

Maintainable Javascript

Provides instructions for writing and maintaining testable JavaScript code, including reducing code complexity, using Selenium and CasperJS, and production debugging.

Maintainable JavaScript"O'Reilly Media, Inc."

Learning React A hands-on guide to building web applications using React and Redux As far as new web frameworks and libraries go, React is quite the runaway success. It not only deals with the most common problems developers face when building complex apps, it throws in a few additional tricks that make building the visuals for such apps much, much easier. What React isn't, though, is beginner-friendly and approachable. Until now. In Learning React , author Kirupa Chinnathambi brings his fresh, clear, and very personable writing style to help web developers new to React understand its fundamentals and how to use it to build really performant (and awesome) apps. The only book on the market that helps you get your first React app up and running in just minutes, Learning React is chock-full of colorful illustrations to help you visualize difficult concepts and practical step-by-step examples to show you how to apply what you learn. Build your first React app Create components to define parts of your UI Combine components into other components to build more complex UIs Use JSX to specify visuals without writing full-fledged JavaScript Deal with maintaining state Work with React's way of styling content Make sense of the mysterious component lifecycle Build multi-page apps using routing and views Optimize your React workflow using tools such as Node, Babel, webpack, and others Use Redux to make managing your app data and state easy Contents at a Glance 1 Introducing React 2 Building Your First React App 3 Components in React 4 Styling in

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React 5 Creating Complex Components 6 Transferring Properties 7 Meet JSX... Again! 8 Dealing with State in React 9 Going from Data to UI in React 10 Events in React 11 The Component Lifecycle 12 Accessing DOM Elements in React 13 Setting Up Your React Dev Environment 14 Working with External Data in React 15 Building an Awesome Todo List App in React 16 Creating a Sliding Menu in React 17 Avoiding Unnecessary Renders in React 18 Creating a Single-Page App in React Using React Router 19 Introduction to Redux 20 Using Redux with React

An introduction to writing code with JavaScript covers such topics as style guidelines, programming practices, and automation.

With Google Web Toolkit, Java developers can build sophisticated Rich Internet Applications (RIAs) and complete Web sites using the powerful IDEs and tools they already use. Now, with GWT 2, Google Web Toolkit has become even more useful. Essential GWT shows how to use this latest version of GWT to create production solutions that combine superior style, performance, and interactivity with exceptional quality and maintainability. Federico Kereki quickly reviews the basics and then introduces intermediate and advanced GWT skills, covering issues ranging from organizing projects to compiling and deploying final code. Throughout, he focuses on best-practice methodologies and design patterns. For example, you'll learn how to use the MVP (model-view-presenter) pattern to improve application design and support automated testing for agile development. Kereki illuminates each concept with realistic code examples that help developers jump-start their projects and get great results more quickly. Working with the latest versions of open source tools such as Eclipse, Subversion, Apache, Tomcat, and MySQL, he demonstrates exactly how GWT fits into real Web development environments. Coverage includes Using

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the Google Plugin for Eclipse and the GWT Shell Script
Detecting and working with browsers—and solving the
problems they cause Building better user interfaces with the
MVP pattern Using APIs for visualization, mapping, weather
data, and more Internationalizing and localizing GWT code
Securing GWT applications with cryptography, hashing, and
encryption Testing with JUnit, Emma, GWTTTestCase,
Selenium, and Mock Objects Deploying client-only and client-
plus-server GWT applications

Go beyond the basics of D3.js to create maintainable,
modular, and testable charts and to package them into a
library that can be distributed as open source software or kept
for private use. This book will show you how to transform
regular D3.js chart code into reusable and extendable
modules. You know the basics of working with D3.js, but it's
time to become a professional D3.js practitioner. This book is
your launching pad to refactoring code, composing complex
visualizations from small components, working as a team with
other developers, and integrating charts with a Continuous
Integration system. You'll begin by creating a production-
ready chart using D3.js v5, ES2015, and a test-driven
approach and then move on to using and extending
Britecharts, the reusable charting library based on Reusable
API patterns. Finally, you'll see how to use D3.js along with
React to document and build your charts to compose a
charting library you can release into the NPM repository. With
Pro D3.js, you'll become an accomplished D3.js developer in
no time. What You Will Learn Create v5 D3.js charts with
ES2016 and unit tests Develop modular, testable and
extensible code with the Reusable API pattern Work with and
extend Britecharts, a reusable charting library created at
Eventbrite Use Webpack and npm to create and publish a
charting library from your own chart collections Write
reference documentation and build a documentation

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homepage for your library. Who This Book Is For Data scientists, data visualization engineers, and frontend developers with a fundamental knowledge of D3.js and some experience with JavaScript, as well as data journalists and consultants.

To get the most out of modern JavaScript, you need learn the latest features of its parent specification, ECMAScript 6 (ES6). This book provides a highly practical look at ES6, without getting lost in the specification or its implementation details. Armed with practical examples, author Nicolas Bevacqua shows you new ways to deal with asynchronous flow control, declare objects or functions, and create proxies or unique sets, among many other features. The first title in Bevacqua's Modular JavaScript series, Practical Modern JavaScript prepares JavaScript and Node.js developers for applied lessons in modular design, testing, and deployment in subsequent books. This book explains: How JavaScript and its standards development process have evolved Essential ES6 changes, including arrow functions, destructuring, let and const Class syntax for declaring object prototypes, and the new Symbol primitive How to handle flow control with Promises, iterators, generators, and async functions ES6 collection built-in types for creating object maps and unique sets How and when to use the new Proxy and Reflect built-ins Changes to Array, Math, numbers, strings, Unicode, and regular expressions, and other improvements since ES5 "Writing readable code"--Cover.

Explore the functional programming paradigm and the different techniques for developing better algorithms, writing more concise code, and performing seamless testing Key Features Explore this second edition updated to cover features like async functions and transducers, as well as

functional reactive programming Enhance your functional programming (FP) skills to build web and server apps using JavaScript Use FP to enhance the modularity, reusability, and performance of apps Book Description Functional programming is a paradigm for developing software with better performance. It helps you write concise and testable code. To help you take your programming skills to the next level, this comprehensive book will assist you in harnessing the capabilities of functional programming with JavaScript and writing highly maintainable and testable web and server apps using functional JavaScript. This second edition is updated and improved to cover features such as transducers, lenses, prisms and various other concepts to help you write efficient programs. By focusing on functional programming, you'll not only start to write but also to test pure functions, and reduce side effects. The book also specifically allows you to discover techniques for simplifying code and applying recursion for loopless coding. Gradually, you'll understand how to achieve immutability, implement design patterns, and work with data types for your application, before going on to learn functional reactive programming to handle complex events in your app. Finally, the book will take you through the design patterns that are relevant to functional programming. By the end of this book, you'll have developed your JavaScript skills and

have gained knowledge of the essential functional programming techniques to program effectively. What you will learn Simplify JavaScript coding using function composition, pipelining, chaining, and transducing Use declarative coding as opposed to imperative coding to write clean JavaScript code Create more reliable code with closures and immutable data Apply practical solutions to complex programming problems using recursion Improve your functional code using data types, type checking, and immutability Understand advanced functional programming concepts such as lenses and prisms for data access Who this book is for This book is for JavaScript developers who want to enhance their programming skills and build efficient web applications. Frontend and backend developers who use various JavaScript frameworks and libraries like React, Angular, or Node.js will also find the book helpful. Working knowledge of ES2019 is required to grasp the concepts covered in the book easily. Create scalable, reusable high-quality JavaScript applications and libraries

The JavaScript Workshop is a definitive guide to learning JavaScript in a practical way. Starting with JavaScript's core syntax and structure, the book gradually builds up to more advanced concepts like server-side development and functional programming. With this book, you'll gain the confidence to tackle any real-world JavaScript

challenge.

There's no doubt that the JavaScript ecosystem changes fast. Not only are new tools and frameworks introduced and developed at a rapid rate, the language itself has undergone big changes with the introduction of ES2015 (aka ES6).

Understandably, many articles have been written complaining about how difficult it is to learn modern JavaScript development these days. We're aiming to minimize that confusion with this set of books on modern JavaScript. This book presents modern JavaScript best practice, utilizing the features now available in the language that enable you to write more powerful code that is clean, performant, maintainable, and reusable. It contains:

- The Anatomy of a Modern JavaScript Application by James Kolce
- Clean Code with ES6 Default Parameters & Property Shorthands by Moritz Kruger
- JavaScript Performance Optimization Tips: An Overview by Ivan CuriC
- JavaScript Design Patterns: The Singleton by Samier Saeed
- JavaScript Object Creation: Patterns and Best Practices by Jeff Mott
- Best Practices for Using Modern JavaScript Syntax by M. David Green
- Flow Control in Modern JS: Callbacks to Promises to Async/Await by Craig Buckler
- JavaScript's New Private Class Fields, and How to Use Them by Craig Buckler

This book is for all front-end developers who wish to improve their JavaScript skills. You'll need to be familiar with

HTML and CSS and have a reasonable level of understanding of JavaScript in order to follow the discussion.

"From library user to JavaScript developer"--Cover.

Use Knockout.js to design and build dynamic client-side web applications that are extremely responsive and easy to maintain. This example-driven book shows you how to use this lightweight JavaScript framework and its Model-View-ViewModel (MVVM) pattern. You'll learn how to build your own data bindings, extend the framework with reusable functions, and work with a server to enhance your client-side application with persistence. In the final chapter, you'll build a shopping cart to see how everything fits together. If you're a web developer with experience in JavaScript, HTML, and CSS, you're ready for Knockout. Learn how to create a ViewModel Bind HTML data and attributes, and CSS classes and styles Understand data binding in Knockout's context hierarchy Use properties that change dynamically through user interaction Work with forms by using several different bindings Bind multiple ViewModels on a single page Extend or attach custom functions to observables Perform server-side interactions with jQuery Map a JavaScript object or apply JSON data to a new object

Get the most out of JavaScript for building web applications through a series of patterns, techniques,

and case studies for clean coding Key Features Write maintainable JS code using internal abstraction, well-written tests, and well-documented code Understand the agents of clean coding like SOLID principles, OOP, and functional programming Explore solutions to tackle common JavaScript challenges in building UIs, managing APIs, and writing states Book Description Building robust apps starts with creating clean code. In this book, you'll explore techniques for doing this by learning everything from the basics of JavaScript through to the practices of clean code. You'll write functional, intuitive, and maintainable code while also understanding how your code affects the end user and the wider community. The book starts with popular clean-coding principles such as SOLID, and the Law of Demeter (LoD), along with highlighting the enemies of writing clean code such as cargo culting and over-management. You'll then delve into JavaScript, understanding the more complex aspects of the language. Next, you'll create meaningful abstractions using design patterns, such as the Class Pattern and the Revealing Module Pattern. You'll explore real-world challenges such as DOM reconciliation, state management, dependency management, and security, both within browser and server environments. Later, you'll cover tooling and testing methodologies and the importance of documenting code. Finally, the book will focus on

advocacy and good communication for improving code cleanliness within teams or workplaces, along with covering a case study for clean coding. By the end of this book, you'll be well-versed with JavaScript and have learned how to create clean abstractions, test them, and communicate about them via documentation. What you will learn

- Understand the true purpose of code and the problems it solves for your end-users and colleagues
- Discover the tenets and enemies of clean code considering the effects of cultural and syntactic conventions
- Use modern JavaScript syntax and design patterns to craft intuitive abstractions
- Maintain code quality within your team via wise adoption of tooling and advocating best practices
- Learn the modern ecosystem of JavaScript and its challenges like DOM reconciliation and state management
- Express the behavior of your code both within tests and via various forms of documentation

Who this book is for This book is for anyone who writes JavaScript, professionally or otherwise. As this book does not relate specifically to any particular framework or environment, no prior experience of any JavaScript web framework is required. Some knowledge of programming is assumed to understand the concepts covered in the book more effectively.

You may have definite ideas about writing code when working alone, but team development requires

that everyone use the same approach. With the JavaScript practices in this book—including code style, programming tips, and automation—you will learn how to write maintainable code that other team members can easily understand, adapt, and extend. Author Nicholas Zakas assembled this collection of best practices as a front-end tech leader at Yahoo!, after completing his own journey from solo hacker to team player. He also includes rules recommended by other industry authorities. Use these tips and techniques to help your team set aside individual preferences and function at a higher level. Establish specific code conventions for your team Use tools such as JSLint and JSHint to keep your team on track Adopt style guidelines, such as basic formatting, to help your team produce uniform code Apply several programming practices to solve problems and improve code quality Create an automated JavaScript build system using a variety of utilities Integrate browser-based JavaScript testing with tools such as the YUI Test Selenium Driver If you've used a more traditional object-oriented language, such as C++ or Java, JavaScript probably doesn't seem object-oriented at all. It has no concept of classes, and you don't even need to define any objects in order to write code. But don't be fooled—JavaScript is an incredibly powerful and expressive object-oriented language that puts many design decisions right into your hands. In *The Principles of Object-Oriented JavaScript*,

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Nicholas C. Zakas thoroughly explores JavaScript's object-oriented nature, revealing the language's unique implementation of inheritance and other key characteristics. You'll learn: –The difference between primitive and reference values –What makes JavaScript functions so unique –The various ways to create objects –How to define your own constructors –How to work with and understand prototypes –Inheritance patterns for types and objects

The Principles of Object-Oriented JavaScript will leave even experienced developers with a deeper understanding of JavaScript. Unlock the secrets behind how objects work in JavaScript so you can write clearer, more flexible, and more efficient code.

With Learning JavaScript Design Patterns, you'll learn how to write beautiful, structured, and maintainable JavaScript by applying classical and modern design patterns to the language. If you want to keep your code efficient, more manageable, and up-to-date with the latest best practices, this book is for you. Explore many popular design patterns, including Modules, Observers, Facades, and Mediators. Learn how modern architectural patterns—such as MVC, MVP, and MVVM—are useful from the perspective of a modern web application developer. This book also walks experienced JavaScript developers through modern module formats, how to namespace code effectively, and other essential topics. Learn the structure of design patterns and how they are written

Understand different pattern categories, including creational, structural, and behavioral

Walk through more than 20 classical and modern design patterns in JavaScript

Use several options for writing

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modular code—including the Module pattern, Asynchronous Module Definition (AMD), and CommonJS Discover design patterns implemented in the jQuery library Learn popular design patterns for writing maintainable jQuery plug-ins "This book should be in every JavaScript developer's hands. It's the go-to book on JavaScript patterns that will be read and referenced many times in the future."—Andrée Hansson, Lead Front-End Developer, presis!

A fast-paced guide to designing and building scalable and maintainable web apps with React.js About This Book Build maintainable and performant user interfaces for your web applications using React.js Create reusable React.js components to save time and effort in maintaining your user interfaces Learn how to build a ready-to-deploy React.js web application, following our step-by-step tutorial Who This Book Is For If you're a front-end developer with knowledge of jQuery and its libraries, along with frameworks, such as Angular.JS and Backbone.JS, or native JavaScript development, and you wish to use the fastest web user interface library there is, then this book is ideal for you. What You Will Learn Install powerful React.js tools to make development much more efficient Create React elements with properties and children Get started with stateless and stateful React components Use JSX to speed up your React.js development process Add reactivity to your React components with lifecycle methods Integrate your React components with other JavaScript libraries Utilize the Flux application architecture with your React components Test your React components with Jest test

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framework In Detail Building web applications with maintainable and performant user interfaces is a challenge that many have faced for more than a decade, but no one has risen to this challenge quite like React.js. Today React.js is used by Facebook, Instagram, Khan Academy, and Imperial College London, to name a few. Many new users recognize the benefits of React.js and adopt it in their own projects, forming a fast-growing community. The speed at which React.js has evolved promises a bright future for those who invest in learning it today. React.js Essentials will take you on a fast-paced journey through building your own maintainable React.js application. Begin by exploring how you can create single and multiple user interface elements. Create stateless and stateful components and make them reactive, learn to interact between your components and lifecycle methods and gauge how to effectively integrate your user interface components with other JavaScript libraries. Delve deep into the core elements of the Flux architecture and learn how to manage your application using stores. Finish by going that extra mile with the Jest test framework, running multiple tests on your application and find solutions to scale it further without complexity. Style and approach The book adopts a step-by-step, hands-on approach with ample codes to ensure you learn React.js at a fast pace.

If you have a working knowledge of JavaScript and ECMAScript 6 (ES6), this practical guide will help you tackle modular programming to produce code that's readable, maintainable, and scalable. You'll learn the fundamentals of modular architecture with JavaScript

and the benefits of writing self-contained code at every system level, including the client and server. Nicolás Bevacqua, author of Practical Modern JavaScript, demonstrates how to scale out JavaScript applications by breaking codebases into smaller modules. By following the design practices in this book, senior developers, technical leaders, and software architects will learn how to create modules that are simple and flexible while keeping internal complexity in check. Learn modular design essentials, including how your application will be consumed and what belongs on the interface Design module internals to keep your code readable and its intent clear Reduce complexity by refactoring code and containing and eliminating state Take advantage of modern JavaScript features to write clear programs and reduce complexity Apply Twelve-Factor App principles to frontend and backend JavaScript application development Debunk the myth that JavaScript is not easily testable. Whether you use Node.js, Express, MongoDB, jQuery, AngularJS, or directly manipulate the DOM, you can test-drive JavaScript. Learn the craft of writing meaningful, deterministic automated tests with Karma, Mocha, and Chai. Test asynchronous JavaScript, decouple and properly mock out dependencies, measure code coverage, and create lightweight modular designs of both server-side and client-side code. Your investment in writing tests will pay high dividends as you create code that's predictable and cost-effective to change. Design and code JavaScript applications with automated tests. Writing meaningful tests is a skill that takes learning,

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some unlearning, and a lot of practice, and with this book, you'll hone that skill. Fire up the editor and get hands-on through practical exercises for effective automated testing and designing maintainable, modular code. Start by learning when and why to do manual testing vs. automated verification. Focus tests on the important things, like the pre-conditions, the invariants, complex logic, and gnarly edge cases. Then begin to design asynchronous functions using automated tests. Carefully decouple and mock out intricate dependencies such as the DOM, geolocation API, file and database access, and Ajax calls to remote servers. Step by step, test code that uses Node.js, Express, MongoDB, jQuery, and AngularJS. Know when and how to use tools such as Chai, Istanbul, Karma, Mocha, Protractor, and Sinon. Create tests with minimum effort and run them fast without having to spin up web servers or manually edit HTML pages to run in browsers. Then explore end-to-end testing to ensure all parts are wired and working well together. Don't just imagine creating testable code, write it. What You Need: A computer with a text editor and your favorite browser. The book provides instructions to install the necessary automated testing-related tools. Master Functional Programming techniques with this comprehensive guide for writing cleaner, safer, high-performing JavaScript codes About This Book Become proficient and skilled with Functional Programming in JavaScript to solve real-world development problems Successfully apply Functional Programming concepts and techniques to everyday JavaScript programming Bring modularity, reusability, testability, and performance

to your web apps Who This Book Is For If you are a JavaScript developer and want to apply functional programming techniques, then this book is for you. Only a basic knowledge of the concepts of functional programming is required for this book. What You Will Learn Create more reliable code with closures and immutable data Convert existing methods into pure functions, and loops into recursive methods Develop more powerful applications with currying and function composition Separate the logic of your system from implementation details Implement composition and chaining techniques to simplify coding Use functional programming techniques where it makes the most sense In Detail Functional programming is a programming paradigm for developing software using functions. Learning to use functional programming is a good way to write more concise code, with greater concurrency and performance. The JavaScript language is particularly suited to functional programming. This book provides comprehensive coverage of the major topics in functional programming with JavaScript to produce shorter, clearer, and testable programs. You'll delve into functional programming; including writing and testing pure functions, reducing side-effects, and other features to make your applications functional in nature. Specifically, we'll explore techniques to simplify coding, apply recursion for loopless coding, learn ways to achieve immutability, implement design patterns, and work with data types. By the end of this book, you'll have developed the JavaScript skills you need to program functional applications with confidence. Style and

approach This book takes an easy-to-follow, step-by-step tutorial approach. You will make the most of JavaScript programming with a focus on the progression of functional programming techniques, styles, and detailed information about JavaScript libraries.

Most programming languages contain good and bad parts, but JavaScript has more than its share of the bad, having been developed and released in a hurry before it could be refined. This authoritative book scrapes away these bad features to reveal a subset of JavaScript that's more reliable, readable, and maintainable than the language as a whole—a subset you can use to create truly extensible and efficient code. Considered the JavaScript expert by many people in the development community, author Douglas Crockford identifies the abundance of good ideas that make JavaScript an outstanding object-oriented programming language—ideas such as functions, loose typing, dynamic objects, and an expressive object literal notation. Unfortunately, these good ideas are mixed in with bad and downright awful ideas, like a programming model based on global variables. When Java applets failed, JavaScript became the language of the Web by default, making its popularity almost completely independent of its qualities as a programming language. In *JavaScript: The Good Parts*, Crockford finally digs through the steaming pile of good intentions and blunders to give you a detailed look at all the genuinely elegant parts of JavaScript, including: Syntax Objects Functions Inheritance Arrays Regular expressions Methods Style Beautiful features The real beauty? As you move ahead with the subset of

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JavaScript that this book presents, you'll also sidestep the need to unlearn all the bad parts. Of course, if you want to find out more about the bad parts and how to use them badly, simply consult any other JavaScript book. With JavaScript: The Good Parts, you'll discover a beautiful, elegant, lightweight and highly expressive language that lets you create effective code, whether you're managing object libraries or just trying to get Ajax to run fast. If you develop sites or applications for the Web, this book is an absolute must.

Little known to many, R works just as well with JavaScript—this book delves into the various ways both languages can work together. The ultimate aim of this work is to put the reader at ease with inviting JavaScript in their data science workflow. In that respect the book is not teaching one JavaScript but rather we show how little JavaScript can greatly support and enhance R code. Therefore, the focus is on integrating external JavaScript libraries and no prior knowledge of JavaScript is required. Key Features: ? Easy to pick up. ? An entry way to learning JavaScript for R. ? Covers topics not covered anywhere else. ? Easy to follow along.

Presents an introduction to WebGL development and production concepts to create full 3D applications.

Summary JavaScript Application Design: A Build First Approach introduces JavaScript developers to techniques that will improve the quality of their software as well as their web development workflow. You'll begin by learning how to establish build processes that are appropriate for JavaScript-driven development. Then, you'll walk through best practices for productive day-to-

day development, like running tasks when your code changes, deploying applications with a single command, and monitoring the state of your application once it's in production. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book The fate of most applications is often sealed before a single line of code has been written. How is that possible? Simply, bad design assures bad results. Good design and effective processes are the foundation on which maintainable applications are built, scaled, and improved. For JavaScript developers, this means discovering the tooling, modern libraries, and architectural patterns that enable those improvements. JavaScript Application Design: A Build First Approach introduces techniques to improve software quality and development workflow. You'll begin by learning how to establish processes designed to optimize the quality of your work. You'll execute tasks whenever your code changes, run tests on every commit, and deploy in an automated fashion. Then you'll focus on designing modular components and composing them together to build robust applications. This book assumes readers understand the basics of JavaScript. What's Inside Automated development, testing, and deployment processes JavaScript fundamentals and modularity best practices Modular, maintainable, and well-tested applications Master asynchronous flows, embrace MVC, and design a REST API About the Author Nicolas Bevacqua is a freelance developer with a focus on modular JavaScript, build processes, and sharp design. He maintains a blog at

ponyfoo.com. Table of Contents PART 1 BUILD PROCESSES Introduction to Build First Composing build tasks and flows Mastering environments and the development workflow Release, deployment, and monitoring PART 2 MANAGING COMPLEXITY Embracing modularity and dependency management Understanding asynchronous flow control methods in JavaScript Leveraging the Model-View-Controller Testing JavaScript components REST API design and layered service architectures

Elm brings the safety and stability of functional programming to front-end development, making it one of the most popular new languages. Elm's functional nature and static typing means that run-time errors are nearly impossible, and it compiles to JavaScript for easy web deployment. This book helps you take advantage of this new language in your web site development. Learn how the Elm Architecture will help you create fast applications. Discover how to integrate Elm with JavaScript so you can update legacy applications. See how Elm tooling makes deployment quicker and easier. Functional programming offers safer applications with decreased runtime errors, but functional solutions that are type safe and easy to use have been hard to find, until the Elm language. Elm has the benefits of functional languages while compiling to JavaScript. This book provides a complete tutorial for the Elm language, starting with a simple static application that introduces Elm syntax, modules, and the virtual DOM, to exploring how to create a UI using functions. See how Elm handles the issues of state in functional languages. You'll

continue to build up larger applications involving HTTP requests for communication. Integrate your Elm applications with JavaScript so you can update legacy applications or take advantage of JavaScript resources. Elm also provides built-in tooling to alleviate the tooling creep that's so common in JavaScript. This book covers Elm's deployment and testing tools that ease development confusion. Dive into advanced concepts including creating single-page applications, and creating performance improvements. Elm expert Jeremy Fairbank brings his years of web development experience to teaching how to use Elm for front-end development. Your web UIs will be faster, safer, and easier to develop with Elm and this tutorial. What You Need: You will need the latest version of Elm, 0.19, along with a browser to run the examples in this book.

Update your skill set for ES 6 and 7 with the ultimate JavaScript guide for pros Professional JavaScript for Web Developers is the essential guide to next-level JavaScript development. Written for intermediate-to-advanced programmers, this book jumps right into the technical details to help you clean up your code and become a more sophisticated JavaScript developer. From JavaScript-specific object-oriented programming and inheritance, to combining JavaScript with HTML and other markup languages, expert instruction walks you through the fundamentals and beyond. This new fourth edition has been updated to cover ECMAScript 6 and 7 (also known as ES2015 and ES2016) and the major re-imagination and departure from ES 5.1; new frameworks and libraries, new techniques, new testing tools, and

more are explained in detail for the professional developer, with a practical focus that helps you put your new skills to work on real-world projects. The latest—and most dramatic—ES release is already being incorporated into JavaScript engines in major browsers; this, coupled with the rise in mobile web traffic increasing demand for responsive, dynamic web design, means that all web developers need to update their skills—and this book is your ideal resource for quick, relevant guidance. Get up to date with ECMAScript 6 and 7, new frameworks, and new libraries Delve into web animation, emerging APIs, and build systems Test more effectively with mocks, unit tests, functional tests, and other tools Plan your builds for future ES releases Even if you think you know JavaScript, new ES releases bring big changes that will affect the way you work. For a professional-level update that doesn't waste time on coding fundamentals, Professional JavaScript for Web Developers is the ultimate resource to bring you up to speed.

What's the best approach for developing an application with JavaScript? This book helps you answer that question with numerous JavaScript coding patterns and best practices. If you're an experienced developer looking to solve problems related to objects, functions, inheritance, and other language-specific categories, the abstractions and code templates in this guide are ideal—whether you're using JavaScript to write a client-side, server-side, or desktop application. Written by JavaScript expert Stoyan Stefanov—Senior Yahoo! Technical and architect of YSlow 2.0, the web page performance optimization tool—JavaScript Patterns

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includes practical advice for implementing each pattern discussed, along with several hands-on examples. You'll also learn about anti-patterns: common programming approaches that cause more problems than they solve. Explore useful habits for writing high-quality JavaScript code, such as avoiding globals, using single var declarations, and more Learn why literal notation patterns are simpler alternatives to constructor functions Discover different ways to define a function in JavaScript Create objects that go beyond the basic patterns of using object literals and constructor functions Learn the options available for code reuse and inheritance in JavaScript Study sample JavaScript approaches to common design patterns such as Singleton, Factory, Decorator, and more Examine patterns that apply specifically to the client-side browser environment

Like it or not, JavaScript is everywhere these days—from browser to server to mobile—and now you, too, need to learn the language or dive deeper than you have. This concise book guides you into and through JavaScript, written by a veteran programmer who once found himself in the same position. Speaking JavaScript helps you approach the language with four standalone sections. First, a quick-start guide teaches you just enough of the language to help you be productive right away. More experienced JavaScript programmers will find a complete and easy-to-read reference that covers each language feature in depth. Complete contents include: JavaScript quick start: Familiar with object-oriented programming? This part helps you learn JavaScript quickly and properly. JavaScript in depth: Learn details

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of ECMAScript 5, from syntax, variables, functions, and object-oriented programming to regular expressions and JSON with lots of examples. Pick a topic and jump in. Background: Understand JavaScript's history and its relationship with other programming languages. Tips, tools, and libraries: Survey existing style guides, best practices, advanced techniques, module systems, package managers, build tools, and learning resources. If you're like most developers, you rely heavily on JavaScript to build interactive and quick-responding web applications. The problem is that all of those lines of JavaScript code can slow down your apps. This book reveals techniques and strategies to help you eliminate performance bottlenecks during development. You'll learn how to improve execution time, downloading, interaction with the DOM, page life cycle, and more. Yahoo! frontend engineer Nicholas C. Zakas and five other JavaScript experts—Ross Harmes, Julien Lecomte, Steven Levithan, Stoyan Stefanov, and Matt Sweeney—demonstrate optimal ways to load code onto a page, and offer programming tips to help your JavaScript run as efficiently and quickly as possible. You'll learn the best practices to build and deploy your files to a production environment, and tools that can help you find problems once your site goes live. Identify problem code and use faster alternatives to accomplish the same task Improve scripts by learning how JavaScript stores and accesses data Implement JavaScript code so that it doesn't slow down interaction with the DOM Use optimization techniques to improve runtime performance Learn ways to ensure the UI is responsive at all times

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Achieve faster client-server communication Use a build system to minify files, and HTTP compression to deliver them to the browser

Three years after the first edition of this book was released, there have been several advances in the techniques and technology of JavaScript in the browser. This Second Edition has been thoroughly updated to include the latest versions of all web browsers. The book also introduces newer techniques and related technologies such as canvas, E4X, and JavaScript 2.0. Setting the stage by covering JavaScript in HTML, the book then explores the core of JavaScript, ECMAScript, to give you an understanding of the language's basic syntax, data types, statements, and memory management.

Provides information on how to write better JavaScript programs, covering such topics as functions, arrays, library and API design, and concurrency.

Explore the functional programming paradigm and the different techniques for developing better algorithms, writing more concise code, and performing seamless testing

Key Features Explore this second edition updated to cover features like async functions and transducers, as well as functional reactive programming Enhance your functional programming (FP) skills to build web and server apps using JavaScript Use FP to enhance the modularity, reusability, and performance of apps

Book Description Functional programming is a paradigm for developing software with better performance. It helps you write concise and testable code. To help you take your programming skills to the next level, this

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comprehensive book will assist you in harnessing the capabilities of functional programming with JavaScript and writing highly maintainable and testable web and server apps using functional JavaScript. This second edition is updated and improved to cover features such as transducers, lenses, prisms and various other concepts to help you write efficient programs. By focusing on functional programming, you'll not only start to write but also to test pure functions, and reduce side effects. The book also specifically allows you to discover techniques for simplifying code and applying recursion for loopless coding. Gradually, you'll understand how to achieve immutability, implement design patterns, and work with data types for your application, before going on to learn functional reactive programming to handle complex events in your app. Finally, the book will take you through the design patterns that are relevant to functional programming. By the end of this book, you'll have developed your JavaScript skills and have gained knowledge of the essential functional programming techniques to program effectively. What you will learn

- Simplify JavaScript coding using function composition, pipelining, chaining, and transducing
- Use declarative coding as opposed to imperative coding to write clean JavaScript code
- Create more reliable code with closures and immutable data
- Apply practical solutions to complex programming problems using recursion
- Improve your functional code using data types, type checking, and immutability
- Understand advanced functional programming concepts such as lenses and prisms for data access

Who this book is for This book is for

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JavaScript developers who want to enhance their programming skills and build efficient web applications. Frontend and backend developers who use various JavaScript frameworks and libraries like React, Angular, or Node.js will also find the book helpful. Working knowledge of ES2019 is required to grasp the concepts covered in the book easily.

Offers problems, solutions, and examples for readers using JavaScript and DHTML in Web pages, covering topics such as interactive forms, user-friendly navigation, dynamic and stationary content, and frames.

One skill that's essential for any professional JavaScript developer is the ability to write testable code. This book shows you what writing and maintaining testable JavaScript for the client- or server-side actually entails, whether you're creating a new application or rewriting legacy code. From methods to reduce code complexity to unit testing, code coverage, debugging, and automation, you'll learn a holistic approach for writing JavaScript code that you and your colleagues can easily fix and maintain going forward. Testing JavaScript code is complicated. This book helps experienced JavaScript developers simplify the process considerably. Get an overview of Agile, test-driven development, and behavior-driven development Use patterns from static languages and standards-based JavaScript to reduce code complexity Learn the advantages of event-based architectures, including modularity, loose coupling, and reusability Explore tools for writing and running unit tests at the functional and application level Generate code coverage to measure the scope and effectiveness of

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your tests Conduct integration, performance, and load testing, using Selenium or CasperJS Use tools for in-browser, Node.js, mobile, and production debugging Understand what, when, and how to automate your development processes

Get the most out of JavaScript for building web applications through a series of patterns, techniques, and case studies for clean coding Key Features Write maintainable JS code using internal abstraction, well-written tests, and well-documented code Understand the agents of clean coding like SOLID principles, OOP, and functional programming Explore solutions to tackle common JavaScript challenges in building UIs, managing APIs, and writing states Book Description Building robust apps starts with creating clean code. In this book, you'll explore techniques for doing this by learning everything from the basics of JavaScript through to the practices of clean code. You'll write functional, intuitive, and maintainable code while also understanding how your code affects the end user and the wider community. The book starts with popular clean-coding principles such as SOLID, and the Law of Demeter (LoD), along with highlighting the enemies of writing clean code such as cargo culting and over-management. You'll then delve into JavaScript, understanding the more complex aspects of the language. Next, you'll create meaningful abstractions using design patterns, such as the Class Pattern and the Revealing Module Pattern. You'll explore real-world challenges such as DOM reconciliation, state management, dependency management, and security, both within browser and

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server environments. Later, you'll cover tooling and testing methodologies and the importance of documenting code. Finally, the book will focus on advocacy and good communication for improving code cleanliness within teams or workplaces, along with covering a case study for clean coding. By the end of this book, you'll be well-versed with JavaScript and have learned how to create clean abstractions, test them, and communicate about them via documentation. What you will learn

Understand the true purpose of code and the problems it solves for your end-users and colleagues
Discover the tenets and enemies of clean code considering the effects of cultural and syntactic conventions
Use modern JavaScript syntax and design patterns to craft intuitive abstractions
Maintain code quality within your team via wise adoption of tooling and advocating best practices
Learn the modern ecosystem of JavaScript and its challenges like DOM reconciliation and state management
Express the behavior of your code both within tests and via various forms of documentation

Who this book is for
This book is for anyone who writes JavaScript, professionally or otherwise. As this book does not relate specifically to any particular framework or environment, no prior experience of any JavaScript web framework is required. Some knowledge of programming is assumed to understand the concepts covered in the book more effectively.

How can you overcome JavaScript language oddities and unsafe features?
With this book, you'll learn how to create code that's beautiful, safe, and simple to understand and test by using JavaScript's functional

programming support. Author Michael Fogus shows you how to apply functional-style concepts with Underscore.js, a JavaScript library that facilitates functional programming techniques. Sample code is available on GitHub at <https://github.com/funjs/book-source>. Fogus helps you think in a functional way to help you minimize complexity in the programs you build. If you're a JavaScript programmer hoping to learn functional programming techniques, or a functional programmer looking to learn JavaScript, this book is the ideal introduction. Use applicative programming techniques with first-class functions Understand how and why you might leverage variable scoping and closures Delve into higher-order functions—and learn how they take other functions as arguments for maximum advantage Explore ways to compose new functions from existing functions Get around JavaScript's limitations for using recursive functions Reduce, hide, or eliminate the footprint of state change in your programs Practice flow-based programming with chains and functional pipelines Discover how to code without using classes

As programmers, we've all seen source code that's so ugly and buggy it makes our brain ache. Over the past five years, authors Dustin Boswell and Trevor Foucher have analyzed hundreds of examples of "bad code" (much of it their own) to determine why they're bad and how they could be improved. Their conclusion? You need to write code that minimizes the time it would take someone else to understand it—even if that someone else is you. This book focuses on basic principles and practical techniques you can apply every time you write

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code. Using easy-to-digest code examples from different languages, each chapter dives into a different aspect of coding, and demonstrates how you can make your code easy to understand. Simplify naming, commenting, and formatting with tips that apply to every line of code. Refine your program's loops, logic, and variables to reduce complexity and confusion. Attack problems at the function level, such as reorganizing blocks of code to do one task at a time. Write effective test code that is thorough and concise—as well as readable. "Being aware of how the code you create affects those who look at it later is an important part of developing software. The authors did a great job in taking you through the different aspects of this challenge, explaining the details with instructive examples." —Michael Hunger, passionate Software Developer

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