AB-400T00: Extend Microsoft Power Platform Solutions with code and AI

Course ID #: 7000-1226-ZZ-Z
Hours: 21
Delivery Method: Group Internet Based

Course Content

Description:

In this course, you will cover: Extend Microsoft Power Platform solutions with custom code and AI to build modern business applications. Explore advanced extensibility and customization, Power Apps code apps, and the integration of Microsoft Foundry and Copilot Studio agents. Apply core Power Platform development skills alongside AI-powered application development patterns to create connected, intelligent solutions.

Objectives:

Upon successful completion of this course, students will:

- Identify Microsoft Power Platform extension options and package extensions in solutions.
- Implement, register, optimize, secure, and troubleshoot Microsoft Dataverse plug-ins and custom APIs.
- Perform reliable Dataverse operations by using the Web API, Organization service, and SDKs for .NET and Python.
- Process long-running, scheduled, and event-driven Power Platform workloads with Azure Functions and managed identities.
- Build, connect, deploy, secure, monitor, and troubleshoot Power Apps code apps.
- Implement model-driven app client logic and reusable Power Apps component framework controls.
- Build resilient Power Automate cloud flows with error handling, retry policies, child flows, and service principals.
- Consume governed Dataverse MCP servers and integrate code-first agents with Power Platform and Copilot Studio.
- Publish Dataverse events, synchronize external data, and connect external APIs with custom connectors.
- Evaluate secure Power Platform implementation options and design extensible solution components.
- Deliver Power Platform solutions through governed application lifecycle management and CI/CD.

Prerequisites:

Working experience with:

- Microsoft Power Platform services
- JavaScript, TypeScript, JSON, and Power Fx
- C#, Python, HTML, and YAML
- RESTful web APIs
- Microsoft Azure
- Microsoft Foundry
- Microsoft Copilot Studio

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Target Audience:

Microsoft Power Platform developers who extend and customize business solutions with code and integrate AI capabilities into applications. This course is intended for professional developers building custom application experiences and agent integrations, including those preparing for Exam AB-400 toward the Microsoft Certified: Power Platform Developer Associate certification.

Topics:

Extend Dataverse with code and Azure compute

Lesson 1: Get started with Microsoft Power Platform development

- Map where extension code runs and how it starts
- Compare client and application extension options
- Compare server, cloud, connector, and agent extension options
- Package extensions in Power Platform solutions

Lesson 2: Implement business logic with Microsoft Dataverse plug-ins

- Demonstrate the use of the different event execution pipeline stages
- Develop a plug-in that uses the execution context
- Implement business logic with images and the Organization service
- Register plug-in components by using the Plug-in Registration Tool

Lesson 3: Harden Dataverse extensions for production workloads

- Optimize plug-in performance
- Configure a custom API and develop its plug-in
- Configure Dataverse business events
- Configure Microsoft Power Platform managed identity for plug-ins
- Interpret plug-in evidence

Lesson 4: Perform reliable operations with Microsoft Dataverse APIs

- Perform operations by using the Dataverse Web API
- Perform operations by using the Organization service
- Implement API limit retry policies
- Perform operations by using the Dataverse SDKs for .NET and Python

Lesson 5: Diagnose advanced Microsoft Dataverse API failures

- Optimize solution components for performance, concurrency, transactions, and bulk operations
- Implement and troubleshoot authentication by using OAuth
- Perform asynchronous logic by using background operations
- Predict and diagnose API failures

Lesson 6: Process Power Platform workloads with Azure Functions

- Process long-running operations by using Azure Functions
- Implement scheduled and event-driven triggers in Azure Functions
- Authenticate to Microsoft Power Platform by using managed identities

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Build professional Power Apps experiences

Lesson 7: Build Dataverse experiences with Power Apps code apps

- Configure a code app to use Dataverse tables
- Perform Dataverse actions and functions from a code app
- Use environment variables in a code app

Lesson 8: Connect Power Apps code apps to platform services

- Configure a code app to use Power Platform connections
- Perform table and metadata operations on Dataverse data
- Configure a code app to use cloud flows and Copilot Studio agents

Lesson 9: Deploy and operate secure Power Apps code apps

- Configure Content Security Policy settings for a code app
- Package, deploy, and share a code app
- Monitor and troubleshoot a code app
- Optimize code app performance and resource usage
- Interpret CSP and Monitor results

Lesson 10: Apply client-side logic in model-driven Power Apps

- Build code that targets the Client API object model
- Create client scripting that targets the Dataverse Web API
- Implement navigation, dialogs, and notifications

Lesson 11: Build reusable controls with Power Apps component framework

- Demonstrate the code component lifecycle and configure its manifest
- Implement component interfaces and platform features
- Package, deploy, and consume a component

Build automation and agent integrations

Lesson 12: Implement resilient Power Automate cloud-flow logic

- Implement complex expressions and error-handling flow control
- Configure trigger filter and retry policies
- Develop reusable logic by using child flows
- Implement Microsoft Entra ID service principals

Lesson 13: Consume Dataverse MCP servers from MCP clients

- Connect a supported MCP client to a Dataverse MCP server
- Inspect tools and invoke a Dataverse operation
- Apply the MCP server governance boundary

Lesson 14: Integrate custom agents with Microsoft Power Platform

- Integrate code-first agents with Power Platform data
- Connect custom agents, Copilot Studio agents, and applications

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Integrate Dataverse with services and external data

Lesson 15: Publish Microsoft Dataverse events to external services

- Publish a Dataverse event by using the IServiceEndpointNotificationService
- Publish a Dataverse event by using the Plug-in Registration Tool
- Register service endpoints including webhooks, Azure Service Bus, and Azure Event Hubs
- Recommend options for listening to Dataverse events

Lesson 16: Synchronize external data reliably with Microsoft Dataverse

- Perform data synchronization by using change tracking
- Develop code that uses alternate keys
- Synchronize data by using the UpsertRequest message
- Predict synchronization outcomes

Lesson 17: Connect external APIs with Power Platform custom connectors

- Create a custom connector from an existing API definition
- Implement authentication for custom connectors
- Modify connector behavior at runtime
- Transform data with an Azure Function or custom code

Design and deliver secure Power Platform solutions

Lesson 18: Evaluate Microsoft Power Platform solution implementation options

- Analyze solution components and out-of-the-box fit
- Decide where business logic and data live
- Evaluate identity and security constraints
- Choose user experience and agent approaches
- Select component implementation approaches

Lesson 19: Design extensible Microsoft Power Platform solution components

- Design Power Apps and Dataverse code components
- Design connectors, MCP servers, and integrations
- Design automations, code app interfaces, and custom agents
- Design monitoring and alerting
- Make component design decisions

Lesson 20: Deliver Power Platform solutions through governed ALM

- Manage solution dependencies and solution layers
- Create and use environment variables
- Implement and extend Microsoft Power Platform Pipelines
- Create CI/CD automations by using Power Platform Build Tools
- Make ALM release decisions

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NASBA CPE details are provided on the following pages.

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NASBA Information

Level: Advanced
Advanced Preparation: See prerequisites above.
Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.
Recommended Field(s) of Study: Computer Software & Applications
Recommended CPEs: 23.40

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution
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