MICROSOFT POWER BI DATA ANALYST

PL-300T00

Duration: 3 days; Instructor-led | Virtual Instructor-led

WHAT WILL YOU LEARN

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.

OBJECTIVES

- Ingest, clean, and transform data
- Model data for performance and scalability
- Design and create reports for data analysis
- Apply and perform advanced report analytics
- Manage and share report assets
- Create paginated reports in Power BI

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.

AUDIENCE

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.

COURSE CONTENTS

Module 1:   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 will explore the different roles in data and learn the different tasks of a data analyst.

Learning objectives
In this module, you will:
- Learn about the roles in data.
- Learn about the tasks of a data analyst.

Module 2:   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.

Module 3:   Get data in Power BI

You will learn how to retrieve data from a wide variety of data sources, including Microsoft Excel, relational databases, and NoSQL data stores. You will 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

Module 4:   Clean, transform, and load data in Power BI

Power Query has an incredible amount of features that are dedicated to helping you clean and prepare your data for analysis. You will learn how to simplify a complicated model, change data types, rename objects, and pivot data. You will 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.

Module 5:   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'll 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'll 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

Module 6:   Introduction to creating measures using DAX in Power BI

Data Analysis Expressions (DAX) is a programming language that is used throughout Microsoft Power BI for creating calculated columns, measures, and custom tables. It is a collection of functions, operators, and constants that can be used in a formula, or expression, to calculate and return one or more values. You can use DAX to solve a number of calculations and data analysis problems, which can help you create new information from data that is already in your model.

Learning objectives
By the end of this module, you'll be able to:
- Build quick measures.
- Create calculated columns.
- Use DAX to build measures.
- Discover how context affects DAX measures.
- Use the CALCULATE function to manipulate filters.
- Implement time intelligence by using DAX.

Module 7:   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.

Module 8:   Work with Power BI visuals

Learn how to choose from the exceptional visuals that Power BI makes available to you. Formatting visuals will direct the user's attention to exactly where you want it, while helping to make the visual easier to read and interpret. You will also learn about how to use key performance indicators (KPIs).

Learning objectives
In this module, you will:
- Add visualization items to reports.
- Choose an effective visualization.
- Format and configure visualizations.
- Import a custom visual.
- Add an R or Python visual.

Module 9:   Create a data-driven story with Power BI reports

Power BI helps you create vibrant, highly useful reports that form a cohesive, data-driven story. You'll learn how to use buttons, bookmarks, and other navigation techniques. Additionally, you'll learn how to integrate Power BI reports with other applications. Power BI visuals can interact with each other, letting the user see exactly which data is appealing to them. You'll also explore Power BI report themes to create a unified reporting experience across all reports.

Learning objectives
In this module, you will:
- Design a report layout.
- Add buttons, bookmarks, and selections.
- Design report navigation.
- Use basic interactions.
- Use advanced interactions and drillthrough.
- Configure conditional formatting.
- Apply slicing, filtering, and sorting.
- Publish and export reports.
- Comment on reports.
- Use Performance analyzer to tune reports.
- Optimize reports for mobile use.

Module 10: 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.

Module 11: Perform analytics in Power BI
You will 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 will also learn how to perform time series analysis. Finally, you will work with advanced analytic features of Power BI, such as Quick Insights, AI Insights, and the Analyze feature.

Learning objectives
In this module, you will:
- 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.

Module 12: Work with AI visuals in Power BI
This module describes the AI capabilities of Power BI.

Learning objectives
In this module, you will:
- Use the Q&A visual.
- Find important factors with the Key influencers visual.
- Use the Decomposition Tree visual to break down a measure.

Module 13: Create and manage workspaces in Power BI
This module explains how you can share reports and datasets with your users and how to create a deployment strategy that makes sense for you and your organization. Furthermore, you will learn about data lineage in Microsoft Power BI.

Learning objectives
In this module, you will:
- Distribute a report or dashboard.
- Monitor usage and performance.
- Recommend a development life cycle strategy.
- Troubleshoot data by viewing its lineage.
- Configure data protection.

Module 14: Manage datasets in Power BI
With Microsoft Power BI, you can build multiple reports from a single dataset, meaning that if you change the dataset, all reports will be updated with that change. Additionally, you can clean and prep data once rather than repeatedly for each report.

Learning objectives
In this module, you will:
- Create dynamic reports with parameters.
- Create what-if parameters.
- 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).

Module 15: 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 will 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.