Single Page Web Applications: JavaScript End-to-end
Synopsis

Summary In Single Page Web Applications you’ll learn to build modern browser-based apps that take advantage of stronger client platforms and more predictable bandwidth. You’ll learn the SPA design approach, and then start exploring new techniques like structured JavaScript and responsive design. And you’ll learn how to capitalize on trends like server-side JavaScript and NoSQL data stores, as well as new frameworks that make JavaScript more manageable and testable as a first-class language. About this Book If your website is a jumpy collection of linked pages, you are behind. Single page web applications are your next step: pushing UI rendering and business logic to the browser and communicating with the server only to synchronize data, they provide a smooth user experience, much like a native application. But, SPAs can be hard to develop, manage, and test. Single Page Web Applications shows how your team can easily design, test, maintain, and extend sophisticated SPAs using JavaScript end-to-end, without getting locked into a framework. Along the way, you’ll develop advanced HTML5, CSS3, and JavaScript skills, and use JavaScript as the language of the web server and the database. This book assumes basic knowledge of web development. No experience with SPAs is required. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What’s InsideDesign, build, and test a full-stack SPA Best-in-class tools like jQuery, TaffyDB, Node.js, and MongoDB Real-time web with web sockets and Socket.IO Touch controls for tablets and smartphones Common SPA design mistakesAbout the Authors The authors are architects and engineering managers. Michael Mikowski has worked on many commercial SPAs and a platform that processes over 100 billion requests per year. Josh Powell has built some of the most heavily trafficked sites on the web. Table of ContentsPART 1: INTRODUCING SPAS Our first single page application Reintroducing JavaScript PART 2: SPA CLIENT Develop the Shell Add feature modules Build the Model Finish the Model and Data modules PART 3: THE SPA SERVER The web server The server database Readying our SPA for production

Book Information

Paperback: 432 pages
Publisher: Manning Publications; 1 edition (September 30, 2013)
Language: English
ISBN-10: 1617290750
Product Dimensions: 7.4 x 0.8 x 9.2 inches
Back in April I was asked to convert a small Flash based game to HTML5 (and its related technologies). As it turns out, I was starting a small SPA and didn’t even know it (had never heard the term then). I’m an old programmer (non-web) that had virtually no JavaScript (or other web technology) experience. So over the last few months I have purchased lots of books and have been absorbing all these acronyms as fast as possible! I saw the pre-order of this book and it combines all of this into one book! I’m very excited about this book! I’ve only just started (read the first three chapters), but wanted to go ahead and start my review because Chapter 2 (Reintroducing JavaScript) alone has given me several eureka moments and if I read no further, the book will have been worth it! As for my game in progress, I will probably do a re-write using the models in this book as it has already given me answers to some of the issues I have been struggling with. I’ve read all the “must-read” JavaScript books (The Definitive Guide, Doug Crockford’s book, etc...) and Chapter 2 of this book blows all those away (for certain concepts)! I could never fully “get” concepts such as Closures, Self-executing anonymous functions, and prototype vs. class. And low and behold this chapter covers exactly those concepts and makes them clear as day! The section on the execution context object and the JavaScript engine was perfect! Page after page I had “eureka” moments where I said to myself, "I get it now!" (these guys should write a JavaScript book). The analogies were perfect and for each concept they explained it in several different ways. I loved those multiple explanations, although more seasoned JavaScript programmers may find the repetition a bit boring.

MVC can be implemented by hand (roll your own), but as your application grows (with perhaps tens of states to manage) it quickly becomes unwieldy to continue to do so. Therefore, just as there are various frameworks/libraries for facilitating server-side MVC, many JavaScript frameworks/libraries have emerged for enabling client-side MVC, including Knockout, Backbone, Ember, and Angular. However, what sets this book apart is that the authors argue against using a client-side MVC framework. Having used several client-side MVC frameworks over the past few years, I can
appreciate the stance taken by the authors. Just a couple of years ago, Knockout and Backbone were considered de facto standards for client-side MVC. Then, almost out of nowhere, came Angular, supported by Google’s seemingly infinite programming and marketing resources. But Angular is new and is still undergoing radical changes from release to release. As a result, documentation is often lagging and there are multiple ways to do the same thing: legacy approaches often co-exist with newer approaches, as if to see what sticks. Furthermore, each of these automatic two-way data binding frameworks requires the programmer to accept some rigidity in exchange for convenience. In case you’re wondering, it’s clear that the authors aren’t roll your own advocates. It’s just that they don’t want to invest in an immature or rigid client-side MVC framework. Although Angular is gaining traction, as of now there are no client-side MVC frameworks that can reasonably be termed as mature. As evidence of the authors’ level-headedness, consider their testing approach, detailed in Appendix B. Here, the authors write, Node.js has many test frameworks that have years of use and refinement.

Single Page Web Apps in action is a crucial book to understand an important trend in web development. The MEAN stack has all the buzz recently, but it was impressive to see everything at play with the MEjQN stack—less convenient acronym be darned. Many programming books will leave the reader with many snippets of quasi-functional code and call it a day. This is not the case with Single Page Web Apps In Action, where the end result is a living breathing SPA with everything necessary to be pushed to production. The SPA that is built via a deliberate process winds up being a byproduct of a great programming book that is heavy on practical advice, precautions, and tips. It teaches technique and philosophy as much as it builds out features. The tone can seem a bit didactic at time, but it’s clear the authors care deeply about making the reader better. This book will improve the way you look at and write code. Take much of the author’s advice on naming conventions and documentation to heart and you’ll be a better collaborator as well. The book’s structure can be considered in thirds. The first is set up and javascript concepts review. The second is the guts of the app. The final third is additional components (Express, Socket IO, Mongo) to take it past the development environment. The middle third is amazingly repetitive, in a good way. You must realize that’s largely the point. It’s all in Javascript, and it’s all following a similar design pattern with strict attention to the author’s style guide. Different tools are brought in JSLint, Tidy, FakeDB, TaffyDB, but it’s so sensible. It looks both obvious and complex, which is a testament to the author’s methodical documentation.

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