PL-300T00: Microsoft Power BI Data Analyst

Course Details

Course Code: PL-300T00

Duration: 3 days

Notes:

- This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.
- Course content, prices, and availability are subject to change without notice.
- Terms and Conditions apply

Elements of this syllabus are subject to change.

About this course

This course covers the various methods and best practices that are in line with business and technical requirements for modeling, visualizing, and analyzing data with Power BI. The course will show how to access and process data from a range of data sources including both relational and non-relational sources. Finally, this course will also discuss how to manage and deploy reports and dashboards for sharing and content distribution.

Audience Profile

The audience for this course are data professionals and business intelligence professionals who want to learn how to accurately perform data analysis using Power BI. This course is also targeted toward those individuals who develop reports that visualize data from the data platform technologies that exist on both in the cloud and on-premises.

Prerequisites

Successful Data Analysts start this role with experience of working with data in the cloud.

Specifically:

- Understanding core data concepts.

- Knowledge of working with relational data in the cloud.

- Knowledge of working with non-relational data in the cloud.

- Knowledge of data analysis and visualization concepts.

- You can gain the prerequisites and a better understanding of working with data in Azure by completing Microsoft Azure Data Fundamentals before taking this course.

Discover data analysis

Would you like to explore the journey of a data analyst and learn how a data analyst tells a story with data? In this module, you explore the different roles in data and learn the different tasks of a data analyst.

Learning objectives

In this module, you'll:

- Learn about the roles in data.
- Learn about the tasks of a data analyst.

Get started building with Power BI

Learn what Power BI is, including its building blocks and how they work together.

This module helps prepare you for Exam PL-100: Microsoft Power Platform App Maker.

Learning objectives

In this module, you will:

- Learn how Power BI services and applications work together.
- Explore how Power BI can make your business more efficient.
- Learn how to create compelling visuals and reports.

Get data in Power BI

You'll learn how to retrieve data from a variety of data sources, including Microsoft Excel, relational databases, and NoSQL data stores. You'll also learn how to improve performance while retrieving data.

Learning objectives

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

- Identify and connect to a data source
- Get data from a relational database, like Microsoft SQL Server
- Get data from a file, like Microsoft Excel
- Get data from applications
- Get data from Azure Analysis Services
- Select a storage mode
- Fix performance issues
- Resolve data import errors

Clean, transform, and load data in Power BI

Power Query has an incredible number of features that are dedicated to helping you clean and prepare your data for analysis. You'll learn

how to simplify a complicated model, change data types, rename objects, and pivot data. You'll also learn how to profile columns so that you know which columns have the valuable data that you're seeking for deeper analytics.

Learning objectives

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

- Resolve inconsistencies, unexpected or null values, and data quality issues.
- Apply user-friendly value replacements.
- Profile data so you can learn more about a specific column before using it.
- Evaluate and transform column data types.
- Apply data shape transformations to table structures.
- Combine queries.
- Apply user-friendly naming conventions to columns and queries.
- Edit M code in the Advanced Editor.

Design a data model in Power BI

The process of creating a complicated data model in Power BI is straightforward. If your data is coming in from more than one transactional system, before you know it, you can have dozens of tables that you have to work with. Building a great data model is about simplifying the disarray. A star schema is one way to simplify a data model, and you learn about the terminology and implementation of them in this module. You will also learn about why choosing the correct data granularity is important for performance and usability of your Power BI reports. Finally, you learn about improving performance with your Power BI data models.

Learning objectives

In this module, you will:

- Create common date tables
- Configure many-to-many relationships
- Resolve circular relationships
- Design star schemas

Add measures to Power BI Desktop models

In this module, you'll learn how to work with implicit and explicit measures. You'll start by creating simple measures, which summarize a single column or table. Then, you'll create more complex measures based on other measures in the model. Additionally, you'll learn about the

similarities of, and differences between, a calculated column and a measure.

Learning objectives

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

- Determine when to use implicit and explicit measures.
- Create simple measures.
- Create compound measures.
- Create quick measures.
- Describe similarities of, and differences between, a calculated column and a measure.

Add calculated tables and columns to Power BI Desktop models

By the end of this module, you'll be able to add calculated tables and calculated columns to your data model. You'll also be able to describe row context, which is used to evaluated calculated column formulas. Because it's possible to add columns to a table using Power Query, you'll also learn when it's best to create calculated columns instead of Power Query custom columns.

Learning objectives

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

- Create calculated tables.
- Create calculated columns.
- Identify row context.
- Determine when to use a calculated column in place of a Power Query custom column.
- Add a date table to your model by using DAX calculations.

Use DAX time intelligence functions in Power BI Desktop models

By the end of this module, you'll learn the meaning of time intelligence and how to add time intelligence DAX calculations to your model.

Learning objectives

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

- Define time intelligence.
- Use common DAX time intelligence functions.
- Create useful intelligence calculations.

Optimize a model for performance in Power BI

Performance optimization, also known as performance tuning, involves making changes to the current state of the data model so that it runs more efficiently. Essentially, when your data model is optimized, it performs better.

Learning objectives

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

- Review the performance of measures, relationships, and visuals.
- Use variables to improve performance and troubleshooting.
- Improve performance by reducing cardinality levels.
- Optimize DirectQuery models with table level storage.
- Create and manage aggregations.

Design Power BI reports

Because Power BI includes more than 30 core visuals, it can be challenging for a beginner to select the correct visual. This module will guide you through selecting the most appropriate visual type to meet your design and report layout requirements.

Learning objectives

In this module, you will:

- Learn about the structure of a Power BI report.
- Learn about report objects.
- Select the appropriate visual type to use.

Configure Power BI report filters

Report filtering is a complex topic because many techniques are available for filtering a Microsoft Power BI report. However, with complexity comes control, allowing you to design reports that meet requirements and expectations. Some filtering techniques apply at design time, while others are relevant at report consumption time (in reading view). What matters is that your report design allows report consumers to intuitively narrow down to the data points that interest them.

Learning objectives

In this module, you will:

- Design reports for filtering.

- Design reports with slicers.
- Design reports by using advanced filtering techniques.
- Apply consumption-time filtering.
- Select appropriate report filtering techniques.

Enhance Power BI report designs for the user experience

The features and capabilities that are covered in this module will help you enhance your reports to make them more refined.

Learning objectives

In this module, you will:

- Design reports to show details.
- Design reports to highlight values.
- Design reports that behave like apps.
- Work with bookmarks.
- Design reports for navigation.
- Work with visual headers.
- Design reports with built-in assistance.
- Use specialized visuals.

Perform analytics in Power BI

You'll learn how to use Power BI to perform data analytical functions, how to identify outliers in your data, how to group data together, and how to bin data for analysis. You'll also learn how to perform time series analysis. Finally, you'll work with advanced analytic features of Power BI, such as Quick Insights, AI Insights, and the Analyze feature.

Learning objectives

In this module, you'll:

- Explore statistical summary.
- Identify outliers with Power BI visuals.
- Group and bin data for analysis.
- Apply clustering techniques.
- Conduct time series analysis.
- Use the Analyze feature.
- Use advanced analytics custom visuals.
- Review Quick insights.
- Apply AI Insights.

Create and manage workspaces in Power BI

Learn how to navigate the Power BI service, create and manage workspaces and related items, and distribute reports to users.

Learning objectives

In this module, you will:

- Create and manage Power BI workspaces and items.
- Distribute a report or dashboard.
- Monitor usage and performance.
- Recommend a development lifecycle strategy.
- Troubleshoot data by viewing its lineage.
- Configure data protection.

Manage datasets in Power BI

With Microsoft Power BI, you can use a single dataset to build many reports. Reduce your administrative overhead even more with scheduled dataset refreshes and resolving connectivity errors.

Learning objectives

In this module, you will:

- Use a Power BI gateway to connect to on-premises data sources.
- Configure a scheduled refresh for a dataset.
- Configure incremental refresh settings.
- Manage and promote datasets.
- Troubleshoot service connectivity.
- Boost performance with query caching (Premium).

Create dashboards in Power BI

Microsoft Power BI dashboards are different than Power BI reports. Dashboards allow report consumers to create a single artifact of directed data that is personalized just for them. Dashboards can be composed of pinned visuals that are taken from different reports. Where a Power BI report uses data from a single dataset, a Power BI dashboard can contain visuals from different datasets.
Learning objectives

In this module, you will:

- Set a mobile view.
- Add a theme to the visuals in your dashboard.
- Configure data classification.
- Add real-time dataset visuals to your dashboards.

- Pin a live report page to a dashboard.

Implement row-level security

Row-level security (RLS) allows you to create a single or a set of reports that targets data for a specific user. In this module, you'll learn how to implement RLS by using either a static or dynamic method and how Microsoft Power BI simplifies testing RLS in Power BI Desktop and Power BI service.

Learning objectives

In this module, you will:

- Configure row-level security by using a static method.
- Configure row-level security by using a dynamic method.