

Data and Artificial Intelligence

Cyber Shujaa Program

Week 4 Assignment

Power BI Assignment

Chepkirui Bethsheba
CS-DA01-25054

INTRODUCTION

Power BI is a business analytics service that transforms raw data into interactive dashboards and reports, providing actionable insights for decision-making. It allows users to connect to various data sources, clean and shape data, and visualize it using charts, graphs, and other visualizations.

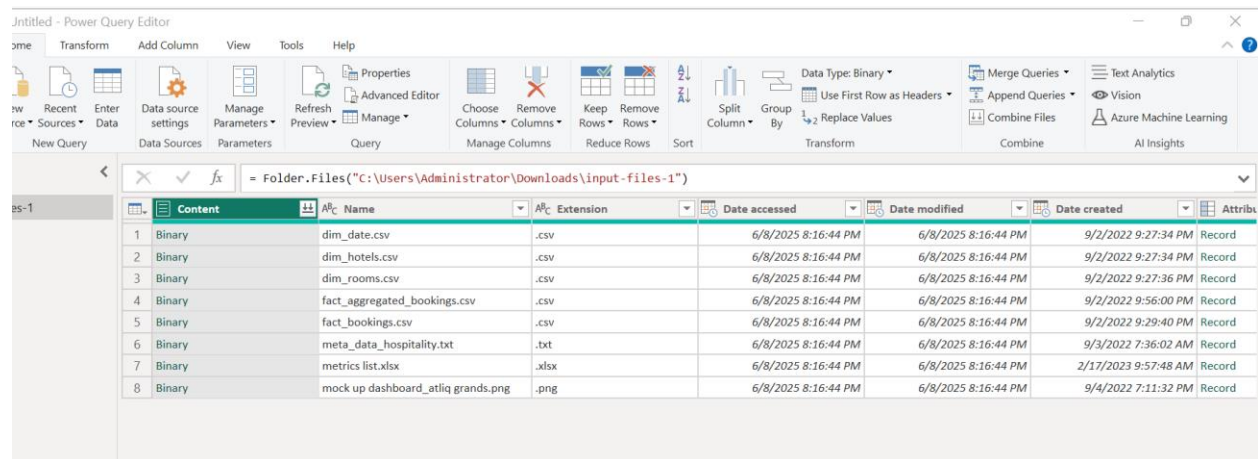
We will perform hand on activities on the following;

Understand the Hotel business and client needs Load, Data Transform , DataBuild DAX, Visualize Dashboard and Publish the project.

Load and transform the data sets

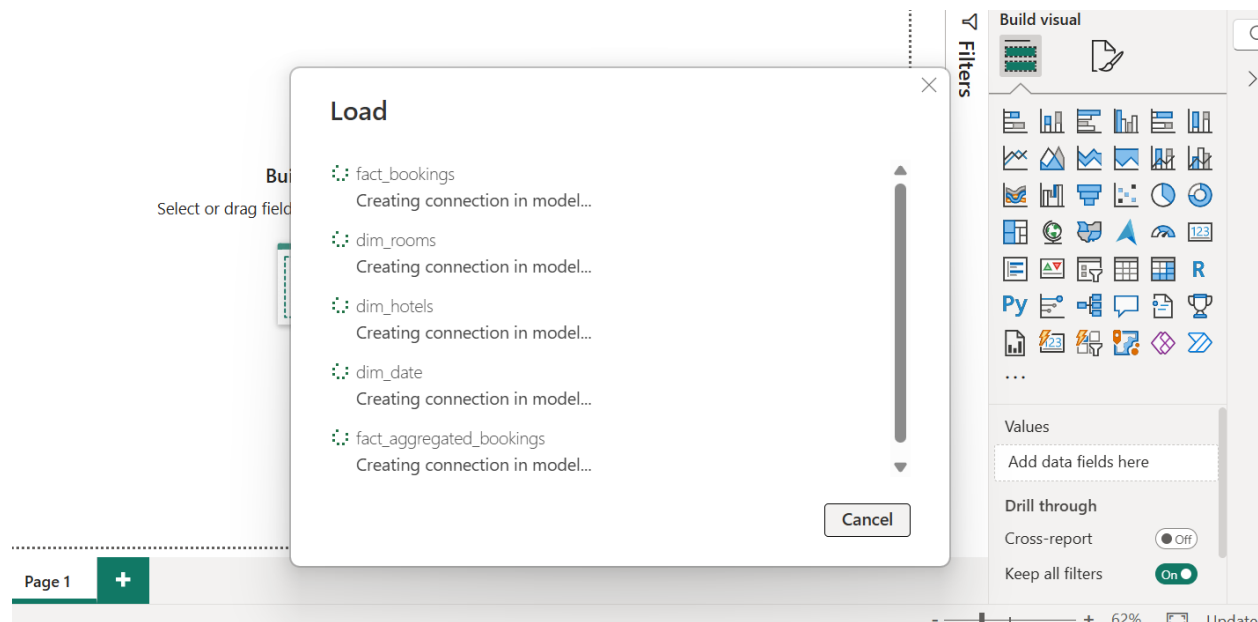
To load data, go to the **Home** tab in Power BI Desktop and click on **Get Data**. You can then choose the appropriate data source from the list and connect to it.

Once you're satisfied with your data transformations, click **Close & Apply** in the Power Query Editor. This will load the transformed data into your Power BI data model, where you can start creating relationships between tables and building visualizations.



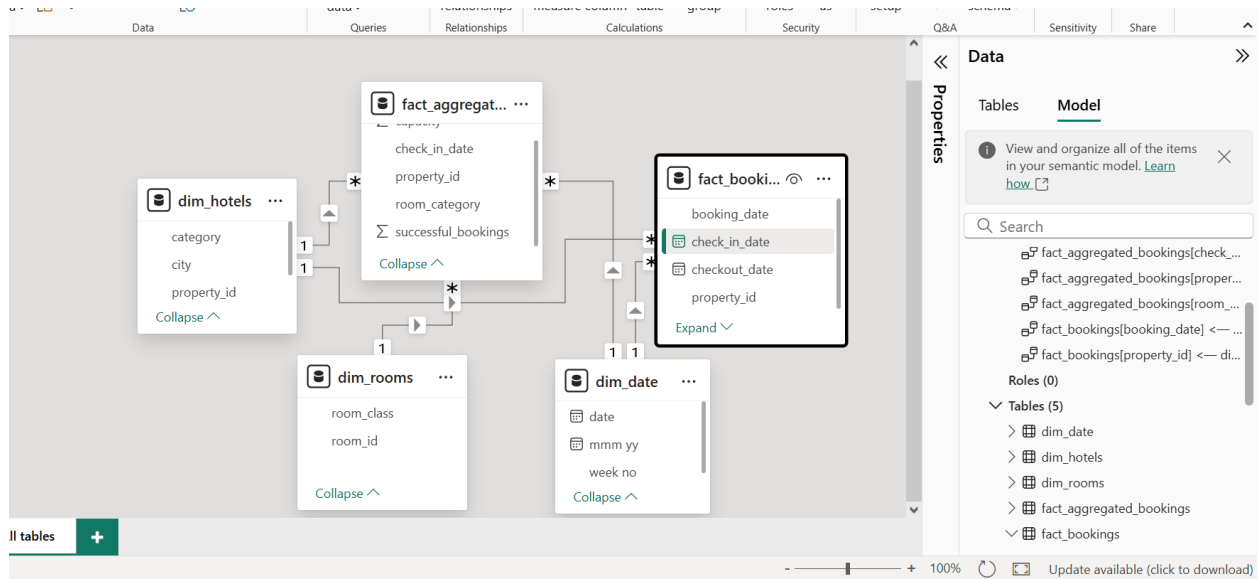
The screenshot shows the Power Query Editor interface. The ribbon includes tabs for Home, Transform, Add Column, View, Tools, and Help. The Home tab is active, showing options like New Query, Recent, Enter Data, Data source settings, Manage Parameters, Refresh Preview, Properties, Advanced Editor, Manage, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Sort, Split Column, Group By, Replace Values, Data Type: Binary, Use First Row as Headers, Merge Queries, Append Queries, Combine Files, Text Analytics, Vision, Azure Machine Learning, and AI Insights. The main area displays a folder named "Folder.Files('C:\Users\Administrator\Downloads\input-files-1')". Below the folder name is a table with 8 rows and 8 columns: Content, Name, Extension, Date accessed, Date modified, Date created, and Attribute. The data is as follows:

	Content	Name	Extension	Date accessed	Date modified	Date created	Attribute
1	Binary	dim_date.csv	.csv	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/2/2022 9:27:34 PM	Record
2	Binary	dim_hotels.csv	.csv	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/2/2022 9:27:34 PM	Record
3	Binary	dim_rooms.csv	.csv	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/2/2022 9:27:36 PM	Record
4	Binary	fact_aggregated_bookings.csv	.csv	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/2/2022 9:56:00 PM	Record
5	Binary	fact_bookings.csv	.csv	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/2/2022 9:29:40 PM	Record
6	Binary	meta_data_hospitality.txt	.txt	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/3/2022 7:36:02 AM	Record
7	Binary	metrics list.xlsx	.xlsx	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	2/17/2023 9:57:48 AM	Record
8	Binary	mock up dashboard_atliq grands.png	.png	6/8/2025 8:16:44 PM	6/8/2025 8:16:44 PM	9/4/2022 7:11:32 PM	Record



Build the Data Model

After loading your data, the next step is to build a data model. You start by Creating Relationships: Relationships connect your tables, allowing you to filter and analyze data across them, next is understanding the relationship



manage relationships



+ New relationship

⚡ Autodetect

✎ Edit

🗑 Delete

≡ Filter ▾

From: table (column) ↑	Relationship	To: table (column)	Status
fact_aggregated_bookings (ch...	* — ◀ — 1	dim_date (date)	Active ...
fact_aggregated_bookings (pr...	* — ◀ — 1	dim_hotels (property_id)	Active ...
fact_aggregated_bookings (ro...	* — ◀ — 1	dim_rooms (room_id)	Active ...
fact_bookings (booking_date)	* — ◀ — 1	dim_date (date)	Active ...
fact_bookings (property_id)	* — ◀ — 1	dim_hotels (property_id)	Active ...

Close

Data Analysis Expressions

DAX helps you create new information from the data that is already in your model. While you can create many basic reports without using any DAX formulas, you need it to solve more advanced calculation and data analysis problems. Calculated Columns and Measures are crucial in using dax.

Columns

The screenshot displays the Power BI Desktop interface with two DAX formulas being created.

Formula 1: date_type

```
1 date_type =  
2  
3 var wk = WEEKDAY(dim_date[date])  
4  
5 return if(wk>5, "weekend", "weekday")
```

The resulting table shows the calculated values for the 'date_type' column:

date	mmm yy	week no	wk	date_type
Sunday, May 1, 2022	Thursday, May 22, 2025	W 19	19	weekday
Monday, May 2, 2022	Thursday, May 22, 2025	W 19	19	weekday
Tuesday, May 3, 2022	Thursday, May 22, 2025	W 19	19	weekday
Wednesday, May 4, 2022	Thursday, May 22, 2025	W 19	19	weekday
Thursday, May 5, 2022	Thursday, May 22, 2025	W 19	19	weekday
Friday, May 6, 2022	Thursday, May 22, 2025	W 19	19	weekend
Saturday, May 7, 2022	Thursday, May 22, 2025	W 19	19	weekend
Sunday, May 8, 2022	Thursday, May 22, 2025	W 20	20	weekday
Monday, May 9, 2022	Thursday, May 22, 2025	W 20	20	weekday
Tuesday, May 10, 2022	Thursday, May 22, 2025	W 20	20	weekday
Wednesday, May 11, 2022	Thursday, May 22, 2025	W 20	20	weekday

Formula 2: wk

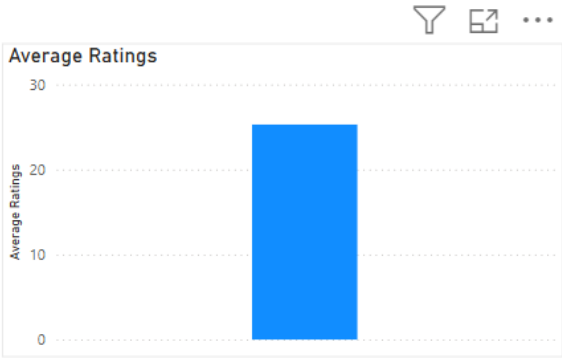
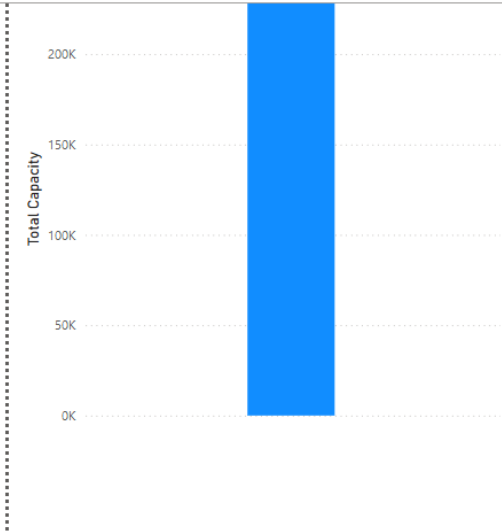
```
1 wk = WEEKNUM(dim_date[date])
```

The resulting table shows the calculated values for the 'wk' column:

date	mmm yy	week no	wk
Sunday, May 1, 2022	Thursday, May 22, 2025	W 19	19
Monday, May 2, 2022	Thursday, May 22, 2025	W 19	19
Tuesday, May 3, 2022	Thursday, May 22, 2025	W 19	19
Wednesday, May 4, 2022	Thursday, May 22, 2025	W 19	19
Thursday, May 5, 2022	Thursday, May 22, 2025	W 19	19
Friday, May 6, 2022	Thursday, May 22, 2025	W 19	19
Saturday, May 7, 2022	Thursday, May 22, 2025	W 19	19
Sunday, May 8, 2022	Thursday, May 22, 2025	W 20	20
Monday, May 9, 2022	Thursday, May 22, 2025	W 20	20
Tuesday, May 10, 2022	Thursday, May 22, 2025	W 20	20
Wednesday, May 11, 2022	Thursday, May 22, 2025	W 20	20
Thursday, May 12, 2022	Thursday, May 22, 2025	W 20	20
Friday, May 13, 2022	Thursday, May 22, 2025	W 20	20
Saturday, May 14, 2022	Thursday, May 22, 2025	W 20	20

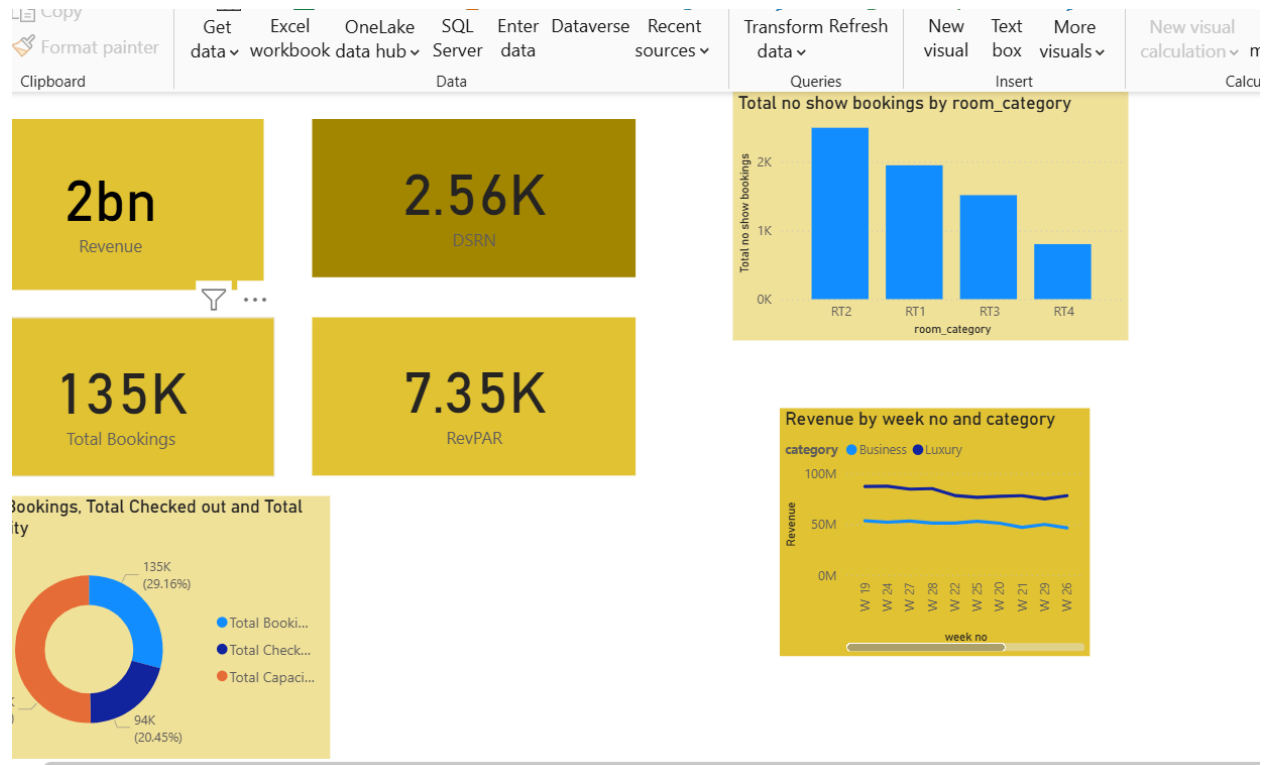
Measures

1 Total Capacity = SUM(fact_aggregated_bookings[capacity])



Dashboard

Dashboards are a powerful way to communicate insights and monitor the health of your business, a dashboard uses visualizations to tell a story.



Publishing

This allows you to share your work/project

Link to my power BI

Assignment: <https://drive.google.com/file/d/1hah2qf4hgZxRZCXW0mxoRjKEMOZtfRiN/view?usp=sharing>

Conclusion

The Power BI project successfully delivered a dynamic and interactive reporting solution that transforms raw data into meaningful insights. Through the development of visually intuitive dashboards and comprehensive data models, stakeholders are now equipped with tools to make faster, data-driven decisions.