

How F# Learned to Stop Worrying and Love the Data

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Conspirator behind <http://fsharp.org>



software stacks

trainings teaching F# user groups snippets

mac and linux cross-platform books and tutorials

F# Software Foundation

F# community open-source MonoDevelop

<http://www.fsharp.org>

contributions research support

consultancy mailing list

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 >>](#)



```
let wb = WorldBank()  
wb.
```

[DEMO]

Exploring WorldBank Data

Asynchronous programming

Asynchrony matters

Node.js and **C# 5.0**


F# Async workflows

Without **inversion of control**

Exception handling and **loops** simple

Sequential and **parallel** composition

F# to JavaScript



CodePlex

FSharp.WebTools

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Project Description

The F# Web Tools augment the F# distribution with tools to author homogeneous client/server/database web applications in one type-checked project. The model distinctions between client and server are checked through the use of F# workflows, and LINQ can be used for database access. In the first version, parts of the application are dynamically served as JavaScript. Planned extensions include serving client-side portions as Silverlight code.

More information about the project

- » [F# Web Tools: "Ajax" applications made simple](#) - Blog | TomasP.Net
- » [Rich client/server web applications in F#](#) - Paper submitted to the ML Workshop
- » [Ajax-style Client/Server Programming with F#](#) - Slides from the presentation at MSR Cambridge

Last edited Sep 23 2007

[DEMO]

WorldBank App for the Web

F# to JavaScript

TypeScript type provider

Import types for JS libraries
Somebody else writes them!

Libraries & frameworks

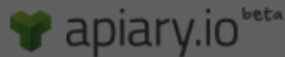
Open source: **FunScript** and Pit

Commercial: IntelliFactory **WebSharper**

Accessing REST services

REST (Representational State Transfer) is a **style of software architecture** for distributed systems such as the **World Wide Web**.
REST has emerged as a predominant Web service design model.

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]

Introducing Apiary Type Provider

Apiary.io Type Provider

Common REST conventions

GET /movie/{id}	Get movie summary
GET /movie/{id}/casts	Get cast details

Types from JSON samples

```
{ "page": 1, "total_pages": 1, "total_results": 5,  
  "results": [ { "title": "Skyfall", "id": 94221 } ] }
```

[DEMO]

The Movie Database App for the Web

Type Providers in Action

WorldBank Type Provider

JSON Type Provider

Apiary Type Provider

TypeScript Type Provider

[SUMMARY]

Where to learn more?

Online resources

www.fsharp.org Information & community

www.tryfsharp.org Interactive F# tutorials

<p>Getting Started in F# </p> <p>Learn F# Programming Fundamentals</p>	<p>Advanced F# Programming </p> <p>Learn Advanced F# Programming Techniques</p>	<p>Data Visualization and Charting </p> <p>Bring Your Data to Life with Charting</p>
<p>Data Science </p> <p>Work with Language Integrated Web Data through F# Type Providers</p>	<p>Scientific and Numerical Computing </p> <p>Write Simple Code to Solve Complex Problems with F#</p>	<p>Financial Computing </p> <p>Examples Related to Financial Modeling and Engineering</p>

User groups and trainings

Functional and F# trainings

In London and New York

Get in touch tomas@tomasp.net

F#unctional Londoners meetup

<http://meetup.com/FSharpLondon/>

F#, Data and Services

other languages web
tool support extensibility code-first
type script **Love the Data** REST
unstructured data static typing
inference **and integration** schema
R language transparent java script