SharePoint Framework (SPFx) — Application Development Basics

Course code: SPO_DEV_1

This course is designed for anyone who wants to learn the basics of modern solutions using SharePoint Framework (SPFx) in Microsoft 365. Participants will learn how to use tools, integrate React & Fluent UI, access data (REST & Graph), address performance, security, and deployment automation issues, all in accordance with best practices.

Who is the course intended for

- Front-end developers in Microsoft 365
- Teams working with classic SharePoint solutions moving towards modern development
- Power users transitioning to sustainable and structured development

Required prior knowledge

- Creating websites in HTML/XHTML and CSS
- JavaScript basics at the JS_PROG1 course level
- TypeScript basics at the JS_TS1 course level
- React basics (optional/advantageous)
- Knowledge of SharePoint lists and libraries (optional/advantageous)

Course outline

- Overview of the Microsoft 365 &SPFx platform (2 hours)
- Brief history of SharePoint and pro-code approaches
- Positioning of SPFx vs Add-ins / Power Platform / Teams apps
- Multi-tenant and tenant boundaries
- Development environment &tools (2.5 hours)
- Node.js LTS, package managers, Yeoman, Gulp
- fnm/nvm; recommended global packages
- Project structure and configuration (tsconfig.json, package.json, serve.json)
- Project structure &first Web Part (2.5 hours)
- Entry points, manifests, localization
- Property pane basics &live reload
- Property panes &dynamic configuration (2.5 hours)
- Reactive vs. non-reactive fields, validation patterns
- Other configuration options
- React &Fluent UI integration (2.5 hours)
- React/Fluent UI versions and compatibility
- Optional helper packages and patterns
- Functional components, hooks, theming &accessibility Bonus — React UI libraries: KendoReact integration (1.5–2 hours)
- Overview of the KendoReact library and licensing (commercial)
- Installing packages and basic theme in SPFx
- Using KendoReact Grid connected to SharePoint list data
- Theming alongside Fluent UI
- Notes on package size and performance
- Data access: REST, PnPjs &Microsoft Graph (2.5 hours)
- AadHttpClient vs MSGraphClientFactory vs SPHttpClient
- Batching, selective projection, error handling
- Performance &caching (2.5 hours)
- Package analysis, code splitting, lazy loading
- Caching strategies (session, in-memory, PnPjs)

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- Local storage/indexedDB
- SPFx Extensions (2.5 hours)
- Command Set, Application Customizer, Field Customizer
- JSON formatting as a no-/low-code alternative
- Lifecycle events &secure DOM manipulation
- Security &permissions (2.5 hours)
- Scoped permissions, admin consent workflow
- Fallback when scope is denied
- Localization &multiple languages (2.5 hours)
- loc folder, fallbacks, culture switching
- Packaging &App Catalog deployment (2.5 hours)
- Creating .sppkg, versioning, tenant vs. site deployment
- Upgrade paths &manifest development
- CI/CD &Quality gates (2.5 hours)
- GitHub Actions / Azure DevOps pipeline
- Lint, unit tests (Jest), package size limits
- Telemetry &diagnostics (2.5 hours)
- Logging
- Performance marks
- Error boundaries
- Hardening &governance (2.5 hours)
- Dependency checks, licenses, polyfill strategies
- Secure configurations and resilience to change
- Capstone &review (2–2.5 hours)
- Presentation of the final Web Part + any extensions
- Code review section &backlog improvements

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