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BI Team – RTB C7 – MS Power BI – Advance Level

Manual & Case Study

Skill Manual

Objective

To collate and analyze data from a wide range of sources such as Excel workbooks, SQL databases, web sites & cloud services and display it in user friendly BI dashboards.

Check Point	Date	Topics
1	12-Mar-21	Working of Power BI Platform
		Power BI and Programming Languages
2	2-Apr-21	DAX Fundamentals
		Basic DAX Calculations
3	30-Apr-21	Advanced DAX Calculations
4	14-May-21	DAX and Modeling
5	28-May-21	M and Power Query

Topics To Cover

Topic	Sub-topics
Working of Power BI Platform	• Understanding the Microsoft update process and Power BI Desktop vs. Pro. • Fundamentals of Getting Data - Data Limits, Cleaning Data, Selecting Data. • Understanding how and where to Transform Data. • Understanding how Power BI Accesses and Stores Data.
Power BI and Programming Languages	• The Power BI REST API • R • M • Python • Data Analysis Expressions • DAX Syntax • Logical Operators • DAX Examples

Topic	Sub-topics
DAX Fundamentals	• DAX Capabilities and Common DAX Use Cases • DAX Formula Syntax Fundamentals • Formula Evaluation Order • DAX Operators • DAX Operator Precedence • DAX Data Types • DAX Type Conversions • DAX Functions • Nested Function Execution Order
Basic DAX Calculations	• Calculated Columns • Evaluation Context and Row Context • Working with Relationships • Using RELATED() and RELATEDTABLE() • Using Ad-hoc Relationships with USERELATIONSHIP() • Flattening Models with Calculated Columns • Calculated Tables

Topic	Sub-topics
Advanced DAX Calculations	• Measure Use Cases • Implicit Measures • Calculated Measures • Evaluation Context and Filter Context • Implicit Filter Context • Explicit Filter Context • Filtering with Calculate() and Filter() • Undoing Filters with All() • Working with built-in Iterator & Nested Iterators Functions • Time Intelligence Calculation in DAX • Variance Calculations in DAX
DAX and Modeling	• Resolving Model Granularity Issues • Flattening Models • Row Level Security with Row Filters • Avoiding Ambiguous Relationships with Role Playing Tables.

Topic	Sub-topics
M and Power Query	• Power Query Basics • Using the Formula Bar in Power Query • Using the Advanced Editor in Power Query • Power Query's Standard Function Library • M Language • Case Sensitivity in Power Query and M • Single Literal Values • Intrinsic Values • Structured Values: Lists, Records, and Tables • M Language Operators • Commenting Code in M • Using the Let Statement • Variable Naming in M • M's Each Statement • Creating Columns in M • Conditional Constructs in M • M Functions

Topic	Sub-topics
Custom Visuals for Power BI	• Different Approaches to create custom visuals. • Custom Visual using Standard Panel. • User Market Place Visuals (Created by Partners) • Create Custom Visual with Java Scripts and.net • Create Visual Using R/ Python Scripts in Power BI Desktop • Create Custom Visual using R • Create Custom Visual Using Charticulator

Expectations

Team Members post the intervention should be able to conduct knowledge sharing session and complete the Assessments. We will be sharing the mode of assessments in the group/team level meeting.

Case Study

Power BI Case Study :

Challenge:

A company sells electronic products worldwide through several retail shops and a website. Around the globe, country/region managers are responsible for producing figures for next year's budget for their respective countries/regions. Managers use Excel workbook containing the relevant information to produce the budget. Based on the results of the workbook, he would typically create a Microsoft PowerPoint presentation to share the results during internal meetings. This year, however, Managers wants to take advantage of the new Power BI service provided by Microsoft.

Objective:

Create Power BI report producing this year's budget for various locations to share in Internal meetings.

Solution:

To create dashboards with easily digestible information, that would highlight achievements, identify issues and show trends.

1. Transforming Data with Power Query.
2. Building Data Model
3. Incorporating DAX Formulas to interpret the data.
4. Create Power BI dashboards with interactive visualizations.
5. Create Custom Visualizations using one of the Customization approaches.

Details:

Design approaches for creating a Dashboard:

1. Limit complicated complex measures and aggregations in data models.
2. Avoid scrolls within the visual and on page
3. Use drill through buttons to generate an intuitive user experience.
4. Improve Power BI Performance by Optimizing DAX

Details:

Design considerations for creating a Dashboard:

1. Use Alignment Tool to have balance and perfect alignment.
2. Multi Format
3. Use Themes
4. Leverage Graphics
5. Chose the right visualization techniques
6. Create Custom Visuals.
7. Be consistent

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Good To Have Functionalities:

1. Restrict data access with row-level security (RLS) for Power BI Desktop

2. Customize tooltips in Power BI Desktop

3. Add a hyperlink to a text box in a report

Generic Points for Dashboards:

1. Create smart narrative summaries (preview)

2. Data alerts in the Power BI service

3. Dashboard data classification

4. Use Dashboard Themes in Power BI service

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Must Used Topics in above Case Study:

1. DAX Fundamentals

2. Basic DAX Calculations

3. Advanced DAX Calculations

4. DAX and Modeling

5. M and Power Query

6. Custom Visuals for Power BI

Expected Deliverables

1. Creation of Power BI Report / Dashboard with at least one custom visuals.

2. Publishing to PowerBI.com.

3. Power BI Report / Dashboard Demo with Interactive visuals

Power BI Dashboard View

1. Create Summary / Home Page

2. Create Navigation Pane

3. Create Home Button

4. Inserting Bookmarks

5. Last Refreshed Information

6. Add Contact Info – for queries/concerns/feedback

Quality Expectations (Do's / Don'ts)

To improve the performance and security of enterprise-grade Power BI implementations, follow Power BI best practices and custom visualization for architects and developers.

Reference :

https://www.knowledgehut.com/blog/business-intelligence-and-visualization/power-bi-best-practices

https://maqsoftware.com/expertise/powerbi/power-bi-best-practices

https://radacad.com/custom-visual-for-power-bi-different-approches

Thank You.