

# MASTERING PLAYWRIGHT

MODERN WEB BROWSER AUTOMATION

FROM FIRST SCRIPT TO ENTERPRISE-SCALE TEST FRAMEWORKS



RELIABLE  
TESTS



CROSS-BROWSER  
AUTOMATION



JAVASCRIPT &  
TYPESCRIPT



API TESTING &  
NETWORK  
INTERCEPTION



PARALLEL  
EXECUTION



CI/CD  
INTEGRATION



PRACTICAL  
EXAMPLES



REAL-WORLD  
SCENARIOS



MAINTAINABLE  
PATTERNS



ENTERPRISE-SCALE  
SOLUTIONS

STEVE T.

# Mastering Playwright: Modern Web Browser Automation

From First Script to Enterprise-Scale Test Frameworks

Steve T. Team Publications

This book is available at

<https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>

This version was published on 2026-06-24



Leanpub

This is a [Leanpub](#) book. Leanpub empowers authors and publishers with the Lean Publishing process. [Lean Publishing](#) is the act of publishing an in-progress ebook using lightweight tools and many iterations to get reader feedback, pivot until you have the right book and build traction once you do.

© 2026 Steve T. Team Publications

# Contents

<b>Mastering Playwright: Modern Web Browser Automation</b> . . . . .	<b>1</b>
From First Script to Enterprise-Scale Test Frameworks . . . . .	1
Introduction . . . . .	2
Chapter 1: The Browser Automation Landscape . . . . .	5
Chapter 2: Under the Hood – How Browsers and Playwright Work . .	7
Chapter 3: Installation and First Steps . . . . .	9
Chapter 4: Selectors and Locators – Finding What You Need . . . . .	11
Chapter 5: Page Interactions – Clicking, Typing, and Navigating . . . .	13
Chapter 6: Waits, Synchronization, and Timing . . . . .	15
Chapter 7: Assertions and Validation . . . . .	17
Chapter 8: Test Organization – Fixtures, POM, and Architecture . . . .	19
Chapter 9: API Testing and Network Interception . . . . .	21
Chapter 10: Parallel Execution, Cross-Browser, and Mobile Testing . .	23
Chapter 11: Debugging, Performance, and Security . . . . .	25
Chapter 12: CI/CD Integration – Shipping Playwright in Production . .	27
Chapter 13: The ShopTest Project – From First Script to Enterprise Framework . . . . .	29
References . . . . .	32

# Mastering Playwright: Modern Web Browser Automation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## From First Script to Enterprise-Scale Test Frameworks

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Introduction

The cost of manual testing is not a theoretical concern. It is a line item that bleeds budgets every sprint. Every time a developer pushes code, someone has to open the application, navigate through workflows, and verify that everything works as expected. That process takes hours, days, or weeks depending on the size of the application and the number of test scenarios. And it never stops. Every release cycle repeats the same cycle of manual verification, creating a bottleneck that slows down every team in the organization.

This book is about solving that problem with Playwright. It is a complete guide to web browser automation, written for JavaScript and TypeScript developers and QA engineers who want to build reliable, maintainable test suites in production. You will learn how Playwright works under the hood, from installation through advanced patterns like Page Object Model, API testing, network interception, parallel execution, and CI/CD integration. Every chapter includes practical code examples, real-world scenarios, and actionable guidance so you can design, build, and scale robust automation solutions that your team can trust.

## Who This Book Is For

This book is written for three overlapping audiences, and the path through it depends on where you are today.

If you are a **beginner** with no prior test automation experience, start at Chapter 1 and work through sequentially. You will learn the browser automation landscape, how Playwright fits into it, and how to write your first tests. The book assumes familiarity with JavaScript or TypeScript but does not require deep expertise. If you have never written an automated test before, Chapters 1 through 5 will give you everything you need to start writing reliable tests on day one.

If you are a **practitioner** who already writes Playwright tests but wants to level up, skip ahead to Chapter 8 for test organization patterns, then work through Chapters 9 through 12 for advanced techniques. You will learn how to structure large test suites, intercept network requests, run tests in parallel, and integrate them into CI/CD pipelines. The material in these chapters is where the real value lies: it is the difference between writing a few tests and building an enterprise-scale test framework.

If you are an **engineering manager** responsible for scaling test automation across a team, focus on Chapters 8, 10, and 11. These chapters cover test organization, parallel execution, cross-browser testing, and CI/CD integration. You will learn how to structure test suites so they scale with the team, how to run tests efficiently in CI, and how to make decisions about infrastructure, runner sizing, and cost optimization.

## How to Use This Book

The book is structured as a progression from foundation to mastery. Each chapter builds on the previous one, and you should read them in order unless you are skipping ahead for specific topics.

Chapter 1 sets the stage by comparing Playwright with its competitors and explaining why it has become the dominant framework in 2026. Chapter 2 dives into browser architecture and how Playwright's isolation model works. Chapter 3 covers installation and your first test. Chapters 4 through 7 cover the core API: selectors, interactions, synchronization, and assertions.

Chapters 8 through 12 are where the book becomes advanced. Chapter 8 covers test organization, fixtures, and the Page Object Model. Chapter 9 covers API testing and network interception. Chapter 10 covers parallel execution, cross-browser testing, and mobile testing. Chapter 11 covers debugging, performance optimization, and security. Chapter 12 covers CI/CD integration, including GitHub Actions workflows, GitLab CI, Jenkins pipelines, browser caching strategies, and runner sizing for production environments.

Each chapter includes practical code examples in JavaScript and TypeScript, real-world scenarios drawn from production environments, and actionable guidance that you can apply immediately. The code examples are complete and runnable; you should follow along by typing them into your own project.

The book also includes review questions at the end of each chapter to help you test your understanding. These are not trivia questions; they are practical exercises that challenge you to apply what you have learned to real scenarios.

## A Note on Versions

This book is written for Playwright 1.49 and later, which is the version available as of late 2024. The API described here is stable and backward-compatible, so

the code examples will work with any version from 1.49 onward. If you are using an older version, you may need to update before following along. The latest stable release as of mid-2026 is 1.61.0, which includes the WebAuthn passkey virtual authenticator and enhanced web storage APIs introduced in 1.61, but all core features discussed in this book are available from 1.49 onward.

## Where to Go Next

After you finish this book, you will have the knowledge to design, build, maintain, and scale robust browser automation solutions in professional environments. The next step is to apply what you have learned to your own project. Start small: write one test that covers a critical user flow. Make it reliable using role-based locators and auto-waiting. Add another test that covers a different flow. Build up gradually, always prioritizing stability over speed.

The book is not a theoretical exercise. It is a practical guide to building automation that works in production, and every chapter has been tested in real environments. If you follow the guidance here, you will have a test suite that your team can trust.

## Chapter 1: The Browser Automation Landscape

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 1 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 1 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 2: Under the Hood – How Browsers and Playwright Work**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 2 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 2 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 3: Installation and First Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 3 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 3 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 4: Selectors and Locators – Finding What You Need**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 4 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 4 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 5: Page Interactions – Clicking, Typing, and Navigating**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 5 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 5 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 6: Waits, Synchronization, and Timing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 6 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 6 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 7: Assertions and Validation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 7 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 7 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 8: Test Organization – Fixtures, POM, and Architecture**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 8 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 8 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 9: API Testing and Network Interception

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 9 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 9 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 10: Parallel Execution, Cross-Browser, and Mobile Testing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Mobile-First Debugging Techniques

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Real-Device vs. Emulator Trade-offs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Common Mobile Flakiness Patterns and Fixes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 10 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 10 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 11: Debugging, Performance, and Security

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 11 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 11 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 12: CI/CD Integration – Shipping Playwright in Production

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### GitHub Actions: The Complete Workflow

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Browser Binary Caching Strategies

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Runner Sizing and Cost Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### GitLab CI: Equivalent Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Jenkins Pipeline: Equivalent Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### Migration Path Between Platforms

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 12 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 12 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Summary of CI/CD Best Practices

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 13: The ShopTest Project – From First Script to Enterprise Framework**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 3: The First Test**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 4: Locators – Finding What You Need**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 5: Interactions – Clicking, Typing, and Navigating**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 7: Assertions – Validating Behavior**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 8: Test Organization – POM and Fixtures**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

### **Chapter 9: API Testing and Network Interception**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 10: Parallel Execution, Cross-Browser, and Mobile Testing**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **Chapter 12: CI/CD Integration – Shipping in Production**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **The Complete ShopTest Suite**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## **What Comes Next**

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 12 Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## Chapter 12 Review Questions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.

## References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/masteringplaywrightmodernwebbrowserautomation>.