

LESSON 4. DATA MODELLING BASICS

Formative Assessment No. 2 - Laboratory

Direction:

1. Please find a partner as this will be a pair activity.
2. Create a copy of this file and have your answers pasted here.
3. Submit this file in the designated submission bin in pdf format with title format: Surname of Member 1_ Surname of Member 2_ FA4_Lab

Name of Group Members:

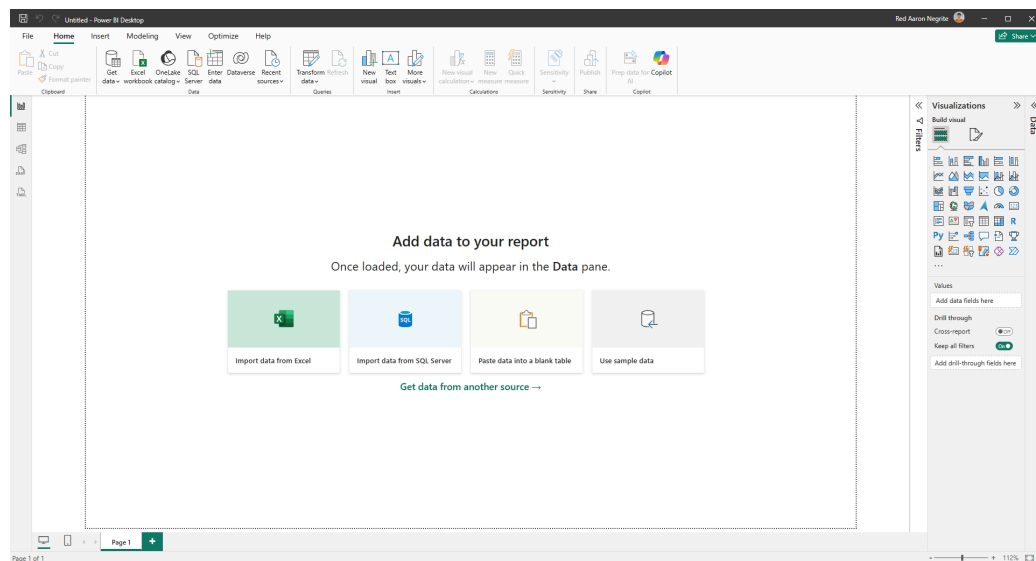
Alava, Enki Prince A.

Negrite, Red Aaron P.

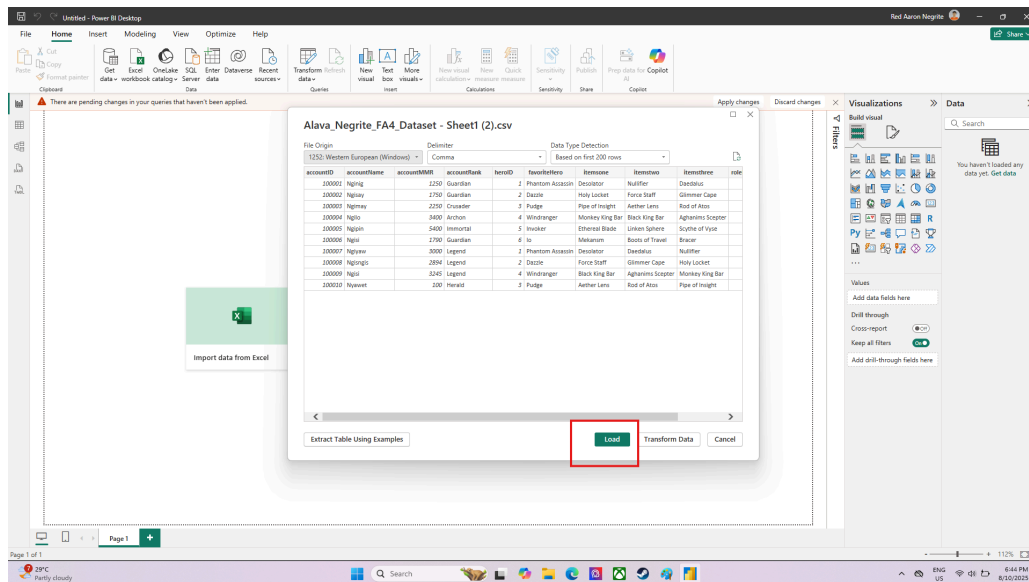
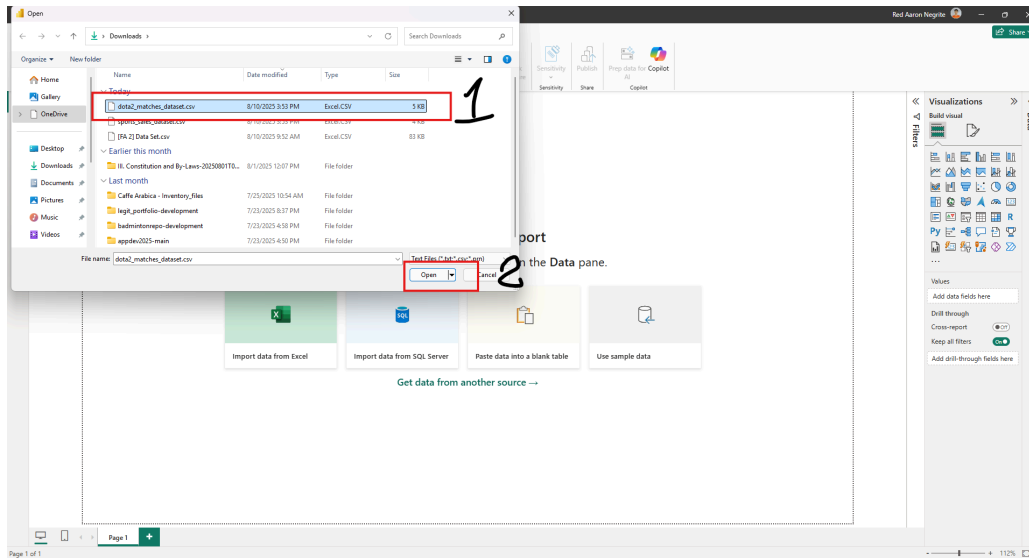
Section: BSIT 3-1

Perform the following (please screenshot your **step by step** work)

1. Create a Power BI File



2. Upload a data set (to be created by your group, use mock data generators), the data set must have multiple columns.



NOTE: In this section, we decided to generate our own CSV file to be uploaded in Power BI Desktop Application. You may access our CSV file in our GitHub Repository

view10cm.com/PowerBIDatasetsOfficial

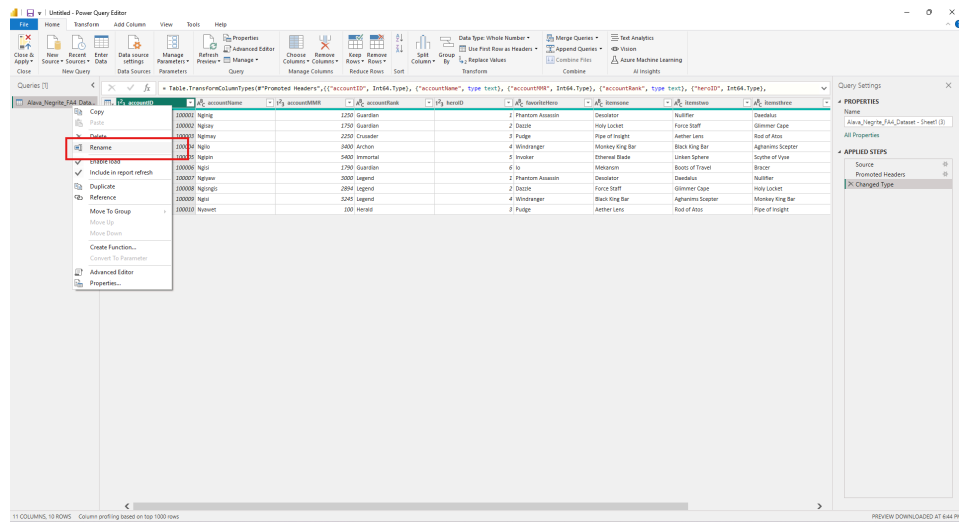
3. Create a Snowflake Schema of a flat data set that you have uploaded

To create the Snowflake Schema of the Flat Dataset that has uploaded:

The screenshot shows the Microsoft Power BI Desktop interface. The 'Transform data' button in the 'Data' pane is highlighted with a red box and a '1'. The 'Data source settings' dropdown is highlighted with a red box and a '2'. The main canvas shows a table with 10 columns and 10 rows of data.

accountID	accountName	accountMkt	accountBank	brand	brandName	brandType	brandID	brandType	brandID
1	100001	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
2	100002	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
3	100003	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
4	100004	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
5	100005	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
6	100006	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
7	100007	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
8	100008	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
9	100009	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco
10	100010	Ngine	1700	Guardian	2	Disco	1	Phantom Assassin	Disco

4. Using Power Query, create separate tables (factual table, dimensions, and sub dimensions)



NOTE: In this section, we renamed my CSV file into FactOverall to emphasize that the first file is a factual table

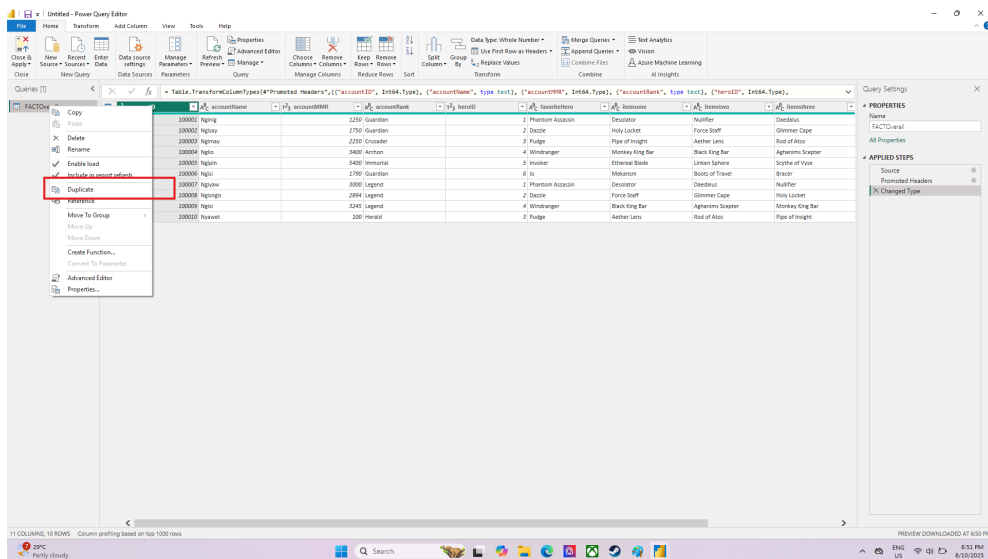


Table.TransformColumnTypes(*Promoted Headers*,([{"accountID", Int64.Type}, {"accountName", type text}, {"accountMMR", Int64.Type}, {"accountRank", type text}, {"heroID", Int64.Type}, {"heroRank", Int64.Type}, {"heroName", type text}, {"heroType", Int64.Type}, {"heroLevel", Int64.Type}, {"heroClass", Int64.Type}, {"heroSkill", Int64.Type}])

accountID	accountName	accountMMR	accountRank	heroID	heroRank	heroName	heroType	heroLevel	heroClass	heroSkill
1000001	Ngine	2250	Guardian	1	Phantom Assassin	Overseer	Butterfly	Overseer	Overseer	Overseer
1000002	Ngine	2750	Guardian	2	Decide	Holy Locket	Force Staff	Glimmer Cape	Glimmer Cape	Glimmer Cape
1000003	Ngine	2250	Overseer	3	Pudge	Pipe of Insight	Aether Lens	Rod of Atos	Rod of Atos	Rod of Atos
1000004	Ngine	2400	Anchor	4	Windranger	Monkey King Bar	Black King Bar	Agahornis Scepter	Agahornis Scepter	Agahornis Scepter
1000005	Ngine	2400	Immortal	5	Invoker	Ethereal Blade	Linken Sphere	Scythe of Viper	Scythe of Viper	Scythe of Viper
1000006	Ngine	2750	Guardian	6	Io	Maelstrom	Boots of Travel	Bracer	Bracer	Bracer
1000007	Ngine	2000	Legend	7	Phantom Assassin	Overseer	Overseer	Overseer	Overseer	Overseer
1000008	Ngine	2804	Legend	2	Decide	Force Staff	Glimmer Cape	Holy Locket	Holy Locket	Holy Locket
1000009	Ngine	3243	Legend	4	Windranger	Black King Bar	Agahornis Scepter	Monkey King Bar	Monkey King Bar	Monkey King Bar
1000010	Ngine	200	Immortal	3	Pudge	Aether Lens	Rod of Atos	Pipe of Insight	Pipe of Insight	Pipe of Insight

NOTE: Since our Table contains three dimensions, we duplicated the factual table into three

Table.TransformColumnTypes(*Promoted Headers*,([{"accountID", Int64.Type}, {"accountName", type text}, {"accountMMR", Int64.Type}, {"accountRank", type text}, {"heroID", Int64.Type}, {"heroRank", Int64.Type}, {"heroName", type text}, {"heroType", Int64.Type}, {"heroLevel", Int64.Type}, {"heroClass", Int64.Type}, {"heroSkill", Int64.Type}])

accountID	accountName	accountMMR	accountRank	heroID	heroRank	heroName	heroType	heroLevel	heroClass	heroSkill
1000001	Ngine	2250	Guardian	1	Phantom Assassin	Overseer	Butterfly	Overseer	Overseer	Overseer
1000002	Ngine	2750	Guardian	2	Decide	Holy Locket	Force Staff	Glimmer Cape	Glimmer Cape	Glimmer Cape
1000003	Ngine	2250	Overseer	3	Pudge	Pipe of Insight	Aether Lens	Rod of Atos	Rod of Atos	Rod of Atos
1000004	Ngine	2400	Anchor	4	Windranger	Monkey King Bar	Black King Bar	Agahornis Scepter	Agahornis Scepter	Agahornis Scepter
1000005	Ngine	2400	Immortal	5	Invoker	Ethereal Blade	Linken Sphere	Scythe of Viper	Scythe of Viper	Scythe of Viper
1000006	Ngine	2750	Guardian	6	Io	Maelstrom	Boots of Travel	Bracer	Bracer	Bracer
1000007	Ngine	2000	Legend	7	Phantom Assassin	Overseer	Overseer	Overseer	Overseer	Overseer
1000008	Ngine	2804	Legend	2	Decide	Force Staff	Glimmer Cape	Holy Locket	Holy Locket	Holy Locket
1000009	Ngine	3243	Legend	4	Windranger	Black King Bar	Agahornis Scepter	Monkey King Bar	Monkey King Bar	Monkey King Bar
1000010	Ngine	200	Immortal	3	Pudge	Aether Lens	Rod of Atos	Pipe of Insight	Pipe of Insight	Pipe of Insight

NOTE: The duplicated tables are renamed in accordance to our desired dimension name

Factual Table Properties

Factual Table Name: FactOverall
Columns:

- accountID
- heroID
- accountMMR

The screenshot displays the Power Query Editor interface. The main area shows a data preview of the 'FactOverall' table, which has 10 rows and 3 columns: accountID, heroID, and accountMMR. The formula bar at the top shows the query definition: `Table.SelectColumns(*Changed Type*, {"accountID", "heroID", "accountMMR"})`. The right-hand pane shows the 'Query Settings' for 'FactOverall', including the 'APPLIED STEPS' list which contains 'Removed Other Columns'. The bottom status bar indicates '3 COLUMNS, 10 ROWS' and 'Column profiling based on top 1000 rows'.

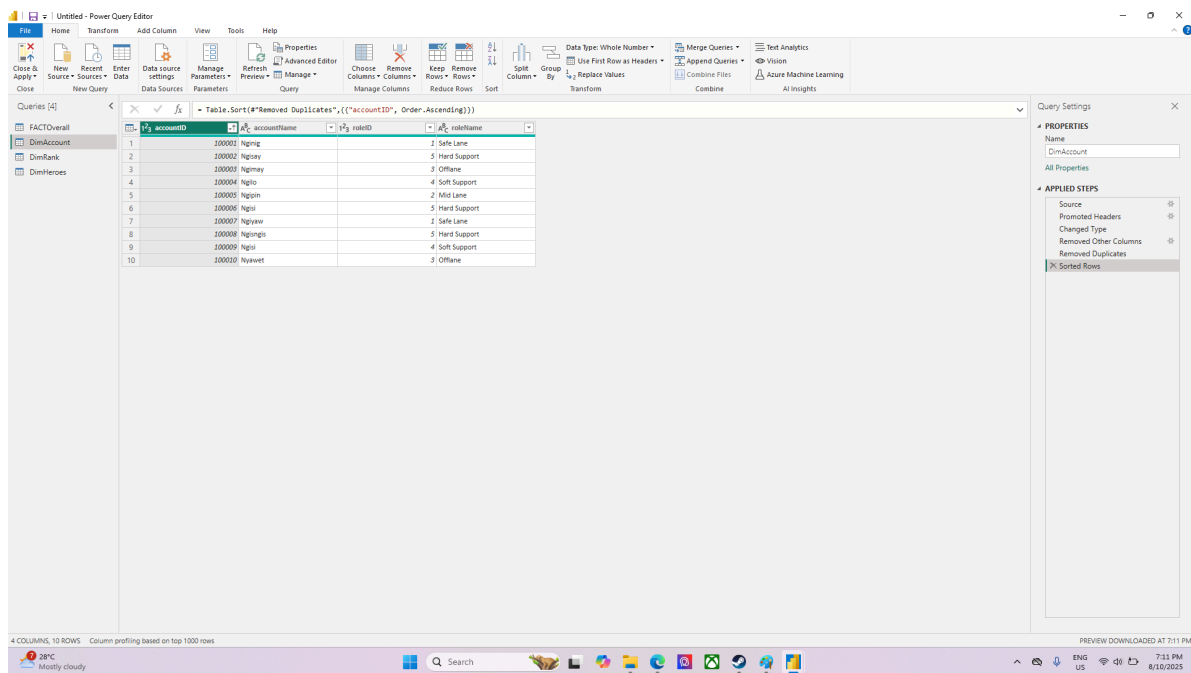
	accountID	heroID	accountMMR
1	100001	1	1250
2	100002	2	1750
3	100003	3	2250
4	100004	4	3400
5	100005	5	5400
6	100006	6	1790
7	100007	1	3000
8	100008	2	2894
9	100009	4	3245
10	100010	3	100

Dimension Properties

Dimension Name: DimAccounts

Columns:

- accountID
- accountName
- roleID
- roleName



The screenshot shows the Power Query Editor interface. The main area displays a table with 10 rows and 4 columns: accountID, accountName, roleID, and roleName. The table is sorted by accountID in ascending order. The right-hand pane shows the 'Query Settings' for 'DimAccounts', with the 'Name' field set to 'DimAccounts'. The 'Applied Steps' list on the right includes 'Source', 'Promoted Headers', 'Changed Type', 'Removed Other Columns', 'Removed Duplicates', and 'Sorted Rows'. The bottom status bar indicates '4 COLUMNS, 10 ROWS' and 'Column profiling based on top 1000 rows'.

accountID	accountName	roleID	roleName
1	Ngini	2	Safe Lane
2	Ngway	5	Hard Support
3	Ngimey	3	Offlane
4	Ngilo	4	Soft Support
5	Ngoin	2	Mid Lane
6	Ngisi	5	Hard Support
7	Ngisye	2	Safe Lane
8	Ngisigi	5	Hard Support
9	Ngisi	4	Soft Support
10	Nyavet	3	Offlane

Dimension Name: DimHeroes

Columns:

- heroID
- favoriteHero
- Itemsone
- Itemstwo
- itemsthree

Power Query Editor - Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Query Settings: Formula Bar, Monospaced, Column distribution, Show whitespace, Column profile, Column quality, Column profile, Always allow, Go to Column, Parameters, Advanced, Query Dependencies

Queries [4]: FACTOverall, DimAccount, DimRank, DimHeroes

Data Preview: Table.Distinct(Removed Other Columns, {"heroID"})

heroID	favoriteItems	Itemsone	Itemstwo	Itemsthree
1	Phantom Assassin	Decolator	Nullifier	Oscillus
2	Dazzle	Holy Locket	Force Staff	Glimmer Cape
3	Pudge	Pipe of Insight	Aether Lens	Rod of Atos
4	Windranger	Monkey King Bar	Black King Bar	Aghanims Scepter
5	Invoker	Ethereal Blade	Linken Sphere	Scythe of Vyse
6	Io	Mekansm	Boots of Travel	Bracer

Query Settings: PROPERTIES (Name: DimHeroes), APPLIED STEPS (Source, Promoted Headers, Changed Type, Removed Other Columns, Removed Duplicates)

5 COLUMNS, 6 ROWS Column profiling based on top 1000 rows

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Search

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Dimension Name: DimRank

Columns:

- accountMMR
- accountRank
- Wins
- loss

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Query Settings

Layout

Formula Bar

Monospaced Column distribution

Show whitespace Column profile

Column quality

Data Preview

Go to Column

Parameters

Advanced Editor

Query Dependencies

Queries [4]

FACTOverall

DimAccount

DimRank

DimHeroes

Table.Distinct(**Removed Other Columns**, ("accountID"))

	accountMMR	accountRank	wins	loss
1	3250	Guardian	250	255
2	2750	Guardian	220	127
3	2250	Crusader	700	427
4	3400	Archon	1500	520
5	3400	Immortal	4857	400
6	1790	Guardian	126	50
7	3000	Legend	3689	1632
8	2894	Legend	3267	2101
9	3245	Legend	2810	1200
10	100	Herald	70	50

Query Settings

PROPERTIES

Name

DimRank

APPLIED STEPS

Source

Promoted Headers

Changed Type

Removed Other Columns

Removed Duplicates

4 COLUMNS, 10 ROWS Column profiling based on top 1000 rows

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NOTE: In this section, it is a must to ascend the primary column into ascending order and to remove duplicated rows

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Query Settings

Close & Apply

Recent

Data source settings

Manage Parameters

Advanced Editor

Refresh

Manage Query

Choose Columns

Remove Columns

Keep Rows

Remove Rows

Sort

Split Column

Group By

Data Type: Whole Number

Use First Row as Headers

Replace Values

Merge Queries

Append Queries

Combine Files

Combine

Text Analytics

Vision

Azure Machine Learning

AI Insights

Queries [4]

FACTOverall

DimAccount

DimRank

DimHeroes

Table.SelectColumns(**Changed Type**, ("accountID", "heroID", "accountMMR"))

	accountID	heroID	accountMMR
1	100001	1	1250
2	100002	2	1750
3	100003	3	2250
4	100004	4	3400
5	100005	5	3400
6	100006	6	1790
7	100007	1	3000
8	100008	2	2894
9	100009	4	3245
10	100010	3	100

Query Settings

PROPERTIES

Name

FACTOverall

APPLIED STEPS

Source

Promoted Headers

Changed Type

Removed Other Columns

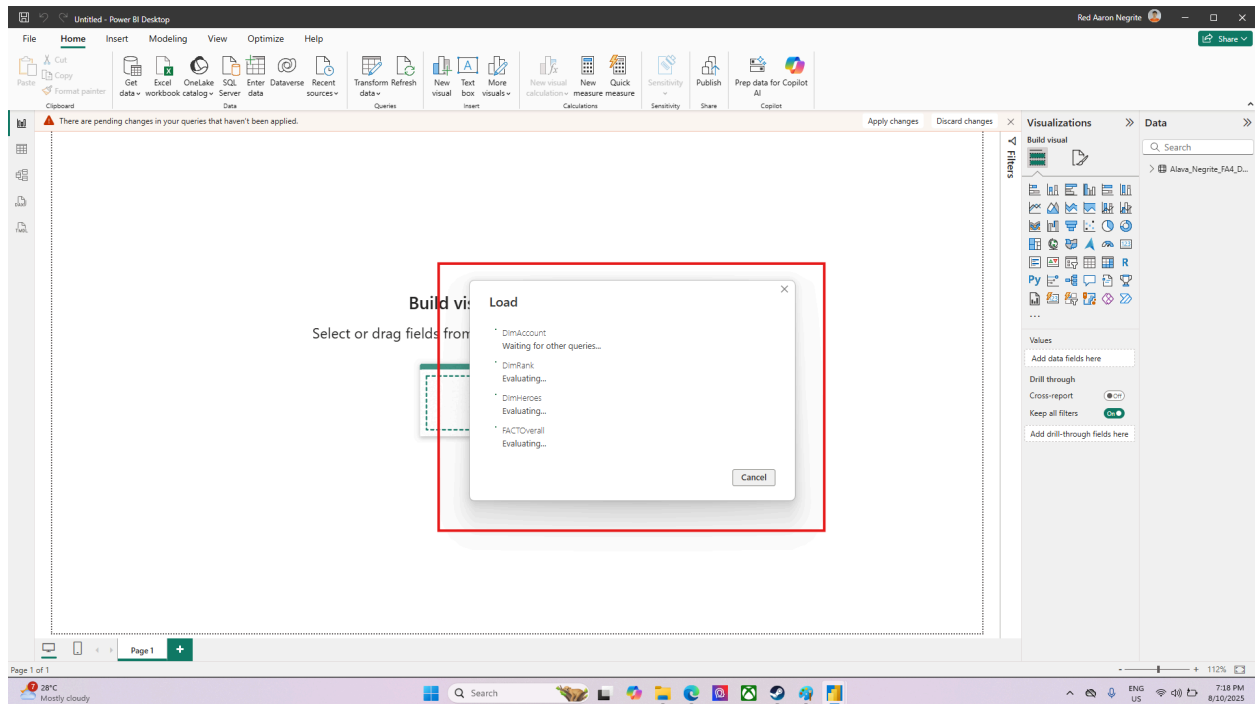
3 COLUMNS, 10 ROWS Column profiling based on top 1000 rows

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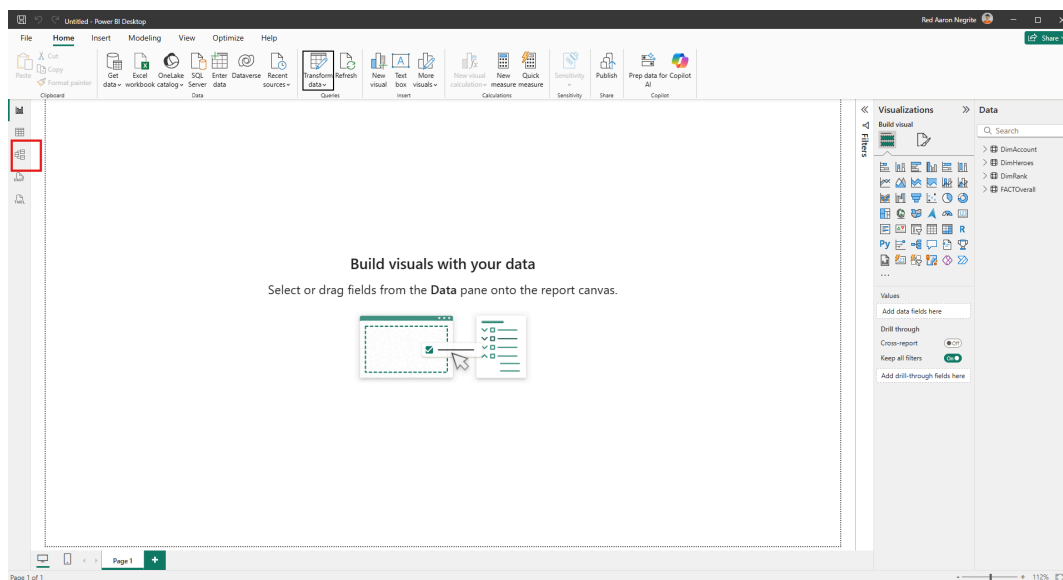
28°C Mostly cloudy

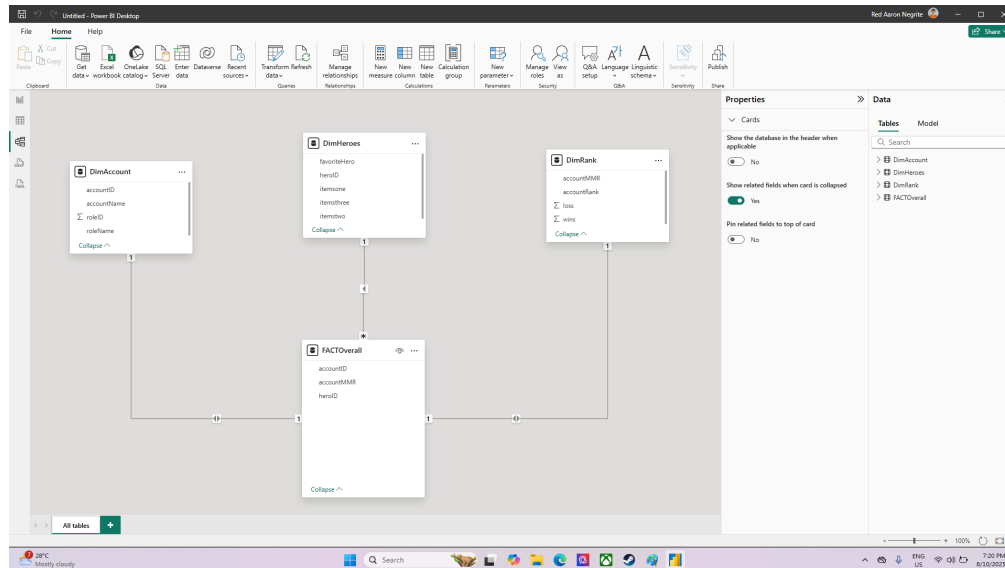
Search

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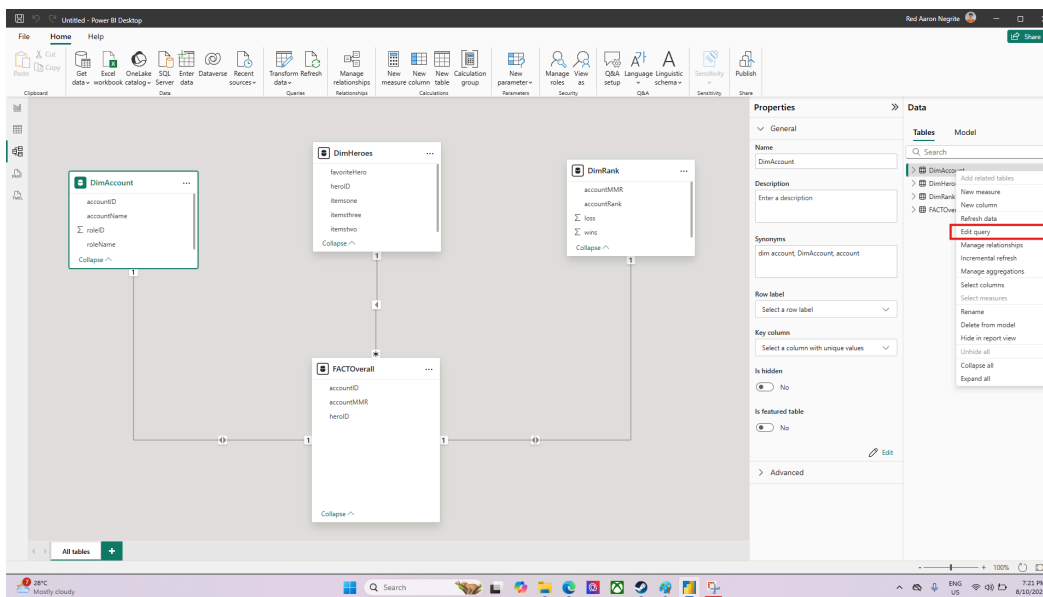


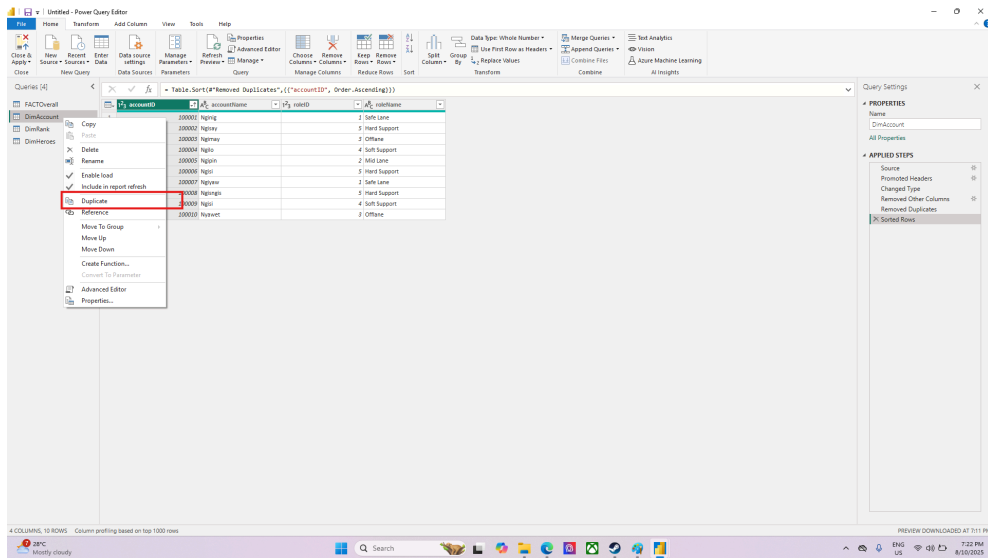
5. Using model view create one to one relationships that resemble a snowflake schema





To create a one-to-one relationship in the Model View:





Subdimension Table Properties

Subdimension Name: SubDimRole

From Dimension Name: DimAccounts

Columns:

- roleID
- roleName

roleID	roleName
1	Self-Learn
2	Hard Support
3	Offline
4	Soft Support
5	Mid Lane

Subdimension Name: SubDimStandings

From Dimension Name: DimAccounts

Columns:

- wins
- loss

Power Query Editor interface showing a query named "Table.RemoveColumns(*Removed Other Columns,('accountVWR', 'accountRank'))". The query is loaded from a data source and displays 10 rows of data. The columns are "id", "win", and "loss".

	id	win	loss
1	250	256	
2	220	227	
3	700	427	
4	2500	520	
5	4637	400	
6	126	50	
7	3689	2652	
8	3267	2101	
9	2810	1200	
10	70	50	

Query Settings: Name: SubDimStandings

APPLIED STEPS: Source, Promoted Headers, Changed Type, Removed Other Columns, Removed Columns

2 COLUMNS, 10 ROWS Column profiling based on top 1000 rows

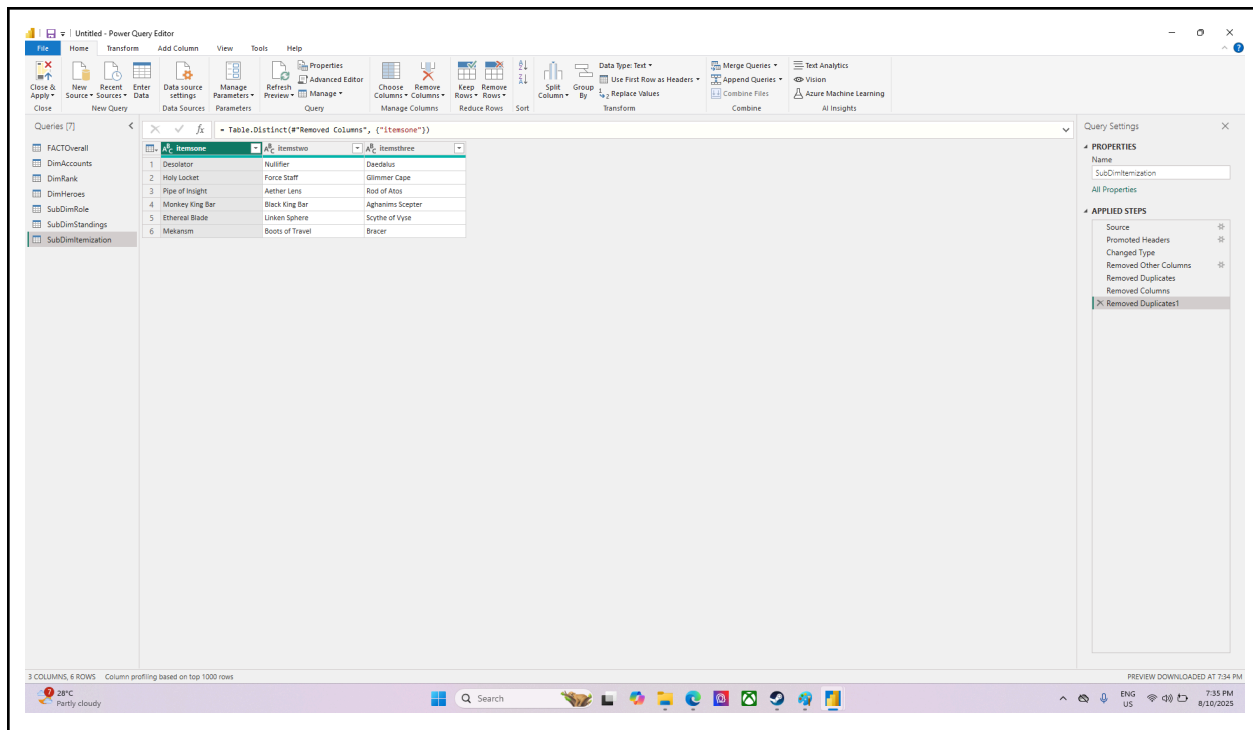
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Subdimension Name: SubDimItemization

From Dimension Name: DimHeroes

Columns:

- itemsone
- Itemstwo
- itemsthree



NOTE: In this section, it is a must to ascend the primary column into ascending order and to remove duplicated rows

