Power BI Advanced Reporting and Administration

Duration: 3 Days

Target Audience: Data analysts, BI specialists, and report developers with basic Power BI knowledge

Prerequisites:

- Basic understanding of Power BI concepts and interface
- Familiarity with data concepts and analytics fundamentals
- Experience working with at least one data source
- Basic knowledge of relational databases

Course Objectives:

- Design and develop interactive reports and dashboards for data analysis and decision-making
- Implement advanced analytical methods and DAX calculations within reports
- Administer, secure, and share reports and dashboards effectively across organizations
- Optimize data models for performance and implement best practices
- Manage Power BI Service environments, workspaces, and user access

Content Coverage :

Day 1: Report Design and Data Source Integration

Module 1: Advanced Report Design Principles

- Report design best practices for user engagement and clarity
- Designing layouts for different report types and business scenarios
- Visual hierarchy and information architecture
- Color theory, typography, and accessibility standards
- Responsive design for different screen sizes and devices
- Performance considerations in report design
- Understanding user personas and designing for decision-making

Module 2: Connecting to Cloud and On-Premises Data Sources

- Connecting to Azure SQL Database and SQL Server
- Establishing connections to cloud data sources
- Managing on-premises data gateway configurations
- Working with relational and non-relational databases
- Handling authentication and security in connections
- Troubleshooting data source connectivity issues
- Best practices for data source management

Module 3: Data Transformation and Preparation

- Loading data from multiple sources into Power BI Desktop
- Using Power Query for data cleaning and transformation
- Handling missing values and data quality issues
- Merging and appending queries from various sources

- Creating calculated columns for enhanced analysis
- Staging data for optimal report performance
- Documenting transformation logic and data lineage

Module 4: Building Interactive Visualizations

- Creating effective chart types for different analytical scenarios
- Configuring visuals for interactivity and drill-down capabilities
- Working with slicers, buttons, and navigation controls
- Implementing conditional formatting and visual indicators
- Creating KPI cards and gauge visualizations
- Building matrix and decomposition tree visualizations

Day 2: Advanced Analytics and Report Optimization

Module 5: Advanced DAX Calculations and Measures

- Understanding DAX syntax and context evaluation
- Creating calculated measures for complex business logic
- Time intelligence functions for period-over-period analysis
- Implementing running totals and cumulative calculations
- Working with CALCULATE for filter context manipulation
- Creating advanced ranking and classification measures
- Performance optimization through measure design

Module 6: Advanced Analytical Methods in Reports

- Implementing trend analysis and forecasting visualizations
- Working with variance analysis and comparative analytics
- Creating scenario planning and what-if analysis

- Implementing cohort analysis and customer segmentation
- Advanced aggregation and roll-up calculations
- Anomaly detection and outlier visualization
- Building predictive analytics dashboards

Module 7: Data Model Optimization and Query Folding

- Reviewing data model architecture and relationships
- Implementing star schema and dimensional modeling
- Optimizing relationships for better performance
- Understanding query folding and native queries
- Identifying and addressing bottlenecks in data refresh
- Implementing aggregations and dual storage modes
- Best practices for model scalability

Module 8: Report Performance and Rendering (Hands-on)

- Analyzing report performance metrics
- Implementing slicers and filters efficiently
- Optimizing visual rendering and page load times
- Using bookmarks for interactive navigation
- Creating and managing calculation groups

Day 3: Administration, Sharing, and Service Management

Module 9: Power BI Service Workspaces and Access Control

- Understanding Premium and Shared Capacity in Power BI Service
- Creating and managing workspaces
- Assigning roles and permissions (Admin, Member, Contributor, Viewer)

- Implementing row-level security for multi-tenant environments
- Managing dataset access and sharing policies
- Configuring object-level security
- Implementing column-level security for sensitive data

Module 10: Publishing and Deploying Reports

- Publishing reports from Desktop to Power BI Service
- Managing report versions and updates
- Configuring scheduled refreshes and real-time refreshes
- Setting up incremental refresh for large datasets
- Managing dataset owners and endorsement
- Implementing deployment pipelines for environments
- Automating report deployment workflows

Module 11: Sharing Reports and Dashboards

- Sharing reports with specific users and groups
- Creating and managing distribution groups
- Using the Sharing feature for granular permissions
- Embedding reports in applications and portals
- Creating public links and guest access
- Exporting reports in various formats
- Managing subscription and alert configurations

Module 12: Monitoring, Security, and Governance

- Monitoring tenant health and resource usage
- Implementing data loss prevention policies

- Auditing and tracking user activity
- Managing sensitivity labels and information protection
- Setting up administrative alerts
- Creating governance policies for report development