

Data and Artificial Intelligence

Cyber Shujaa Program

Week 4 Assignment

Business Intelligence on Power BI

Student Name: Jeff Walter Maende

Student ID: CS-DA02-25001

Table of Contents

Data and Artificial Intelligence	1
Cyber Shujaa Program.....	1
Week 4 Assignment Business Intelligence on Power BI.....	1
1. Introduction	1
2. Tasks Completed	2
3. Conclusion.....	8

1. Introduction

This week's assignment developed my hands-on experience in Business Intelligence using Power BI for Hotel Management.

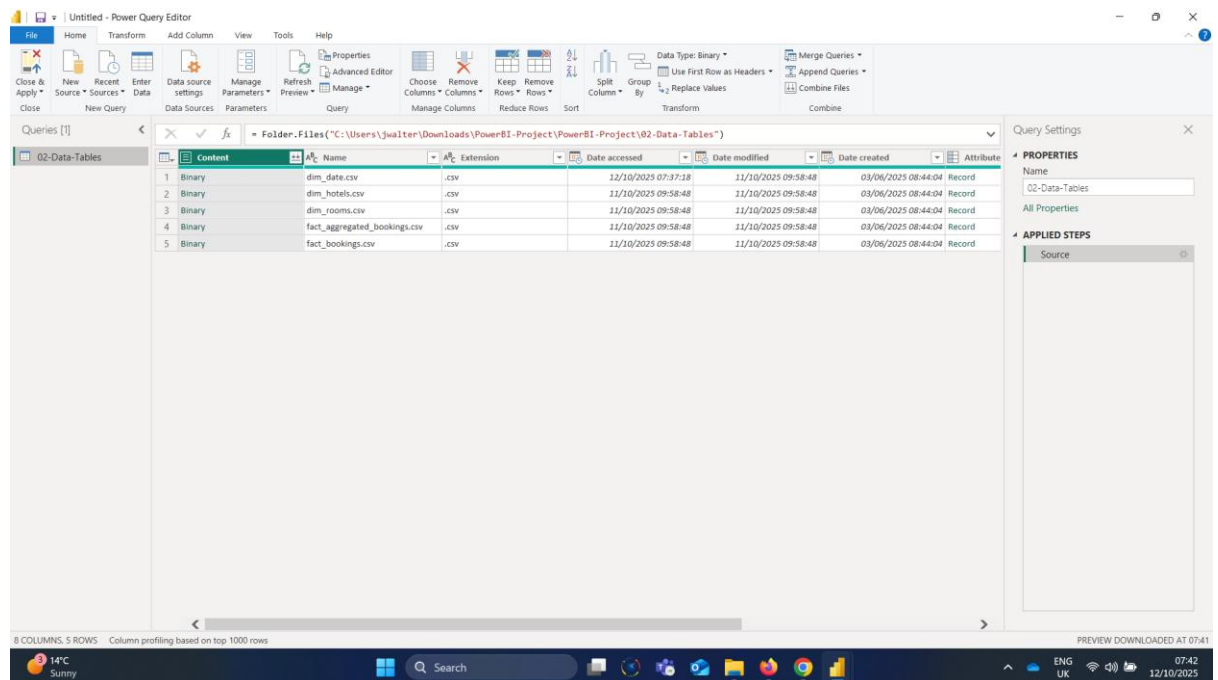
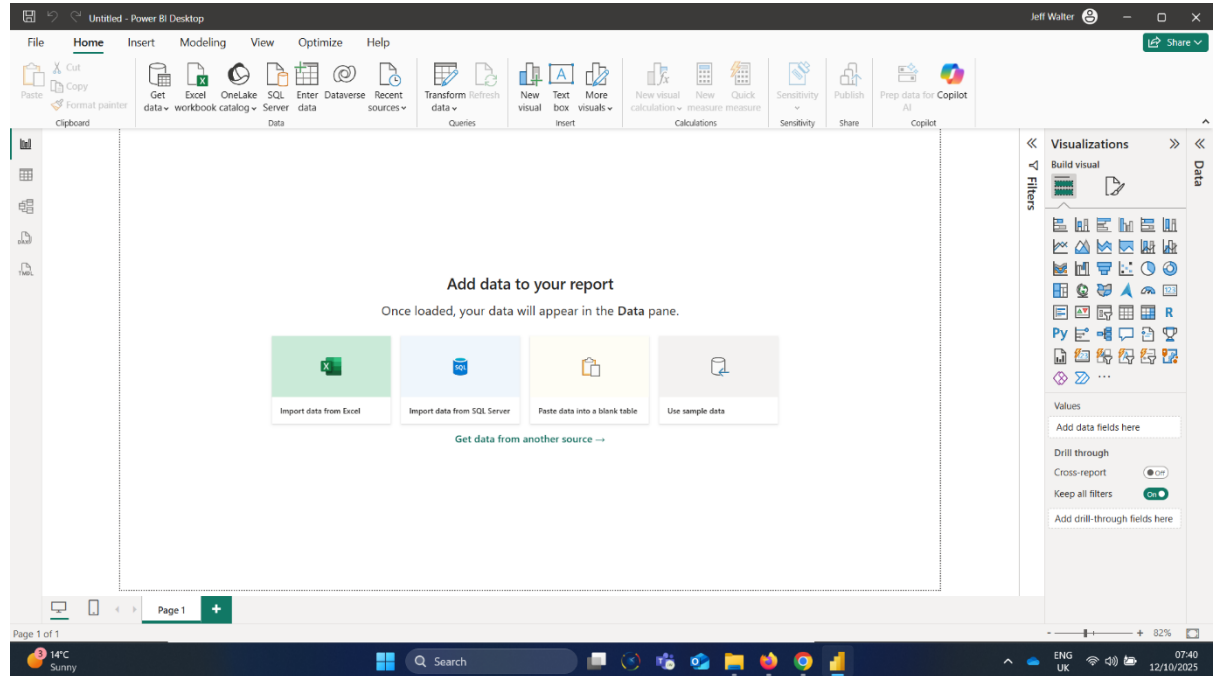
The objective of the assignment was to gain hands-on practice in:

- 1.1 Loading and transforming the various data sets
- 1.2 Building a Data Model
- 1.3 Building Data Analysis Expressions
- 1.4 Visualising the Dashboard
- 1.5 Publishing my project as part of my portfolio collection

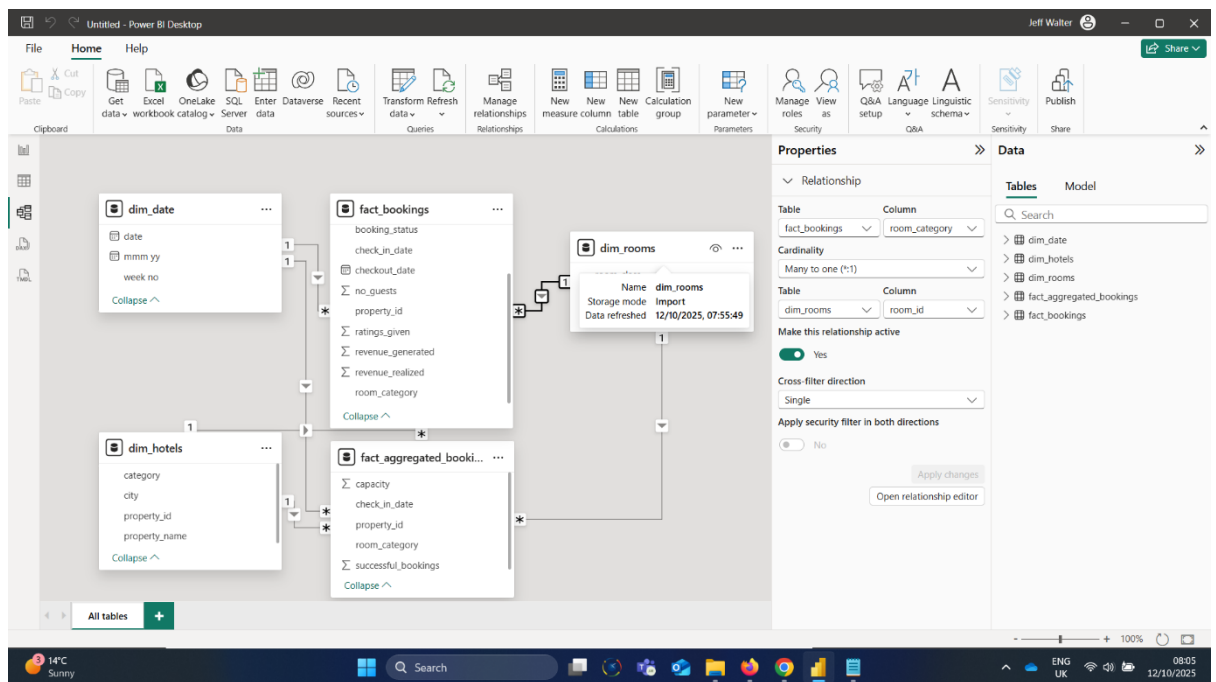
2. Tasks Completed

I have outlined the step-by-step sequence of tasks completed, backing my steps with screenshots as attached below:

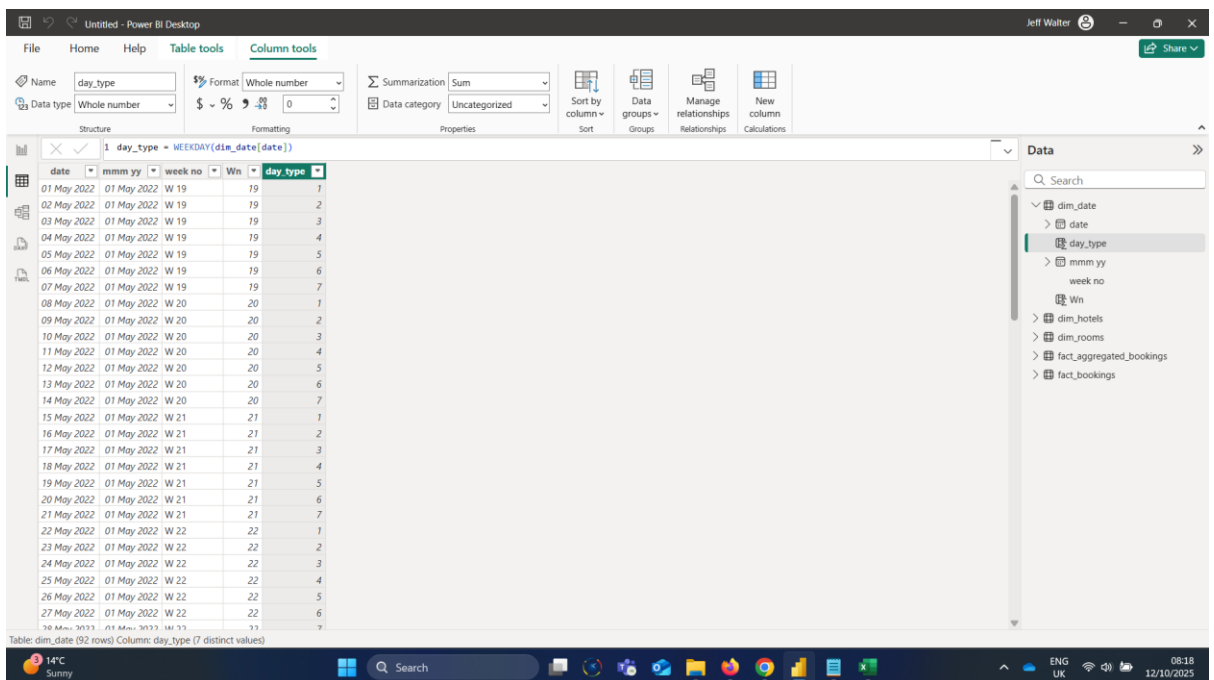
2.1 Loading data into Power BI



2.2 Building a data model



2.3 Building Data Analysis Expression



The screenshot displays the Microsoft Power BI Desktop interface. The main workspace shows a data table with the following columns:

- date**: date
- mmm yy**: month and year
- week no**: week number
- day_type**: day of the week

The table contains 28 rows of data, representing the days of the month of May 2022. The formula bar at the top shows the DAX formula: `1 day_type = WEEKDAY(dim_date[date])`.

date	mmm yy	week no	day_type
01 May 2022	01 May 2022	W 19	19
02 May 2022	01 May 2022	W 19	19
03 May 2022	01 May 2022	W 19	19
04 May 2022	01 May 2022	W 19	19
05 May 2022	01 May 2022	W 19	19
06 May 2022	01 May 2022	W 19	19
07 May 2022	01 May 2022	W 19	19
08 May 2022	01 May 2022	W 20	20
09 May 2022	01 May 2022	W 20	20
10 May 2022	01 May 2022	W 20	20
11 May 2022	01 May 2022	W 20	20
12 May 2022	01 May 2022	W 20	20
13 May 2022	01 May 2022	W 20	20
14 May 2022	01 May 2022	W 20	20
15 May 2022	01 May 2022	W 21	21
16 May 2022	01 May 2022	W 21	21
17 May 2022	01 May 2022	W 21	21
18 May 2022	01 May 2022	W 21	21
19 May 2022	01 May 2022	W 21	21
20 May 2022	01 May 2022	W 21	21
21 May 2022	01 May 2022	W 21	21
22 May 2022	01 May 2022	W 22	22
23 May 2022	01 May 2022	W 22	22
24 May 2022	01 May 2022	W 22	22
25 May 2022	01 May 2022	W 22	22
26 May 2022	01 May 2022	W 22	22
27 May 2022	01 May 2022	W 22	22

Untitled - Power BI Desktop

Jeff Walter

File Home Help Table tools Column tools

Name: day_type Format: Text

Data type: Text

Summarization: Don't summarize

Data category: Uncategorized

Sort by column: Sort

Data groups: Groups

Manage relationships: Relationships

New column: Calculations

```

1 day_type =
2 var wkd = WEEKDAY(dim_date[date])
3 return if(wkd>5, "Weekend", "Weekday")

```

date	mmm yy	week no	Wn	day_type
01 May 2022	01 May 2022	W 19	19	Weekday
02 May 2022	01 May 2022	W 19	19	Weekday
03 May 2022	01 May 2022	W 19	19	Weekday
04 May 2022	01 May 2022	W 19	19	Weekday
05 May 2022	01 May 2022	W 19	19	Weekday
06 May 2022	01 May 2022	W 19	19	Weekend
07 May 2022	01 May 2022	W 19	19	Weekend
08 May 2022	01 May 2022	W 20	20	Weekday
09 May 2022	01 May 2022	W 20	20	Weekday
10 May 2022	01 May 2022	W 20	20	Weekday
11 May 2022	01 May 2022	W 20	20	Weekday
12 May 2022	01 May 2022	W 20	20	Weekday
13 May 2022	01 May 2022	W 20	20	Weekend
14 May 2022	01 May 2022	W 20	20	Weekend
15 May 2022	01 May 2022	W 21	21	Weekday
16 May 2022	01 May 2022	W 21	21	Weekday
17 May 2022	01 May 2022	W 21	21	Weekday
18 May 2022	01 May 2022	W 21	21	Weekday
19 May 2022	01 May 2022	W 21	21	Weekday
20 May 2022	01 May 2022	W 21	21	Weekend
21 May 2022	01 May 2022	W 21	21	Weekend
22 May 2022	01 May 2022	W 22	22	Weekday
23 May 2022	01 May 2022	W 22	22	Weekday
24 May 2022	01 May 2022	W 22	22	Weekday
25 May 2022	01 May 2022	W 22	22	Weekday
26 May 2022	01 May 2022	W 22	22	Weekday

Table: dim_date (92 rows) Column: day_type (2 distinct values)

14°C Sunny

ENG UK

08:34 12/10/2023

Untitled - Power BI Desktop

Jeff Walter

File Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

Name: DSRN WoW change % Format: General

Home table: key_measures

Data category: Uncategorized

New Quick measure measure Calculations

```

1 DSRN WoW change % =
2
3

```

Select or drag fields to populate this visual

Filters on this visual: Add data fields here

Filters on this page: Add data fields here

Filters on all pages: Add data fields here

Visualizations

Build visual

Fields

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Data

key_measures

- ☐ ADR
- ☐ ADR WoW change %
- ☐ Average Rating
- ☐ Booking % by Platform
- ☐ Booking % by Room class
- ☐ Cancellation %
- ☐ DBRN
- ☐ DSRN
- ☐ DSRN WoW change %
- ☐ DURN
- ☐ No of days
- ☐ No Show rate %
- ☐ Occupancy %
- ☐ Occupancy WoW change %
- ☐ Realisation %
- ☐ Realisation WoW change %
- ☐ Revenue
- ☐ Revenue WoW change %
- ☐ RevPAR
- ☐ Revpar WoW change %
- ☐ Total Bookings
- ☐ Total cancelled bookings

Page 1 of 1

17°C Sunny

ENG UK

09:40 12/10/2023

2.4 Dashboard Visualisations

Untitled - Power BI Desktop

Jeff Walter

File Home Insert Modeling View Optimize Help Format Data / Drill

Clipboard: Cut, Copy, Paste, Format painter

Get data: Excel, OneLake, SQL Server, Enter data, Datasource, Recent sources

Transform Refresh data, Queries

New visual, Text box, More visuals, Insert

New visual calculation, New measure measure, Calculations

Sensitivity, Publish, Prep data for Copilot AI, Copilot

Visualizations: Build visual, Filters, Columns

property_id, property_name, city, Revenue, RevPAR, Occupancy %, ADR, DSRN, DBRN, DURN, Realisation %, Cancellation %, Average Rating

property_id	property_name	city	Revenue	RevPAR	Occupancy %	ADR	DSRN	DBRN	DURN	Realisation %	Cancellation %	Average Rating
16558	Atliq Grands	Delhi	36M	7,525	65.81%	11,435.63	52.00	34.22	23.96	70.01%	25.08%	4.25
16559	Atliq Exotica	Mumbai	117M	10,629	65.85%	16,141.36	121.00	79.68	56.09	70.39%	24.63%	4.32
16560	Atliq City	Delhi	54M	6,281	53.61%	11,714.41	95.00	50.93	36.26	71.20%	24.03%	3.01
16561	Atliq Blu	Delhi	57M	8,612	65.66%	13,114.84	73.00	47.93	33.48	69.85%	25.56%	4.28
16562	Atliq Bay	Delhi	56M	6,254	53.40%	11,711.77	88.00	52.33	36.29	69.34%	25.24%	3.07
16563	Atliq Palace	Delhi	88M	8,289	66.25%	12,480.45	117.00	77.52	54.27	70.02%	25.19%	4.27
17558	Atliq Grands	Mumbai	74M	7,953	53.60%	14,838.75	102.00	54.67	38.22	69.91%	25.67%	3.05
17559	Atliq Exotica	Mumbai	93M	10,107	66.09%	15,293.13	101.00	66.75	47.26	70.81%	24.04%	4.32
17560	Atliq City	Mumbai	87M	7,763	53.07%	14,628.63	123.00	65.27	45.37	69.51%	25.12%	3.04
17561	Atliq Blu	Mumbai	73M	9,447	66.19%	14,271.29	85.00	56.36	39.46	70.14%	24.81%	4.30
17562	Atliq Bay	Mumbai	51M	6,893	44.86%	15,166.73	83.00	37.23	25.91	69.60%	25.44%	2.37
17563	Atliq Palace	Mumbai	100M	10,592	66.13%	16,016.18	104.00	68.78	48.60	70.67%	24.38%	4.29
17564	Atliq Seasons	Mumbai	65M	7,397	44.57%	16,597.41	97.00	43.23	30.52	70.59%	24.81%	2.30
18558	Atliq Grands	Hyderabad	46M	5,514	53.38%	10,330.52	91.00	48.57	33.87	69.73%	25.07%	3.06
18559	Atliq Exotica	Hyderabad	47M	4,061	44.57%	9,111.40	128.00	57.05	40.26	70.57%	24.33%	2.33
18560	Atliq City	Hyderabad	60M	6,068	66.07%	9,185.42	109.00	72.01	51.07	70.91%	24.33%	4.26
18561	Atliq Blu	Hyderabad	55M	5,679	65.46%	8,675.08	107.00	70.04	49.29	70.36%	24.27%	4.25
18562	Atliq Bay	Hyderabad	68M	6,216	65.81%	9,445.93	121.00	79.63	55.90	70.20%	24.68%	4.31
18563	Atliq Palace	Hyderabad	44M	5,014	52.89%	9,479.77	97.00	51.31	35.69	69.57%	26.00%	3.07
19558	Atliq Grands	Bangalore	54M	5,527	44.33%	12,468.14	107.00	47.43	33.23	70.06%	24.49%	2.37
19559	Atliq Exotica	Bangalore	59M	6,851	53.73%	12,751.16	95.00	51.04	36.12	70.76%	24.54%	3.04
Total			1688M	7,337	57.79%	12,695.75	2,528.00	1,460.87	1,024.64	70.14%	24.84%	3.62

Page 1 of 1

19°C Sunny

Untitled - Power BI Desktop

Jeff Walter

File Home Insert Modeling View Optimize Help Format Data / Drill

Clipboard: Cut, Copy, Paste, Format painter

Get data: Excel, OneLake, SQL Server, Enter data, Datasource, Recent sources

Transform Refresh data, Queries

New visual, Text box, More visuals, Insert

New visual calculation, New measure measure, Calculations

Sensitivity, Publish, Prep data for Copilot AI, Copilot

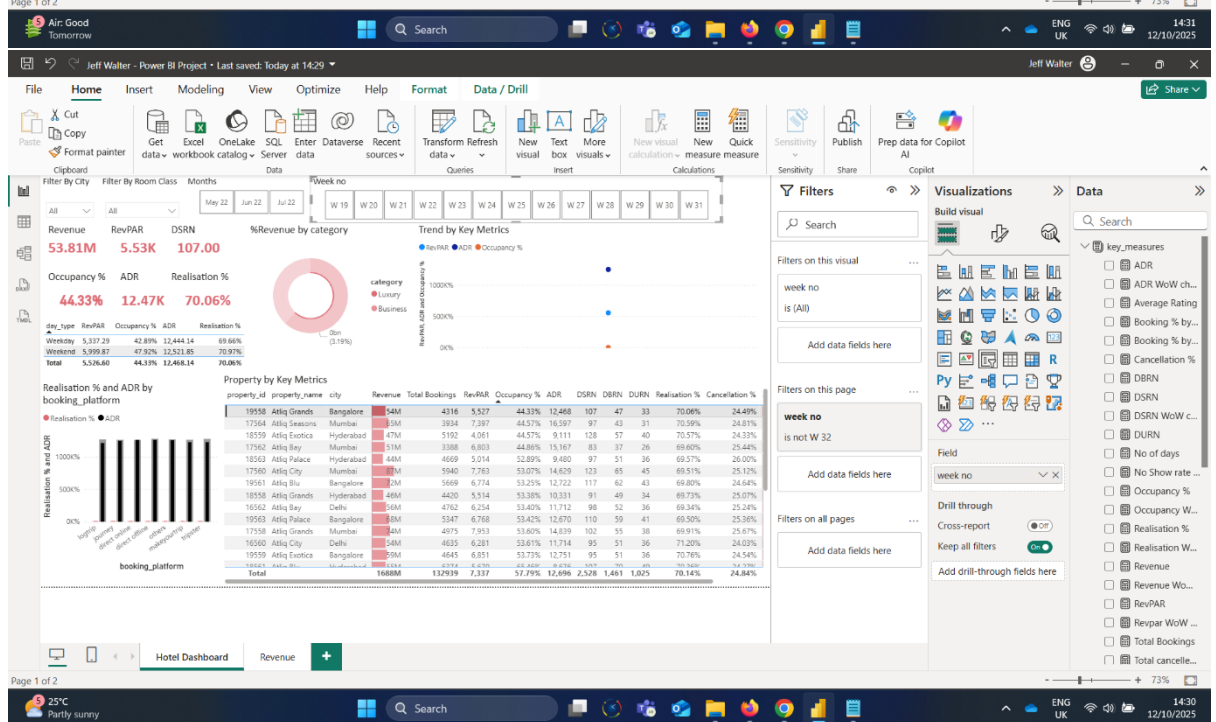
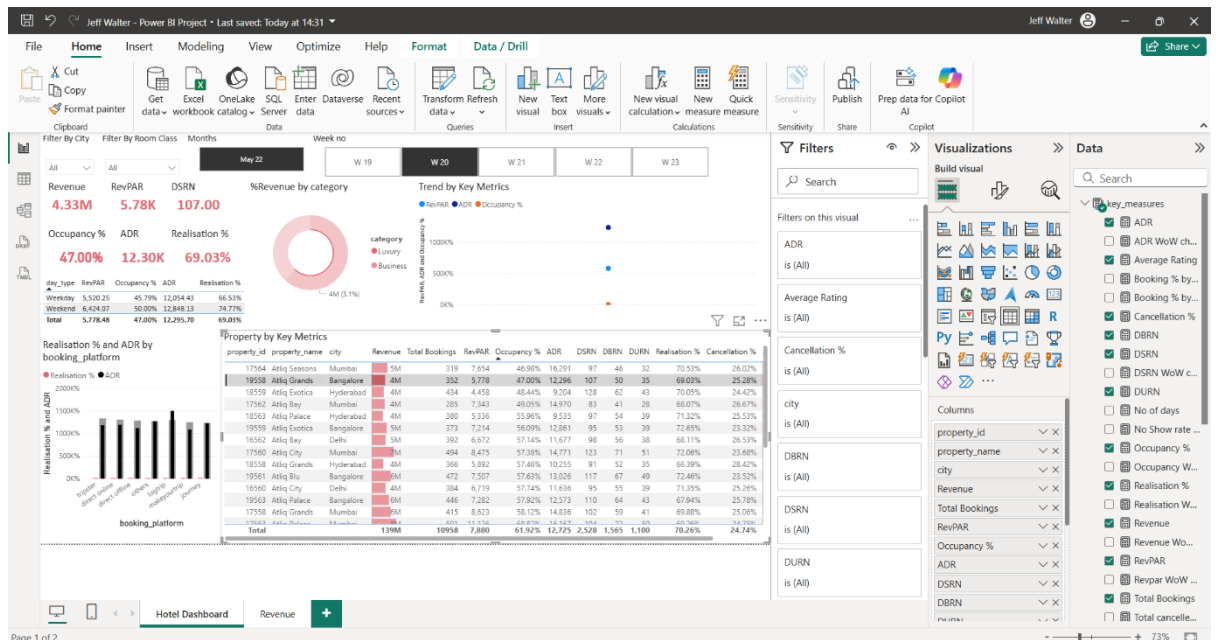
Visualizations: Build visual, Filters, Columns

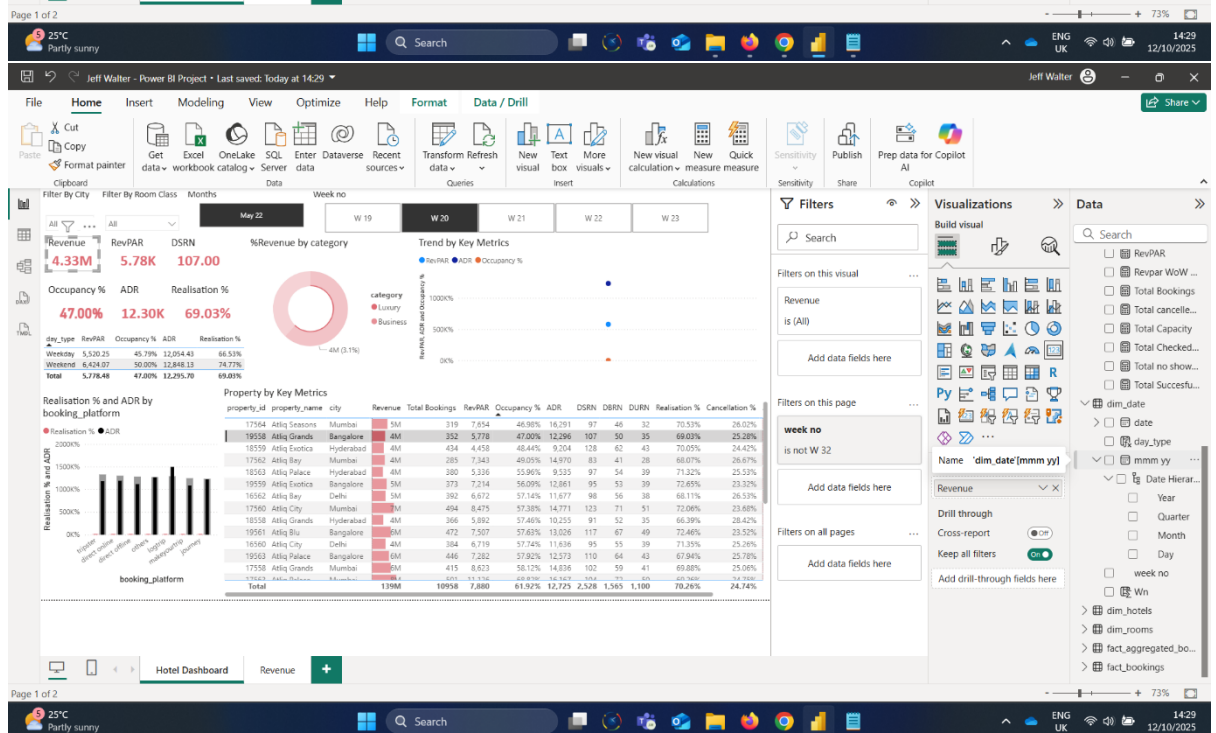
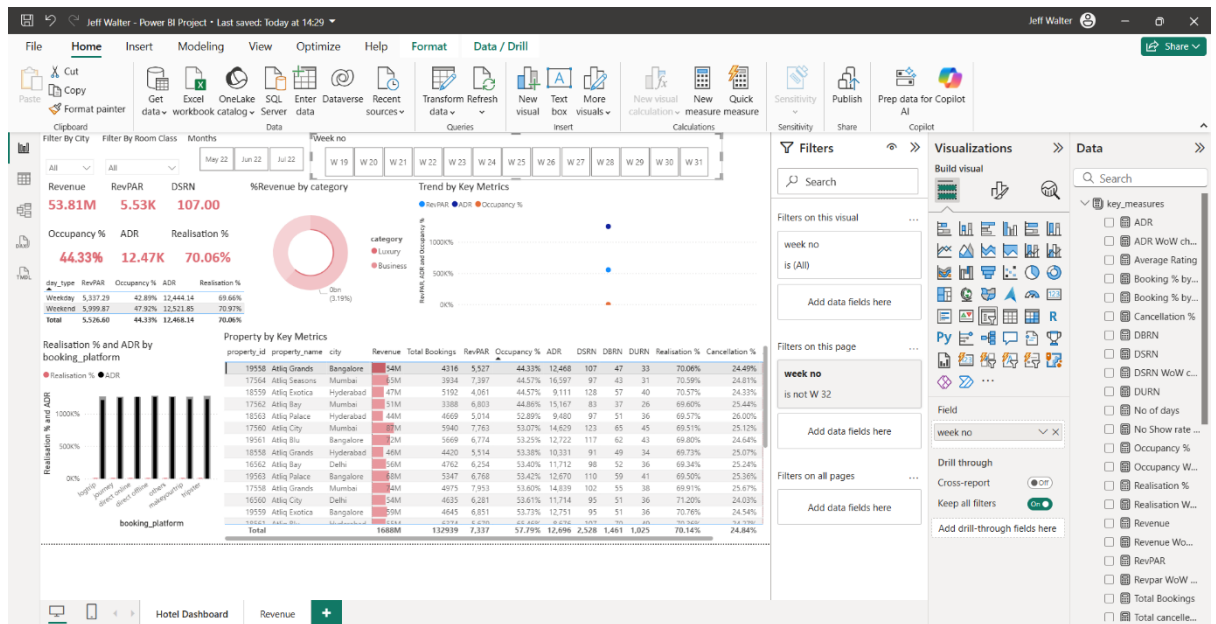
property_id, property_name, city, Revenue, RevPAR, Occupancy %, ADR, DSRN, DBRN, DURN, Realisation %, Cancellation %, Average Rating

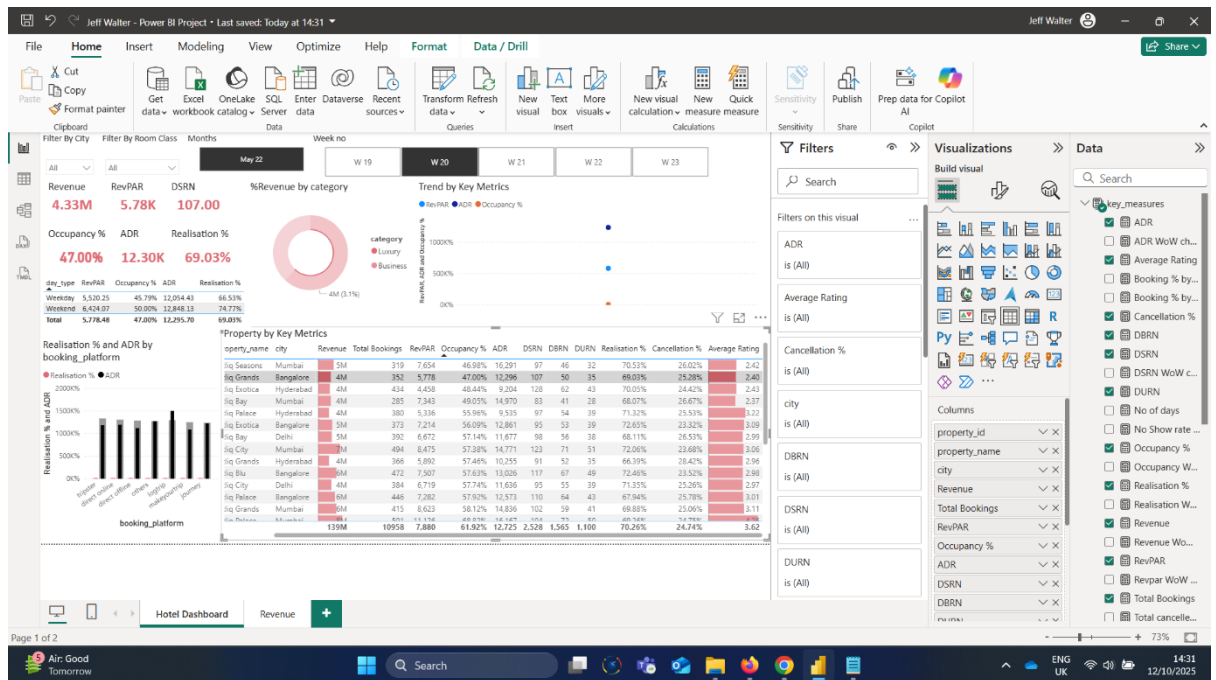
property_id	property_name	city	Revenue	RevPAR	Occupancy %	ADR	DSRN	DBRN	DURN	Realisation %	Cancellation %	Average Rating
16558	Atliq Grands	Delhi	36M	7,525	65.81%	11,436	52	34	24	70.01%	25.08%	4.25
16559	Atliq Exotica	Mumbai	117M	10,629	65.85%	16,141	121	80	56	70.39%	24.63%	4.32
16560	Atliq City	Delhi	54M	6,281	53.61%	11,714	95	51	36	71.20%	24.03%	3.01
16561	Atliq Blu	Delhi	57M	8,612	65.66%	13,115	73	48	33	69.85%	25.56%	4.28
16562	Atliq Bay	Delhi	56M	6,254	53.40%	11,712	88	52	38	69.34%	25.24%	3.07
16563	Atliq Palace	Delhi	88M	8,289	66.25%	12,480	117	78	54	70.02%	25.19%	4.27
17558	Atliq Grands	Mumbai	74M	7,953	53.60%	14,839	102	55	38	69.91%	25.67%	3.05
17559	Atliq Exotica	Mumbai	93M	10,107	66.09%	15,293	101	67	47	70.81%	24.04%	4.32
17560	Atliq City	Mumbai	87M	7,763	53.07%	14,629	123	65	45	69.51%	25.12%	3.04
17561	Atliq Blu	Mumbai	73M	9,447	66.19%	14,271	85	56	39	70.14%	24.81%	4.30
17562	Atliq Bay	Mumbai	51M	6,893	44.86%	15,167	83	37	26	69.60%	25.44%	2.37
17563	Atliq Palace	Mumbai	100M	10,592	66.13%	16,016	104	69	49	70.67%	24.38%	4.29
17564	Atliq Seasons	Mumbai	65M	7,397	44.57%	16,597	97	43	31	70.59%	24.81%	2.30
18558	Atliq Grands	Hyderabad	46M	5,514	53.38%	10,331	91	49	34	69.73%	25.07%	3.06
18559	Atliq Exotica	Hyderabad	47M	4,061	44.57%	9,111	128	57	40	70.57%	24.33%	2.33
18560	Atliq City	Hyderabad	60M	6,068	66.07%	9,185	109	72	51	70.91%	24.33%	4.26
18561	Atliq Blu	Hyderabad	55M	5,679	65.46%	8,676	107	70	49	70.36%	24.27%	4.25
18562	Atliq Bay	Hyderabad	68M	6,216	65.81%	9,446	121	80	56	70.20%	24.68%	4.31
18563	Atliq Palace	Hyderabad	44M	5,014	52.89%	9,480	97	51	36	69.57%	26.00%	3.07
19558	Atliq Grands	Bangalore	54M	5,527	44.33%	12,468	107	47	33	70.06%	24.49%	2.37
19559	Atliq Exotica	Bangalore	59M	6,851	53.73%	12,751	95	51	36	70.76%	24.54%	3.04
Total			1688M	7,337	57.79%	12,696	2,528	1,461	1,025	70.14%	24.84%	3.62

Page 1 of 1

Air: Good Tomorrow







I have shared my built business intelligence project, which can be accessed using the link below:
https://drive.google.com/drive/folders/1bgEQpCjCuZO83Af_cKDnqXk9n5B6fPIh?usp=sharing

3. Conclusion

This week's assignment developed my hands-on experience in Business Intelligence using Power BI for Hotel Management. Through the process, I learned how to connect to various data sources, clean, and transform hotel operational data, design interactive dashboards, and generate meaningful visualisations to support data-driven decision-making. The assignment deepened my understanding of key Business Intelligence concepts such as data modelling, DAX calculations, and performance analysis, while also demonstrating how Power BI can be leveraged to improve efficiency, identify trends in occupancy and revenue, and optimise overall hotel operations.