

POWER BI - Course Curriculum

CHAPTER 0 : INTRODUCTION TO POWER BI

Introduction to Power BI - Need, Importance * Power BI - Advantages and Scalable Options * History - Power View, Power Query, Power Pivot * Power BI Data Source Library and DW Files * Cloud Collaboration and Usage Scope * Business Analyst Tools, MS Cloud Tools * Power BI Installation and Cloud Account * Power BI Cloud and Power BI Service * Power BI Architecture and Data Access * On-Premise Data Access and Microsoft On Drive * Power BI Desktop - Installation, Usage * Sample Reports and Visualization Controls * Power BI Cloud Account Configuration * Understanding Desktop & Mobile Editions * Report Rendering Options and End User Access * Power View and Power Map. Power BI Licenses * Course Plan - Power BI Online Training

CHAPTER 1 : CREATING POWER BI REPORTS, AUTO FILTERS

Report Design with Legacy & .DAT Files * Report Design with Database Tables * Understanding Power BI Report Designer Report Canvas, Report Pages: Creation, Renames * Report Visuals, Fields and UI Options * Experimenting Visual Interactions, Advantages * Reports with Multiple Pages and Advantages * Pages with Multiple Visualizations * Data Access * PUBLISH Options and Report Verification in Cloud * "GET DATA" Options and Report Fields, Filters * Report View Options: Full, Fit Page, Width Scale * Report Design using Databases & Queries * Query Settings and Data Preloads * Navigation Options and Report Refresh * Stacked bar chart, Stacked column chart * Clustered bar chart, Clustered column chart * Adding Report Titles. Report Format Options * Focus Mode, Explore and Export Settings.

CHAPTER 2 : REPORT VISUALIZATIONS and PROPERTIES

Power BI Design: Canvas, Visualizations and Fields * Import Data Options with Power BI Model, Advantages * Direct Query Options and Real-time (LIVE) Data Access * Data Fields and Filters with Visualizations * Visualization Filters, Page Filters, Report Filters * Conditional Filters and Clearing. Testing Sets * Creating Customized Tables with Power BI Editor * General Properties, Sizing, Dimensions, and Positions * Alternate Text and Tiles. Header (Column, Row) Properties * Grid Properties (Vertical, Horizontal) and Styles * Table Styles & Alternate Row Colors - Static, Dynamic * Sparse, Flashy Rows, Condensed Table Reports * Focus Mode Totals Computations, Background * Borders Properties Column Headers, Column Formatting, Value Properties * Conditional Formatting Options - Color Scale * Page Level Filters and Report Level Filters * Visual-Level Filters and Format Options Report Fields, Formats and Analytics * Page-Level Filters and Cortana - Q & A Options * Column Formatting Options, Titles Background Properties, Borders and Lock Aspect

CHAPTER 3 : CHART AND MAP REPORT PROPERTIES

CHART Report Types and Properties * STACKED BAR CHART, STACKED COLUMN CHART * CLUSTERED BAR CHART, CLUSTERED COLUMN CHART * 100% STACKED BAR CHART, 100% STACKED COLUMN CHART * LINE CHARTS, AREA CHARTS, STACKED AREA CHARTS * LINE AND STACKED ROW CHARTS * LINE AND STACKED COLUMN CHARTS * WATERFALL CHART, SCATTER CHART, PIE CHART * Field Properties: Axis, Legend, Value, Tooltip * Field Properties: Color Saturation, Filters Types * Formats: Legend, Axis, Data Labels, Plot Area * Data Labels: Visibility, Color and Display Units * Data Labels: Precision, Position, Text Options * Analytics: Constant Line, Position, Labels * Working with Waterfall Charts and Default Values * Modifying Legends and Visual Filters - Options * Map Reports: Working with Map Reports * Hierarchies: Grouping Multiple Report Fields * Hierarchy Levels and Usages * Using Field Hierarchies with Chart Reports

* Advanced Query Mode @ Connection Settings - Options * Direct Import and In-memory Loads

CHAPTER 4 : HIERARCHIES and DRILLDOWN REPORTS

Hierarchies and Drilldown Options * Hierarchy Levels and Drill Modes – Usage * Drill-thru Options with Tree Map and Pie Chart * Higher Levels and Next Level Navigation Options * Aggregates with Bottom/Up Navigations. Rules * Multi Field Aggregations and Hierarchies in Power BI * DRILLDOWN, SHOWNEXTLEVEL, EXPANDTONEXTLEVEL * SEE DATA and SEE RECORDS Options. Differences * Toggle Options with Tabular Data. Filters * Drilldown Buttons and Mouse Hover Options @ Visuals * Dependent Aggregations, Independent Aggregations * Automated Records Selection with Tabular Data Report Parameters: Creation and Data Type * Available Values and Default values. Member Values * Parameters for Column Data and Table / Query Filters * Parameters Creation - Query Mode, UI Option Linking * Parameters to Query Columns – Options * Edit Query Options and Parameter Manage Entries * Connection Parameters and Dynamic Data Sources * Synonyms - Creation and Usage Options

CHAPTER 5 : POWER QUERY & M LANGUAGE - Part 1

Understanding Power Query Editor – Options * Power BI Interface and Query / Dataset Edits * Working with Empty Tables and Load / Edits * Empty Table Names and Header Row Promotions * Undo Headers Options. Blank Columns Detection * Data Imports and Query Marking in Query Editor * JSON Files & Binary Formats with Power Query * JavaScript Object Notation - Usage with M Lang * Applied Steps and Usage Options. Revert Options * Creating Query Groups and Query References. Usage * Query Rename, Load Enable and Data Refresh Options * Combine Queries - Merge Join and Anti-Join Options * Combine Queries - Union and Union All as New Dataset * M Language: NestedJoin and JoinKind Functions * REPLACE, REMOVE ROWS, REMOVE COL, BLANK - M Lang * Column Splits and FilledUp / FilledDown Options * Query Hide and Change Type Options. Code Generation

CHAPTER 6 : POWER QUERY & M LANGUAGE - Part 2

Invoke Function and Freezing Columns * Creating Reference Tables and Queries * Detection and Removal of Query Datasets * Custom Columns with Power Query * Power Query Expressions and Usage * Blank Queries and Enumuration Value Generation * M Language Semantics and Syntax. Transform Types * IF..ELSE Conditions, TransformColumn() Types * RemoveColumns(), SplitColumns(), ReplaceValue() * Table.Distinct Options and GROUP BY Options * Table.Group(), Table.Sort() with Type Conversions * PIVOT Operation and Table.Pivot(). List Functions * Using Parameters with M Language (Power Query Editor) * Advanced Query Editor and Parameter Scripts * List Generation and Table Conversion Options * Aggregations using PowerQuery & Usage in Reports * Report Generation using Web Pages & HTML Tables * Reports from Page collection with Power Query * Aggregate and Evaluate Options with M Language

CHAPTER 7 : DAX EXPRESSIONS - Level 1

Purpose of Data Analysis Expressions (DAX) * Scope of Usage with DAX. Usability Options * DAX Context : Row Context and Filter Context * DAX Entities : Calculated Columns and Measures * DAX Data Types : Numeric, Boolean, Variant, Currency * Date time Data Type with DAX. Comparison with Excel * DAX Operators & Symbols. Usage. Operator Priority * Parenthesis, Comparison, Arithmetic, Text, Logic DAX * Functions and Types: Table Valued Functions * Filter, Aggregation and Time Intelligence Functions * Information Functions, Logical, Parent-Child Functions * Statistical and Text Functions. Formulas and Queries * Syntax Requirements with DAX. Differences with Excel * Naming Conventions and DAX Format Representation * Working with Special Characters in Table Names * Calculated Columns and Calculated Measures with DAX * Attribute / Column Scope with DAX – Examples * Measure / Column Scope with DAX

- Examples * DAX Expressions with Measures and Columns * DAX for Query Extraction, Data Mashup

CHAPTER 8 : DAX EXPRESSIONS - Level 2

YTD, QTD, MTD Calculations with DAX * DAX Expressions with Power View * DAX Calculations and Measures * Using TOPN, RANKX, RANK.EQ * Computations using STDEV & VAR * SAMPLE Function, COUNTALL, ISERROR * ISTEXT, DATEFORMAT, TIMEFORMAT Time * Intelligence Functions with DAX * Data Analysis Expressions and Functions * DATESYTD, DATESQTD, DATESMTD ENDOFYEAR * ENDOFQUARTER, ENDOFMONTH * FIRSTDATE, LASTDATE, DATESBETWEEN * LOSINGBALANCEYEAR, CLOSINGBALANCEQTR * SAMEPERIOD and PREVIOUSMONTH, QUARTER * KPIs with DAX. Vertipaq Queries in DAX * Data Type Conversions with DAX Routines

CHAPTER 9 : POWERBI DEPLOYMENT & CLOUD

PowerBI Report Validation and Publish * Understanding PowerBI Cloud Architecture * PowerBI Cloud Account and Workspace * Reports and DataSet Items Validation * Dashboards and Pins - Real-time Usage * Dynamic Data Sources and Encryptions * Personal and Organizational Content Packs * Gateways, Subscriptions, Mobile Reports * Data Refresh with Power BI Architecture * PBIX and PBIT Files with Power BI - Usage * Visual Data Imports and Visual Schemas * Cloud and On-Premise Data Sources * How PowerBI Supports Data Model? * Relation between Dashboards to Reports * Relation between Datasets to Reports * Relation between Datasets to Dashboards * Page to Report - Mapping Options * Publish Options and Data Import Options * Need for PINS @ Visuals and PINS @ Reports * Need for Data Streams and Cloud Integration

CHAPTER 10 : POWER BI CLOUD OPERATIONS

Report Publish Options and Verifications * Working with Power BI Cloud Interface & Options * Navigation Paths with "My Workspace" Screens * FILE, VIEW, EDIT REPORTS, ACCESS, DRILLDOWN Saving Reports into pdf, pptx, etc. * Report Embed Report Rendering and EDIT, SAVE, Print Options * Report PIN and individual Visual PIN Options * Create and Use Dashboards. Menu Options * Goto Dashboard and Goto LIVE Page Options * Operations on Pinned Reports and Visuals * TITLE, MEDIA, USAGE METRICS & FAVOURITES * SUBSCRIPTION Options and Reports with Mobile * View Options with Report Page : Print and Subscribe * Report Actions: USAGE METRICS, ANALYSE IN EXCEL * Report Actions: RELATED ITEMS, RENAME, DELETE * Dashboard Actions: USAGE METRICS, RELATED ITEMS * Dashboard Actions: SETTINGS FOR Q & A, DELETE * PIN Actions: USAGE METRICS, SHARE, RELATED ITEMS * PIN Actions: SETTINGS FOR Q & A, DELETE * EDIT DASHBOARD (CLOUD), On-The-Fly Reports * Dataset Actions: CREATE REPORT, REFRESH * SCHEDULED REFRESH & RELATED ITEMS * Dashboard Integration with Apps in Power BI

CHAPTER 11 : IMPROVING POWER BI REPORTS

Publish PowerBI Report Templates * Import and Export Options with Power BI * Dataset Navigations and Report Navigations * Quick Navigation Options with "My Workspace" * Dashboards, Workbooks, Reports, Datasets * Working with MY WORK SPACE group * Installing the Power BI Personal Gateway *

Automated Refresh - Possible Issues * Adding images to the dashboards * Reading & Editing Power BI Views * Power BI Templates (pbix)- Creation, Usage * Managing report in Power BI Services * PowerBI Gateway - Download and Installation * Personal and Enterprise Gateway Features * PowerBI Settings : Dataset - Gateway Integration * Configuring Dataset for Manual Refresh of Data * Configuring Automatic Refresh and Schedules * Workbooks and Alerts with Power BI * Dataset Actions and Refresh Settings with Gateway * Using natural Language Q&A to data - Cortana

CHAPTER 12 : INSIGHTS AND SUBSCRIPTIONS

Data Navigation Paths and Data Splits * Getting data from existing systems * Data Refresh and LIVE Connections * Pbit and pbix : differences. Usage Options * Quick Insights For Power BI Reports Quick * Insights For PowerBI Dashboards * Generating Insights with Cloud Datasets * Generating Reports with Cloud Datasets * Using relational databases on-premises * Using relational databases in the cloud * Consuming a service content pack * Creating a custom data set from a service * Creating a content pack for your organization * Consuming an organizational content pack * Updating an organizational content pack * Adding Tiles : Images, Videos, DataStreams * Creating New Reports from Cortana, Advantages

CHAPTER 13 : INTEGRATION ELEMENTS IN POWER BI

SSRS Integration with Power BI * SSRS Report Portal URL to Power BI Cloud * Power BI KPI Reports Vs SSRS KPI Reports * Converting and Working with Mobile Reports * Report Builder Reports to Power BI * Generating QR Codes and Report Security * Reporting JSON Files, Bulk Data Loads * SQL Azure and Azure Market Place * SCALA and PYTHON Data Access * Creating high-density Reports in Power BI * OLAP DataSources in Power BI * Using MDX Queries with PowerBI Queries * MDX SELECT and Perspective Access * KPIs and MDX Expressions with Power BI * MDX Queries and Filters with Power BI * Working with Pivot & Unpivot columns * YTD, PARALLELPERIOD,SCOPE, ALLMEMBERS * WHERE, EXCEPT, RANGE, NONEMPTY CURRENT & EMPTY, AND / OR, LEFT / RIGHT SCOPE, THIS, THIS, FREEZE Functions * Choosing between DAX and MDX

