

## Playwright with TypeScript – Complete Industry Roadmap

This roadmap helps in:

- ✓ Crack Playwright Automation Interviews
  - ✓ Build Modern Automation Frameworks
  - ✓ Work confidently in Real-Time Projects
  - ✓ Become Industry-Ready Automation Engineers
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### 📦 TypeScript Fundamentals

(TypeScript is mandatory before Playwright)

#### Core TypeScript Topics

- Introduction to TypeScript
  - Variables & Data Types
  - Functions
  - Arrays
  - Objects
  - Loops
  - Conditional Statements
  - Interfaces
  - Classes & Objects
  - OOP Concepts
  - Async & Await
  - Promises
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### 📦 Node.js Basics

- Introduction to Node.js
- npm Package Manager

- Installing Packages
  - Project Structure
  - package.json
  - Environment Setup
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## 3 Playwright Introduction

- What is Playwright
  - Advantages of Playwright
  - Playwright Architecture
  - Browser Support
  - Headless vs Headed Execution
  - Installing Playwright
  - Creating First Automation Script
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## 4 Locators & Selectors

Most important Playwright topic.

- text Locator
  - id Locator
  - CSS Selector
  - XPath
  - Role Locator
  - Placeholder Locator
  - Label Locator
  - Chained Locators
  - Dynamic Locators
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## 5 Web Element Handling

- Click Actions
  - Fill & Type
  - Radio Buttons
  - Checkboxes
  - Dropdown Handling
  - Alerts & Popups
  - Frames Handling
  - Multiple Tabs & Windows
  - Web Tables
  - Mouse Actions
  - Keyboard Actions
  - Drag & Drop
  - File Upload & Download
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## 6 Synchronization in Playwright

One of Playwright's biggest advantages.

- Auto Wait Mechanism
  - Explicit Waits
  - `waitForSelector`
  - `waitForResponse`
  - `waitForLoadState`
  - Timeout Handling
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## 7 Assertions & Validations

- Playwright Assertions

- Text Validation
  - Element Validation
  - URL Validation
  - Title Validation
  - Visibility Checks
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## 8 Advanced Playwright Concepts

- Network Interception
  - API Mocking
  - Authentication Handling
  - Cookies & Sessions
  - Browser Context
  - Storage State
  - Environment Variables
  - Parallel Execution
  - Cross Browser Testing
  - Mobile Emulation
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## 9 API Testing with Playwright

Modern companies expect UI + API knowledge.

Topics:

- API Requests
- GET/POST/PUT/DELETE
- Response Validation
- Headers & Tokens
- JSON Parsing

- Authentication
  - API Assertions
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## **10** Framework Development

Most important for high-paying roles.

### **Framework Concepts**

- Page Object Model (POM)
  - Reusable Components
  - Utility Functions
  - Test Data Management
  - Environment Configuration
  - Base Page Design
  - Logging
  - Reporting
  - Screenshot Capture
  - Video Recording
  - Error Handling
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### **Playwright Test Runner**

- Test Structure
- Hooks
- Fixtures
- Tags
- Retry Mechanism
- Parallel Execution
- Test Configuration

- Multi Browser Execution
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## **12 Reporting**

- HTML Reports
  - Allure Reports
  - Screenshots on Failure
  - Video Recording
  - Trace Viewer
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## **13 Git & GitHub**

- Git Basics
- Repository Management
- Push & Pull
- Branching
- Merge Conflicts
- Pull Requests

Mandatory for industry work.

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## **14 CI/CD Integration**

- Jenkins Integration
  - GitHub Actions
  - Scheduled Execution
  - Pipeline Configuration
  - Automation in CI/CD
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## **15 SQL Basics**

- SELECT Queries
- WHERE Clause
- JOINS
- GROUP BY
- ORDER BY

Used for backend validation.

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## **16 Agile & Jira**

Mandatory in real-time projects.

### **Agile Topics**

- Scrum Framework
- Sprint Planning
- Daily Standups
- User Stories
- Retrospectives

### **Jira Topics**

- Story Tracking
  - Bug Reporting
  - Sprint Boards
  - Dashboards
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## **17 Real-Time Project Implementation**

you should practice:

- Login Automation
- E-Commerce Testing
- Payment Flow Testing

- End-to-End Framework
  - API + UI Integration
  - Parallel Execution Framework
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## **18** Interview Preparation

### **Frequently Asked Interview Questions**

- Why Playwright over Selenium?
  - Difference between Browser & Context
  - Auto Wait Mechanism
  - Playwright Fixtures
  - API Testing in Playwright
  - Parallel Execution
  - Handling Dynamic Elements
  - POM Framework
  - Trace Viewer Usage
  - Real-Time Challenges
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## **19** Industry Survival Skills

### **Technical Skills**

- Debugging Failures
- Framework Maintenance
- CI/CD Knowledge
- Root Cause Analysis
- Reporting Issues

### **Soft Skills**

- Communication

- Agile Participation
  - Requirement Understanding
  - Client Interaction
  - Team Collaboration
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## **Recommended learning Plan**

### **Week 1**

TypeScript Basics + Node.js

### **Week 2**

Playwright Basics + Locators

### **Week 3**

Advanced Element Handling + Waits

### **Week 4**

Assertions + API Testing

### **Week 5**

Framework Development

### **Week 6**

Reporting + Git + CI/CD

### **Week 7**

Real-Time Project

### **Week 8**

Mock Interviews + Resume Preparation

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## **Important Industry Advice**

Those who learn only Playwright commands struggle in projects.

To become industry-ready, you must learn:

- ✓ Strong TypeScript Basics
- ✓ Framework Development
- ✓ API Testing
- ✓ CI/CD Integration
- ✓ Real-Time Scenarios
- ✓ Debugging Skills
- ✓ Agile Process
- ✓ Communication Skills

That combination helps students crack modern Automation Testing roles confidently.