

Developing Modern SharePoint Solutions with SPFx

SPFx, React, Microsoft Graph, Teams & Fluent UI

5-Day Course Outline · 40 Hours

Day 1 — Foundations & Environment

Module 1: Introduction to SPFx

- Why SharePoint Framework? Modern toolchain overview, roadmap

Module 2: Preparing Your Machine

- Node.js, Visual Studio Code, Yeoman, Heft, Webpack

LAB: Environment setup

Module 3: Building Your First Web Part

- Web part project structure, Gulp/Heft build tasks, running & debugging locally
- Full Page Apps vs. standard web parts

LAB: Scaffold and run a web part

Module 4: TypeScript for SPFx

- Types, interfaces & classes, functions, modules
- Promises and async/await

LAB: Refactoring JS to typed TypeScript

Day 2 — Web Parts, Properties & React

Module 5: Web Part Properties

- Property pane basics, preconfigured field types
- Custom property controls, validation, property pane lifecycle

LAB: Configurable web part

Module 6: React Fundamentals for SPFx

- JSX, component structure, props vs. state, lifecycle, virtual DOM

LAB: Building a React-based web part

Module 7: React Component Deep-Dive

- Composing components, form components, hooks basics

LAB: Multi-component web part with shared state

Day 3 — Data & Security

Module 8: Loading SharePoint & Graph Data

- REST/OData fundamentals, SPHttpClient & HttpClient
- Introduction to PnPjs for simplified queries
- SharePoint list subscriptions (webhooks)

LAB: Data-driven web part using PnPjs

Module 9: Microsoft Graph & Entra ID Security

- Registering apps in Entra ID, API permissions
- Consuming Microsoft Graph and other protected APIs
- Domain-isolated web parts & security guidance

LAB: Calling Graph API securely from a web part

Day 4 — Styling, Extensions & Teams

Module 10: Styling with Sass and Fluent UI

- Sass variables/mixins/nesting, Fluent UI components & styles

LAB: Restyling a web part with Fluent UI

Module 11: SPFx Extensions

- Application customizers, field customizers, command sets
- Building SharePoint forms and Adaptive Card Extensions (ACEs)

LAB: Building a custom command set and an ACE

Module 12: Teams Integration

- Creating Teams tabs with SPFx, deploying to Microsoft Teams

LAB: Deploying a web part as a Teams tab

Day 5 — Dynamic Data, Quality & Deployment

Module 13: Dynamic Data

- Data providers/consumers, serialization, handling updates

LAB: Connecting two web parts via dynamic data

Module 14: Testing SPFx Components

- Unit testing with Jest, mocking SharePoint context

LAB: Writing tests for a web part

Module 15: Build, Package & Deploy

- Bundling, packaging, app catalog (tenant/site-scoped), versioning
- CI/CD basics: automating build/deploy with Azure DevOps or GitHub Actions

LAB: Setting up an automated deployment pipeline

Module 16: Tips, Tricks & Troubleshooting

- Debugging techniques, Application Insights, customizing Heft, webpack bundle analysis
- Course wrap-up and Q&A