



## Microsoft® Power BI Desktop:

### Data Modeling and Reporting in Power BI

#### Training Course Content (2 days)

**Course Objective:** In this course, students learn additional methods to transform & shape data in Query Editor, and to incorporate Data Modeling strategies in Power BI Desktop. Students will use GIS Data to build informative map visuals, create powerful Measures using conditional, rank and filter functions, prepare and view rolling calculations in chart tiles using Time Intelligence. Build reports to gain insights into the data using the Gauge, Multi Cards, Maps, and Key Influencer visuals. Learn to manage a data refresh schedule, and add a PowerApp to the Power BI Service.

**Prerequisites:** To ensure your success, each student should have previous experience or knowledge of loading and transforming data using Query Editor, modeling data, understand how to calculate data using basic DAX functions, and the basics for building report pages using visual tiles. These skills can be learned in the Introduction to Power BI Desktop 2-Day class.

#### Lesson 1: Data Transformation using Query Editor

- Identify Strategies to Reduce Data Load in the Model
- Create Dimension Tables by Grouping Data
- Overcome Bad Data issues with Multi-Column to Row Data Merging
- Promote/Demote Row Data to a Header
- Merge Queries using Fuzzy Matching
- Use Pivot and Unpivot to Transform Column and Row Data
- Profile Data in Query Editor with Column Distribution, Quality and Profile Features

#### Lesson 2: Improved Data Modeling in Power BI Desktop

- Overcome Relationship Errors in Model
- Create Composite Models
- Explore Cross Filter Direction Impact on Data Precision
- Create a Table to store Measures
- Create a Disconnected Table
- Create Date Hierarchies as a Table Field
- Use Custom Format Strings in Data Model
- Introduction to the Performance Analyzer

#### Lesson 3: GIS Data Usage in Power BI Desktop

- Load and Model GIS Data
- Create Visual Reports using GIS Data

#### Lesson 4: Conditional, Rank, and Filter use in DAX Measures

- Explore Comparison Operators ( ||, &&, ==) use in DAX
- Use Variables in DAX Expressions
- Filter Use in the Calculate Expression
- Create a Rank Measure
- Use If and Between in Calculated Columns and Measures
- Differences Between ALL and ALLSELECTED as Filters in CALCULATE

#### Lesson 5: DAX Measures using Time Intelligence

- Create a 3-Month Rolling Average
- Create To-Date Totals for Current 12 Months
- Build a Dynamic Time Matrix



## Data Modeling and Reporting in Power BI Desktop (Continued)

### Lesson 6: Power BI Desktop Visuals and Reports

- Apply Advanced Conditional Formatting Options to Data Fields
- Add/Remove Available Visuals in Power BI Desktop
- Use Dual Card, Filled Map and Gauge Visuals in a Report
- Identify Factors that Impact Desired Results with the Key Influencers Visual
- Work with Report Layouts and Themes

### Lesson 7: Data Connectivity and Power Apps in Power BI Online

- Schedule a Refresh of Data
- Introduction to PowerApps in Power BI Online