Microsoft Power Platform Developer (PL-400T00)

COURSE OVERVIEW

In this course, students will learn how to build Power Apps, Automate Flows and extend the platform to complete business requirements and solve complex business problems.

WHO WILL BENEFIT FROM THIS COURSE?

Candidates for this course design, develop, secure, and troubleshoot Power Platform solutions. Candidates implement components of a solution that include application enhancements, custom user experience, system integrations, data conversions, custom process automation, and custom visualizations. Candidates will gain applied knowledge of Power Platform services, including in-depth understanding of capabilities, boundaries, and constraints. Candidates should have development experience that includes JavaScript, JSON, TypeScript, C#, HTML, .NET, Microsoft Azure, Microsoft 365, RESTful Web Services, ASP.NET, and Power BI.

PREREQUISITES

- Candidates should have an introductory knowledge of Power Platform
- Candidates should have development experience that includes JavaScript, JSON, TypeScript, C#, HTML, .NET, Microsoft Azure, Microsoft 365, RESTful Web Services, ASP.NET, and Power BI

COURSE OBJECTIVES

Students will learn:

- How to build your first model-driven app with Dataverse
- Get started with model-driven apps in Power Apps
- Manage tables in Dataverse
- Create and manage columns within a table in Dataverse
- Working with choices in Dataverse
- Create a relationship between tables in Dataverse
- Define and create business rules in Dataverse
- Create and define calculation or rollup columns in Dataverse
- Get started with security roles in Dataverse
- Get started with Power Apps canvas apps
- Customize a canvas app in Power Apps
- Manage apps in Power Apps
- Navigation in a canvas app in Power Apps
- How to build the UI in a canvas app in Power Apps
- Use and understand Controls in a canvas app in Power Apps
- Document and test your Power Apps application
- Use imperative development techniques for canvas apps in Power Apps

- Create formulas that use tables, records, and collections in a canvas app in Power Apps
- Perform custom updates in a Power Apps canvas app
- Complete testing and performance checks in a Power Apps canvas app
- Work with relational data in a Power Apps canvas app
- Work with data source limits (delegation limits) in a Power Apps canvas app
- Connect to other data in a Power Apps canvas app
- Use custom connectors in a Power Apps canvas app
- Get started with Power Automate
- Build approval flows with Power Automate
- Introduction to expressions in Power Automate
- Introduction to Microsoft Power Platform developer resources
- Use developer tools to extend Microsoft Power Platform
- Introduction to extending Microsoft Power Platform
- Introduction to Dataverse for developers
- Extend plug-ins in Power Platform
- Perform common actions with client script
- Automate business process flows with client script
- Get started with Power Apps component framework
- Build a Power Apps component
- Use advanced features with Power Apps component framework
- Work with Dataverse Web API
- Integrate Dataverse Azure solutions

COURSE OUTLINE

Module 1: How to build your first model-driven app with Dataverse
- Discover the value and key features of Dataverse.
- Learn about the value and key features of model-driven apps.
- Explore sample model-driven template apps.

Module 2: Get started with model-driven apps in Power Apps
- Learn about model-driven app design
- Create a model-driven app

Module 3: Manage tables in Dataverse
- Tables in Dataverse.
- Types of tables that are available in Dataverse.
- Creating a custom table.
- Enabling attachments within a table.
- Which licensing requirements to apply to use each type of table.

Module 4: Create and manage columns within a table in Dataverse
- Learn what a column is in Dataverse.
- Learn about the types of columns that are available in Dataverse.
- Add a column to a table.
- Learn what a primary name column is in Dataverse.

- Identify restrictions that are associated with columns.
- Create an auto-numbering column.
- Create an alternate key.

Module 5: Working with choices in Dataverse
- Learn about choices.
- Explore the standard choices.
- Create a new choice or modify an existing one.

Module 6: Create a relationship between tables in Dataverse
- Why you should segment data that is used by your solutions into many tables.
- Why you need to relate one table to another.
- How to build relationships between tables.
- How to select the proper relationship type when you're building solutions with Dataverse.

Module 7: Define and create business rules in Dataverse
- Define business rules in Dataverse.
- Create and manage business rules in Dataverse.

Module 8: Create and define calculation or rollup columns in Dataverse
- Define a rollup column.
- Create a rollup column.
- Identify a calculation column.
- Create a calculation column.

Module 9: Get started with security roles in Dataverse
- Learn about security roles and apply them to users in an environment.
- Learn how to add users to an environment.
- Understand security concepts in Dataverse
- Identify default security roles.
- Create a custom role.
- Create a custom security role and assign it to entities and users.
- Learn how to configure Dataverse teams for security
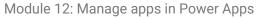- Learn how to configure Dataverse group teams for security

Module 10: Get started with Power Apps canvas apps
- Explore how Power Apps can make your business more efficient.
- Learn how to use different technologies to perform different tasks in Power Apps.
- Learn about the different ways to build an app in Power Apps.
- Create your first app from data in an Excel workbook.

Module 11: Customize a canvas app in Power Apps
- Change the layout of a gallery.
- Change the data that a control shows.
- Change the order in which fields appear.
- Change the control with which a user provides information.
- Explore controls on each screen of an app.
- Format a number as a price.
- Color prices based on their values.
- Explore formulas in a generated app.

Module 12: Manage apps in Power Apps

- Learn how to view and restore app versions.
- Explore how to share an app, including permissions and notifications.
- Learn about what environments are, how to create them, and how to manage security.
- Find more information about Power Apps.

Module 13: Navigation in a canvas app in Power Apps

- Understand how navigation works in a canvas app
- Use the Navigate and Back functions
- Understand the different ways these functions can be invoked

Module 14: How to build the UI in a canvas app in Power Apps

- Understand the basics of building the UI through themes, icons, control customization, and images.
- Use personalization in a canvas app
- Understand the differences between the Tablet and Mobile form factors

Module 15: Use and understand Controls in a canvas app in Power Apps

- Understand how to use controls in a canvas app
- Use the different types of controls
- Understand how Galleries and Forms related to controls

Module 16: Document and test your Power Apps application

- Learn about the different types of test plans and components of a good test plan
- Identify and discuss optimization tools and performance tuning
- Learn about the benefits of documenting your application

Module 17: Use imperative development techniques for canvas apps in Power Apps

- Understand imperative vs. declarative development
- Understand the variables in Power Apps
- Understand when to utilize each of the three different types of variables

Module 18: Create formulas that use tables, records, and collections in a canvas app in Power Apps

- Utilize formulas that process multiple records
- Use the Concat function to combine text from multiple records
- Utilize the Countrows, CountIf, ForAll
- Perform math operations on data in a table

Module 19: Perform custom updates in a Power Apps canvas app

- Use the Patch function to update your data
- Understand how the Defaults function is used to create new records with Patch
- Utilize the Remove and RemoveIf functions to delete records
- Determine whether to use Clear and Collect or ClearCollect in their scenario

Module 20: Complete testing and performance checks in a Power Apps canvas app

- Use best practices to improve the performance of your app
- Understand how to best test an app
- Use fiddler for troubleshooting

Module 21: Work with relational data in a Power Apps canvas app

- Understand relational data
- Use relational data to improve an app user's experience in Power Apps
- Understand how to use relational data in Microsoft Dataverse

Module 22: Work with data source limits (delegation limits) in a Power Apps canvas app

- Understand the different limits of different data sources
- Understand how functions, predicates, and operators all play roles in the limits
- Use this new understanding to choose the best data source for an app

Module 23: Connect to other data in a Power Apps canvas app

- Understand and use action-based connectors
- Integrate user information and user-profile information into a canvas app
- Use Power Automate with Power Apps

Module 24: Use custom connectors in a Power Apps canvas app

- Understand custom connectors and the basics of how to build one
- Understand the custom connector lifecycle
- Use postman with a custom connector

Module 25: Get started with Power Automate

- Create a flow that automatically saves email attachments
- Learn how to create a button flow to send yourself a reminder

Module 26: Build approval flows with Power Automate

- Create and process approval requests
- Build a flow that runs at recurring time intervals
- Create a business process flow with conditions

Module 27: Introduction to expressions in Power Automate

- Use one or more functions to create expressions.
- Use functions to retrieve data, change data, evaluate data, and more.

Module 28: Introduction to Microsoft Power Platform developer resources

- Explain what solution components exist within Microsoft Power Platform.
- Explain key components of Microsoft Dataverse and the Common Data Model.
- Explain what Azure solution elements relate to Microsoft Power Platform.
- Explain what AI Solutions exist as it relates to Microsoft Power Platform.
- Navigate the Developer Guide successfully in support of their Microsoft Power Platform development efforts.

Module 29: Use developer tools to extend Microsoft Power Platform

- Install NuGet packages available for Microsoft Power Platform development
- Work with the Configuration Migration tool
- Work with Package Deployer
- Leverage Solution Packager to isolate features
- Run the Plugin Registration Tool

Module 30: Introduction to extending Microsoft Power Platform
- Identify which elements architecturally comprise Microsoft Power Platform.
- Learn about the areas of extensibility that are available to customize Microsoft Power Platform through code.
- Discover different approaches to common business scenarios in respect to achieving extensibility by means of configuration versus code.

Module 31: Introduction to Dataverse for developers
- Explain what functions can be executed against Microsoft Power Platform via Microsoft Power Platform SDKs.
- Perform basic operations against Microsoft Power Platform such as create/read/update/delete operations.

Module 32: Extend plug-ins in Power Platform
- Learn how to extend plug-ins.

Module 33: Performing common actions with client script in Power Platform
- Write client scripts to perform common actions as listed in the module units.

Module 34: Automate business process flows with client script
- Automate business process flow actions by using JavaScript/TypeScript API methods.

Module 35: Get started with Power Apps component framework
- Learn about Power Apps component framework architecture.
- Learn about Power Apps component tooling.

Module 36: Build a Power Apps component
- Create a custom Power Apps component.
- Create a code component solution package.
- Test and debug a code component.
- Learn key concepts of Dataverse auditing

Module 37: Use advanced features with Power Apps component framework
- Use formatting API in a Power Apps component.
- Use Dataverse web API in a Power Apps component.

Module 38: Work with Dataverse Web API
- Interact with Dataverse Web API by using Postman.
- Authorize against Dataverse with OAuth.
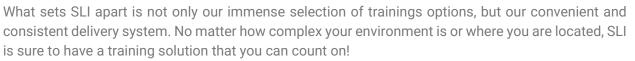- Use OData to query data.

Module 39: Integrate Dataverse Azure solutions
- Publish Dataverse events to Microsoft Azure Service Bus.
- Write a Service Bus Event Listener that consumes Dataverse events.

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