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Power BI Training: Culminating Exercise

Solutions Manual

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Culminating Exercise

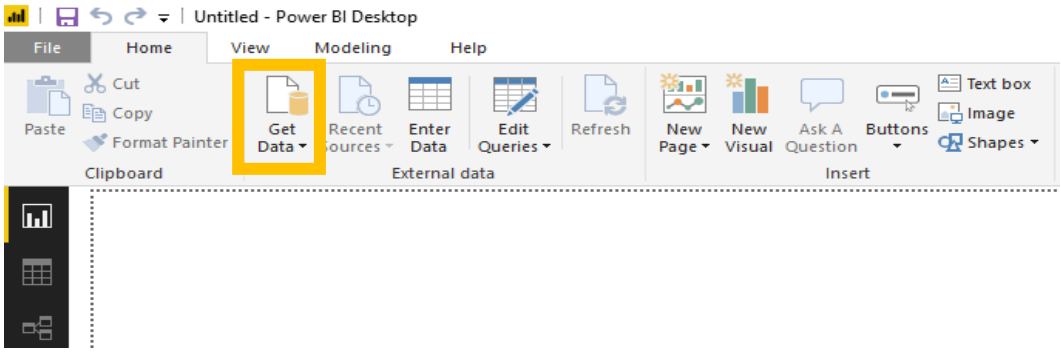
These solutions serve as a general guide or reference to the functionalities and basics that will be used in creating the exercise to produce the required charts

Extract, Transform, Load

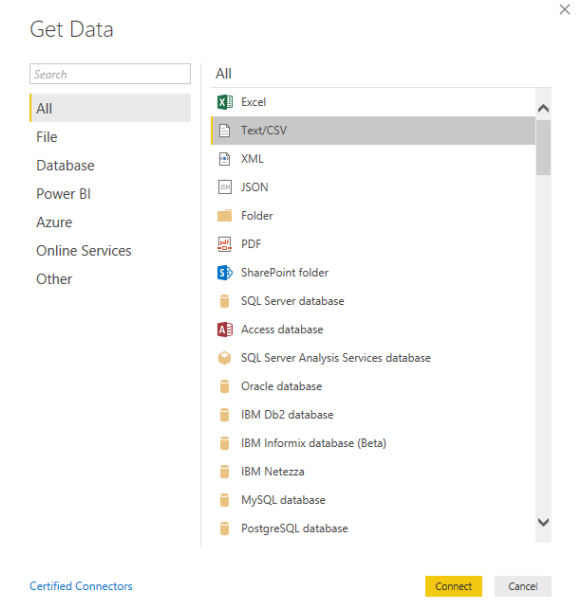
LOADING DATA

In creating reports in PowerBI, loading the data is the first step which serves as your source

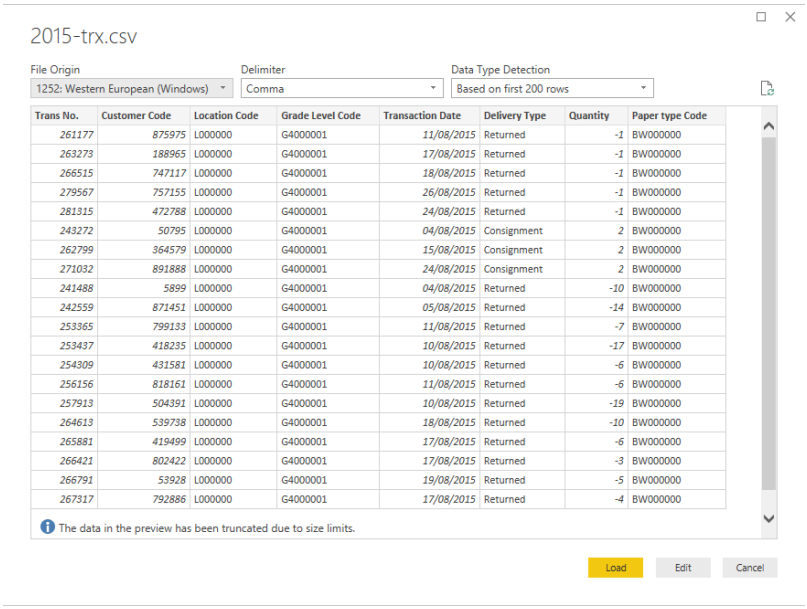
1. Click on **Get Data** in the upper section of the interface under the Home tab



2. Select the Text/CSV data source type in the dialog and then click **Connect**.



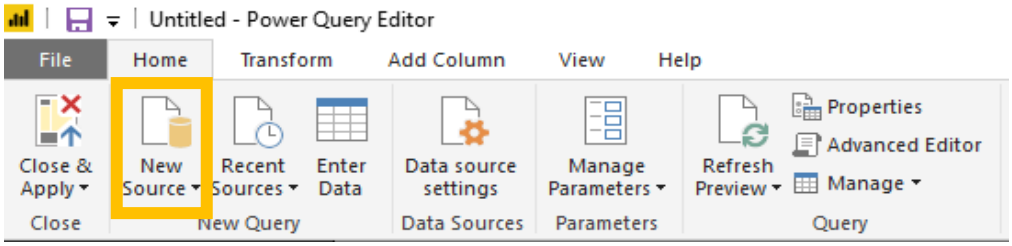
3. Select which tables to add using the *Navigator* pane by clicking on the check beside its name and then click **Load**.



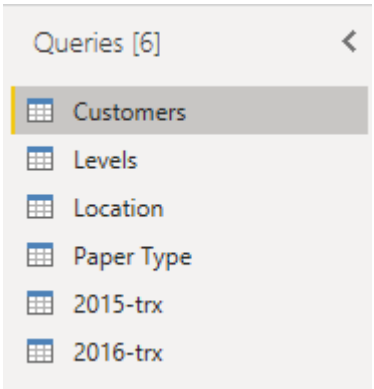
- To process the datasets, click **Edit**.
- Then, refer to the next section on *Editing Queries*.

EDITING QUERIES

1. Load all the datasets from the folder by clicking **New Source**.
    - You need to load the datasets one by one using the same procedure by selecting each of them



2. There should be 6 data models extracted from your sources:

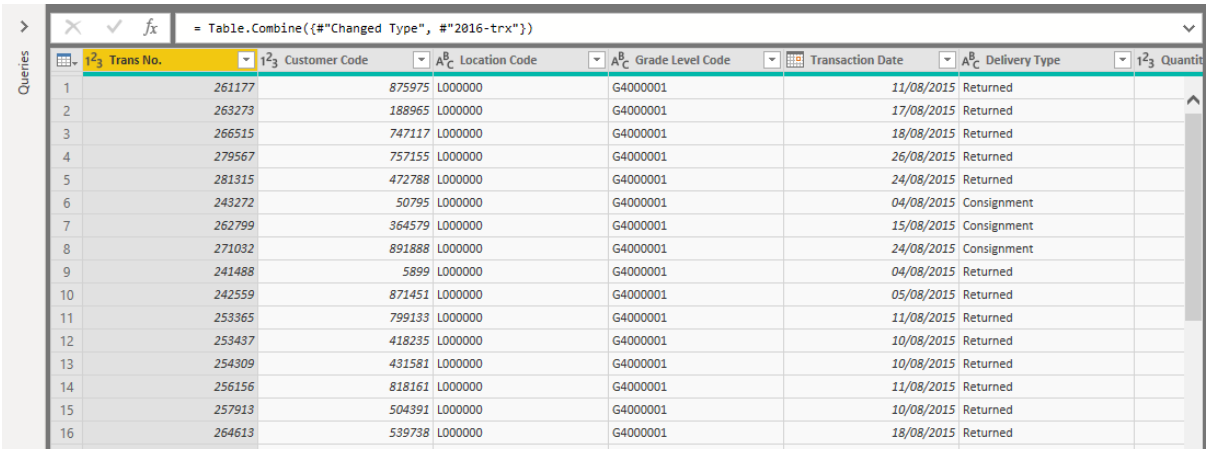


PROCESSING THE DATA

Joining the two transactions table (2015 & 2016)

1. Check and validate the column fields of both tables

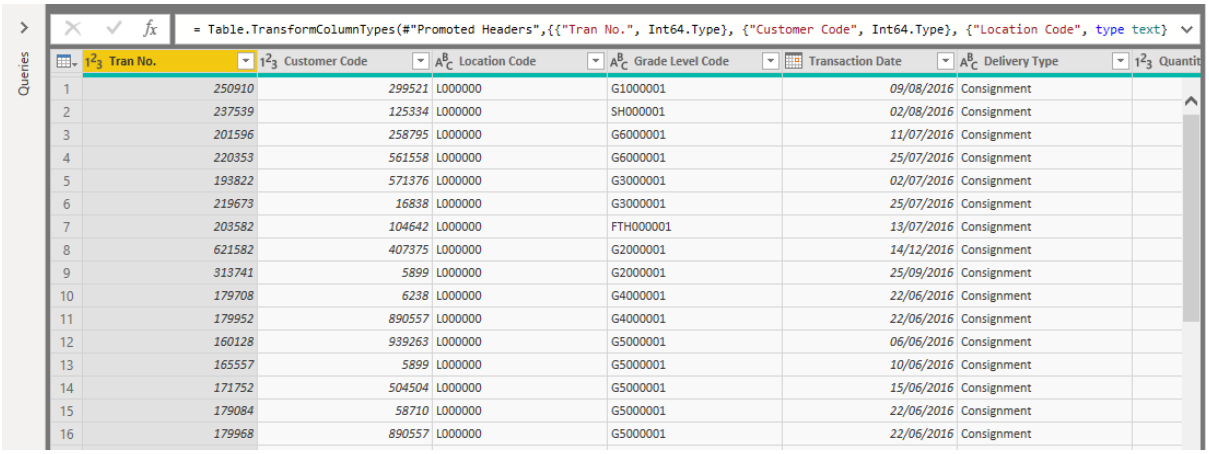
2015-trx



```
= Table.Combine({#"Changed Type", #"2016-trx"})
```

	Trans No.	Customer Code	Location Code	Grade Level Code	Transaction Date	Delivery Type	Quantit
1	261177	875975	L000000	G4000001	11/08/2015	Returned	
2	263273	188965	L000000	G4000001	17/08/2015	Returned	
3	266515	747117	L000000	G4000001	18/08/2015	Returned	
4	279567	757155	L000000	G4000001	26/08/2015	Returned	
5	281315	472788	L000000	G4000001	24/08/2015	Returned	
6	243272	50795	L000000	G4000001	04/08/2015	Consignment	
7	262799	364579	L000000	G4000001	15/08/2015	Consignment	
8	271032	891888	L000000	G4000001	24/08/2015	Consignment	
9	241488	5899	L000000	G4000001	04/08/2015	Returned	
10	242559	871451	L000000	G4000001	05/08/2015	Returned	
11	253365	799133	L000000	G4000001	11/08/2015	Returned	
12	253437	418235	L000000	G4000001	10/08/2015	Returned	
13	254309	431581	L000000	G4000001	10/08/2015	Returned	
14	256156	818161	L000000	G4000001	11/08/2015	Returned	
15	257913	504391	L000000	G4000001	10/08/2015	Returned	
16	264613	539738	L000000	G4000001	18/08/2015	Returned	

2016-trx



```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Tran No.", Int64.Type}, {"Customer Code", Int64.Type}, {"Location Code", type text}
```

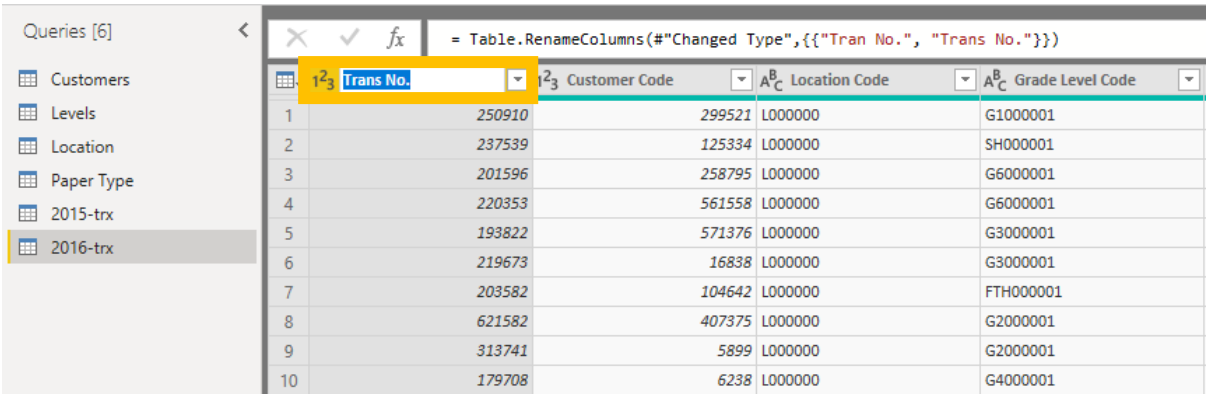
	Tran No.	Customer Code	Location Code	Grade Level Code	Transaction Date	Delivery Type	Quantit
1	250910	299521	L000000	G1000001	09/08/2016	Consignment	
2	237539	125334	L000000	SH000001	02/08/2016	Consignment	
3	201596	258795	L000000	G6000001	11/07/2016	Consignment	
4	220353	561558	L000000	G6000001	25/07/2016	Consignment	
5	193822	571376	L000000	G3000001	02/07/2016	Consignment	
6	219673	16838	L000000	G3000001	25/07/2016	Consignment	
7	203582	104642	L000000	FTH000001	13/07/2016	Consignment	
8	621582	407375	L000000	G2000001	14/12/2016	Consignment	
9	313741	5899	L000000	G2000001	25/09/2016	Consignment	
10	179708	6238	L000000	G4000001	22/06/2016	Consignment	
11	179952	890557	L000000	G4000001	22/06/2016	Consignment	
12	160128	939263	L000000	G5000001	06/06/2016	Consignment	
13	165557	5899	L000000	G5000001	10/06/2016	Consignment	
14	171752	504504	L000000	G5000001	15/06/2016	Consignment	
15	179084	58710	L000000	G5000001	22/06/2016	Consignment	
16	179968	890557	L000000	G5000001	22/06/2016	Consignment	

   a. Notice that the column field **Trans No.** for 2015 and **Tran No.** for 2016 are not equal

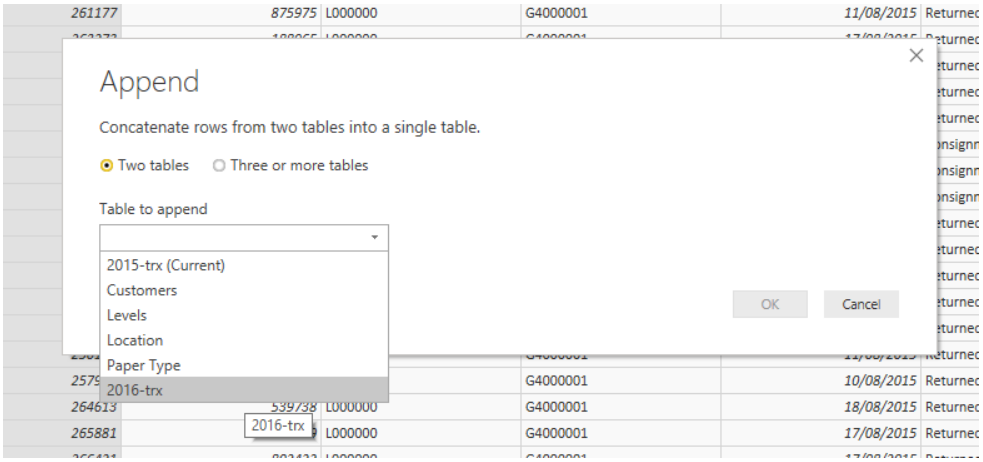
IMPORTANT:

When joining two tables, make sure that the column header names of the two tables are the same in order for you to avoid creating duplicate columns

2. Rename the column header **Tran No.** → **Trans No.** in the 2016-trx data model



3. In the Home tab, click Append Queries
    a. A window will pop-up asking you how many tables to append.
    b. Select two tables
    c. Select **2016-trx**
    d. Click OK.

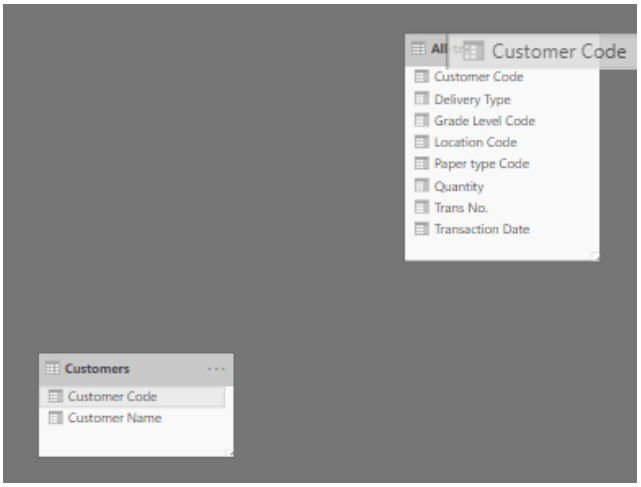


4. Rename the table **2015-trx** into **All-trx** since this contains both transaction tables already.

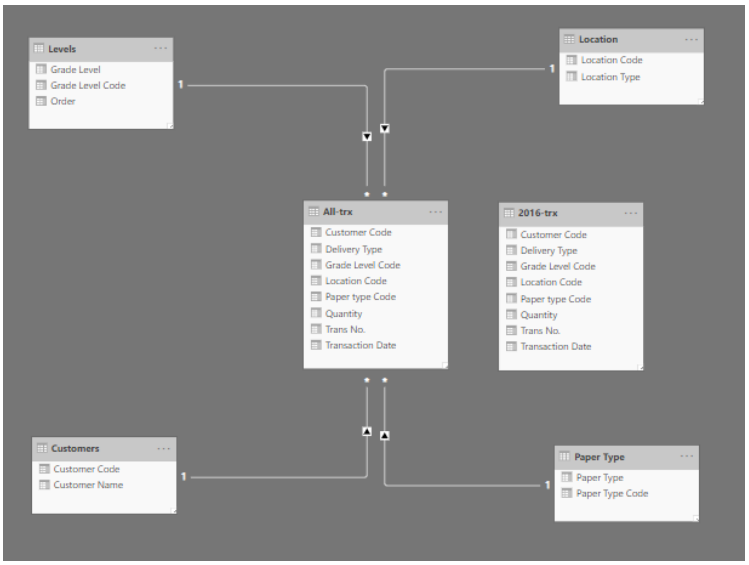
DATA RELATIONSHIPS

Adding Data Relationships

1. Go to the **Relationships View**.
2. Power BI automatically detects relationship between the tables if there are matching column names from them and detects the cardinality.
3. Validate and check for fields that are not set. Drag the column names from the reference table into the transaction table (e.g. Customer Name from the Customers table into Customer Name in the Transaction table)
    - For the transaction table, we'll use the **2015-trx** table since it's the appended table that contains the **2016-trx** as well.



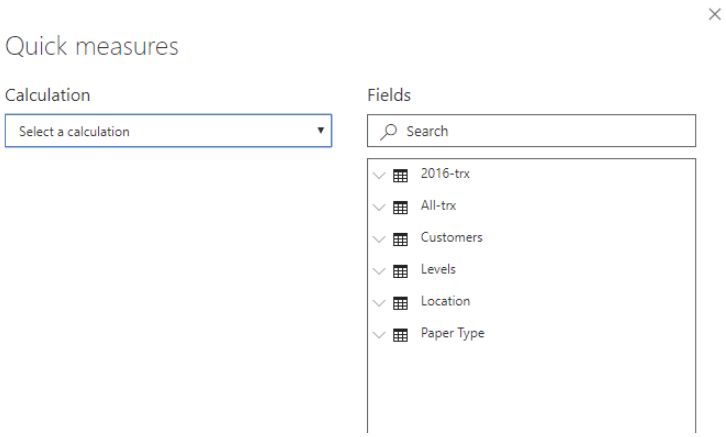
4. Repeat the same steps in establishing relationships for the **Levels, Location,** and **Paper Type** by dragging the column fields.



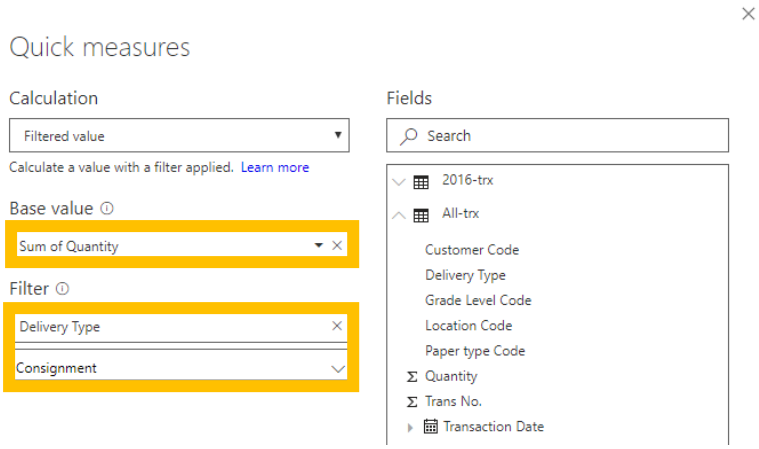
Task #1

CREATING TOTAL CONSIGNMENT OF THE PUBLISHING HOUSE

1. Right-click on the All-trx in the Fields pane
2. Select New Quick Measure
3. In the Quick Measures window, select the calculation “Filtered value”



4. Expand the **All-trx** table
5. Drag the column field **Quantity** in the Base Value
6. Drag the column field **Delivery Type** in the Filter
7. Select the value **Consignment**



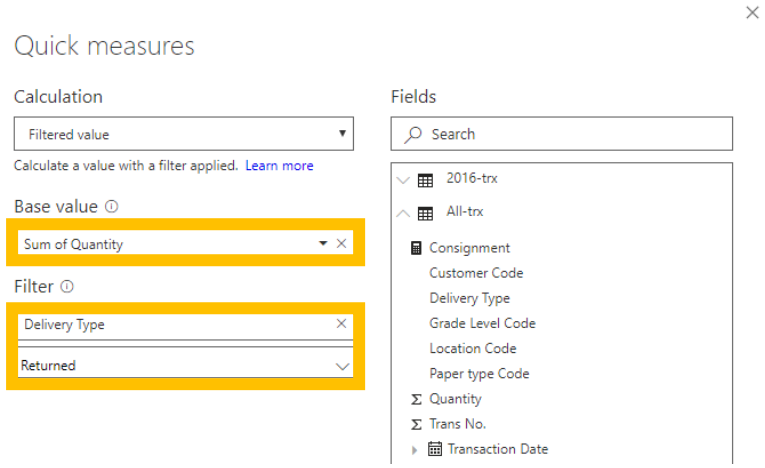
8. Click **OK**.
9. Drag the newly created measure into the reports page and select the card visual

CREATING THE PERFORMANCE OF CONSIGNMENT RATE

A performance consignment requires two filtered metrics namely: Consignment and Returned. We also need to set the target percentage for consignment which is 80%

1. Right-click on the All-trx in the Fields pane.
2. Select New quick measure

3. Expand the **All-trx** table
4. Drag the column field **Quantity** in the Base Value
5. Drag the column field **Delivery Type** in the Filter
6. Select the value **Returned**



7. Click **OK**.
8. Click on the measure newly created measure **Returned**. Change the formula by adding an ABS syntax outside which looks like this:

```
Returned =
ABS(CALCULATE(
    SUM('All-trx'[Quantity]),
    'All-trx'[Delivery Type] IN { "Returned" }
))
```

9. On the Field Properties, right-click **All-trx** and select New Measure
10. Type the formula and hit enter:

$$\textbf{\% Performance} = 1 - \frac{Returned}{Consignment}$$

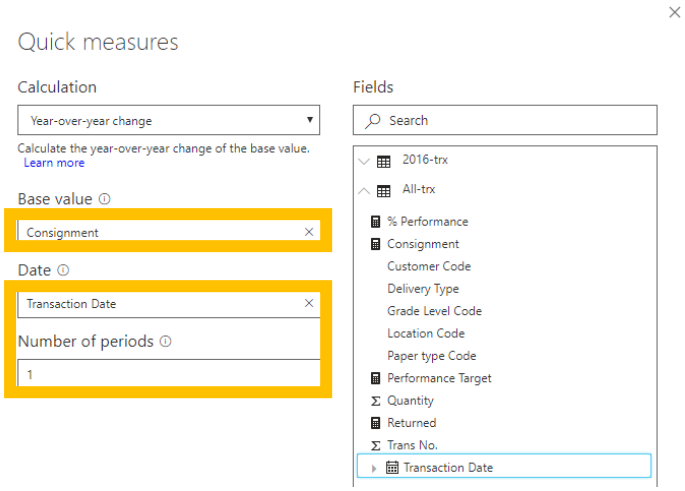
11. Right-click **All-trx** in the Field Properties and select New Measure
12. Type the formula and hit enter:

$$\textbf{Performance Target} = 0.80$$

13. Select the gauge chart in the Visualizations pane
14. Drag the **% Performance** into the Value field and the **Performance Target** into the Target value field

CREATING YEAR-TO-YEAR % GROWTH

1. Right-click All-trx and select New quick measure
2. Under Time Intelligence, select **Year-over-Year change**
3. Expand All-trx in the field section on the right
4. Drag Consignment into the Base Value
5. Drag Transaction Date into the Date Field



6. Click **OK**.

CREATING CONSIGNMENT QUANTITY PER GRADE LEVEL

1. Click on the column stacked bar chart
2. In the Grade level table, drag **Grade Level** into the Axis field
3. In the All-trx, drag **Consignment** into the Values field

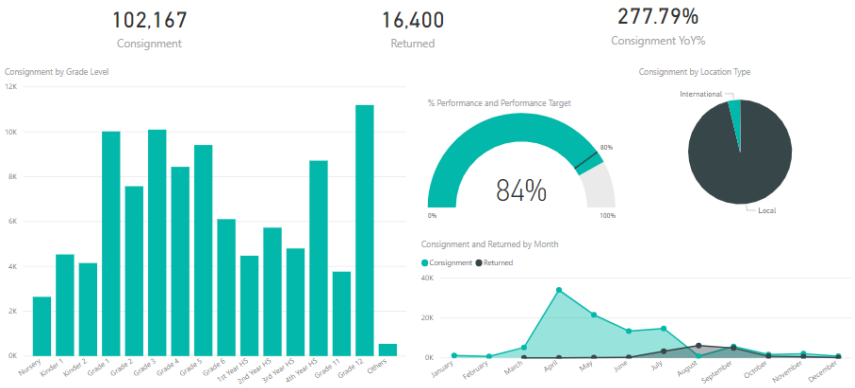
CREATING CONSIGNMENT CONTRIBUTION FOR INTERNATIONAL

1. Click on the Pie Chart
2. Drag **Consignment** in the Values field
3. Drag **Location Type** found in the Location data model

CREATING SEASONALITY TREND OF CONSIGNMENT AND RETURNED

4. Click on the Area Chart
5. Drag **Consignment** in the Values field
6. Drag **Returned** in the Values field under the Consignment field
7. Click the **Transaction Date** in the All-trx data model
    a. Expand the Transaction Date field
    b. Drag the Month field into the Axis field in the Visualization pane

OUTPUT



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Task #2

PERCENTAGE OF COLORED/BLACK AND WHITE BOOKS BY LEVEL

1. Click on the 100% stacked column chart
2. Drag **Grade Level** field from the Grade level data model into the Axis field
3. Drag **Paper Type** field from the Paper Type data model into the Axis field
4. Drag Consignment field from the 2015 Transactions into the Value field

QUADRANT CHART ON THE GRADE LEVEL PERFORMANCE

1. Click the Scatter Plot chart
2. Drag **Grade Level** from the Grade Level data model into the Axis field
3. Drag **Consignment** into the X-axis
4. Drag **Returned** into the Y-axis
5. To create quadrant lines, go to the Analytics pane
    a. Go to Average Line
    b. Click +Add
    c. Select the Consignment for the Measure
    d. Click +Add again
    e. Select the Returned for the second average line

PERCENTAGE OF COLOR/BLACK AND WHITE BOOKS

1. Click the Donut chart.
2. Drag **Paper Type** from the Paper Type data model into the Legend field.
3. Drag **Consignment** into the Value field.

OUTPUT