Developing SharePoint Online Solutions

Course ISI-1509B 4 Days Instructor-led, Hands on

Course Description

This four-day instructor led course provides students with a complete guide to building SharePoint Framework solutions, apps, add-ins, and solutions for SharePoint for your enterprise or customer needs. Regardless of your title, this course is intended for professional developers who develop solutions for SharePoint products and technologies in a team-based, medium-sized to large development environment.

The SharePoint Framework (SPFx) is a page and web part model that provides full support for client-side SharePoint development, easy integration with SharePoint data, and support for open source tooling. With the SharePoint Framework, you can use modern web technologies and tools in your preferred development environment to build productive experiences and apps that are responsive and mobile-ready from day one. Currently, the SharePoint Framework is only available for SharePoint Online.

Course Objectives

- Understand the limitations of the previous development models for SharePoint. You will begin to see how and where SharePoint Framework differs the most and why it matters.
- Understand the SharePoint Framework which covers the types of project you can implement and reveals how to code and start using the necessary tools quickly.
- How to install the toolchain and verifying everything is installed correctly. You'll learn how project files are laid out and where to find what.
- How to code a SharePoint Framework based web part and deploy it locally for testing and in SharePoint for real use.
- How to use Visual Studio Code, the free editor from Microsoft that fully supports SharePoint Framework projects. You will also learn how to use Visual Studio 2015/2017 if you are more familiar with them.
- Learn how to package and deploy their code in an orderly and managed fashion. You'll learn about the tools to aid you in this task and how to manually deploy your code to SharePoint.
- Learn how to access SharePoint-hosted data such as lists and documents. You will also learn using mock data to quickly get your code working before further testing against live data.
- Learn how to create solutions that allow parameters and values from user input, such as settings data for a web part. This way your code can run dynamically regardless of where it is deployed.

- Learn how to combine React and Office UI Fabric React frameworks with SharePoint Framework projects.
- Learn how to use other popular frameworks, such as jQuery and Angular, to implement your solutions while still using SharePoint Framework.
- Learn how to troubleshoot and Debug a SharePoint Framework Solution using
- efficient troubleshooting techniques to help you find common problems you might encounter. Debugging a SharePoint Framework solution is slightly different from traditional server-side debugging, and this module will teach you how to debug your code.
- Learn the different SharePoint APIs and how they differ from each other. You'll learn how to access the APIs, and also how to employ Microsoft Graph, the fabric that provides knowledge for most things in Office 365 and Azure Active Directory.
- Learn what SharePoint Framework means for developers from now on. As development models come and go, we give you several ideas how developers should approach this major change.

Prerequisites

- A working knowledge of using Visual Studio and Visual Studio Code
- A basic working knowledge of SharePoint
- A working knowledge of Visual C#
- A basic working knowledge of client-side web technologies including HTML, CSS, and JavaScript.

Course Outline

Module 1: Introducing SharePoint Online for Developers

- What is SharePoint Online?
- SharePoint sites and site collections
- SharePoint document libraries
- SharePoint lists
- SharePoint web parts
- Why SharePoint Online?
- Office 365 licensing
- Choosing an Office 365 license for development use
- Getting started with SharePoint Online
- Creating new site collections
- A word or two on SharePoint site templates
- Site definitions
- Site templates
- Web templates
- SharePoint Online and site templates
- Creating a new site collection

- Developer sites versus team sites
- SharePoint Online APIs
- A quick primer on Microsoft Graph
- Developing solutions for SharePoint Online
- Solutions for SharePoint and SharePoint Online
- SharePoint 2001-2003: direct modification of files
- SharePoint 2007--Full-trust code
- SharePoint 2010 and SharePoint Online: sandbox solutions
- SharePoint 2013, SharePoint 2016, and SharePoint Online: add-ins
- SharePoint Online--add-ins and client-side scripts
- Development tooling for SharePoint Online

Module 2: Developing Solutions for SharePoint

- Introducing the SharePoint Framework
- SharePoint extensibility
- Philosophy of the SharePoint Framework
- Types of projects the SharePoint Framework supports
- Key features of the SharePoint Framework
- Toolchain
- npm
- Yeoman and Yeoman SharePoint generator
- Gulp
- Visual Studio Code
- Browser developer tools
- SharePoint Workbench
- Introducing Office Developer Patterns and Practices
- Office Developer Patterns and Practices in practice
- Contributing to Office Dev PnP
- Application life cycle management with SharePoint customizations
- Managing and versioning source code and assets
- GitHub
- Visual Studio Team Services
- Deploying, retracting, and managing solutions

Module 3: Getting Started with the SharePoint Framework

- Setting up your development environment
- Step 1 - Installing Node.js
- Step 2 - Node package manager
- Step 3 - Installing Yeoman and Gulp
- Step 4 - Installing the Yeoman SharePoint generator
- Step 5 - Install Visual Studio Code
- Testing your SharePoint Framework development environment
- Step 1 - Creating a folder for the web part

- Step 2 - Running the Yeoman SharePoint generator
- Step 3 - Installing the developer certificate
- Step 4 - Running the web part on a local workbench
- Anatomy of the SharePoint Framework web part project
- Main folders and root level configuration files
- TypeScript basics in the SharePoint Framework
- Key files of the SharePoint Framework web part projects

Module 4: Building Your First Web Part

- Creating a feedback list
- Creating the feedback web part project
- Setting web part basics
- Building feedback web part user experience
- Testing the user interface
- Saving the feedback
- Testing and troubleshooting the web part
- Ideas for fine tuning the web part for production use
- Using Office 365 to build better business process
- Building smarter controls
- Provisioning of the Feedback list and other resources
- Localization
- Localizing web part manifest
- Localizing texts
- Calendar and currency

Module 5: Using Visual Studio Code and Other Editors

- Introducing Visual Studio Code
- Installing Visual Studio Code
- Getting to know Visual Studio Code
- Changing the color theme
- Working with files
- Extensions
- Working with the SharePoint Framework in Visual Studio Code
- Running commands with the Integrated Terminal
- Using Visual Studio instead of Visual Studio Code

Module 6: Packaging and Deploying Solutions

- Overview of packaging and deploying
- Packaging SharePoint Framework solutions
- Using Gulp to package a project
- Deploying SharePoint Framework solutions
- App Catalog

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- Installing the app
- Deploying assets
- SharePoint Online CDN and Microsoft Azure CDN
- Configuring a SharePoint Online CDN
- Updating the project to support a SharePoint Online CDN
- Deploying assets to a SharePoint Online CDN
- Configuring Microsoft Azure Storage CDN
- Updating the project to support Microsoft Azure CDN
- Deploying assets to Microsoft Azure CDN

Module 7: Working with SharePoint Content

- Overview of working with SharePoint content
- Using mock data
- Using mock data with locally hosted SharePoint Workbench
- Step 1 - create data model
- Step 2 - create MockSharePointClient
- Step 3 - consume the mock data in the web part
- Accessing real data with SPHttpClient
- Working with SharePoint lists
- Requesting the list of lists with SPHttpClient
- Checking if the list exists and creating lists
- Working with SharePoint list items
- Creating an Office 365 Group and new SharePoint list
- Basic operation with SharePoint list items using SPHttpClient
- Step 1 - create a hello-listitems web part project
- Step 2 - add a data model for list items
- Step 3 - build the user interface for the web part
- Step 4 - define the function that will make SPHttpClient request to read list items and test the web part
- Step 5 - implementing the _runOperation function and building a skeleton for CRUD operation functions
- Step 6 - implementing the create operation
- Step 7 - implementing the read operation
- Step 8 - implementing the update operation
- Step 9 - implementing the delete operation

Module 8: Working with the Web Part Property Pane

- Web part property pane
- Property panes in classic web parts
- Property panes in SharePoint Framework web parts
- Implementing a property pane
- Fields in property panes
- Implementing headers, groups, and fields

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- Implementing multiple pages in property panes
- Handling property field events
- Implementing custom properties in a property pane
- Defining a custom field type

Module 9: Using React and Office UI Fabric React Components

- Overview
- Understanding React
- React is declarative
- React is component-based
- Introduction to Fabric React components
- Fabric React support
- How to obtain Fabric React for your web part
- Using Fabric React components
- Button
- Dialog
- TextField
- Using React and Office UI Fabric React components in SharePoint Framework web parts
- Creating the SharePoint Framework React To-do web part
- Step 1 - Creating a React web part project
- Step 2 - Adding Office UI Fabric React to the project
- Step 3 - Examining the React project structure
- Step 4 - Creating the ITodoItem interface and mockup data
- Step 5 - Implementing a to-do list in React and Fabric React components
- Modifying the web part file
- Modifying the ReactTodo component
- Creating TodoItemComponent

Module 10: Working with Other JavaScript Frameworks

- Overview
- Using jQuery in SharePoint framework web parts
- Loading jQuery from CDN
- Bundling jQuery to the web part package
- Knockout
- AngularJS and Angular
- Using SharePoint patterns and practices JavaScript Core Library
- Accessing user profiles
- Sending email
- Working with lists and list items
- Working with JavaScript libraries
- Additional considerations

Module 11: Troubleshooting and Debugging SharePoint Framework Solutions

- Troubleshooting
- Ensuring an up-to-date npm
- Updating the Yeoman template version
- Troubleshooting the npm cache
- Optimization
- Optimizing the SharePoint Framework packages
- Loading external packages
- Debugging solutions
- Debugger statements using browser developer tools
- Debugging with source maps
- Debugging in Visual Studio Code

Module 12: SharePoint APIs and Microsoft Graph

- SharePoint APIs
- SharePoint REST APIs
- Accessing SharePoint Online with CSOM using a console app
- Accessing SharePoint Online with REST using a console app
- Accessing REST APIs with SharePoint Framework
- Microsoft Graph
- What is Microsoft Graph?
- Accessing Microsoft Graph with Graph Explorer
- Accessing Microsoft Graph with SharePoint Framework

Module 13: The Future of SharePoint Customizations

- The future of SharePoint developers
- Our recommendations for developers
- The SharePoint Framework support in SharePoint 2016
- Is SharePoint Framework the final framework for SharePoint developers?