MS-MS4010: EXTEND MICROSOFT 365 COPILOT WITH DECLARATIVE AGENTS BY USING VISUAL STUDIO CODE

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1 Day	Intermediate	Microsoft 365	Instructor-led	NA

INTRODUCTION

This course provides comprehensive knowledge and hands-on experience in building declarative agents using Visual Studio Code and Teams Toolkit. Participants start with an introduction to declarative agents, followed by practical labs that guide them through building their first agent, understanding API plugins, and implementing APIs. Advanced topics include creating adaptive cards, managing authentication for API plugins, and integrating Microsoft Graph connectors. By the end of the course, participants have a solid understanding of how to leverage declarative agents to enhance the functionality of Microsoft 365 Copilot.

AUDIENCE PROFILE

This training course is designed primarily for developers and technical professionals who want to extend Microsoft 365 Copilot by building plugins, connectors, and declarative agents.

PREREQUISITES

There are no formal prerequisites for this course.

COURSE OBJECTIVES

After completing this course, students will be able to do:

- Extend Microsoft 365 Copilot with declarative agents.
- Build custom plugins and connectors for Copilot.
- Integrate real-time business data into Copilot.
- Troubleshoot and test custom extensions.

COURSE CONTENT

Module 1: Introduction to declarative agents for Microsoft 365 Copilot

Determine the scenarios which declarative agents are suitable for customizing and extending Microsoft 365 Copilot. Describe the function of custom knowledge and custom actions.

Lessons

- Introduction
- What are declarative agents?
- How declarative agents work
- When to use declarative agents
- Knowledge check
- Summary

After completing this module, students will be able to:

- Evaluate whether a declarative agent is appropriate to extend Microsoft 365 Copilot for your scenario.
- Describe how the components of a declarative agent work together to create agents that run on Microsoft 365 Copilot.

Module 2: Build your first declarative agent using TypeSpec

This module guides you through the process of building, deploying, and optimizing a custom Microsoft 365 Copilot connector. You'll learn how to connect external data sources, implement security, and ensure your data is discoverable and actionable in Copilot.

Lessons

- Introduction
- What is TypeSpec?
- Exercise - Scaffold a new declarative agent
- Exercise - Write instructions and conversation starters
- Exercise - Integrate knowledge and actions
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Explain the purpose and benefits of TypeSpec in its role in creating declarative agents.
- Build a basic declarative agent using TypeSpec and the Microsoft 365 Agents Toolkit in Visual Studio Code.
- Configure and customize an agent's behavior, including adding conversation starters and testing its functionality in Microsoft 365 Copilot.
- Integrate advanced capabilities into a declarative agent, such as web content, OneDrive/SharePoint data, Teams messages, and Python-based code interpretation.
- Validate and deploy a fully functional agent tailored to meet specific organizational needs.

Module 3: Introduction to actions with API plugins for declarative agents

Determine the scenarios for which actions for declarative agents with API plugins are suitable. Describe the function of API plugins

Lessons

- Introduction
- What are API plugins for declarative agents?

- How API plugins work
- When to use API plugins
- Module assessment
- Summary

By the end of this module, you're able to:

- Evaluate whether extending your declarative agent with an API plugin action is suitable for your scenario.
- Describe how API plugins enable a declarative agent to retrieve and modify external data.

Module 4: Build your first action for declarative agents with API plugin by using Visual Studio Code

Build a declarative agent for Microsoft 365 Copilot optimized for a specific scenario. Bring actions to your agent with API plugins to access external data in real-time.

Lessons

- Introduction
- Create a declarative agent with an API plugin
- Exercise - Create a declarative agent with an API plugin
- Knowledge check
- Summary

After completing this module, students will be able to:

- Design a declarative agent with actions using an API plugin
- Integrate a declarative agent with an API plugin connected to an anonymous API
- Run declarative agent with an API plugin in Microsoft 365 Copilot to validate the results

Module 5: Use Adaptive Cards to show data in API plugins for declarative agents

Learn how to enhance the user experience of declarative agents by using Adaptive Cards to render API data visually. Create and configure Adaptive Card templates, integrate them into API plugins, and test the setup in Microsoft 365 Copilot. Learn the practical steps for building and previewing Adaptive Cards in Visual Studio Code.

Lessons

- Introduction
- Return rich responses with Adaptive Cards
- Exercise - Return rich responses with Adaptive Cards
- Knowledge check
- Summary

After completing this module, students will be able to:

- Create an Adaptive Card template that shows the data from the API.
- Verify that the Adaptive Card template correctly renders API data.
- Configure the API plugin to render the data using the Adaptive Card template.
- Upload your declarative agent to Microsoft 365 Copilot and validate the results.

Module 6: Authenticate your API plugin for declarative agents with secured APIs

When building apps for work, you typically integrate with secured APIs. Learn about the two common ways of how APIs are secured – API key and OAuth2, and how to integrate with them when building an API plugin for declarative agents that run in Microsoft 365 Copilot.

Lessons

- Introduction
- Integrate an API plugin with an API secured with a key
- Exercise - Integrate an API plugin with an API secured with a key
- Integrate an API plugin with an API secured with OAuth
- Exercise - Integrate an API plugin with an API secured with OAuth
- Module assessment
- Summary

By the end of this module, you're able to:

- Identify how an API is secured
- Design a secure way to integrate an API plugin for Microsoft 365 Copilot with an API
- Integrate an API plugin with an API secured with an API key
- Integrate an API plugin with an API secured with OAuth2
- Run the API plugin in Microsoft 365 Copilot to validate the results

Module 7: Introduction to Copilot connectors

This module introduces Copilot connectors, explains their architecture, and guides you through connecting external data sources securely to Microsoft 365 Copilot.

Lessons

- Introduction
- What are Copilot connectors?
- Understand external connections and schemas
- Explore methods for data retrieval and transformation
- Understand access controls and data security
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Describe the role and benefits of Copilot connectors in Microsoft 365.
- Explain how external connections and schemas work.
- Explore methods for data retrieval and transformation.
- Understand access controls and security trimming for data protection.
- Assess your knowledge with a module quiz.

Module 8: Build your first Microsoft 365 Copilot connector using Visual Studio Code

This hands-on module guides you through building a working Microsoft 365 Copilot connector that indexes GitHub issues into Microsoft 365. You'll use the Microsoft 365 Agents Toolkit in VS Code to create, configure, and deploy a connector that makes external data queryable by Copilot.

Lessons

- Introduction
- Exercise - Create your first connector project
- Exercise - Connect to GitHub repository
- Exercise - Run connector and ingest data
- Exercise - Add new property
- Module assessment
- Summary

By the end of this module, you'll be able to:

- Scaffold a new Copilot connector project using the Microsoft 365 Agents Toolkit in VS Code.
- Configure the connector to pull data from a public GitHub repository's issue.
- Execute the connector to ingest GitHub issues into Microsoft Graph and verify successful indexing.
- Extend the connector's schema by adding new properties and reingesting data.

Module 9: Monitor and maintain Microsoft 365 Copilot connectors

This module teaches you how to manage Microsoft 365 Copilot connectors throughout their operational lifecycle. You'll learn to monitor connector health, troubleshoot issues, manage security permissions, and optimize performance.

Lessons

- Introduction
- Monitor and manage connector operations
- Troubleshoot connector issues and errors
- Manage access permissions and security

- Optimize connector performance
- Knowledge check
- Summary

By the end of this module, you'll be able to:

- Monitor connector operations and manage connection states effectively using the Microsoft 365 admin center.
- Diagnose and resolve common connector issues using error codes, logs, and diagnostic tools.
- Review and manage access permissions to ensure proper security governance and data protection.
- Optimize connector performance through crawl scheduling, quota management, and capacity planning.

ASSOCIATED CERTIFICATIONS & EXAM

This course has no associated Certification or Exam.