

Analyzing Data with Power BI and Analyzing Data with Excel

Length: 5 Days

Course Description: The main purpose of the course is to give students a good understanding of data analysis with Power BI. The course includes creating visualizations, the Power BI Service, and the Power BI Mobile App. It also gives students the ability to add BI techniques to Excel data analysis. The course goes beyond the capabilities of tables and charts and uses Pivot Charts, the Excel Data Model, and Power BI.

Audience Profile: The course will likely be attended by SQL Server report creators who are interested in alternative methods of presenting data. Also, students who are experienced with analyzing data with Excel and who wish to add BI techniques.

Course Completion: After completing this course, students will be able to:

- Perform Power BI desktop data transformation
- Describe Power BI desktop modelling
- Create a Power BI desktop visualization
- Implement the Power BI service
- Explore and extend a classic Excel dashboard
- Explore and extend an Excel data model
- Pre-format and import a .CSV file
- Import data from a SQL Server database
- Import data from a report

Prerequisites: Before attending this course, students must have:

- Excellent knowledge of relational databases and reporting
- Some basic knowledge of data warehouse schema topology (including star and snowflake schemas)
- Some exposure to basic programming constructs (such as looping and branching)
- An awareness of key business priorities such as revenue, profitability, and financial accounting is desirable
- Familiarity with Microsoft Office applications – particularly Excel

COURSE CONTENT

Module 1: Introduction to Self-Service BI Solutions

Introduces business intelligence (BI) and how-to self-serve with BI.

Lessons

- Introduction to business intelligence
- Introduction to data analysis
- Introduction to data visualization
- Overview of self-service BI
- Considerations for self-service BI
- Microsoft tools for self-service BI
- Lab: Exploring an Enterprise BI solution
 - Viewing reports
 - Creating a Power BI report
 - Creating a Power BI dashboard

After completing this module, students will be able to:

- Describe the trends in BI
- Describe the process of data analysis in Power BI
- Use the key visualizations in Power BI
- Describe the rationale for self-service BI
- Describe considerations for self-service BI
- Understand how you can use Microsoft products to implement a BI solution

Module 2: Introducing Power BI

This module introduces Power BI desktop, and explores the features that enable the rapid creation and publication of sophisticated data visualizations.

Lessons

- Power BI
- The Power BI service
- Lab: Creating a Power BI dashboard

- Connecting to Power BI data
- Create a Power BI dashboard

After completing this module, students will be able to:

- Develop reports using the Power BI Desktop app
- Use report items to create dashboards on the Power BI portal
- Understand the components of the Power BI service including licensing and tenant management

Module 3: Power BI

At the end of this module students will be able to explain the rationale and advantages of using Power BI.

Lessons

- Using Excel as a data source for Power BI
- The Power BI data model
- Using databases as a data source for Power BI
- The Power BI service

Lab: Importing Data into Power BI

- Importing Excel files into Power BI
- Viewing reports from Excel files

After completing this module, students will be able to:

- Describe the data model and know how to optimize data within the model
- Connect to Excel files and import data
- Use on-premises and cloud Microsoft SQL Server databases as a data source, along with the R script data connector
- Take advantage of the features of the Power BI service by using Q&A to ask questions in natural query language, and create content packs and groups

Module 4: Shaping and Combining Data

With Power BI, desktop you can shape and combine data with powerful, built-in tools. This module introduces the tools that are available for preparing your data and transforming it into a form ready for reporting.

Lessons

- Power BI desktop queries
- Shaping data
- Combining data

Lab: Shaping and Combining Data

- Shape power BI data
- Combine Power BI data

After completing this module, students will be able to:

- Perform a range of query editing skills in Power BI
- Shape data, using formatting and transformations

- Combine data together from tables in your dataset

Module 5: Modelling Data

This module describes how to shape and enhance data.

Lessons

- Relationships
- DAX queries
- Calculations and measures

Lab: Modelling Data

- Create relationships
- Calculations

After completing this module, students will be able to:

- Describe relationships between data tables
- Understand the DAX syntax, and use DAX functions to enhance your dataset
- Create calculated columns, calculated tables and measures

Module 6: Interactive Data Visualizations

This module describes how to create and manage interactive data visualizations.

Lessons

- Creating Power BI reports
- Managing a Power BI solution

Lab: Creating a Power BI report

- Connecting to Power BI data
- Building Power BI reports
- Creating a Power BI dashboard

After completing this module, students will be able to:

- Use Power BI desktop to create interactive data visualizations
- Manage a power BI solution

Module 7: Data Analysis in Excel

This module looks at the classic Excel dashboard and at ways to extend it.

Lessons

- Classic Data Analysis with Excel
- Excel Pivot Tables
- Limitations of Classic Data Analysis

Lab: Building a Classic Excel Dashboard

- Filtering and Formatting Data
- Building a Pivot Table
- Building a Pivot Chart
- Building a Dashboard

After completing this module, students will be able to:

- Describe classic data analysis with Excel
- Describe Excel pivot tables
- Describe the limitations of classic data analysis with Excel

Module 8: The Excel Data Model

This module looks at the classic Excel data model and at ways to extend it.

Lessons

- Using an Excel Data Model
- DAX

Lab: Explore an Excel Data Model

- Create Calculated Columns
- Format Data Model Data
- Create Measures
- Analyze the Data

After completing this module, students will be able to:

- Describe an Excel data model
- View data within an Excel data table
- Describe DAX

Module 9: Importing Data from Files

This module looks at pre-formatting and importing CSV files.

Lessons

- Importing Data into Excel
- Shaping and Transforming Data • Loading Data

Lab: Importing Data from a CSV File

- Import and Transform Data from a CSV File
- Add Data from a Folder

After completing this module, students will be able to:

- Import data into excel
- Shape and transform data
- Load data

Module 10: Importing Data from Databases

This module looks at how to import data into Excel from a SQL Server database.

Lessons

- Available Data Sources
- Previewing, Shaping, and Transforming Data
- Table Relationships and Hierarchies
- Loading Data

Lab: Import Data from Multiple Sources

- Import Data from SQL Server
- Import Data from a CSV File
- Create a Data Table

After completing this module, students will be able to:

- Identify available data sources
- Preview, shape, and transform data
- Explain table relationships and hierarchies
- Load data from various sources

Module 11: Importing Data from Excel Reports

This module describes how to import data from a report.

Lessons

- Importing Data from Excel Reports
- Transforming Excel report Data

Lab: Importing Data from a Report

- Import Data from Excel
- Transform the Excel Data
- Load the Data into an Excel Data Model

After completing this module, students will be able to:

- Import data from Excel reports
- Transform Excel report data