



90 Days Playwright(JS/TS) + AI

(JavaScript + TypeScript + AI + CI/CD)

Feature	Details
Practical Lab Exercise	10 per day (~ 400+ Labs)
Total Time	1 Hour per day (5 Hour per week)
Framework + Projects	4-5 Push to Github

Module 1 – JavaScript Fundamentals

Topics

- JavaScript Basics
- Data Types & Variables
- Operators & Expressions
- Control Flow
- Loops
- Functions & Arrow Functions
- Arrays & Objects
- DOM Manipulation
- Async JavaScript
- ES6+ Features
- AI - [Setting up a project via the github Copilot / Augment Code.](#)

Key Coverage

- JavaScript fundamentals for automation
- Variables, scope, and type coercion
- Conditional logic and loops
- Functions and arrow functions
- Array and object manipulation
- DOM selectors and events
- Promises and async/await
- Modern ES6+ syntax

Hands-On Projects



- *(Foundational coding exercises only – no standalone project)*
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Module 2 – Playwright Fundamentals

Topics

- Playwright Overview
- Installation & Setup
- Writing First Test
- Selectors & Locators
- Input Actions
- Assertions
- Browser Contexts
- Screenshots & Videos
- Playwright Inspector

Key Coverage

- Playwright architecture and setup
- Writing stable UI tests
- Locator strategies and actions
- UI assertions and validations
- Browser context isolation
- Debugging and test introspection

Hands-On Projects

- **Form Validation Suite (Beginner)**
 - Input field validation
 - Required vs optional fields
 - Error message verification
 - Accessibility basics
 - **Debugging with Playwright Inspector (Beginner)**
 - Debug failing tests
 - Use Inspector and Trace Viewer
 - Failure analysis
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Module 3 – TypeScript for Automation

Topics

- TypeScript Basics
- Type Annotations
- Interfaces
- Types vs Interfaces
- Functions in TypeScript
- Generics
- Enums & Literal Types
- Classes & Access Modifiers
- Modules
- TypeScript with Playwright

Key Coverage

- Type-safe automation development
- Interface-driven design
- Generic utilities and helpers
- Strong typing in Playwright tests

Hands-On Projects

- *(TypeScript concepts applied gradually to existing Playwright tests)*
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Module 4 – Advanced Playwright Capabilities

Topics

- Network Interception
- API Mocking
- File Uploads & Downloads
- Dialogs & Alerts
- Frames & iFrames
- Multiple Pages & Popups
- Authentication & Storage State
- Mobile Testing
- Visual Testing

Key Coverage

- Route handlers and mocks
- File handling automation
- Multi-tab and frame handling
- Authentication reuse



- Responsive and visual testing

Hands-On Projects

- **Browser Context & Auth State Mini Project (Beginner)**
 - Multiple browser contexts
 - Incognito session testing
 - Save and reuse authentication state
 - **Network Mocking Project (Intermediate)**
 - Mock API responses
 - Simulate failures (500, timeout)
 - Feature flag testing
 - **File Upload & Download Validation (Intermediate)**
 - Upload automation
 - File type and size validation
 - Download verification
 - **Multi-Page & iFrame Testing (Intermediate)**
 - Popups and new tabs
 - Cross-frame interactions
 - **Mobile Responsive Testing (Intermediate)**
 - Device emulation
 - Viewport-based validations
 - Touch interactions
 - **Visual Regression Suite (Intermediate)**
 - Baseline screenshots
 - Screenshot comparison
 - Ignore dynamic regions
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Module 5 – Playwright Test Runner Deep Dive

Topics

- Test Configuration
- Test Organization
- Fixtures
- Parallel Execution
- Retries & Timeouts
- Reporters
- Test Annotations
- Parameterized Tests
- Global Setup & Teardown

Key Coverage

- Playwright Test architecture
- Fixture-based design



- Parallel and sharded execution
- Flaky test handling
- Advanced reporting

Hands-On Projects

- **Data-Driven Test Suite (Intermediate)**
 - JSON/CSV-based tests
 - Parameterized execution
 - Environment-based data
 - **Flaky Test Investigation & Stabilization (Intermediate)**
 - Introduce flaky tests
 - Retry vs fix analysis
 - Trace-based debugging
 - **Multi-Browser Compatibility Suite (Intermediate)**
 - Chromium, Firefox, WebKit execution
 - Conditional skips and tagging
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Module 6 – API Testing with Playwright

Topics

- API Testing Fundamentals
- APIRequestContext
- HTTP Methods
- API Authentication
- Response Validation
- API + UI Hybrid Testing
- API Performance

Key Coverage

- REST API testing with Playwright
- Authenticated API calls
- JSON assertions and validation
- Hybrid automation flows
- Performance thresholds

Hands-On Projects

- **API Testing Mini Framework (Intermediate)**
 - GET and POST tests
 - Header and auth handling
 - JSON assertions
- **API + UI Hybrid Testing Suite (Advanced)**
 - API-based data setup



- UI verification
 - API teardown
 - **API Performance Validation (Intermediate)**
 - Response time measurement
 - Threshold-based failures
 - Performance reporting
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Module 7 – OOPS & Page Object Model (POM)

Topics

- OOP Principles
- Classes & Inheritance
- Abstract Classes
- Interfaces in OOP
- Design Patterns
- Page Object Model
- Page Components
- Base Page Pattern

Key Coverage

- Object-oriented automation design
- Scalable POM architecture
- Reusable components
- Maintainable test code

Hands-On Projects

- **E-Commerce Checkout Flow (POM-Based) (Advanced)**
 - Product selection
 - Checkout validation
 - Negative scenarios
 - **Page Components Library (Intermediate)**
 - Header, footer, navigation components
 - Component-level assertions
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Module 8 – Automation Framework & CI/CD

Topics

- Framework Architecture
- Data Management
- Utilities



- Logging
- Error Handling
- Reporting
- Git & GitHub
- GitHub Actions
- Docker
- Parallel CI Execution

Key Coverage

- Production-ready framework design
- Logging and observability
- CI/CD with Docker
- Parallel and sharded pipelines

Hands-On Projects

- **Complete E2E Automation Framework (Expert)**
 - Folder architecture
 - Base test and base page
 - Environment configuration
 - **Reporting & Failure Analysis (Intermediate)**
 - Allure reports
 - Screenshots and videos
 - Failure diagnostics
 - **CI/CD Pipeline Integration (Advanced)**
 - GitHub Actions
 - Docker execution
 - Parallel and sharded runs
 - **Performance Metrics Collection (UI) (Advanced)**
 - Web vitals (LCP, CLS, FID)
 - Page load metrics
 - Threshold-based failures
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Module 9 – Career & Industry Readiness

Topics

- Resume Building
- GitHub Portfolio
- Interview Preparation

Key Coverage

- Resume storytelling using projects
- GitHub repo polish



- Framework-level interview readiness

Hands-On Projects

- **Resume & GitHub Polish (Beginner)**
 - Resume bullet creation
 - Repository cleanup
 - README and documentation
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