

SharePoint Framework Development with SPFx

FA-0810 · 4 days

Software Development · Mainframe & Enterprise Systems

Introduction

Develop client-side SharePoint web parts using SPFx, React and a version-compatible toolchain. Over four days, work through project setup, property panes, data operations, libraries, UI styling, security, performance and packaging.

Exercises use a prepared SharePoint environment, suitable permissions and mutually supported SPFx, Node.js, React and UI-library versions. Advanced topics are selected introductions and guided examples, not a guarantee of complete production proficiency.

Learning outcomes

- Explain SPFx architecture and compare it with historical SharePoint extension models.
- Set up a compatible toolchain and create and test a client-side web part.
- Use React, property panes, SharePoint data operations and appropriate state management.
- Integrate selected packages/APIs and style responsive interfaces with compatible UI components and SCSS.
- Review permissions, security and performance concerns.
- Package a solution, work with an App Catalog and troubleshoot selected deployment issues.
- Use source control and collaboration practices for SPFx work.

Prerequisites

- Basic understanding of programming concepts.
- Familiarity with JavaScript and its ecosystem.
- An understanding of web development basics such as HTML and CSS.

A prepared SharePoint development site/App Catalog and the permissions needed for selected CRUD and deployment exercises.

Training outline

1. Environment and SPFx architecture

Introduction to SharePoint & SPFx

- SharePoint development history: farm solutions and retired SharePoint Online Add-ins compared with SPFx
- Benefits and significance of the SharePoint Framework.
- Overview of the SPFx architecture: components, dependencies, and workflow.

Setting up the Development Environment

- System requirements and prerequisites for SPFx.
- Detailed walk-through of Node.js: Its role and installation process.
- Yeoman project scaffolding and version-specific build tooling: Heft for SPFx 1.22+, Gulp for older supported projects
- Step-by-step creation of your first SPFx project: Project structure and key files.

2. Web parts, React and data flow

Developing Web Parts with SPFx

- Web part life cycle: from creation to deployment.
- Building and testing client-side web parts using the SharePoint-hosted workbench and supported local development server workflow; no retired local workbench
- Introduction to React within SPFx: Components, Props, and State.
- Customizing web parts: Working with property pane for dynamic behaviors.

Managing Data & Data Flow in SPFx

- Introduction to SharePoint data structures: Lists, Libraries, and more.
- Selected list/library CRUD operations using version-compatible PnPjs and appropriate permissions
- Application state: React state and an introduction to additional tools such as Redux where justified

3. Libraries, APIs and interface styling

Integrating external libraries and APIs

- Working with npm: Adding and managing packages.
- Fetching data from external APIs: Using fetch API, Axios and integrating with SharePoint data.

- Selected compatible package integrations; assess whether libraries such as Lodash or jQuery are needed

User interface and styling

- Office UI Fabric/Fluent UI concepts and components compatible with the selected SPFx/React version
- Custom styling techniques: Using SCSS in SPFx solutions for granular style control.
- Ensuring responsive design: Techniques and practices for a mobile-friendly SharePoint experience.

4. Security, performance and deployment

Security and performance

- The SharePoint context: Current user, permissions, and site details.
- Ensuring security in SPFx: Practices to avoid common vulnerabilities.
- Performance tuning: Tools and techniques for optimizing load times and responsiveness.

Deployment of SPFx Solutions

- Understanding the SharePoint App Catalog: Deployment and versioning.
- Packaging solutions: Generating .sppkg files, and handling feature and package manifests.
- Deployment to supported SharePoint environments and page experiences; compatibility and version management

Wrap-up and Next Steps

- Common challenges and their solutions in SPFx development.
- Staying updated: Following SharePoint and SPFx updates and communities.
- Questions, review and next learning steps

Use source control to review changes and coordinate work; select a small prepared solution for packaging and deployment practice.