV providers

Apiary provider

R and TypeScript provider

XML **JSON** CSV **R provider** unstructured data

Open Government Data custom providers Language Integration

Excel **WorldBank** static types **TypeScript**

web services **R provider** unstructured data

F#

documentation

Apiary schema

REST API web programming