

Playwright & TypeScript: Selectors, API & Debugging

Learn to build, debug and maintain Playwright test automation with TypeScript, from selectors and assertions to API handling and real-world scenarios.

4 Days

4 HOURS

36

TOPICS

12

HANDS-ON LABS

COURSE OVERVIEW

This course covers TypeScript fundamentals for test automation alongside setting up and writing tests with Playwright. It then addresses selectors, UI interactions, assertions, auto-waiting, and applying TypeScript within test files through helper functions and typed test data. Later modules cover handling complex UI elements such as modals, iframes and file uploads, along with authentication flows, API mocking, and using TypeScript data models and enums. The final module addresses organising and debugging tests, using tracing and screenshots, and building a mini test framework for real-world scenarios.

WHO THIS COURSE IS FOR

Test Automation Engineers

QA Engineers

Software Developers

SDETs

PREREQUISITES

- Knowledge of any OOPs programming language.

LEARNING OBJECTIVES

- Explain core TypeScript concepts such as types, interfaces and async/await
- Configure a Playwright project with TypeScript and write a first test
- Apply selectors and simulate UI interactions such as click and fill
- Implement assertions using the expect API and auto-waiting behaviour
- Structure test files using TypeScript helper functions and typed data
- Handle complex UI elements such as modals, iframes and file uploads
- Implement authentication flows and mock API responses with Playwright
- Debug tests using tracing, screenshots and browser developer tools

36 Topics

DAY 1 Introduction to TypeScript and Playwright

Basic TypeScript Concepts (for Test Automation)

3 Labs

TOPICS

- **Introduction to TypeScript:** what, why, how
- **Type annotations:** string, number, boolean, any, unknown
- Interfaces and types
- Functions and arrow syntax
- async/await basics
- Modules and imports

Getting Started with Playwright

TOPICS

- What is Playwright? Key features and comparisons
- Installing Node.js and Playwright
- Setting up a Playwright project with TypeScript
- Understanding folder structure and config files
- Writing your first test using Playwright

DAY 2 Interactions, Assertions & TypeScript in Tests

Playwright Selectors & Actions

3 Labs

TOPICS

- **Types of selectors:** CSS, text, role, XPath
- **UI interactions:** click, fill, type, check, selectOption
- Keyboard and mouse simulation

Assertions & Auto-waiting

TOPICS

Using the expect API · Understanding auto-waiting and retries · Common assertion patterns

TypeScript in Test Files

TOPICS

Creating helper functions with types · Using interfaces for test data · Structuring test files with type-safe imports

Dealing with Complex UI Elements

3 Labs

TOPICS

Handling modals, iframes, file uploads · Multiple tabs/windows · Advanced waiting strategies

Authentication & API Handling

TOPICS

- Login flow automation (UI + API-based)
- Mocking network responses
- Making API calls with Playwright's request context

Using TypeScript for Test Data & Utilities

TOPICS

- Creating data models with interfaces
- Using enums and constants for clean test design
- Organizing reusable TS modules

Test Organization & Debugging

3 Labs

TOPICS

- Organizing tests using folders and test groups
- Writing reusable helper methods with TS
- **Debugging techniques:** pw-debug, --debug, VS Code tools
- Screenshots, videos, and tracing

Real-World Test Scenarios

TOPICS

- **Writing end-to-end scenarios:** login → dashboard → update → logout
- Best practices for maintainable and readable test code
- Simple HTML report generation

Practise What You Learn

MODULE	ACTIVITY
Introduction to TypeScript and Playwright	■ Create a basic TypeScript file with functions and interfaces ■ Initialize a Playwright + TypeScript project ■ Write and run a simple test for a sample login page
Interactions, Assertions & TypeScript in Tests	■ Automate a form submission with validations ■ Create custom TypeScript utility functions for reusability ■ Add multiple assertion types to verify UI states
Advanced Playwright + Real-world Interactions	■ Automate a login flow using UI and session storage ■ Handle file upload + iframe in a single test ■ Use TypeScript interfaces to define API response mocks
Project Structure, Debugging, and Mini Project	■ Build a mini framework with reusable selectors and utilities ■ Implement a real-world test suite for a sample app ■ Practice debugging failed tests and analyzing artifacts

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Hands-on exercises throughout the course
- Delivery by certified instructors and subject matter experts
- Course completion certificate from Koenig

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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