**Power BI Edx Course**

**Module 0: (Intro)**

Connecting to Third Party Software’s as Software Service

Get Data in Power Bi online (Connect to Different Sources)

(Get Data -- > Services (Choose Content Packs/Connectors from Online Services that you use, Provides out of box reports dashboards and analytics to get data from different sources)

**Module1: (Transforming)**

**Locale** is Regional Settings used to interpret numbers,date and time in imported text.

**Get Data:**

SQL

Access

Excel

Blank Query (M Language) (Power Query),…..

= #table({“Col1”,”Col2”},{{1,2},{3,4}})

**Views**

Report View

Data View

Relationship View (Some are automatic)

**Edit Query: (Transformations On Data)**

Queries = Tables

Home🡪Change Data Type (Default Not always Correct)

Add Column 🡪 Date (Week Of Year,Day of Week,…) (Different new column)

Transform 🡪 Date (Week Of Year,Day of Week,…) (Same Column changes)

Transform 🡪 Split Column (Delimiter,Fixed No. Of char)

Query Groups

Date Type(MM/DD/YYYY)

Removing, Reordering Columns

Conditional Columns(If then else type)

**Connecting to Folder (**Load all the files)(See content column for each file)

Home🡪Append Queries(Union of two tables)

Add Custom Column (Write M Language)

**M**

**Example of If then else:**

if [Country] =null then “USA” else [Country]

Home🡪Merge Queries (Join Operation)

View🡪Query Dependencies (\*\*\*)

Transforming Less Structured Data(Mutil Level SpreadSheet)

Fill Cells( Same Value From Above)

Transform 🡪 Transpose Query

Transform 🡪 Use First Row as Header

Pivot and Unpivot Columns (Attribute Value Pairs)

Unpivot repeats the values of column for each row

**Enter Data (Create a New Table) or Copy From Excel**

**Query Parameters(Home-> Manage Parameters)**

**(Filtering Before it comes to Power BI desktop)**

**(**Define the report , specify a prompt enter the value and filter on the basis of that) (Limit the data that comes from database to Power Bi Desktop)

Type,Allowed Values, Default value (Shown in Prompt when opened), Current Value (Current Value at Moment)

**Use parameters to filter columns, use in M Script**

**Export --> Power BI Template**

(Strips out all data,

retains query definition,

retains all transformations,

retains all calculations

retains visuals)

**Module2: (Data Modelling)**

**Manage Data Relationships**

Hide Tables in Relationship View

(One to One,Many to One,One to Many)

Cross Filter Direction: Single/Both

**In Data View :**

**Calculated Columns :**

**DAX is used (Data Analysis Expressions)**

Example: Concatenate : Country & “,” & Zip

**Optimizing**

Hide In Report View (Right Click on Column Hide)(Only Hide in Options there, is seen in Data View)

Sort By Column

Modeling 🡪 Change Format

Measures

Example: (Running Sum by Year)

(Expression Over An Interval From First Day of Year to the end date of column specified)

**YTD Revenue = TOTALYTD(SUM(Sales[Revenue]),Date)**

TOTALYTD (Total Year to Date)

TOTALMTD, (By Month)

TOTALQTD (By Quarter)

**Evaluate something Over a Filter**

**CALCULATE(Expression,Filter)**

**Last Year YTD = Calculate([YTD Revenue],SAMEPERIODLASTYEAR(Date[Date])**

Move Measures to Diff. Tables

WaterFall Chart

**Creating and Managing Hierarchies**

Drag and Drop One column on Another , Set the Order

Expand All,Drill Down,Drill Up,See Records

**Calculated Tables**

**Time Intelligence (Time Hierarchy)**

**Enter Data(Directly/Excel)**

**Include/Exclude(right Click on any category)**

**Grouping/Binning**

(Group Categories)(Aggregation Create Groups/Bins)

**Module 3: (Visualize)**

**Pie and TreeMap**

**(**Pie = Legend,Value)

(TreeMap = Showing Each Contribution to Overall value)

**Hierarchical Axis and Concatenating**

(Switch off the Concatenation in Settings For Axis)

**Filter Pane:**

**(**Basic,Advanced,Top N)

**Page Level Filters**

**Report Level Filters**

**Visual Level Filters**

**DrillThrough Filters**

**Bar Chart With Line (Stacked Colum**n with Line, Showing Change in Value of Other Value as a Line Over Column,

Column Series help us group by that value)

**Analytics Plane**

**(**Max,Min,Constant,Average,Median,Percentile Line)

(Line Chart) 🡪 (Trend Line) ,(Forecast Line -Confidence Interval)

**Clustering and ML**

Using Scatter Chart/Table

Scatter chart (Elipsis 🡪 Automatically Find Clusters) (K- Means)(Two Variables)

Table (Multiple Variables)

**Slicer**

On Canvas Filter

**Focus Mode(** Entire Space for that visual)

**Export Data (From Any Visual)**

**Date Slicer** (Slider)

**MAPS:**

**Bubble Map(**Shown by Bubbles)

**Fill Map , (**Fill in the cities)

**Shape Map (**Custom, Select a area like US, fill mark some places)

Issues:

1 .Boston (can be in two countries)]

Use Lat,Long for accurate locations(Bing get them)

2. Name of Country,State,City in Map Change category)

Modeling--> Data Category(City/State)

**ESRI MAP**

Geo Data from Service and your Own

(baseMap,LocationType As points,Boundaries,Theme,Symbol Type,Referenence Layer)

**Table & Matrix**

Table (Default) (Total Bottom)

Matrix(Rows,Columns)(Pivot table Like)(Total on both Sides)(Hierarchical is Shown Same Window) (Drill Up/Down Support)

Conditional Formatting (Right Click on Value (Column))

**Table Styles**

**Scatter Chart (Two VALUE comparison) Or three**

**(X, Y, Size)**

**Play Axis in Scatter Chart (**Timeline , animation changes over time)(Click on any category shows the history of changes, Traace Lines)

**WaterFall**

(Changes in value over time) (Category,Y Axis)

Funnel Chart

(Show changes over a particular process)

(Funnel charts on the other hand are typically used to show changes over a particular process so if you are using a sales pipeline or you are looking at retention rates through a website)

**Guage,Card,KPI**

**Guage(**Show Progress) (Set Min,Max Value)

**(Single Metric)**

**Card (Single Value)(**Control this by a measure)

**KPI (Indicator,Trend) with Target (Green,Red)**

**Coloring Charts**

**(**Category Colors,Data Colors)

**Shapes (**Rectangle,Oval,Triangle,Line,Arrow)

**TextBoxes (**Enter Text)

**Images(**Add any image)

**GridLines**

**Snap to Grid**

**PageLayout and Formatting(**Zoom Level, Custom Pixel Size, Aspect Ratio,Cortana View)

**Visual Relationship (Edit)**

**(**Control One visual filters other or not)

(Filter/Not Filter/Highlight)

**Duplicate Page**

**Categories with No Data** (Option in Column in Values in Visual )

**Default Summarization(Click on Column (Modeling Tab))**

**Data Category**

**Align/Distribute**

**Custom Hierarchies**

**R(Visual Integration)**

(R code , send Data to R, bring back the visual the show on Canvas)

Which four options you can use to modify the Z order of a visualization?

Send to Back, Bring to Front, Bring Forward, Send backward

**Module 4**

**Power Bi Service**

**Overview Of Dashboard(Topmost Level)**

Dataset can be linked to multiple reports

Each report single dataset

Report to multiple dashboards

Each dashboard from multiple reports

Publish to Workspace (All members)

**Quick Insights**

**(**Dataset, 🡪 Quick Insights**)**

(Dashboard🡪Focus Mode in Visual 🡪 Quick Insights(Statistics))—(Filters applied on visual applied in insights too)

**Add Widget(Image,Textbox,Video(Youtube/Vimeo URL),Web Content)**

**Feature(Every Time you open, that will open)**

**Fav Dashboard**

**Filtering Dashboard**

**Settings (Q&A ,Tile Flow (Flow to Top Left),)**

**Q&A**

**(**Pre Specify Questions,

Report By Vendor(Add a filter,Require Single Selection,Add alias)

Page Information -- > Add alias in Q&A)

**)**

**Add featured questions(Datasets🡪 Add Q&A)**

**Sharing Dashboard(share,Access)**

**Add Security Groups,Email**

(Allow receipts to share your dashboard,Send Email)

**In-Focus Mode**

**Pin-Live Page(Dashboard Tiles** are Interactive)

**Pin Charts**(snapshots in dashboard)

Report in Sync with dashboard(Changes done in report are Reflected in dashboard)

**Custom URL and Title**

**TV Mode(Fit to Screen in Fullscreen Mode) and CollapseNavigation**

(Add collapseNavigation=true) (NAVIGATION CLOSED)

(Add chromeless=true) (FULL SCREEN MODE)

**Export Data**

(Underlying Data(All rows) to Excel,

Summarized Data(1 row) to Excel,CSV)

**Alerts in Power BI (KPI,Gauge,Single Number Tile)**

(notification + Email)

**Personal Gateway**

**(**Schedule Refresh**)**

**(Application** on System that helps pull data and upload to Power Bi Sevice regularly)

**Refresh Frequency** (Daily/Weekly)

**(Send Refresh Failure Email)**

**Admin Portal(Usage Metrics,Manage Users,Tenant Settings)(**

**Groups???**

**Viewing In**

1. **Windows App(Annoatate in Focus Mode the charts/Tile,Share,fav)**
2. **Android App(Annotate,Share,fav)**
3. **Ipad**
4. **iOS(Annotate,Share,Fav,Data Alert)**

**Module 5**

**Working with Excel**

**(Power View(**Interactive Worksheets -> Reports Added Automatically)**,**

**Power Query,**

**Power Pivot (**Data From Diff Sources,Manage Multiple Tables**)**

Should be Assigned As table in Excel then import

Work Online,Create Visualizations Online

**OneDrive For Business (**

**Import(Copy it to Power BI)/Connect**(Just View It in Power BI then schedule refresh**)**

**Pin excel Tables**

**Add in Excel For Power BI**(

Pin it to dashboard

Refresh(PinManager -> Update,

Connect to Power BI data and analyze it)

**Analyze Data in Excel (ODC File)**

**Q&A**

**Examples:**

What is year to date total units

What is year to date sales

**Module 6**

**Organization Packs,Security and Groups**

**Creating a Group/WorkSpaces**

**(Private/Public)(**Add name,group memebers)

**Create Content Pack** (Dashboards,Reports,Datasets)

(Access to Group/Organization)

**Using a Content Pack(**When Open Dataset,

It just creates a copy of package)

(Personalize)

**Editing a Original Content Pack**

**(**Things that were a part of it,if change, get notification to confirm and show those updates to others as well**)**

**Keep Separate Version/Accept those Changes**

**One Drive For Business(**Put Data in Group there and directly import pbix file from there)(Any changes to that are reflected in Report)

**Row Level Security**

**(Manage Roles)(**Add filters to the data,then after publishing add users to those roles in Security Option in PowerBI service)

Users(People/Groups)

**Data Classification On/Off (Dashboard Classification Tag)**

**(**Classification HBI,MBI,LBI **Admin Portal**)

(Show Tab/Not Show tab) (Add URL)

**Module 7**

**Direct Connectivity Mode**

**SQL Azure**

**Get Data 🡪 Live Data Source**

**(**No need to set up refresh it is done automatically)

**SQL Database**

**DirectQuery(Mode)**

**New Column/Measure**

**SSAS(**Sql server Analysis Services)

(Explore Using Live connection)

(Using Credetinals that have access to certain subset of

data,I will see that only)

**Analysis Services Connector**

**(**When share, they see data what they have access to nothing else)

(Use their credentials and make live query)

OLAP Cube(Measures, Dimensions)

**SAP HANA**

**(Enterprise Inmemory Analytics System)**

**Module 8**

**API**

**(Do Data,Visualization programmatically)**

dev.powerbi.com

List Dataset,Create Dataset,

API to take tiles and embed in your app

**Real Time Data into dashboard**

**PubNub to Push data to a Tile**

**(Real Time Dashboard)**

**Custom Visuals(Type Script)**

**Life cycle**

**Init (**Once)

**Update(Logic**/Data/View Port)

**Destroy(Remove/Deallocate)**

|  |  |  |
| --- | --- | --- |
| **Functions, Returns** |  | **Examples** |
| ALL (table/column),table(no filters)  This function is not used by itself | **Returns all rows/all values in column**,  Useful for clearing filters and creating calculations on all the rows in a table  ALL(Table)  ALL(ColumnList) | CountRows(ALL(Products) 🡪 All row count  CountRows(Products))   * count in current context   ALL(category)🡪 distinct values of that column  **Show these** |
| ALLEXCEPT(Table,Columns,…),table(filtered removed except these) | All columns **except these(**Remove filters) | **Show all except these** |
| LASTDATE(dates) ,table having single column/single row with date value | **Returns the last date in the current context** for the specified column of dates. |  |
| CALCULATE(expression,filters.,,..)  (expression returns a single value),  exp output | **Evaluate expression based on some filters**  **For Boolean Filters:**  The expression cannot reference a measure.  **No Nested Calculate**  The expression cannot use any function that scans a table or returns a table, including aggregation functions. |  |
| CALCULATETABLE(expression,filters),  table of values  (Remove all filters, add current, new context is used)  (not independent) | **Evaluates a table expression** in a context modified by the given filters. |  |
| FILTER(table,filter) (Uses current context)  (not independent),table of filtered values | **Returns a table that represents a subset of another table or expression**.  A Boolean expression that is to be evaluated for each row of the table. |  |
| SUM (column) , decimal value | **Adds all the numbers** in a column.  If any rows contain non-numeric values, blanks are returned. |  |
| SUMX (Table,expression),decimal value | Returns **the sum of an expression evaluated for each row** in a table.  Only the numbers in the column are counted. Blanks, logical values, and text are ignored. |  |
| VALUES (Table/Column),column of unique values | The table or column from **which unique values are to be returned**. |  |
| COUNT(column) ,whole number | The COUNT function **counts the number of cells in a column that contain numbers**.  Numbers,Dates,Strings are counted  If Row had text not translated to number, row is not counted.  If none meets criteria, then zero. |  |
| COUNTA(column),whole number | The COUNTA function counts the **number of cells in a column that are not empty**. It counts not just rows that contain numeric values, but also rows that contain nonblank values, including text, dates, and logical values. |  |
| COUNTX(table,exp),integer | **Counts the number of rows that contain a number or an expression that evaluates to a numbe**r, when evaluating an expression over a table. |  |
| PREVIOUSYEAR(dates,[year\_end\_Date])  Default is 31 Dec | Returns a **table that contains a column of all dates from the previous year**, given the last date in the **dates** column. |  |
| PARALLELPERIOD (dates,num\_intervals,interval),column of date values  PARALLELPERIOD(DateTime[DateKey],-1,year) | **Returns a table that contains a column of dates that represents a period parallel to the dates** in the specified **dates** column, in the current context, with the dates shifted a number of intervals either **forward in time or back in time**. |  |
| DATESYTD  (current fiscal year dates)  (Set of dates in year upto current date) | Returns a **table that contains a column of the dates for the year to date,** in the current context. |  |
| LASTNONBLANK(column,exp),table),Single row/column, with value | **Returns the last value** in the column, **column**, filtered by the current context, where **the expression is not blank**. |  |
| SAMEPERIODLASTYEAR(dates),single column of date values | Returns a **table that contains a column of dates shifted one year back in time** from the dates in the specified **dates** column, in the current context. |  |
| TOTALYTD(exp,dates,[filter],[year\_end\_Date]),scalar value | **evaluates the year-to-date value of the expression** in the current context. |  |
| SUMMARIZECOLUMNS(groupby,..[filtertable],[  SUMMARIZECOLUMNS( <groupBy\_columnName> [, < groupBy\_columnName >]…, [<filterTable>]…[, <name>, <expression>]…)   non-ignored expressions which return blank.wil delete the row. | **summary table over a set of groups.** | SUMMARIZECOLUMNS (      'Date'[Calendar Year],      'Product'[Color],      "Sales Amount", SUMX ( Sales, Sales[Quantity] \* Sales[Unit Price] )  ) |
| RANKX(table,exp),rank number(…..)  RANKX(<table>, <expression>[, <value>[, <order>[, <ties>]]]) | Returns the ranking of a number in a list of numbers for each row in the table argument. |  |
| CONCATENATE (text1,text2),string | **Joins two text strings** into one text string. |  |
| **FORMAT(value,formatstring)** | **Converts a value to text according to the specified format.**  If format\_string is BLANK(), the value is formatted with a "General Number" or "General Date" format (according to **value** type).  (Numeric/Date,Time formats)  Numeric: ------  General Number **12345.67**  Currency **$12,345.67**  Fixed **12345.67**  Standard **12,345.67**  Percent **1,234,567.00**  Scientific **1.23E+04**  Yes/No **1/0**  True/False **1/0**  On/Off **1/0**  Date/Time:  General Date  Long Date/Medium Date  Short Date  G/L-M/S  3/12/2008 11:07:31 AM / Wednesday, March 12, 2008 / 3/12/2008  L/M/S Time  11:07:31 AM / 11:07 AM /11:07 |  |
| RELATED(column)  RealtedTable | **Returns a related value from another table**. |  |
| TEXT.REPLACE  REPLACE(<old\_text>, <start\_num>, <num\_chars>, <new\_text>) | REPLACE replaces part of a text string, based on the number of characters you specify, with a different text string. |  |
| TOPN  TOPN(<n\_value>, <table>, <orderBy\_expression>, [<order>[,<orderBy\_expression>, [<order>)  A table with the top N rows of table or an empty table if n\_value is 0 (zero) or less. Rows are not necessarily sorted in any particular order. | Returns the top N rows of the specified table. |  |
| Summarize(table,columns,,,, name,exp,name,exp) | Returns a summary table for the requested totals over a set of groups. |  |

SUMMARIZE(ResellerSales\_USD

, DateTime[CalendarYear]

, ProductCategory[ProductCategoryName]

, "Sales Amount (USD)", SUM(ResellerSales\_USD[SalesAmount\_USD])

, "Discount Amount (USD)", SUM(ResellerSales\_USD[DiscountAmount]))

Data Role: Grouping Type,Measure

**Power BI visuals Gallery**

(.pbiviz)

**Power BI (embedded)**

**Module 9**

**Mobile App**

**Windows 10 App/Phone/iOS**

**(**Explore,Report Gallery,Search,Annotating,Invite,

Edit Phone Layout on Web

Dashboards in MyWorkSpace Area,Recent dashboards from other groups are cached

**Platform Specific**

**Windows(**FullScreen,Pin Tile,Dashboard to Start)

**iOS(Alert)**

**DAX**

US Setting(comma)

UK Setting (Semi colon)

**Power BI embedded**

Embedding for your organization and embedding for your customers. (Two Scenarios)

## Organization

## Embedding for your organization allows you to extend the Power BI service. This requires that the end user of your application sign into the Power BI service when you want to view your content. Once someone in your organization signs in, they will only have access to dashboards and reports that have been shared with them in the Power BI service.

## (Integrate Dashboard,Tile,Report into an App) Limitations

* The end users who access the embedded dashboards must have a Power BI account and have access to the dashboard. Either they own the dashboard or the dashboard was shared with the user.
* Currently Q&A is not supported in embedded dashboards.
* As a temporary limitation, when sharing a dashboard with security groups, user have to first access the dashboards in PowerBI.com before they can see it embedded.

## Customers

Embedding for your customers provides the ability to embed dashboards and reports to users t**hat don't have an account for Power BI**

At least **one Power BI Pro account** is needed. The Power BI Pro account will act as a master account for your application. Think of this as a proxy account. The Power BI Pro account also allows you to generate embed tokens that provide access to dashboards and reports within the Power BI service.

# **Use row-level security with Power BI embedded content**

**Users are authenticated and authorized by your application and embed tokens are used to grant that user access to a specific Power BI Embedded report.**

For RLS to work, you’ll need to pass some additional context as part of your embed token in the form of identities. This is done by way [GenerateToken](https://msdn.microsoft.com/library/mt784614.aspx) API.

* **username (mandatory)** – This is a string that can be used to help identify the user when applying RLS rules. Only a single user can be listed.
* **roles (mandatory)** – A string containing the roles to select when applying Row Level Security rules. If passing more than one role, they should be passed as a string array.
* **dataset (mandatory)** – The dataset that is applicable for the report you are embedding. Only one dataset can be provided in the list of datasets. Support for multiple datasets will be supported for dashboard embedding in the future.

The [GenerateToken](https://msdn.microsoft.com/library/mt784614.aspx) API accepts a list of identities with indication of the relevant datasets. Currently only one identity can be provided.

**PowerBI Embedded permissions**

Power BI permissions give an application the ability to take certain actions on a user's behalf. All permissions must be approved by a user in order to be valid.

| Display Name | Scope Value |
| --- | --- |
| View all Datasets | Dataset.Read.All |
| Read and Write all Datasets | Dataset.ReadWrite.All |
| Add data to a user's dataset (preview) | Data.Alter\_Any |
| Create content (preview) | Content.Create |
| View users Groups | Group.Read |
| View all Groups | Group.Read.All |
| View all Dashboards (preview) | Dashboard.Read.All |
| View all Reports (preview) | Report.Read.All |
| Read and write all Reports | Report.ReadWrite.All |
|  |  |

**Power BI limitations of dataset size**

Free and Pro users have max 10 gb.

App workspaces with max 10 gb storage each(your own as well as shared datasets)

* Excel ranges pinned to dashboard.
* Reporting Services on-premises visualizations pinned to a Power BI dashboard.
* Uploaded images.

Dataset Limits

1 gb for dataset (import mode)

250 mb for excel.

Data Model and Limits

XLS,PBIX are containers

250 mb for data model

10 mb for non data model

**10. PowerBI free vs Pro**

The main difference between a Free or Pro user is centered **around sharing and collaboration**. Only Pro users can publish content to app workspaces**, consume apps without Premium capacity**, share dashboards and subscribe to dashboards and reports.

**If an app is published, and the app workspace it is for is assigned to Premium capacity, Free users can consume those apps**.

**Connect to 70+ data sources,** **Publish to Web,** **Export to PowerPoint, Excel, CSV (In Both)**

Apps, Email subscriptions, Embed APIs and controls(pro)

**Collaboration(**App workspaces, Analyze in Excel, analyze in Power BI Desktop**) (pro)**

**PowerBI Premium (Addon to Pro)(Not for specific users)**

**Resources dedicated to you.(P1,P2,P3 capacity nodes**). (Diamond Workspace)

Buy it from Office 365 Admin (subscrptions).

Move Workspace to premium.

Add admins of Nodes(Premium Settings)

Assign a user to Capacity node inside Admin Portal.

Add users,groups,entire org to assign workspaces to premium.

**Large Dataset Size**(>1 Gb)

Premium(dedicated) vs shared capacity model(workload shared by users in diff organization)

Good for **PowerBi embed performance**.

**Apps**(if workspace backed by premium, share it with free users)

1. Items within a Premium capacity
   * Accessing app workspaces (as members or admins) and publishing apps requires a Power BI Pro license.
   * App readers can be Power BI Pro or free users.
   * Sharing requires a Power BI Pro license but recipients can be Power BI Pro or free users.
   * REST APIs for embedding utilize a service account, with a Power BI Pro license, rather than a user.
2. My workspace in Shared capacity
   * Sharing requires a Pro license. Recipients also need Pro licenses.
3. App workspaces in Shared capacity
   * Any app usage requires Pro licenses

**Power BI Premium includes the right to run Power BI Report Server on-premises.**

**12. Report Server**

* Scheduled data refresh is currently not available for reports using imported data.
* DirectQuery data connections are not currently supported.
* Scale-out environments are not currently supported.
* Reports must be smaller than 50 MB in size.

Power BI Report Server reports don’t support:

* R visuals
* ArcGIS maps
* Breadcrumbs

For mobile:

* These 3 plus Custom visuals and Geofiltering

Create,deploy,manage reports,

Advantages:

Modern Web Portal

PowerBi reports

Mobile reports

Paginated Reports

**14. Data Classification**

Dashboard Data Classifcation tags in Admin Portal->> tenant settings , switch it on and add. Then dashboard settings choose the type, it is shown in tag in top of dashboard.

**16. Which visuals in which scenario?**

(<https://powerbi.microsoft.com/en-us/documentation/powerbi-service-visualization-best-practices/>)

Alignment, order, and proximity . Look and feel is important but always look at requirements first.

1. Line charts (Data Over time)(Compare categories) (Set start,end values)
2. Bar/Column(Same value over diff categories)
3. Stacked Bar/Column (Overall value/trend)
4. 100 % stacked chart(When percentage value of categories)
5. Clustered Bar/Column
6. Combo Charts(Compare two things,remember same range, same X axis, two y axis)
7. Scatter Charts(2 var) or Bubble(3 var,X,Y,size)
8. Tree Map charts(Some category has higher value than others)

Tree maps can be very useful for giving a good overview of the relative size of different components that make up a whole -- especially when you can group them by categories.

1. Pie/Donut
2. KPI (KPIs show the value, status, goal, variance from the goal and trend in the same amount of space. The green coloring turns red if the target isn’t being met and can be yellow if some intermediate target is hit. It’s much simpler to read and interpret than the gauge.)
3. Gauge (Radial gauges seem like a good visual for indicating performance against a target, )
4. Waterfall Chart(Read it)

**17. Relationships PowerBI**

Can Autodetect but sometimes it is necessary to create.These are also auto detected but you should check once.

Type:

1. Many to One
2. One to Many
3. One to One

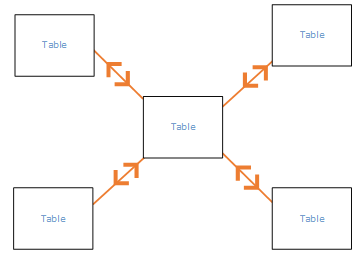
Only once active relationship between two tables at a time.

There can be many to one relationships between same tables. Go to options and mark the proper active one.

**Cross filtering direction**

1. **Both**

Most widely used. When there is star schema or one table surrounded by many lookup tables, this should be used.



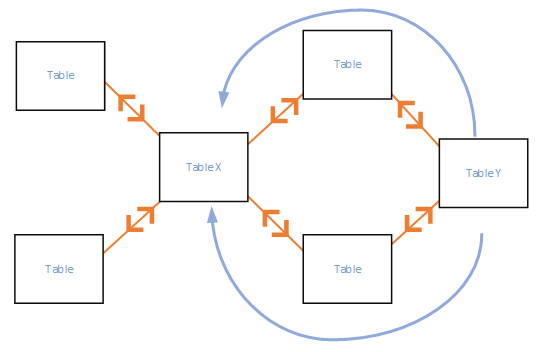
1. **Single**

This means that filtering choices in connected tables work on the table where values are being aggregated.

This defines the table in connected tables where aggregation of values is going on.

If you **import a Power Pivot in Excel 2013** or earlier data model, all relationships will have a **single direction.** Confusion if both directions: Table X filtered on Table Y basis which direction to go.This will create ambiguities(Both won’t be allowed), to solve this ,

1. remove one active relationship /mark as inactive
2. Duplicate the table with new name and add relationship



**18. PowerBI Admin Portal**

Azure Active Directory (Global Admin)/Office 365(Global Admin)/Power BI service administrator

has access to portal.

Global Admin can change the role of user by using office 365 admin portal or Powershell(azure active directory using ObjectId for role and users called RefObjectId).

1. Usage Metrics(Count of Dashboards,Reports,datasets

Most active groups,users,

Most used dashboards,Most consumed packages)

1. Users(Office 365 admin portal(can’t access it if you are Power BI Service Admin)
2. Tenant Settings (

Some features allowed for subset or entire org,

Print Dashboards,Publsih to powerpoint,create content packs(can disabled for subset)

Publish to Web,Share, export(or analyze in excel) (Entire org settings))

1. Audit Logs(Security & Compliance Center Logs)( can’t access it if you are Power BI Service Admin)
2. Premium Settings(Capacity Admin can see this premium capacity settings)

**M Language**

1. **Remove Columns**

= Table.RemoveColumns(#"Reordered Columns",{"Double the Hours"})

1. **Reorder Columns**

= Table.ReorderColumns(#"Added Custom",{"Ticket", "SubmittedBy", "Hours", "Project", "Double the Hours", "DateSubmit"})

1. **Add Columns**

Table.AddColumn(#"Changed Type", "Double the Hours", each [Hours]\*2)

1. **Split Columns**

= Table.SplitColumn(#"Removed Columns", "SubmittedBy", Splitter.SplitTextByEachDelimiter({","}, QuoteStyle.Csv, false), {"SubmittedBy.1", "SubmittedBy.2"})

1. **Change Data Types**

= Table.TransformColumnTypes

(Source,

{{"Ticket", Int64.Type},

{"SubmittedBy", type text},

{"Hours", Int64.Type},

{"Project", type text},

{"DateSubmit", type date}})

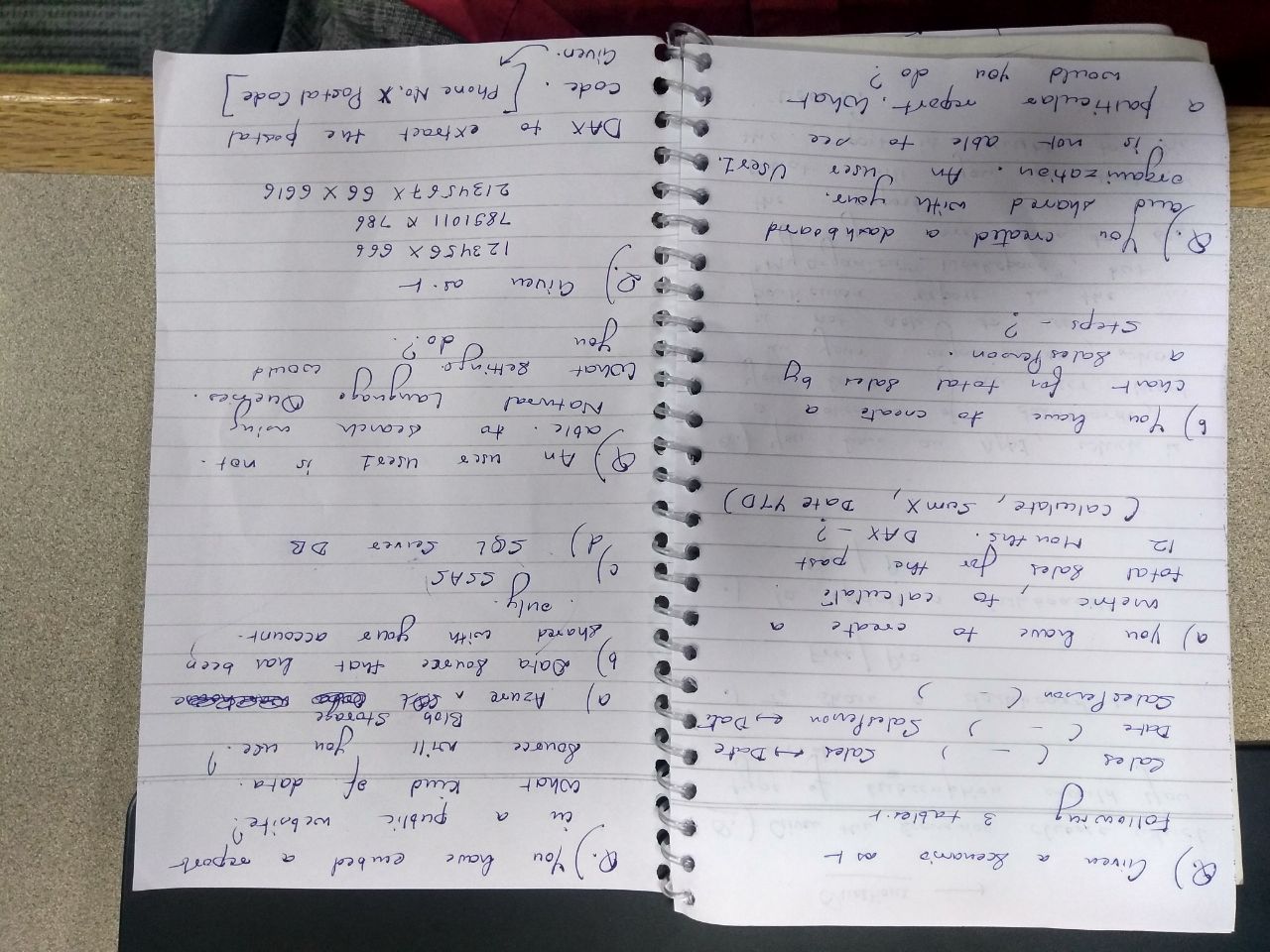
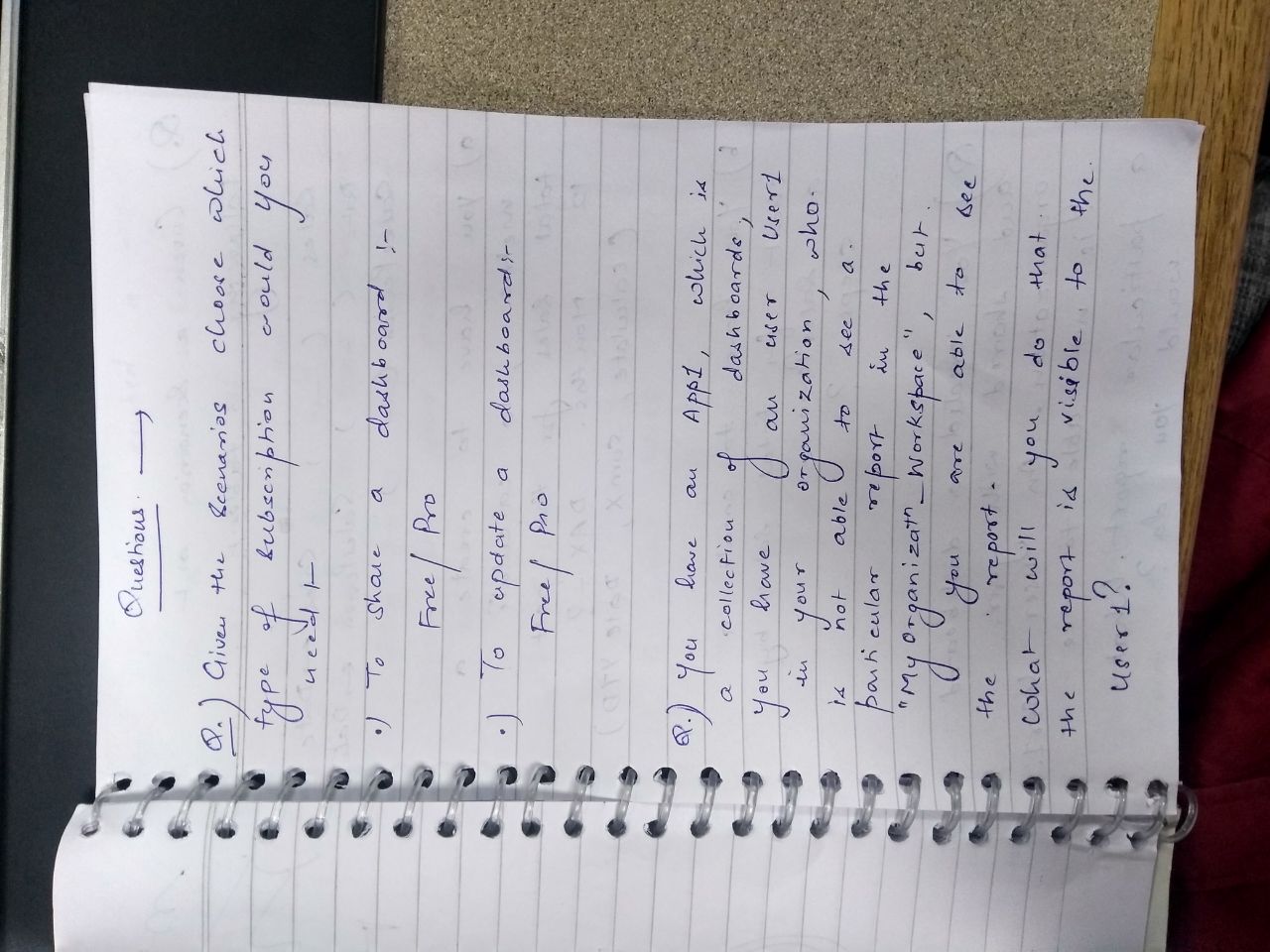
**Q&A**

Q&A only provides results about the data in Power BI.

It relies on the names of the tables, columns, and calculated fields in the underlying dataset.

Dataset 🡪 add featured questions

**Questions:**

****

