

# uCertify

## Course Outline

### Mastering SharePoint Framework



04 Aug 2025

1. Exercises, Quizzes, Flashcards & Glossary

Number of Questions

2. Expert Instructor-Led Training

3. ADA Compliant & JAWS Compatible Platform

4. State of the Art Educator Tools

5. Award Winning Learning Platform (LMS)

6. Chapter & Lessons

Syllabus

Chapter 1: Preface

Chapter 2: Getting Started with the SharePoint Framework

Chapter 3: Develop Your First SPFx Web Part

Chapter 4: SPFx Web Part Property Pane

Chapter 5: Custom Control for the Web Part Property Pane

Chapter 6: PnP Control for the Web Part Property Pane

Chapter 7: CSS Considerations

Chapter 8: Configure the SPFx WebPart Icon

Chapter 9: Examine SPFx WebParts on Modern SharePoint

Chapter 10: Host SPFx WebParts from MS Azure CDN

Chapter 11: Host SPFx WebParts from the Office 365 Public CDN

Chapter 12: Host SPFx Web Parts From the SharePoint Document Library

Chapter 13: Integrating jQuery with SPFx WebParts

Chapter 14: CRUD Operations with No Framework

Chapter 15: CRUD Operations with React JS

Chapter 16: CRUD Operations with AngularJS

Chapter 17: CRUD Operations Using Knockout JS

Chapter 18: CRUD Operations with SP-PnP-JS

Chapter 19: Transition to @pnp/sp from sp-pnp-js

Chapter 20: SPFx Development with ReactJS

- Chapter 21: React Lifecycle Events in SPFx
- Chapter 22: Autobind Control Events in SPFx
- Chapter 23: Partial State Update for React-based SPFx WebParts
- Chapter 24: Using Office UI Fabric in SPFx
- Chapter 25: Provision SharePoint Assets in SPFx Solutions
- Chapter 26: Connect to the MS Graph API with MSGraphClient
- Chapter 27: Connect to the MS Graph API with AadHttpClient
- Chapter 28: SPFx Logging Mechanism
- Chapter 29: Debug SPFx Solutions
- Chapter 30: Overview of SPFx Extensions
- Chapter 31: SPFx Extensions-Application Customizer
- Chapter 32: Extend an Application Customizer with React Components
- Chapter 33: SPFx Extensions-Field Customizer
- Chapter 34: SPFx Extensions-ListView Command Set
- Chapter 35: Anonymously Call MS Azure Functions
- Chapter 36: Securing Azure Functions with Azure Active Directory
- Chapter 37: Consume Azure AD Secured Function with SPFx
- Chapter 38: Implementing Separation of Concerns (SoC)
- Chapter 39: Localization Support for SPFx
- Chapter 40: Office 365 CLI
- Chapter 41: SPFx Solutions Upgrade
- Chapter 42: SPFx Solution Upgrade with the Office 365 CLI
- Chapter 43: Common Issues and Resolutions with Upgrading npm Packages
- Chapter 44: Extend MS Teams with SPFx
- Chapter 45: Library Component Types
- Chapter 46: Develop Custom App Pages with SPFx
- Chapter 47: Optimizing SPFx Solutions
- Chapter 48: Unit Test with Jest and Enzyme

Chapter 49: DevOps for SPFx

Chapter 50: Query User Profile Details

Chapter 51: Querying SP Search Results

Chapter 52: React-based Tree View

Chapter 53: React-based Carousel

Chapter 54: Implement a React-based Organogram

Chapter 55: Integrating Adaptive Cards with SPFx

Chapter 56: Integrating the Google API with SPFx Functions

Chapter 57: SPFx Development with SharePoint On-Premises

Chapter 58: APPENDIX

Videos and How To

## 1. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

## 2. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can

easily navigate uCertify course using JAWS shortcut keys.

### 3. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

### 4. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**

1. Best Postsecondary Learning Solution

- **2015**

1. Best Education Solution
2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution

3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

## 5. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps

them grasp the concepts better because they can go over it again right away which improves learning. Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

## Syllabus

Chapter 1: Preface

Chapter 2: Getting Started with the SharePoint Framework

- SharePoint Evolution Across Versions
- Birth of the SharePoint Framework
- Key Features of the SharePoint Framework
- Script Editor Web Part vs App Part vs the SPFx Web Part
- Lightweight Components/Tools Used (SPFx Toolchain)
- ALM of the Client-side Web Part
- Setup the Developer Environment for SPFx
- Conclusion

Chapter 3: Develop Your First SPFx Web Part

- Features of SPFx Client-side Web Parts
- Conclusion

## Chapter 4: SPFx Web Part Property Pane

- Property Pane Metadata
- Supported Typed Object Properties
- Test the Property Pane
- Conclusion

## Chapter 5: Custom Control for the Web Part Property Pane

- Build the List Dropdown Custom Control
- Define the Web Part Property
- Add the Dropdown Property Pane Control
- Add List Dropdown to the Property Pane Control
- Use the Dropdown Property Pane Control in the Web Part
- Test the Custom Property Pane
- Conclusion

## Chapter 6: PnP Control for the Web Part Property Pane

- PnP Reusable Property Pane Controls
- Use List Picker Control in the Web Part Property Pane
- Conclusion

## Chapter 7: CSS Considerations

- Manage CSS files in the SPFx solution
- Use of Sass
- Override externally referenced CSS
- Conclusion

## Chapter 8: Configure the SPFx WebPart Icon

- Out-of-the-box look and feel
- Office UI Fabric Icons
- Use an External Icon Image
- Use the base64 Encoded Image
- Conclusion

## Chapter 9: Examine SPFx WebParts on Modern SharePoint

- Understand the SharePoint Workbench
- Configure SPFx web parts for Modern Pages
- Conclusion

## Chapter 10: Host SPFx WebParts from MS Azure CDN

- Configure the MS Azure Storage Account
- Configure the BLOB container
- Enable Azure CDN for Storage Account
- Configure the SPFx Solution to use Azure CDN
- Conclusion

## Chapter 11: Host SPFx WebParts from the Office 365 Public CDN

- Configure the CDN for the Office 365 Tenant
- Setup the New Office 365 CDN
- Conclusion

## Chapter 12: Host SPFx Web Parts From the SharePoint Document Library

- Deployment to CDN
- Configure the SharePoint Library as CDN
- Configure the SPFx Solution for the SharePoint Library CDN
- Conclusion

## Chapter 13: Integrating jQuery with SPFx WebParts

- Integrate jQuery with the SPFx Web Part
- Configure the Required Packages and Dependencies

## Chapter 14: CRUD Operations with No Framework

- Develop a SPFx Solution with No Framework for CRUD operations
- Configure the Property for the List Name
- Conclusion

## Chapter 15: CRUD Operations with React JS

- Brief about React JS
- The SPFx Solution for CRUD operations with React JS
- Configure the Property for the List Name
- Add Controls to the WebPart
- Implement the Create Operation
- Implement the Read Operation
- Implement the Update Operation
- Implement the Delete Operation
- Create Operation
- Read Operation
- Update Operation
- Delete Operation

- Conclusion

## Chapter 16: CRUD Operations with AngularJS

- Brief information about AngularJS
- Create the SPFx Solution
- Configure AngularJS
- Configure the Property for List Name
- Build an Angular application
- Implement the Create Operation
- Implement the Read Operation
- Implement the Update Operation
- Implement the Delete Operation
- Configure the Controller
- Configure the Module
- Add Controls to the WebPart
- Create Operation
- Read Operation
- Update Operation

- Delete Operation
- Conclusion

## Chapter 17: CRUD Operations Using Knockout JS

- Brief information about KnockoutJS
- Create the SPFx Solution
- Configure Property for List Name
- Implement the Create Operation
- Implement the Read Operation
- Implement the Update Operation
- Implement the Delete Operation
- Add Controls to the Knockout template
- Test the WebPart
- Create Operation
- Read Operation
- Update Operation
- Delete Operation
- Conclusion

## Chapter 18: CRUD Operations with SP-PnP-JS

- Brief information about SP-PnP-JS
- Create the SPFx Solution
- Configure sp-pnp-js
- Configure Property for List Name
- Add Controls to the WebPart
- Implement the Create Operation
- Implement the Read Operation
- Implement the Update Operation
- Implement the Delete Operation
- Test the WebPart
- Create Operation
- Read Operation
- Update Operation
- Delete Operation
- Conclusion

## Chapter 19: Transition to @pnp/sp from sp-pnp-js

- Why sp-pnp-js is deprecated?

- The SPFx WebPart with sp-pnp-js
- Code the WebPart
- Test the WebPart
- Transition to @pnp/sp from sp-pnp-js
- Test the web part after the @pnp/sp transition
- Conclusion

## Chapter 20: SPFx Development with ReactJS

- Life with JavaScript before React JS
- Overview of ReactJS
- React/Virtual DOM
- Primary Building Blocks of React
- Conclusion

## Chapter 21: React Lifecycle Events in SPFx

- React Component Life Cycle
- Render Method of the React Component
- Conclusion

## Chapter 22: Autobind Control Events in SPFx

- Develop the SPFx Web Part
- Binding the event to the control
- Binding all the events at once
- Conclusion

## Chapter 23: Partial State Update for React-based SPFx WebParts

- React State
- Spread operator
- Test the WebPart
- Conclusion

## Chapter 24: Using Office UI Fabric in SPFx

- The UI Challenges
- Overview of Office UI Fabric
- Office UI Fabric for the SharePoint Framework
- Office UI Fabric Components
- Use Office UI Fabric Components in the SPFx WebPart
- Implement the Greet Message WebPart using Office UI Fabric
- Conclusion

## Chapter 25: Provision SharePoint Assets in SPFx Solutions

- SharePoint Assets
- Create the SPFx Solution
- Add SharePoint Assets to the SPFxSolution
- Package the assets as part of the SPFx Solution
- Conclusion

## Chapter 26: Connect to the MS Graph API with MSGraphClient

- Brief information about Microsoft Graph
- MSGraphClient to consume the Graph APIs
- Retrieve User Information using MS Graph
- Conclusion

## Chapter 27: Connect to the MS Graph API with AadHttpClient

- AadHttpClient vs MSGraphClient
- Access MS Graph using AadHttpClient
- Get user details using MS Graph
- Configure your Office 365 Tenant as the First Release Tenant

- API Management
- Conclusion

## Chapter 28: SPFx Logging Mechanism

- Understand the Logging API
- Develop the SPFx Solution for Implementing Logging
- Conclusion

## Chapter 29: Debug SPFx Solutions

- Develop the SharePoint Framework Web Part
- Debugging with a Browser
- Debug while developing
- Debug with Visual Studio Code
- Debugging on the Local Workbench
- Debugging on the Hosted Workbench
- Conclusion

## Chapter 30: Overview of SPFx Extensions

- SharePoint Framework Extensions
- Update the SPFx Yeoman Generator

- Create the SharePoint Framework Extensions Project
- Conclusion

## Chapter 31: SPFx Extensions-Application Customizer

- Overview of an Application Customizer
- Application Customizer the SPFx Solution
- Implement the Application Customizer
- Conclusion

## Chapter 32: Extend an Application Customizer with React Components

- Generate the SPFx Solution for an Application Customizer
- Application Customizer Implementation
- Conclusion

## Chapter 33: SPFx Extensions-Field Customizer

- Overview of a Field Customizer
- Column Formatting VS SPFx Field Customizer
- Develop the SPFx Solution for a Field Customizer
- Conclusion

## Chapter 34: SPFx Extensions-ListView Command Set

- Overview of ListView Command Set
- Develop the ListView Command Set SPFx Solution
- Develop the ListViewCommand Set
- Debugging the List View Command Set
- Define the ListView Command Sets
- Implement the ListView Command Set Customization
- Conclusion

## Chapter 35: Anonymously Call MS Azure Functions

- Introduction to Azure Functions
- Empower CORS for the Azure Function
- Call the Azure function from the SPFx Web Part
- Call Anonymous Azure Function from the Web Part
- Conclusion

## Chapter 36: Securing Azure Functions with Azure Active Directory

- Azure Active Directory App Registration
- CORS Enablement for Azure Function

- Develop the Azure Function with Visual Studio
- Conclusion

## Chapter 37: Consume Azure AD Secured Function with SPFx

- Consume the Azure function with the SPFx web part
- Set permissions to the SPFx webpart
- Grant permissionsto test the webpart
- Conclusion

## Chapter 38: Implementing Separation of Concerns (SoC)

- Separation of Concerns (SoC)
- Develop an SoC scenario
- Mock data service implementation
- Consume service inside the SPFx webpart
- Conclusion

## Chapter 39: Localization Support for SPFx

- Develop localization solutions for SPFx
- Support for localization

- Conclusion

## Chapter 40: Office 365 CLI

- Installation of the Office 365 CLI
- Usage of the Office 365 CLI
- Office 365 Tenant Management
- Office 365 CLI Cmdlets
- Office 365 CLI Upgrade
- Conclusion

## Chapter 41: SPFx Solutions Upgrade

- The upgrade puzzle
- The upgrade plan
- Conclusion

## Chapter 42: SPFx Solution Upgrade with the Office 365 CLI

- Introduction to the Office 365 CLI
- SPFx Solution Upgrade to the Latest Version
- SPFx Solution Upgrade to a Specific Version
- Conclusion

## Chapter 43: Common Issues and Resolutions with Upgrading npm Packages

- Why to upgrade npm packages?
- Common Issues and Resolutions for npm Upgrade
- Conclusion

## Chapter 44: Extend MS Teams with SPFx

- Develop the MS Teams Tab SPFx Solution
- Support for MS Teams in SPFx
- Handle MS Teams Context in the Web Part
- Package and Deploy the web part to SharePoint
- Make the web part accessible in MS Teams
- Conclusion

## Chapter 45: Library Component Types

- Introduction to a Library Component
- Create the Library Component
- Develop the Library Component
- Utilize the library component in the SPFx web part

- Deploy a library to the tenant app catalog
- Consume the Library from the Tenant App Catalog
- Conclusion

## Chapter 46: Develop Custom App Pages with SPFx

- Develop custom app pages with SPFx
- Configure the web part for a single part page
- Deploy the Package
- Verify the Custom App Page Creation
- Conclusion

## Chapter 47: Optimizing SPFx Solutions

- SPFx implementation common issues
- Conclusion

## Chapter 48: Unit Test with Jest and Enzyme

- Need of unit tests
- Implement Unit Tests
- Automate Unit Testing with Azure DevOps
- Conclusion

## Chapter 49: DevOps for SPFx

- Continuous Integration (CI)
- Create a Build Definition
- Continuous Deployment
- Setup Deployment Trigger
- Conclusion

## Chapter 50: Query User Profile Details

- User Profile Service Outline
- Query User Profile Details from SPFx
- Conclusion

## Chapter 51: Querying SP Search Results

- SPFx Web Part to Query Search Results
- Implement Service to Query Search Results
- Conclusion

## Chapter 52: React-based Tree View

- Develop a SPFx Solution for a React-based Tree View

- Tree View Control
- Conclusion

## Chapter 53: React-based Carousel

- Develop the SPFx Solution for Carousel
- NPM Carousel Package
- Conclusion

## Chapter 54: Implement a React-based Organogram

- Develop the SPFx Solution for an Organogram
- Conclusion

## Chapter 55: Integrating Adaptive Cards with SPFx

- Introduction to Adaptive Cards
- Conclusion

## Chapter 56: Integrating the Google API with SPFx Functions

- Google Fit REST API
- Google Developer Playground
- Develop the SPFx web part to display Google Fit information

- Conclusion

## Chapter 57: SPFx Development with SharePoint On-Premises

- Decide the SPFx Version
- Conclusion

## Chapter 58: APPENDIX

- SPFx Commands Cheat Sheet

You can't stay away! Get  
the [SPFx Commands Cheat Sheet](#)



3187 Independence Drive  
Livermore, CA 94551,  
United States



+1-415-763-6300



[support@ucertify.com](mailto:support@ucertify.com)



[www.ucertify.com](http://www.ucertify.com)