The Little Real-Time Web Development Book

By Roger Stringer

FLYBASE

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Learn to apply real-time web development practices in your apps

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1. Introduction

I've been building websites and web apps of various sizes since 1998.

Websites were generally described as `pamphlet` types of websites that sometimes had catalogs attached to them, then with the advent of languages like PHP, Ruby, Perl and other early CGI forerunners, we started making our web sites more interactive. They started doing things both client and server side. Building things for the web had become a lot more powerful but also more complex, as you started to need to add servers, and databases.

The web has come a long way since then, but not a lot has changed until recently.

Recently, the real-time web came along....

To learn about how real-time works, let's do a little mental experiment.

1. Imagine you're opening the same folder in two different windows on your computer.
2. Now click inside one of the two windows and delete a file. Did the file disappear from the other window as well?

You don't need to actually do these steps to know that it did. When we modify something on our local filesystems, the change is applied everywhere without the need for refreshes or callbacks. It just happens.

However, let's think about how the same scenario would play out on the web. For example, let's say you opened the same WordPress site admin in two browser windows and then created a new post in one of them. Unlike on the desktop, no matter how long you wait, the other window won't reflect the change unless you refresh it. Or on that same WordPress blog, if you created a new post, would that post automatically be available to your readers who happened to be on the site at that moment without refreshing the page?

With the real-time web, and specifically with Flybase by Data McFly, you would see these changes happen in real-time, *no refresh needed*!

For a bit of background as to what Flybase is, let's revisit the story of how Flybase came to be:

> The first API that would eventually grow into what Flybase is now was originally developed in 2013, when after making yet another mobile app and API for a client, we realized that we were basically making the same API for each client, the difference

was the data. We were building the same API for each app, and changing the data being used to match what was needed.

From there, grew a large, almost overwhelming desire to build a universal, flexible API that could be used on any type of app to handle data storage and synchronize in real-time across multiple devices.

Now, fast forward to 2015, and Flybase helps developers quickly and easily build apps in less time than it used to take, with the Flybase cloud servers acting as your app's backend.

Real-time web development means all connected clients instantly sync with each other to reflect changes to data. A blog could instantly show the most recent post, or a chat app could show the most recent chat messages. Call centers would reflect incoming calls or messages, and no page refresh needed.

This also extends to mobile apps, change something on a mobile app and it reflects the change on the desktop app.

Here's a brief example of a real-time web app:

```javascript
1  //       First, create a Flybase reference object
2  var Ref = new Flybase("74k8064f-cd6f-4c07-8baf-b1d241496ec", "sample", "chat");
3
4  //       Second, save some data
5  Ref.set({ name: "Roger Stringer" });
6
7  //       Third, listen for real-time changes to our data
8  Ref.on("added", function(data) {
9       var name = data.value().name;
10       alert("My name is " + name);
11  });
```

This small example will pop up an alert with the person's name when ever someone saved their name to the Flybase datastore.

1.1 Welcome to The Little Real-time Web Development Book

This book has been written to give you a good understanding of using Flybase to build real-time web apps. It was written by Roger Stringer, the founder and lead developer of Flybase, so no one understands using Flybase to build real-time web apps like Roger does.

This book will be divided into three sections:

1. Getting started with Flybase and real-time web development
   - Setting up your Flybase account
   - Building your first basic real-time web app
   - Finally, we'll cover queries and custom events to learn how to control what data you display.
2. Building your Flybase app without a server.
   - We'll build a social news app in Angular.JS with Flybase.
   - Learn how to add user login and registration
   - Learn how to accept comments, and update the home page to show the changes
   - Deploying your app to the web, you'll learn how to upload your Social news app to GitHub pages and host it for everyone to use.
3. Integrating your Flybase app into a node.js app
   - We'll take the app we built in section 2, and integrate it into a node.js app to give us extra server-side power such as:
     - RSS feeds, and sitemap.xml generation
     - Auto-tweeting to Twitter when new links are added to your news site.

When we're done, you'll have a clear understanding of how real-time web development works, and be able to build whatever you need using Flybase.

Ok, we've covered what real-time web development is, and why you want to incorporate it into your workflow. So let's move onto Chapter 2 and build our first real-time web app.