

## MODULE 1: DATA MODELLING AND INGESTION

## **1.Download the Dataset Using Python Code:**

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a tree view with "OPEN EDITORS" expanded, showing "hotel 1.py" and "HotelDataset". Other files like "Booking.csv", "Branches.csv", "Customer.csv", "DateTable.csv", and "RoomType.csv" are listed under "HOTEL...".
- Editor:** The main editor area contains Python code for generating a HotelDataset. It includes imports for csv, random, os, and datetime, along with logic to create a folder and generate room types with various configurations.
- Terminal:** The terminal at the bottom shows command-line output related to Python debugging and CSV saving.
- Sidebar:** A "Build with Agent" sidebar is open, containing instructions for generating agent instructions and a "SUGGESTED ACTIONS" section with "Build Workspace" and "Show Config" buttons.

## **2.Insert All Dataset into Excel:**

### 3.Creating Duration Calculation using Formula

Duration = MAX(0, F2 - E2)

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	RoomTypeID	BranchID	CheckInDate	CheckOutDate	Duration	Revenue	BookingStatus	CancellationReason	PaymentMethod	DiscountApplied	BookingChannel	Purpose	Stay Type	DateID
2	RT5	B3	03-07-2025	08-07-2025	5	25000	No-show	Corporate Accou	0 Call Center	Business	Short Stay	20200101		
3	RT5	B6	07-05-2025	08-05-2025	1	4250	Cancelled	Weather	Cash	15 Mobile App	Conference	Medium Stay	20200102	
4	RT2	B6	17-01-2024	22-01-2024	5	18000	No-show	Credit Card	10 Call Center	Holiday	Long Stay	20200103		
5	RT4	B2	18-08-2023	20-08-2023	2	6000	No-show	Credit Card	0 Website	Holiday	Long Stay	20200104		
6	RT2	B6	04-10-2023	08-10-2023	4	16000	Cancelled	Change of plans	Cash	0 Call Center	Other	Other	20200105	
7	RT7	B7	11-09-2024	14-09-2024	3	38250	No-show	Cash	15 Travel Agent	Conference	Medium Stay	20200106		
8	RT5	B3	30-06-2025	04-07-2025	4	18000	Checked-in	UPI	10 Website	Holiday	Long Stay	20200107		
9	RT3	B2	07-07-2023	08-07-2023	1	6000	Checked-in	Corporate Accou	20 Mobile App	Holiday	Long Stay	20200108		
10	RT6	B3	12-05-2025	15-05-2025	3	19200	No-show	Credit Card	20 Mobile App	Vacation	Long Stay	20200109		
11	RT2	B4	31-08-2023	04-09-2023	4	16000	Cancelled	Change of plans	Corporate Accou	0 Call Center	Other	Other	20200110	
12	RT7	B7	06-09-2024	11-09-2024	5	60000	No-show	UPI	20 Mobile App	Vacation	Long Stay	20200111		
13	RT2	B1	02-01-2024	09-01-2024	7	22400	Cancelled	Other	Credit Card	20 Call Center	Vacation	Long Stay	20200112	
14	RT6	B5	05-05-2025	10-05-2025	5	38000	Checked-in	Credit Card	5 Call Center	Business	Short Stay	20200113		
15	RT6	B1	16-11-2023	21-11-2023	5	34000	Checked-in	Cash	15 Travel Agent	Conference	Medium Stay	20200114		
16	RT2	B4	07-04-2025	14-04-2025	7	28000	Cancelled	Other	Cash	0 Travel Agent	Other	Other	20200115	
17	RT1	B4	08-08-2025	15-08-2025	7	15750	Checked-in	Cash	10 Website	Business	Short Stay	20200116		
18	RT2	B3	28-05-2023	30-05-2023	2	8000	No-show	UPI	0 Mobile App	Conference	Medium Stay	20200117		
19	RT3	B5	08-06-2024	09-06-2024	1	6750	Cancelled	Price	Cash	10 Mobile App	Business	Short Stay	20200118	
20	RT6	B1	26-05-2024	27-05-2024	1	8000	No-show	Credit Card	0 Mobile App	Business	Short Stay	20200119		
21	RT4	B7	10-07-2024	15-07-2024	5	12000	No-show	Corporate Accou	20 Mobile App	Other	Other	20200120		
22	RT7	B5	10-10-2023	15-10-2023	5	67500	Cancelled	Price	Credit Card	10 Travel Agent	Other	Other	20200121	
23	RT5	B6	19-12-2024	22-12-2024	3	14250	No-show	Corporate Accou	5 Travel Agent	Holiday	Long Stay	20200122		
24	RT5	B6	09-09-2025	12-09-2025	3	12750	Checked-in	Cash	15 Website	Conference	Medium Stay	20200123		
25	RT6	B5	27-11-2023	30-11-2023	3	20400	No-show	Corporate Accou	15 Call Center	Vacation	Long Stay	20200124		
26	RT3	B3	14-09-2023	18-09-2023	4	28500	No-show	Credit Card	5 Website	Conference	Medium Stay	20200125		
27	RT1	B4	30-09-2023	04-10-2023	4	9500	Checked-in	Cash	5 Travel Agent	Conference	Medium Stay	20200126		
28	RT6	B3	29-06-2025	03-07-2025	2	12800	No-show	Credit Card	20 Mobile App	Other	Other	20200127		
29	RT1	B1	29-09-2023	04-10-2023	5	10000	Checked-in	Credit Card	20 Website	Other	Other	20200128		
30	RT1	B4	01-01-2025	02-01-2025	1	2250	Cancelled	Other	Corporate Accou	10 Mobile App	Other	Other	20200129	
31	RT3	B6	08-03-2025	15-03-2025	7	44625	Cancelled	Other	Corporate Accou	15 Mobile App	Business	Short Stay	20200130	

### 4.Creating Revenue Calculation Using Formula:

Revenue =VLOOKUP(C2, '[RoomType]Room Type'!A:C, 3, FALSE) \* G2 \* (1 - (L2 / 100))

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	RoomTypeID	BranchID	CheckInDate	CheckOutDate	Duration	Revenue	BookingStatus	CancellationReason	PaymentMethod	DiscountApplied	BookingChannel	Purpose	Stay Type	DateID
2	RT5	B3	03-07-2025	08-07-2025	5	25000	No-show	Corporate Accou	0 Call Center	Business	Short Stay	20200101		
3	RT5	B6	07-05-2025	08-05-2025	1	4250	Cancelled	Weather	Cash	15 Mobile App	Conference	Medium Stay	20200102	
4	RT2	B6	17-01-2024	22-01-2024	5	18000	No-show	Credit Card	10 Call Center	Holiday	Long Stay	20200103		
5	RT4	B2	18-08-2023	20-08-2023	2	6000	No-show	Credit Card	0 Website	Holiday	Long Stay	20200104		
6	RT2	B6	04-10-2023	08-10-2023	4	16000	Cancelled	Change of plans	Cash	0 Call Center	Other	Other	20200105	
7	RT7	B7	11-09-2024	14-09-2024	3	38250	No-show	Cash	15 Travel Agent	Conference	Medium Stay	20200106		
8	RT5	B3	30-06-2025	04-07-2025	4	18000	Checked-in	UPI	10 Website	Holiday	Long Stay	20200107		
9	RT3	B2	07-07-2023	08-07-2023	1	6000	Checked-in	Corporate Accou	20 Mobile App	Vacation	Long Stay	20200108		
10	RT6	B3	12-05-2025	15-05-2025	3	19200	No-show	Credit Card	20 Mobile App	Other	Other	20200109		
11	RT2	B4	31-08-2023	04-09-2023	4	16000	Cancelled	Change of plans	Corporate Accou	0 Call Center	Other	Other	20200110	
12	RT7	B7	06-09-2024	11-09-2024	5	60000	No-show	UPI	20 Mobile App	Vacation	Long Stay	20200111		
13	RT2	B1	02-01-2024	09-01-2024	7	22400	Cancelled	Other	Credit Card	20 Call Center	Vacation	Long Stay	20200112	
14	RT6	B5	05-05-2025	10-05-2025	5	38000	Checked-in	Credit Card	5 Call Center	Business	Short Stay	20200113		
15	RT6	B1	16-11-2023	21-11-2023	5	34000	Checked-in	Cash	15 Travel Agent	Conference	Medium Stay	20200114		
16	RT2	B4	07-04-2025	14-04-2025	7	28000	Cancelled	Other	Cash	0 Travel Agent	Other	Other	20200115	
17	RT1	B4	08-08-2025	15-08-2025	7	15750	Checked-in	Cash	10 Website	Business	Short Stay	20200116		
18	RT2	B3	28-05-2023	30-05-2023	2	8000	No-show	UPI	0 Mobile App	Conference	Medium Stay	20200117		
19	RT3	B5	08-06-2024	09-06-2024	1	6750	Cancelled	Price	Cash	10 Mobile App	Business	Short Stay	20200118	
20	RT6	B1	26-05-2024	27-05-2024	1	8000	No-show	Credit Card	0 Mobile App	Business	Short Stay	20200119		
21	RT4	B7	10-07-2024	15-07-2024	5	12000	No-show	Corporate Accou	20 Mobile App	Other	Other	20200120		
22	RT7	B5	10-10-2023	15-10-2023	5	67500	Cancelled	Price	Credit Card	10 Travel Agent	Other	Other	20200121	
23	RT5	B6	19-12-2024	22-12-2024	3	14250	No-show	Corporate Accou	5 Travel Agent	Holiday	Long Stay	20200122		
24	RT5	B6	09-09-2025	12-09-2025	3	12750	Cancelled	Cash	15 Website	Conference	Medium Stay	20200123		
25	RT6	B5	27-11-2023	30-11-2023	3	20400	No-show	Corporate Accou	15 Call Center	Vacation	Long Stay	20200124		
26	RT3	B3	14-09-2023	18-09-2023	4	28500	No-show	Credit Card	5 Website	Conference	Medium Stay	20200125		
27	RT1	B4	30-09-2023	04-10-2023	4	9500	Checked-in	Cash	5 Travel Agent	Conference	Medium Stay	20200126		
28	RT6	B3	29-06-2025	01-07-2025	2	12800	No-show	Credit Card	20 Mobile App	Other	Other	20200127		
29	RT1	B1	29-09-2023	04-10-2023	5	10000	Checked-in	Credit Card	20 Website	Other	Other	20200128		
30	RT1	B4	01-01-2025	02-01-2025	1	2250	Cancelled	Other	Corporate Accou	10 Mobile App	Other	Other	20200129	

## 5.Creating StayType Calculation Using Formula:

StayType =SWITCH(TRIM(UPPER(N2)),

"BUSINESS", "Short Stay",

"CONFERENCE", "Medium Stay",

"VACATION", "Long Stay",

"HOLIDAY", "Long Stay",

"FAMILY", "Leisure",

"LEISURE", "Leisure",

"GROUP", "Group Stay",

"SOLO", "Solo Stay",

"UNKNOWN", "Unknown",

"Other"

)

The screenshot shows an Excel spreadsheet titled "Hotel booking - Excel". The formula in cell O2 is:

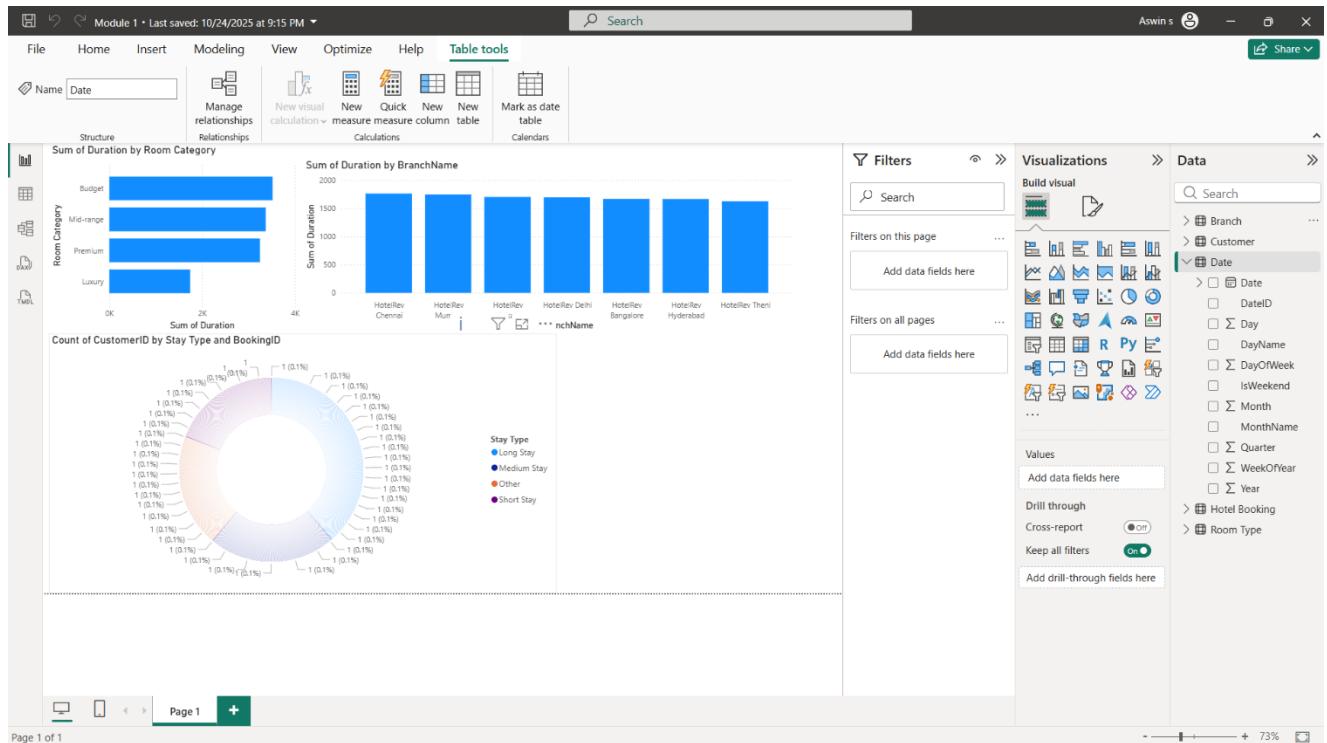
```
=SWITCH(TRIM(UPPER(N2)),  
"BUSINESS", "Short Stay",  
"CONFERENCE", "Medium Stay",  
"VACATION", "Long Stay",  
"HOLIDAY", "Long Stay",  
"FAMILY", "Leisure",  
"LEISURE", "Leisure",  
"GROUP", "Group Stay",  
"SOLO", "Solo Stay",  
"UNKNOWN", "Unknown",  
"Other"  
)
```

The table below contains 19 rows of data with columns: RoomTypeID, BranchID, CheckInDate, CheckOutDate, Duration, Revenue, BookingStatus, CancellationReason, PaymentMethod, DiscountApplied, BookingChannel, Purpose, Stay Type, and DateID.

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	RoomTypeID	BranchID	CheckInDate	CheckOutDate	Duration	Revenue	BookingStatus	CancellationReason	PaymentMethod	DiscountApplied	BookingChannel	Purpose	Stay Type	DateID
2	RT5	B3	03-07-2025	08-07-2025	5	25000	No-show	Corporate Accou	0 Call Center	Business	Short Stay		20200101	
3	RT5	B6	07-05-2025	08-05-2025	1	4250	Cancelled	Weather	Cash	15 Mobile App	Conference	Medium Stay		20200102
4	RT2	B6	17-01-2024	22-01-2024	5	18000	No-show		Credit Card	10 Call Center	Holiday	Long Stay		20200103
5	RT4	B2	18-08-2023	20-08-2023	2	6000	No-show		Credit Card	0 Website	Holiday	Long Stay		20200104
6	RT2	B6	04-10-2023	08-10-2023	4	16000	Cancelled	Change of plans	Cash	0 Call Center	Other	Other		20200105
7	RT7	B7	11-09-2024	14-09-2024	3	38250	No-show		Cash	15 Travel Agent	Conference	Medium Stay		20200106
8	RT5	B3	30-06-2025	04-07-2025	4	18000	Checked-in		UPI	10 Website	Holiday	Long Stay		20200107
9	RT3	B2	07-07-2023	08-07-2023	1	6000	Checked-in	Corporate Accou	20 Mobile App	Holiday	Long Stay			20200108
10	RT6	B3	12-05-2025	15-05-2025	3	19200	No-show		Credit Card	20 Mobile App	Vacation	Long Stay		20200109
11	RT2	B4	31-08-2023	04-09-2023	4	16000	Cancelled	Change of plans	Corporate Accou	0 Call Center	Other	Other		20200110
12	RT7	B7	06-09-2024	11-09-2024	5	60000	No-show		UPI	20 Mobile App	Vacation	Long Stay		20200111
13	RT2	B1	02-01-2024	09-01-2024	7	22400	Cancelled	Other	Credit Card	20 Call Center	Vacation	Long Stay		20200112
14	RT6	B5	05-05-2025	10-05-2025	5	38000	Checked-in		Credit Card	5 Call Center	Business	Short Stay		20200113
15	RT6	B1	16-11-2023	21-11-2023	5	34000	Checked-in		Cash	15 Travel Agent	Conference	Medium Stay		20200114
16	RT2	B4	07-04-2025	14-04-2025	7	28000	Cancelled	Other	Cash	0 Travel Agent	Other	Other		20200115
17	RT1	B4	08-08-2025	15-08-2025	7	15750	Checked-in		Cash	10 Website	Business	Short Stay		20200116
18	RT2	B3	28-05-2023	30-05-2023	2	8000	No-show		UPI	0 Mobile App	Conference	Medium Stay		20200117
19	RT3	B5	08-06-2024	09-06-2024	1	6750	Cancelled	Price	Cash	10 Mobile App	Business	Short Stay		20200118

## 6. Import the Excel into Power BI and Create the Visualization:

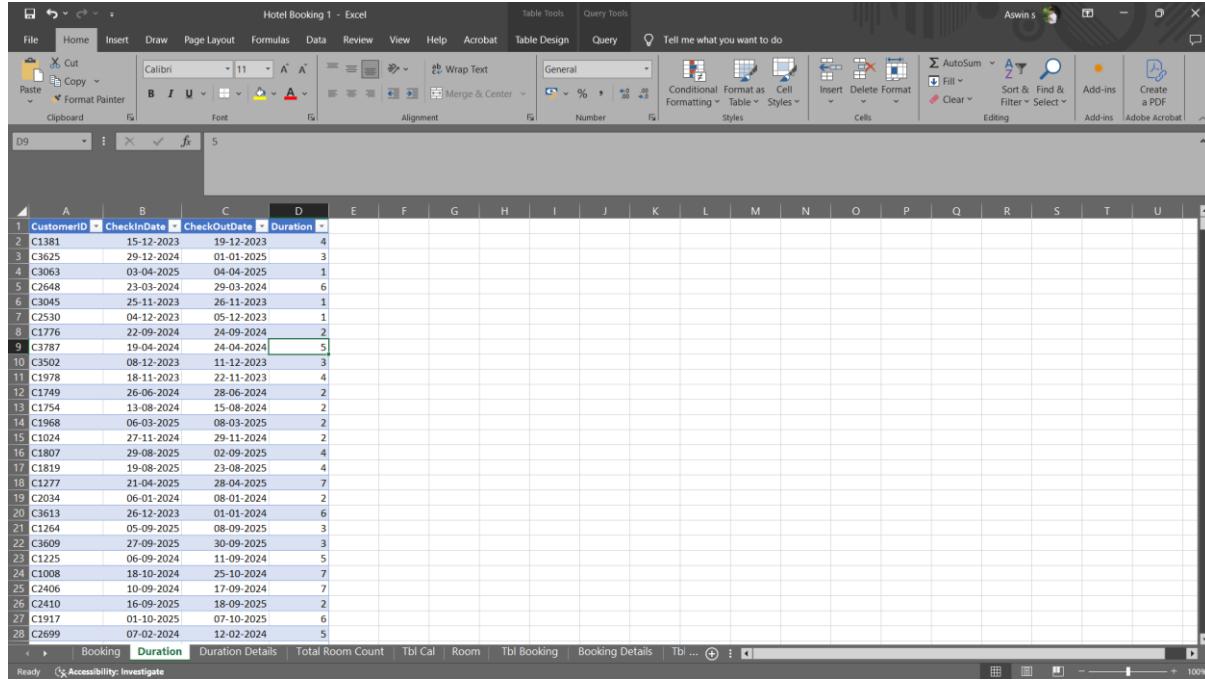
- Duration by Room Category
- Duration by Branch Name
- Count of Customer ID by Stay Type and Booking ID



**Module 1 documentation has been successfully completed.**

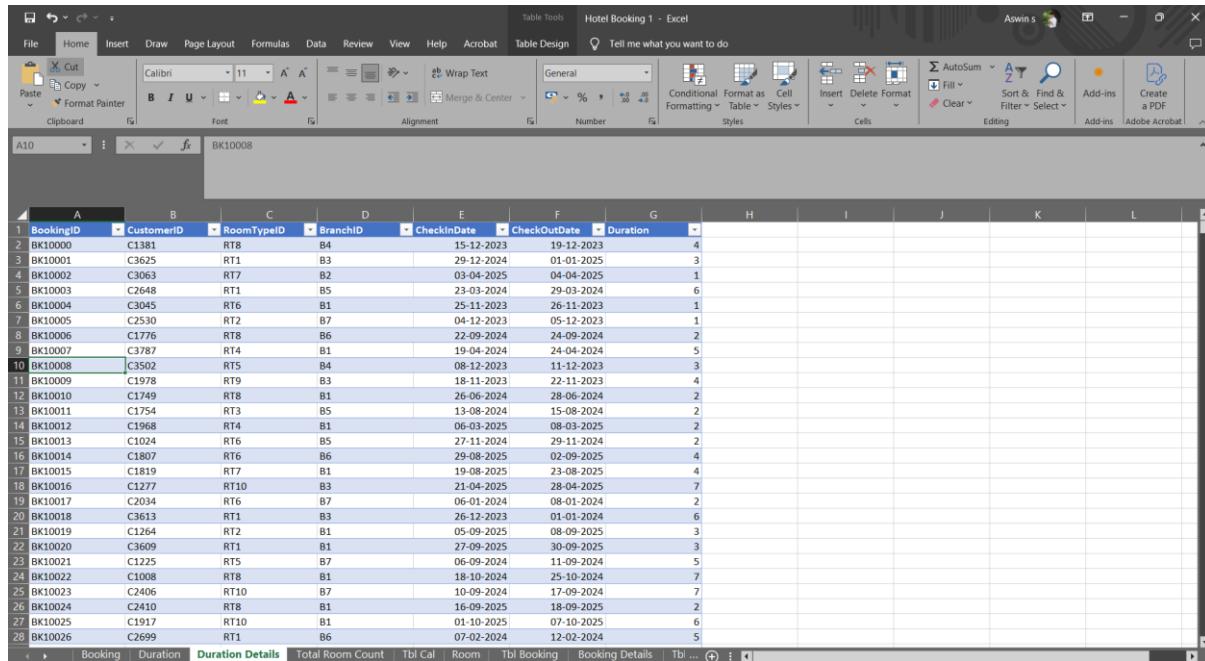
# MODULE 2: ANALYZING METRICS OVERTIME

## 1.Creating the New Table Duration For analysis by Copying Data from Bookings



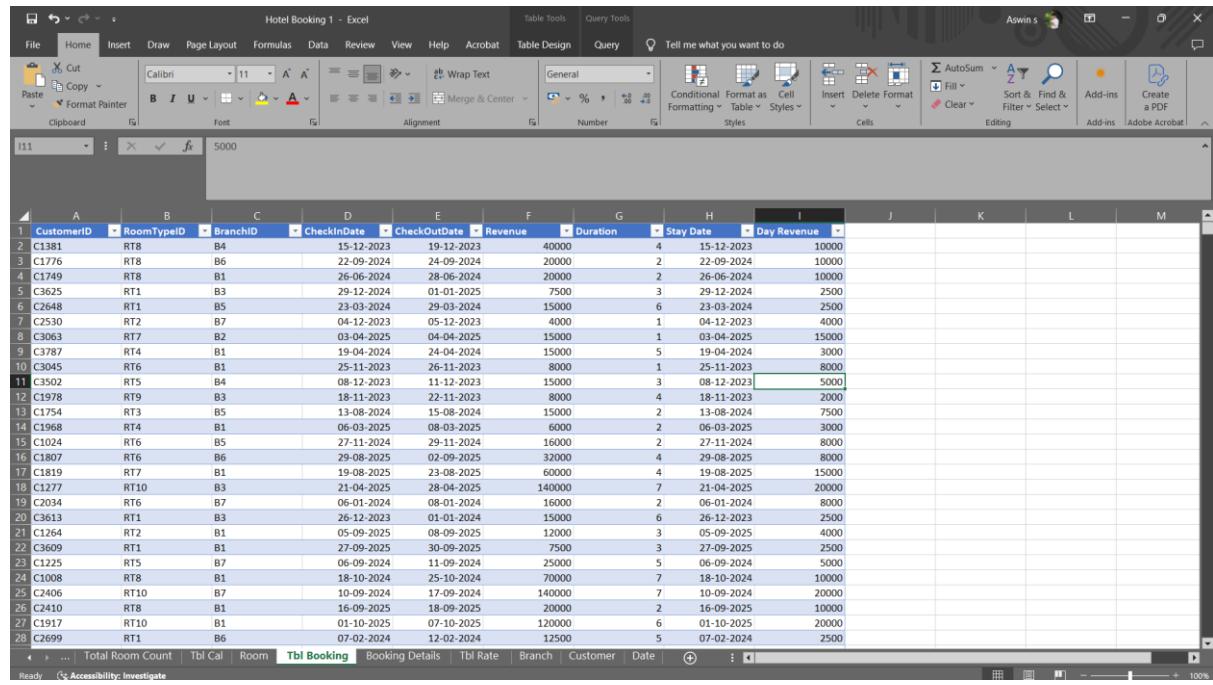
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	CustomerID	CheckinDate	CheckoutDate	Duration																	
2	C1381	15-12-2023	19-12-2023	4																	
3	C3625	29-12-2024	01-01-2025	3																	
4	C3063	03-04-2025	04-04-2025	1																	
5	C2648	23-03-2024	29-03-2024	6																	
6	C3045	25-11-2023	26-11-2023	1																	
7	C2530	04-12-2023	05-12-2023	1																	
8	C1776	22-09-2024	24-09-2024	2																	
9	C3787	19-04-2024	24-04-2024	5																	
10	C3502	08-12-2023	11-12-2023	3																	
11	C1978	18-11-2023	22-11-2023	4																	
12	C1749	26-06-2024	28-06-2024	2																	
13	C1754	13-08-2024	15-08-2024	2																	
14	C1968	06-03-2025	08-03-2025	2																	
15	C1024	27-11-2024	29-11-2024	2																	
16	C1807	29-08-2025	02-09-2025	4																	
17	C1819	19-08-2025	23-08-2025	4																	
18	C1277	21-04-2025	28-04-2025	7																	
19	C2034	06-01-2024	08-01-2024	2																	
20	C3613	26-12-2023	01-01-2024	6																	
21	C1264	05-09-2025	08-09-2025	3																	
22	C6009	27-09-2025	30-09-2025	3																	
23	C1225	06-09-2024	11-09-2024	5																	
24	C1008	18-10-2024	25-10-2024	7																	
25	C2406	10-09-2024	17-09-2024	7																	
26	C2410	16-09-2025	18-09-2025	2																	
27	C1917	01-10-2025	07-10-2025	6																	
28	C2699	07-02-2024	12-02-2024	5																	

## 2.New Table for Duration Details by Copying Data from Bookings



	A	B	C	D	E	F	G	H	I	J	K	L
1	BookingID	CustomerID	RoomTypeID	BranchID	CheckinDate	CheckoutDate	Duration					
2	BK10000	C1381	RT8	B4	15-12-2023	19-12-2023	4					
3	BK10001	C3625	RT1	B3	29-12-2024	01-01-2025	3					
4	BK10002	C3063	RT7	B2	03-04-2025	04-04-2025	1					
5	BK10003	C2648	RT1	B5	23-03-2024	29-03-2024	6					
6	BK10004	C3045	RT6	B1	25-11-2023	26-11-2023	1					
7	BK10005	C2530	RT2	B7	04-12-2023	05-12-2023	1					
8	BK10006	C1776	RT8	B6	22-09-2024	24-09-2024	2					
9	BK10007	C3787	RT4	B1	19-04-2024	24-04-2024	5					
10	BK10008	C3502	RT5	B4	08-12-2023	11-12-2023	3					
11	BK10009	C1978	RT9	B3	18-11-2023	22-11-2023	4					
12	BK10010	C1749	RT8	B1	26-06-2024	28-06-2024	2					
13	BK10011	C1754	RT3	B5	13-08-2024	15-08-2024	2					
14	BK10012	C1968	RT4	B1	06-03-2025	08-03-2025	2					
15	BK10013	C1024	RT6	B5	27-11-2024	29-11-2024	2					
16	BK10014	C1807	RT6	B6	29-08-2025	02-09-2025	4					
17	BK10015	C1819	RT7	B1	19-08-2025	23-08-2025	4					
18	BK10016	C1277	RT10	B3	21-04-2025	28-04-2025	7					
19	BK10017	C2034	RT6	B7	06-01-2024	08-01-2024	2					
20	BK10018	C3613	RT1	B3	26-12-2023	01-01-2024	6					
21	BK10019	C1264	RT2	B1	05-09-2025	08-09-2025	3					
22	BK10020	C3609	RT1	B1	27-09-2025	30-09-2025	3					
23	BK10021	C1225	RT5	B7	06-09-2024	11-09-2024	5					
24	BK10022	C1008	RT8	B1	18-10-2024	25-10-2024	7					
25	BK10023	C2406	RT10	B7	10-09-2024	17-09-2024	7					
26	BK10024	C2410	RT8	B1	16-09-2025	18-09-2025	2					
27	BK10025	C1917	RT10	B1	01-10-2025	07-10-2025	6					
28	BK10026	C2699	RT1	B6	07-02-2024	12-02-2024	5					

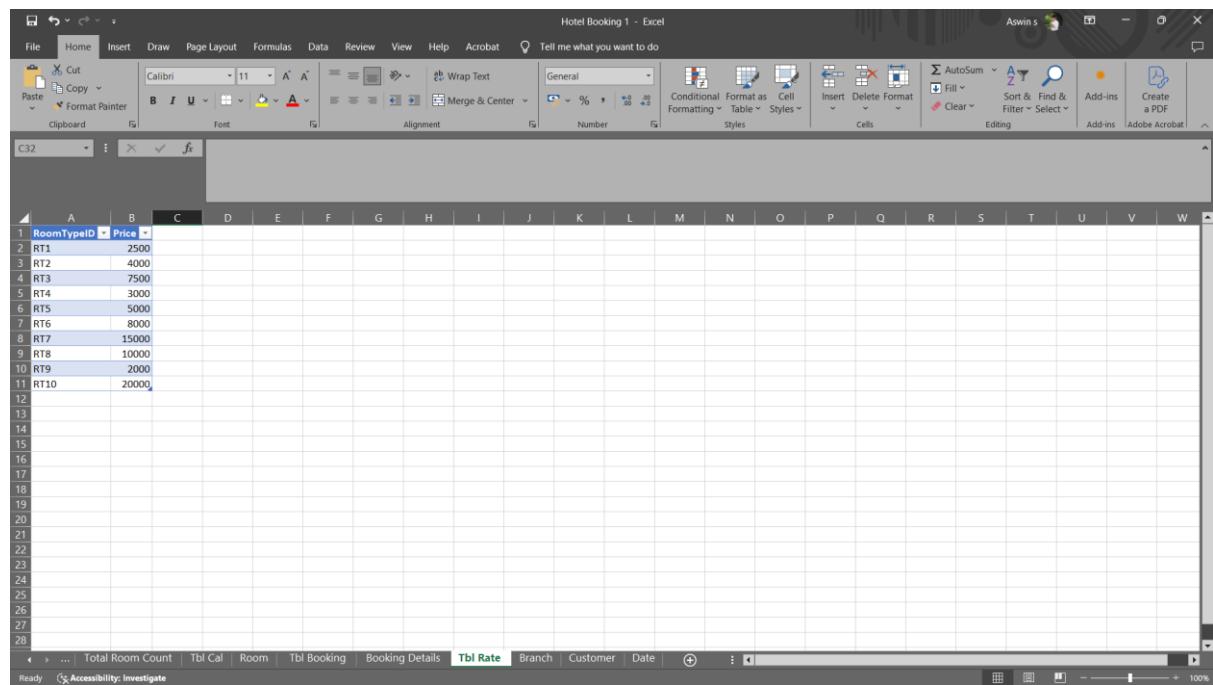
### 3.Creating a new Table as Table Bookings:



CustomerID	RoomTypeID	BranchID	CheckInDate	CheckOutDate	Revenue	Duration	Stay Date	Day Revenue
C1381	RT8	B4	15-12-2023	19-12-2023	40000	4	15-12-2023	10000
C1776	RT8	B6	22-09-2024	24-09-2024	20000	2	22-09-2024	10000
C1749	RT8	B1	26-06-2024	28-06-2024	20000	2	26-06-2024	10000
C9625	RT1	B3	29-12-2024	01-01-2025	7500	3	29-12-2024	2500
C6248	RT1	B5	23-03-2024	29-03-2024	15000	6	23-03-2024	2500
C2530	RT2	B7	04-12-2023	05-12-2023	4000	1	04-12-2023	4000
C3063	RT7	B2	03-04-2025	04-04-2025	15000	1	03-04-2025	15000
C3787	RT4	B1	19-04-2024	24-04-2024	15000	5	19-04-2024	3000
C3045	RT6	B1	25-11-2023	26-11-2023	8000	1	25-11-2023	8000
C3502	RT5	B4	08-12-2023	11-12-2023	15000	3	08-12-2023	5000
C1978	RT9	B3	18-11-2023	22-11-2023	8000	4	18-11-2023	2000
C1754	RT3	B5	13-08-2024	15-08-2024	15000	2	13-08-2024	7500
C1968	RT4	B1	06-03-2025	08-03-2025	6000	2	06-03-2025	3000
C1024	RT6	B5	27-11-2024	29-11-2024	16000	2	27-11-2024	8000
C1807	RT6	B6	29-08-2025	02-09-2025	32000	4	29-08-2025	8000
C1819	RT7	B1	19-08-2025	23-08-2025	60000	4	19-08-2025	15000
C1277	RT10	B3	21-04-2025	28-04-2025	140000	7	21-04-2025	20000
C2034	RT6	B7	06-01-2024	08-01-2024	16000	2	06-01-2024	8000
C2613	RT1	B3	26-12-2023	01-01-2024	15000	6	26-12-2023	2500
C1264	RT2	B1	05-09-2025	08-09-2025	12000	3	05-09-2025	4000
C3609	RT1	B1	27-09-2025	30-09-2025	7500	3	27-09-2025	2500
C1225	RT5	B7	06-09-2024	11-09-2024	25000	5	06-09-2024	5000
C1008	RT8	B1	18-10-2024	25-10-2024	70000	7	18-10-2024	10000
C2406	RT10	B7	10-09-2024	17-09-2024	140000	7	10-09-2024	20000
C2410	RT8	B1	16-09-2025	18-09-2025	20000	2	16-09-2025	10000
C1917	RT10	B1	01-10-2025	07-10-2025	120000	6	01-10-2025	20000
C2699	RT1	B6	07-02-2024	12-02-2024	12500	5	07-02-2024	2500

### 4.Creating Tbl Rate from RoomType:

Only Choosing Columns RoomTypeID and Price



RoomTypeID	Price
RT1	2500
RT2	4000
RT3	7500
RT4	3000
RT5	5000
RT6	8000
RT7	15000
RT8	10000
RT9	2000
RT10	20000

### 3.Creating Room Category Calculation in Room Table:

Room Category =SWITCH(B2,  
"Single", "Budget",  
"Double", "Budget",  
"Deluxe Single", "Mid-range",  
"Deluxe Double", "Mid-range",  
"Suite", "Premium",  
"Family Suite", "Premium",  
"Executive Suite", "Luxury",  
"Presidential Suite", "Luxury",  
"Economy Room", "Budget",  
"Penthouse", "Luxury",  
"Other")

)

A	B	C	D	E	F	G	H
RoomTypeID	RoomType	Price	MaxOccupancy	Amenities	IsAC	IsSeaFacing	Room Category
2 RT1	Single	2500	1 WiFi,TV	TRUE	FALSE		Budget
3 RT2	Double	4000	2 WiFi,TV,Minibar	TRUE	TRUE		Budget
4 RT3	Suite	7500	4 WiFi,TV,Minibar,Balcony	TRUE	TRUE		Premium
5 RT4	Deluxe Single	3000	2 WiFi,TV,Minibar	TRUE	FALSE		Mid-range
6 RT5	Deluxe Double	5000	2 WiFi,TV,Minibar,Balcony	TRUE	TRUE		Mid-range
7 RT6	Family Suite	8000	4 WiFi,TV,Minibar,Balcony	TRUE	TRUE		Premium
8 RT7	Presidential Suite	15000	5 WiFi,TV,Minibar,Balcony,Jacuzz	TRUE	TRUE		Luxury
9 RT8	Executive Suite	10000	3 WiFi,TV,Minibar,Balcony,Work	TRUE	TRUE		Luxury
10 RT9	Economy Room	2000	2 WiFi,TV	FALSE	FALSE		Budget
11 RT10	Penthouse	20000	6 WiFi,TV,Minibar,Balcony,Jacuzz	TRUE	TRUE		Luxury
12							
13							
14							
15							
16							
17							
18							
19							

#### **4. Creating Table Calculation Using Power Query Editor :**

The screenshot shows a Microsoft Excel spreadsheet titled "Hotel Booking 1 - Excel". The ribbon menu is visible at the top, with tabs for File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, Help, and Acrobat. A search bar says "Tell me what you want to do". The Home tab is selected.

The main area displays a table with two columns: "Stay Date" and "Room Booked Count". The "Stay Date" column contains dates from 15-12-2023 to 07-02-2024. The "Room Booked Count" column contains corresponding integers. Row 1 is a header row with a blue background. Row 28 is the last data row, indicated by a red border.

	Stay Date	Room Booked Count
1	15-12-2023	32
2	22-09-2024	28
3	26-06-2024	23
4	29-12-2024	30
5	23-03-2024	37
6	04-12-2023	22
7	03-04-2025	27
8	19-04-2024	24
9	25-11-2023	34
10	08-12-2023	26
11	18-11-2023	30
12	13-08-2024	33
13	06-03-2025	29
14	27-11-2024	19
15	29-08-2025	23
16	19-08-2025	29
17	21-04-2025	31
18	06-01-2024	30
19	26-12-2023	31
20	05-09-2025	30
21	27-09-2025	33
22	06-09-2024	25
23	18-10-2024	27
24	10-09-2024	23
25	16-09-2025	36
26	01-10-2025	21
27	07-02-2024	31
28	Total Room Count	

**5.By using Pivot table Create the Sum of Room Booked Count:**

The screenshot shows a Microsoft Excel spreadsheet titled "Hotel Booking 1 - Excel". The ribbon menu is visible at the top, with the "Insert" tab selected. The main content area displays a PivotTable report. The "Row Labels" section contains the following data:

	Sum of Room Booked Count
2023	6089
May	154
26-05-2023	24
27-05-2023	36
28-05-2023	14
29-05-2023	22
30-05-2023	28
31-05-2023	30
Jun	822
Jul	889
Aug	836
Sep	879
Oct	826
Nov	833
Dec	850
2024	10263
2025	8648
<b>Grand Total</b>	<b>25000</b>

The PivotTable includes several filters and slicers on the right side of the interface.

## 6. Load the date to Power BI and Create columns Using Dax Formula in Table Calculation

1. ADR = `DIVIDE([TotalRevenue],[Room Booked Count])`
2. Month = `FORMAT([MonthStart], "MMMM")`
3. MonthStart = `DATE(YEAR([Stay Date]), MONTH([Stay Date]), 1)`
4. Occupancy % = `DIVIDE('Tbl Cal'[Room Booked Count],'Tbl Cal'[Total Rooms])*100`
5. Quarter = "Q" & `FORMAT([Stay Date], "Q")` & " " & `FORMAT([MonthStart], "YYYY")`
6. Revpar = `DIVIDE([TotalRevenue],[Total Rooms])`
7. Season = `SWITCH(`  
`TRUE(),`  
`MONTH([Stay Date]) IN {12, 1, 2}, "Winter",`  
`MONTH([Stay Date]) IN {3, 4, 5}, "Spring",`  
`MONTH([Stay Date]) IN {6, 7, 8}, "Summer",`  
`MONTH([Stay Date]) IN {9, 10, 11}, "Autumn"`  
`)`
8. Total Rooms = 208
9. TotalRevenue =  
`CALCULATE(`  
`SUM('Tbl Booking'[Day Revenue]),`  
`FILTER(`  
`'Tbl Booking',`  
`'Tbl Booking'[Stay Date] = ('Tbl Cal'[Stay date])`  
`)`  
`)`
10. Week = `WEEKNUM([Stay date])`
11. Weekday = `FORMAT([Stay Date], "dddd")`

The screenshot shows the Microsoft Power BI Data View interface. The table 'Tbl Cal' has the following structure:

Stay Date	Room Booked Count	ADR	Month	MonthStart	Occupancy %	Quarter	Revpar	Season	Total Rooms	TotalRevenue	Week	Weekday
03 April 2025	27	₹7,481.48	April	01-04-2025	1298.08%	Q2 2025	₹ 971.15	Spring	208	202000	14	Thursday
18 October 2024	27	₹7,370.37	October	01-10-2024	1298.08%	Q4 2024	₹ 956.73	Autumn	208	199000	42	Friday
21 June 2025	27	₹8,203.70	June	01-06-2025	1298.08%	Q2 2025	₹ 1,064.90	Summer	208	221500	25	Saturday
20 June 2024	27	₹7,277.78	June	01-06-2024	1298.08%	Q2 2024	₹ 944.71	Summer	208	196500	25	Thursday
27 May 2025	27	₹ 5,592.59	May	01-05-2025	1298.08%	Q2 2025	₹ 725.05	Spring	208	151000	22	Tuesday
04 August 2025	27	₹ 8,037.04	August	01-08-2025	1298.08%	Q3 2025	₹ 1,043.31	Summer	208	217000	32	Monday
23 July 2025	27	₹ 7,611.11	July	01-07-2025	1298.08%	Q3 2025	₹ 987.98	Summer	208	205500	30	Wednesday
14 August 2024	27	₹ 6,388.89	August	01-08-2024	1298.08%	Q3 2024	₹ 829.33	Summer	208	172500	33	Wednesday
22 June 2025	27	₹ 7,592.59	June	01-06-2025	1298.08%	Q2 2025	₹ 985.58	Summer	208	205000	26	Sunday
07 October 2023	27	₹ 6,795.30	October	01-10-2023	1298.08%	Q4 2023	₹ 682.21	Autumn	208	183500	40	Saturday
23 August 2024	27	₹ 7,111.11	August	01-08-2024	1298.08%	Q3 2024	₹ 923.08	Summer	208	192000	34	Friday
19 October 2023	27	₹ 6,962.96	October	01-10-2023	1298.08%	Q4 2023	₹ 1,163.46	Autumn	208	242000	42	Thursday
13 October 2024	27	₹ 6,685.19	October	01-10-2024	1298.08%	Q4 2024	₹ 1,127.40	Autumn	208	234500	42	Sunday
26 March 2024	27	₹ 8,629.63	March	01-03-2024	1298.08%	Q1 2024	₹ 1,120.19	Spring	208	233000	13	Tuesday
06 September 2023	27	₹ 7,666.67	September	01-09-2023	1298.08%	Q3 2023	₹ 995.19	Autumn	208	207000	36	Wednesday
28 December 2024	27	₹ 9,407.41	December	01-12-2024	1298.08%	Q4 2024	₹ 1,221.15	Winter	208	254000	52	Saturday
15 September 2025	27	₹ 7,370.37	September	01-09-2025	1298.08%	Q3 2025	₹ 956.73	Autumn	208	199000	38	Monday
05 March 2025	27	₹ 5,481.48	March	01-03-2025	1298.08%	Q1 2025	₹ 711.54	Spring	208	148000	10	Wednesday
07 July 2024	27	₹ 9,814.81	July	01-07-2024	1298.08%	Q3 2024	₹ 1,274.04	Summer	208	265000	28	Sunday
11 September 2025	27	₹ 5,962.96	September	01-09-2025	1298.08%	Q3 2025	₹ 774.04	Autumn	208	161000	37	Thursday
29 March 2024	27	₹ 7,055.56	March	01-03-2024	1298.08%	Q1 2024	₹ 915.87	Spring	208	190500	13	Friday
28 April 2024	27	₹ 9,685.19	April	01-04-2024	1298.08%	Q2 2024	₹ 1,257.21	Spring	208	261500	18	Sunday
06 January 2025	27	₹ 8,000.00	January	01-01-2025	1298.08%	Q1 2025	₹ 1,038.46	Winter	208	216000	2	Monday
08 November 2024	27	₹ 7,129.63	November	01-11-2024	1298.08%	Q4 2024	₹ 925.48	Autumn	208	192500	45	Friday
03 September 2025	27	₹ 7,666.67	September	01-09-2025	1298.08%	Q3 2025	₹ 995.19	Autumn	208	207000	36	Wednesday
27 May 2024	27	₹ 6,962.96	May	01-05-2024	1298.08%	Q2 2024	₹ 903.85	Spring	208	188000	22	Monday
31 August 2025	27	₹ 10,370.37	August	01-08-2025	1298.08%	Q3 2025	₹ 1,346.15	Summer	208	280000	36	Sunday
07 January 2025	27	₹ 9,055.56	January	01-01-2025	1298.08%	Q1 2025	₹ 915.87	Winter	208	190500	2	Tuesday
31 January 2024	27	₹ 5,259.26	January	01-01-2024	1298.08%	Q1 2024	₹ 682.69	Winter	208	142000	5	Wednesday
11 August 2024	27	₹ 7,407.41	August	01-08-2024	1298.08%	Q3 2024	₹ 961.54	Summer	208	200000	33	Sunday

Table: Tbl Cal (901 rows)

## 7.Creating a New Table as Master data

```

MasterData =
VAR CalendarTable =
    ADDCOLUMNS (
        CALENDAR (DATE(2023,5,1), DATE(2025,11,1)),
        "MonthStart", EOMONTH([Date], -1) + 1,
        "Month", FORMAT(EOMONTH([Date], -1) + 1, "dd-mmm-yy"),
        "DayCount", DAY(EOMONTH([Date], 0)),
        "RoomAvailableCount", DAY(EOMONTH([Date], 0)) * 260
    )
RETURN
    ADDCOLUMNS (
        SUMMARIZE (
            CalendarTable,
            [MonthStart], [Month], [DayCount], [RoomAvailableCount]
        ),
        "RoomSoldCount",
        CALCULATE (
            SUM ('Booking details'[Room Booked Count]),
            TREATAS ( { [MonthStart] }, 'Booking details'[MonthStart] )
        ),
        "Occupancy %",
        DIVIDE (
            CALCULATE (
                SUM ('Booking details'[Room Booked Count]),
                TREATAS ( { [MonthStart] }, 'Booking details'[MonthStart] )
            ),
            [RoomAvailableCount],
            0
        ) * 100
    )
)

```

The screenshot shows the Power BI Data Editor interface with the 'MasterData' table selected. The ribbon at the top has 'Table tools' selected. The 'Structure' tab is active, showing the table schema with columns: MonthStart, Month, DayCount, RoomAvailableCount, RoomSoldCount, Occupancy %, ADR, RevPAR, and TotalRevenue. Below the schema, a preview grid displays 31 rows of data corresponding to the months from June 2023 to August 2023. The 'Data' pane on the right lists various measures and tables used in the model, such as Booking, Booking Details, and MasterData.

MonthStart	Month	DayCount	RoomAvailableCount	RoomSoldCount	Occupancy %	ADR	RevPAR	TotalRevenue
01-05-2023 00:00:00	01-May-23	31	8060	154	1.9106699751861	₹ 28,756.49	₹ 549.44	4428500
01-06-2023 00:00:00	01-Jun-23	30	7800	822	10.5384615384615	₹ 31,621.05	₹ 3,332.37	25992500
01-07-2023 00:00:00	01-Jul-23	31	8060	889	11.029776674938	₹ 30,482.56	₹ 3,362.16	27090000
01-08-2023 00:00:00	01-Aug-23	31	8060	836	10.3722084367246	₹ 31,447.37	₹ 3,261.79	26290000

Table: MasterData (31 rows)

## 8.Adding New Columns in the Master Data Using Dax Formula:

1. ADR =

```
DIVIDE(
    [TotalRevenue],
    'MasterData'[RoomSoldCount]
)
```

2. RevPAR =

```
[ADR] * DIVIDE(MasterData[Occupancy %], 100)
```

3. TotalRevenue =

```
CALCULATE(
    SUM('Booking'[Revenue]),
    FILTER('Booking','Booking'[MonthStart] = MasterData[MonthStart])
)
```

The screenshot shows the Power BI Desktop interface with the 'Column tools' ribbon selected. The 'Structure' tab is active, displaying a code editor with the DAX formula for calculating ADR. The 'Formatting' tab shows the column is set to 'Currency' with 2 decimal places. The 'Properties' tab shows the column name is 'ADR' and its data type is 'Decimal number'. The 'Calculated columns' section lists the ADR formula. The main data grid displays monthly sales data with columns for MonthStart, Month, DayCount, RoomAvailableCount, RoomSoldCount, Occupancy %, ADR, RevPAR, and TotalRevenue. To the right, the 'Data' pane shows the schema of the 'MasterData' table, including relationships to other tables like 'Booking' and 'Branch'. The bottom status bar indicates there are 31 rows in the MasterData table.

MonthStart	Month	DayCount	RoomAvailableCount	RoomSoldCount	Occupancy %	ADR	RevPAR	TotalRevenue
01-05-2023 00:00:00	01-May-23	31	8060	154	19.106699751861	₹ 28,756.49	₹ 549.44	4428500
01-06-2023 00:00:00	01-Jun-23	30	7800	822	10.5384615384615	₹ 31,621.05	₹ 3,332.37	25992500
01-07-2023 00:00:00	01-Jul-23	31	8060	889	11.029776674938	₹ 30,482.56	₹ 3,362.16	27099000
01-08-2023 00:00:00	01-Aug-23	31	8060	836	10.3722084367246	₹ 31,447.37	₹ 3,261.79	26290000
01-09-2023 00:00:00	01-Sep-23	30	7800	879	11.2692307692308	₹ 30,797.50	₹ 3,470.64	27071000
01-10-2023 00:00:00	01-Oct-23	31	8060	826	10.2481389578164	₹ 32,615.01	₹ 3,342.43	26940000
01-11-2023 00:00:00	01-Nov-23	30	7800	833	10.6794871794872	₹ 30,915.97	₹ 3,301.67	25753000
01-12-2023 00:00:00	01-Dec-23	31	8060	850	10.545905707196	₹ 29,634.12	₹ 3,125.19	25189000
01-01-2024 00:00:00	01-Jan-24	31	8060	890	11.0421836228288	₹ 31,894.38	₹ 3,521.84	28386000
01-02-2024 00:00:00	01-Feb-24	29	7540	804	10.66312973274748	₹ 31,303.48	₹ 3,337.93	25168000
01-03-2024 00:00:00	01-Mar-24	31	8060	870	10.7940446650124	₹ 30,889.66	₹ 3,334.24	26874000
01-04-2024 00:00:00	01-Apr-24	30	7800	839	10.756102564103	₹ 30,797.38	₹ 3,312.69	25839000
01-05-2024 00:00:00	01-May-24	31	8060	931	11.5508684863524	₹ 30,678.30	₹ 3,543.61	28561500
01-06-2024 00:00:00	01-Jun-24	30	7800	865	11.0897435897436	₹ 30,865.32	₹ 3,422.88	26698500
01-07-2024 00:00:00	01-Jul-24	31	8060	839	10.40942920397	₹ 30,204.41	₹ 3,144.11	25341500
01-08-2024 00:00:00	01-Aug-24	31	8060	860	10.6699751861042	₹ 30,628.49	₹ 3,268.05	26340500
01-09-2024 00:00:00	01-Sep-24	30	7800	847	10.8589743589744	₹ 31,913.81	₹ 3,465.51	27031000
01-10-2024 00:00:00	01-Oct-24	31	8060	879	10.9057071960298	₹ 29,500.00	₹ 3,217.18	25930500
01-11-2024 00:00:00	01-Nov-24	30	7800	809	10.3717948717949	₹ 31,470.95	₹ 3,264.10	25460000
01-12-2024 00:00:00	01-Dec-24	31	8060	830	10.2977667493797	₹ 32,515.06	₹ 3,348.33	26987500
01-01-2025 00:00:00	01-Jan-25	31	8060	818	10.148883746898	₹ 31,525.67	₹ 3,199.50	25788000
01-02-2025 00:00:00	01-Feb-25	28	7280	788	10.8241758241758	₹ 30,565.99	₹ 3,308.52	24060000
01-03-2025 00:00:00	01-Mar-25	31	8060	829	10.2853598014888	₹ 30,899.28	₹ 3,178.10	25615500
01-04-2025 00:00:00	01-Apr-25	30	7800	837	10.73072307692	₹ 28,404.26	₹ 3,051.86	23804500
01-05-2025 00:00:00	01-May-25	31	8060	846	10.4962779156328	₹ 31,904.26	₹ 3,348.76	26991000
01-06-2025 00:00:00	01-Jun-25	30	7800	866	11.1025641025641	₹ 29,703.81	₹ 3,297.88	25723500
01-07-2025 00:00:00	01-Jul-25	31	8060	857	10.632754324318	₹ 31,731.04	₹ 3,373.88	27193500

## 9. Create a New table as Monthly Booking:

MonthlyBookings =

```
SUMMARIZE(  
    'Booking Details',  
    'Booking Details'[MonthStart],  
    "TotalRoomsBooked", SUM('Booking details'[Room Booked Count])  
)
```

The screenshot shows the Microsoft Power BI Data Editor interface. The top navigation bar includes File, Home, Help, and Table tools. The Table tools tab is selected, showing options for Manage relationships, New measure, New column, New table, and Mark as date table. The Structure pane on the left displays the DAX code for the 'MonthlyBookings' table:

```
1 MonthlyBookings =  
2     SUMMARIZE(  
3         'Booking Details',  
4         'Booking Details'[MonthStart],  
5         "TotalRoomsBooked", SUM('Booking details'[Room Booked Count])  
6     )  
7
```

The main data grid shows the following data:

MonthStart	TotalRoomsBooked
01-04-2025 00:00:00	837
01-10-2024 00:00:00	879
01-06-2025 00:00:00	866
01-06-2024 00:00:00	865
01-05-2025 00:00:00	846
01-08-2025 00:00:00	871
01-07-2025 00:00:00	857
01-08-2024 00:00:00	860
01-10-2023 00:00:00	826
01-03-2024 00:00:00	870
01-09-2023 00:00:00	879
01-12-2024 00:00:00	830
01-09-2025 00:00:00	846
01-03-2025 00:00:00	829
01-07-2024 00:00:00	839
01-04-2024 00:00:00	839
01-01-2025 00:00:00	818
01-11-2024 00:00:00	809
01-05-2024 00:00:00	931
01-01-2024 00:00:00	890
01-06-2023 00:00:00	822
01-09-2024 00:00:00	847
01-02-2025 00:00:00	788
01-08-2023 00:00:00	836
01-10-2025 00:00:00	824

Table: MonthlyBookings (31 rows)

## 10. Adding new Columns in Bookings

1. CustomerCluster =

```
SWITCH(  
    TRUE(),  
    [NumOfBookings] = 1 && [Revenue] < 5000, "First-Timer",  
    [NumOfBookings] >= 3 && [Revenue] < 15000, "Loyal Guest",  
    [Revenue] >= 15000, "High Spender",  
    "Other"  
)
```

2. GuestType =

```
SWITCH(TRUE(),  
    [Purpose] = "Business" || [BookingChannel] = "Corporate", "Business",  
    [Purpose] = "Vacation" && [StayType] = "Extended Stay", "Family",  
    [Purpose] = "Holiday" && [StayType] = "Extended Stay", "Family",  
    [Purpose] = "Conference" || [StayType] = "Extended Stay", "Corporate",  
    "Solo"  
)
```

3. MonthStart = DATE(YEAR('Booking'[CheckInDate]), MONTH('Booking'[CheckInDate]), 1)

```

4. NumOfBookings =
CALCULATE(
    COUNT('Booking'[BookingID]),
    ALLEXCEPT('Booking', 'Booking'[CustomerID])
)
5. StayLengthGroup =
SWITCH(
    TRUE(),
    Booking[Duration] >= 1 && Booking[Duration] <= 5, "1–5 nights",
    Booking[Duration] >= 6 && Booking[Duration] <= 10, "6–10 nights",
    Booking[Duration] >= 11 && Booking[Duration] <= 20, "11–20 nights",
    Booking[Duration] > 20, "20+ nights",
    "Unknown"
)

```

The screenshot shows the Power BI Data Editor interface. A new column 'StayLengthGroup' is being created in a table named 'Booking'. The formula is:

```

1 StayLengthGroup =
2 SWITCH(
3     TRUE(),
4     Booking[Duration] >= 1 && Booking[Duration] <= 5, "1–5 nights",
5     Booking[Duration] >= 6 && Booking[Duration] <= 10, "6–10 nights",
6     Booking[Duration] >= 11 && Booking[Duration] <= 20, "11–20 nights",
7     Booking[Duration] > 20, "20+ nights",
8     "Unknown"
9 )
10

```

The Data pane on the right lists various dimensions and measures such as DateID, Duration, GuestType, LeadTime, MonthStart, NumOfBookings, PaymentMethod, Purpose, Revenue, RoomCategory, RoomTypeID, SourceType, and StayType.

## 11. Adding New Columns in Booking Details:

- MonthStart = DATE(YEAR([Stay Date]), MONTH([Stay Date]), 1)
- MonthYear = 'Booking Details'[Stay Date]
- Season =
- SWITCH(
 TRUE(),
 MONTH('Booking Details'[Stay Date]) IN {12, 1, 2}, "Winter",
 MONTH('Booking Details'[Stay Date]) IN {3, 4, 5}, "Spring",
 MONTH('Booking Details'[Stay Date]) IN {6, 7, 8}, "Summer",
 MONTH('Booking Details'[Stay Date]) IN {9, 10, 11}, "Autumn"
)
- Weekday = FORMAT('Booking Details'[Stay Date], "dddd")
- WeekNum = WEEKNUM('Booking Details'[Stay Date])
- WeekStart = 'Booking Details'[Stay Date] - WEEKDAY('Booking Details'[Stay Date], 2) + 1
- Year = YEAR('Booking Details'[Stay Date])

## 9. YearWeek =

```
VAR YearNum = YEAR('Booking Details'[Stay Date])
VAR WeekNum = WEEKNUM('Booking Details'[Stay Date])
RETURN
YearNum & "-W" & FORMAT(WeekNum, "00")
```

The screenshot shows the Power BI Desktop interface with the 'Booking Details' table selected. The table has 901 rows and the following columns:

Stay Date	Room Booked Count	Month	MonthStart	MonthYear	Season	Weekday	WeekNum	WeekStart	Year	YearWeek
03 April 2025	27	April	01-04-2025	2025-04	Spring	Thursday	14	31-03-2025	2025	2025-W14
18 October 2024	27	October	01-10-2024	2024-10	Autumn	Friday	42	14-10-2024	2024	2024-W42
21 June 2025	27	June	01-06-2025	2025-06	Summer	Saturday	25	16-06-2025	2025	2025-W25
20 June 2024	27	June	01-06-2024	2024-06	Summer	Thursday	25	17-06-2024	2024	2024-W25
27 May 2025	27	May	01-05-2025	2025-05	Spring	Tuesday	22	26-05-2025	2025	2025-W22
04 August 2025	27	August	01-08-2025	2025-08	Summer	Monday	32	04-08-2025	2025	2025-W32
23 July 2025	27	July	01-07-2025	2025-07	Summer	Wednesday	30	21-07-2025	2025	2025-W30
14 August 2024	27	August	01-08-2024	2024-08	Summer	Wednesday	33	12-08-2024	2024	2024-W33
22 June 2025	27	June	01-06-2025	2025-06	Summer	Sunday	26	16-06-2025	2025	2025-W26
07 October 2023	27	October	01-10-2023	2023-10	Autumn	Saturday	40	02-10-2023	2023	2023-W40
23 August 2024	27	August	01-08-2024	2024-08	Summer	Friday	34	19-08-2024	2024	2024-W34
19 October 2023	27	October	01-10-2023	2023-10	Autumn	Thursday	42	16-10-2023	2023	2023-W42
13 October 2024	27	October	01-10-2024	2024-10	Autumn	Sunday	42	07-10-2024	2024	2024-W42
26 March 2024	27	March	01-03-2024	2024-03	Spring	Tuesday	13	25-03-2024	2024	2024-W13
06 September 2023	27	September	01-09-2023	2023-09	Autumn	Wednesday	36	04-09-2023	2023	2023-W36
28 December 2024	27	December	01-12-2024	2024-12	Winter	Saturday	52	23-12-2024	2024	2024-W52
15 September 2025	27	September	01-09-2025	2025-09	Autumn	Monday	38	15-09-2025	2025	2025-W38
05 March 2025	27	March	01-03-2025	2025-03	Spring	Wednesday	10	03-03-2025	2025	2025-W10
07 July 2024	27	July	01-07-2024	2024-07	Summer	Sunday	28	01-07-2024	2024	2024-W28
11 September 2025	27	September	01-09-2025	2025-09	Autumn	Thursday	37	08-09-2025	2025	2025-W37
29 March 2024	27	March	01-03-2024	2024-03	Spring	Friday	13	25-03-2024	2024	2024-W13
28 April 2024	27	April	01-04-2024	2024-04	Spring	Sunday	18	22-04-2024	2024	2024-W18
06 January 2025	27	January	01-01-2025	2025-01	Winter	Monday	2	06-01-2025	2025	2025-W02
08 November 2024	27	November	01-11-2024	2024-11	Autumn	Friday	45	04-11-2024	2024	2024-W45
03 September 2025	27	September	01-09-2025	2025-09	Autumn	Wednesday	36	01-09-2025	2025	2025-W36
27 May 2024	27	May	01-05-2024	2024-05	Spring	Monday	22	27-05-2024	2024	2024-W22
31 August 2025	27	August	01-08-2025	2025-08	Summer	Sunday	36	25-08-2025	2025	2025-W36
07 January 2025	27	January	01-01-2025	2025-01	Winter	Tuesday	2	06-01-2025	2025	2025-W02
31 January 2024	27	January	01-01-2024	2024-01	Winter	Wednesday	5	29-01-2024	2024	2024-W05
11 August 2024	27	August	01-08-2024	2024-08	Summer	Sunday	33	05-08-2024	2024	2024-W33

Table: Booking Details (901 rows)

## 12. Creating New Measures in Bookings Table:

### 1. ADR =

```
DIVIDE(
    'Booking'[Revenue],
    'Booking'[Duration],
    0
)
```

2. DailyBookings = COUNT('Booking'[BookingID])

3. DailyBookingValue = SUM('Booking'[Revenue])

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Search

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DailyBookingValue

Format Whole number

Data category Uncategorized

New measure Quick measure Calculations

Structure

Formatting

Properties

Calculations

**1 DailyBookingValue = SUM(Booking'[Revenue])**

tion	Revenue	Purpose	StayType	BookingStatus	CancellationReason	LeadTime	PaymentMethod	DiscountApplied	BookingChannel	DateID	RoomCategory	ADR	
5	50000	Vacation	Long Stay	No-show		56	Cash		10	Mobile App	20230918	Luxury	10000
6	48000	Vacation	Long Stay	No-show		41	Credit Card		10	Travel Agent	20250616	Luxury	8000
2	8000	Vacation	Long Stay	No-show		55	Cash		10	Travel Agent	20231023	Luxury	4000
7	21000	Vacation	Long Stay	No-show		5	UPI		10	Travel Agent	20250609	Luxury	3000
5	25000	Vacation	Long Stay	No-show		24	Credit Card		10	Mobile App	20250416	Luxury	5000
1	4000	Vacation	Long Stay	No-show		25	Cash		10	Travel Agent	20240617	Luxury	4000
3	30000	Vacation	Long Stay	No-show		36	Corporate Account		10	Mobile App	20231129	Luxury	10000
4	16000	Vacation	Long Stay	No-show		36	Credit Card		10	Website	20250129	Luxury	4000
1	5000	Vacation	Long Stay	No-show		24	Cash		10	Mobile App	20231011	Luxury	5000
2	40000	Vacation	Long Stay	No-show		15	Credit Card		10	Mobile App	20250621	Luxury	20000
4	80000	Vacation	Long Stay	No-show		37	Cash		10	Mobile App	20251111	Luxury	20000
6	12000	Vacation	Long Stay	No-show		6	Credit Card		10	Mobile App	20240414	Luxury	2000
5	15000	Vacation	Long Stay	No-show		19	Credit Card		10	Website	20230901	Luxury	3000
1	10000	Vacation	Long Stay	No-show		57	UPI		10	Website	20240525	Luxury	10000
1	5000	Vacation	Long Stay	No-show		34	UPI		10	Call Center	20231114	Luxury	5000
7	52500	Vacation	Long Stay	No-show		29	Corporate Account		10	Website	20250507	Luxury	7500
7	35000	Vacation	Long Stay	No-show		12	Corporate Account		10	Mobile App	20240712	Luxury	5000
5	12500	Vacation	Long Stay	No-show		21	UPI		10	Travel Agent	20250809	Luxury	2500
3	22500	Vacation	Long Stay	No-show		5	Corporate Account		10	Website	20250823	Luxury	7500
6	24000	Vacation	Long Stay	No-show		6	Credit Card		10	Mobile App	20250813	Luxury	4000
2	70000	Vacation	Long Stay	No-show		12	UPI		10	Mobile App	20230612	Luxury	5000
7	35000	Vacation	Long Stay	No-show		31	Credit Card		10	Mobile App	20241009	Luxury	5000
2	5000	Vacation	Long Stay	No-show		59	Corporate Account		10	Website	20250222	Luxury	2500
6	48000	Vacation	Long Stay	No-show		35	UPI		10	Travel Agent	20250621	Luxury	8000
4	80000	Vacation	Long Stay	No-show		26	Cash		10	Call Center	20250921	Luxury	20000
3	12000	Vacation	Long Stay	No-show		22	Corporate Account		10	Mobile App	20230809	Luxury	4000
4	12000	Vacation	Long Stay	No-show		10	UPI		10	Call Center	20250517	Luxury	3000
3	6000	Vacation	Long Stay	No-show		37	Cash		10	Travel Agent	20231226	Luxury	2000
7	56000	Vacation	Long Stay	No-show		36	UPI		10	Travel Agent	20231224	Luxury	8000

Table: Booking (25,000 rows) Column: DailyBookingValue (0 distinct values)

### **13.Adding New Measures in Booking Details Table:**

- ```
1. DirectBookings_Daily =  
CALCULATE(  
    SUM('Booking details'[Room Booked Count]),  
    FILTER('Booking', 'Booking'[Source Type] = "Direct")  
)  
2. DirectBookings_Weekly =  
CALCULATE(  
    SUM('Booking details'[Room Booked Count]),  
    FILTER(  
        'Booking',  
        'Booking'[Source Type] = "Direct"  
    ),  
    ALLEXCEPT('Booking details', 'Booking details'[WeekNum])  
)  
3. OTABookings_Daily =  
CALCULATE(  
    SUM('Booking details'[Room Booked Count]),  
    FILTER('Booking', 'Booking'[Source Type] = "OTA")  
)  
4. OTABookings_Weekly =  
CALCULATE(  
    SUM('Booking details'[Room Booked Count]),  
    FILTER(  
        'Booking',  
        'Booking'[Source Type] = "OTA"  
    ),
```

```

        ALLEXCEPT('Booking details', 'Booking details'[WeekNum])
    )
5. Revenue_Daily =
    SUM('Booking'[Revenue])
6. Revenue_Weekly =
    CALCULATE(
        SUM('Booking'[Revenue]),
        ALLEXCEPT('Booking details', 'Booking details'[WeekNum])
    )
7. RoomsBooked_Autumn =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        FILTER('Booking details', 'Booking details'[Season] = "Autumn")
    )
8. RoomsBooked_Daily =
    SUM('Booking details'[Room Booked Count])
9. RoomsBooked_PerMonth =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        ALLEXCEPT('Booking Details', 'Booking Details'[MonthYear])
    )
10. RoomsBooked_Spring =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        FILTER('Booking details', 'Booking details'[Season] = "Spring")
    )
11. RoomsBooked_Summer =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        FILTER('Booking details', 'Booking details'[Season] = "Summer")
    )
12. RoomsBooked_Weekly =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        ALLEXCEPT('Booking details', 'Booking details'[WeekNum])
    )
13. RoomsBooked_Winter =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        FILTER('Booking details', 'Booking details'[Season] = "Winter")
    )
14. RoomsBookedPerMonth =
    CALCULATE(
        SUM('Booking details'[Room Booked Count]),
        GROUPBY(
            'Booking details',
            'Booking details'[Stay Date]
        ))

```

Table: Booking Details (901 rows)

## 14. Creating New Measures in Master Data:

1. MADR =  

$$\text{DIVIDE}(\text{SUM('Booking'[Revenue])}, \text{SUM('Booking'[Duration]))}$$
2. MOccupancy % =  

$$\text{DIVIDE}(\text{SUM('MasterData'[RoomSoldCount])}, \text{SUM('MasterData'[RoomAvailableCount])), 0) * 100$$
3. MonthlyADR =  

$$\text{CALCULATE}([\text{MADR}], \text{ALLEXCEPT}(\text{MasterData}, \text{MasterData}[MonthStart]))$$
4. MonthlyRevPAR =  

$$\text{CALCULATE}([\text{MRevPAR}], \text{ALLEXCEPT}(\text{MasterData}, \text{MasterData}[MonthStart]))$$
5. MRevPAR =  

$$\text{DIVIDE}(\text{SUM('Booking'[Revenue])}, \text{SUM('MasterData'[RoomAvailableCount])), 0)$$

)

The screenshot shows the Power BI Data Editor interface. The left pane displays the DAX query for the 'MasterData' table:

```
1 MasterData =  
2 VAR CalendarTable =  
3 ADDCOLUMNS (  
4     CALENDAR (DATE(2023,5,1), DATE(2025,11,1)),  
5     "MonthStart", EOMONTH([Date], -1) + 1,  
6     "Months", FORMAT(EOMONTH([Date], -1) + 1, "dd-mmm-yy"),  
7     "DayCount", DAY(EOMONTH([Date], 0)),  
8     "RoomAvailableCount", DAY(EOMONTH([Date], 0)) * 260  
9 )  
10 RETURN  
11 ADDCOLUMNS (  
12     SUMMARIZE (  
13         CalendarTable,  
14         [MonthStart], [Month], [DayCount], [RoomAvailableCount]  
15     ),  
16     "RoomSoldCount",  
17     CALCULATE (  
18         SUM ('Booking details'[Room Booked Count]),  
19         TREATAS ( { [MonthStart] }, 'Booking details'[MonthStart] )  
20     ),  
21     "Occupancy %",  
22     DIVIDE (  
23         CALCULATE (  
24             SUM ('Booking details'[Room Booked Count]),  
25             TREATAS ( { [MonthStart] }, 'Booking details'[MonthStart] )  
26         ),  
27         [RoomAvailableCount],  
28         0  
29     ) * 100  
30 )  
31
```

The right pane shows the data model with the 'MasterData' table selected. The table has columns: MonthStart, Month, DayCount, RoomAvailableCount, RoomSoldCount, Occupancy %, ADR, RevPAR, and TotalRevenue. The data is as follows:

| MonthStart          | Month     | DayCount | RoomAvailableCount | RoomSoldCount | Occupancy %      | ADR         | RevPAR     | TotalRevenue |
|---------------------|-----------|----------|--------------------|---------------|------------------|-------------|------------|--------------|
| 01-05-2023 00:00:00 | 01-May-23 | 31       | 8060               | 154           | 1.9106699751861  | ₹ 28,756.49 | ₹ 549.44   | 4428500      |
| 01-06-2023 00:00:00 | 01-Jun-23 | 30       | 7800               | 822           | 10.5384615384615 | ₹ 31,621.05 | ₹ 3,332.37 | 25992500     |
| 01-07-2023 00:00:00 | 01-Jul-23 | 31       | 8060               | 889           | 11.029776674938  | ₹ 30,482.56 | ₹ 3,362.16 | 27099000     |
| 01-08-2023 00:00:00 | 01-Aug-23 | 31       | 8060               | 836           | 10.3722084367246 | ₹ 31,447.37 | ₹ 3,261.79 | 26290000     |

## 15.Adding New Measures in Table calculations:

1. ADR (Measure) =

```
DIVIDE(  
    SUM('Tbl Cal'[TotalRevenue]),  
    SUM('Tbl Cal'[Room Booked Count]),  
    0  
)
```

2. ADR YY Change =

```
VAR CurrentADR = [ADR (Measure)]  
VAR LastYearADR =  
    CALCULATE(  
        [ADR (Measure)],  
        SAMEPERIODLASTYEAR('Tbl Cal'[Stay date])  
)
```

RETURN

```
DIVIDE(  
    CurrentADR - LastYearADR,  
    LastYearADR,  
    0  
)
```

3. Occupancy % per Month =

```
DIVIDE(  
    CALCULATE(  
        SUM('Tbl Cal'[Room Booked Count]),  
        ALLEXCEPT('Tbl Cal', 'Tbl Cal'[Month]))
```

```

),
CALCULATE(
    SUM('Tbl Cal'[Total Rooms]),
    ALLEXCEPT('Tbl Cal', 'Tbl Cal'[Month])
),
0
)
4. RevPAR (measure) =
DIVIDE(
    SUM('Tbl Cal'[TotalRevenue]),
    SUM('Tbl Cal'[Total Rooms]),
    0
)
5. RevPAR YY Change =
VAR CurrentRevPAR = [RevPAR (measure)]
VAR LastYearRevPAR =
    CALCULATE(
        [RevPAR (measure)],
        SAMEPERIODLASTYEAR('Tbl Cal'[Stay date])
    )
RETURN
DIVIDE(
    CurrentRevPAR - LastYearRevPAR,
    LastYearRevPAR,
    0
)

```

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File Home Help Table tools

Name Tbl Cal

Manage relationships New measure column New table Mark as date table

Structure Relationships Calculations Calendars

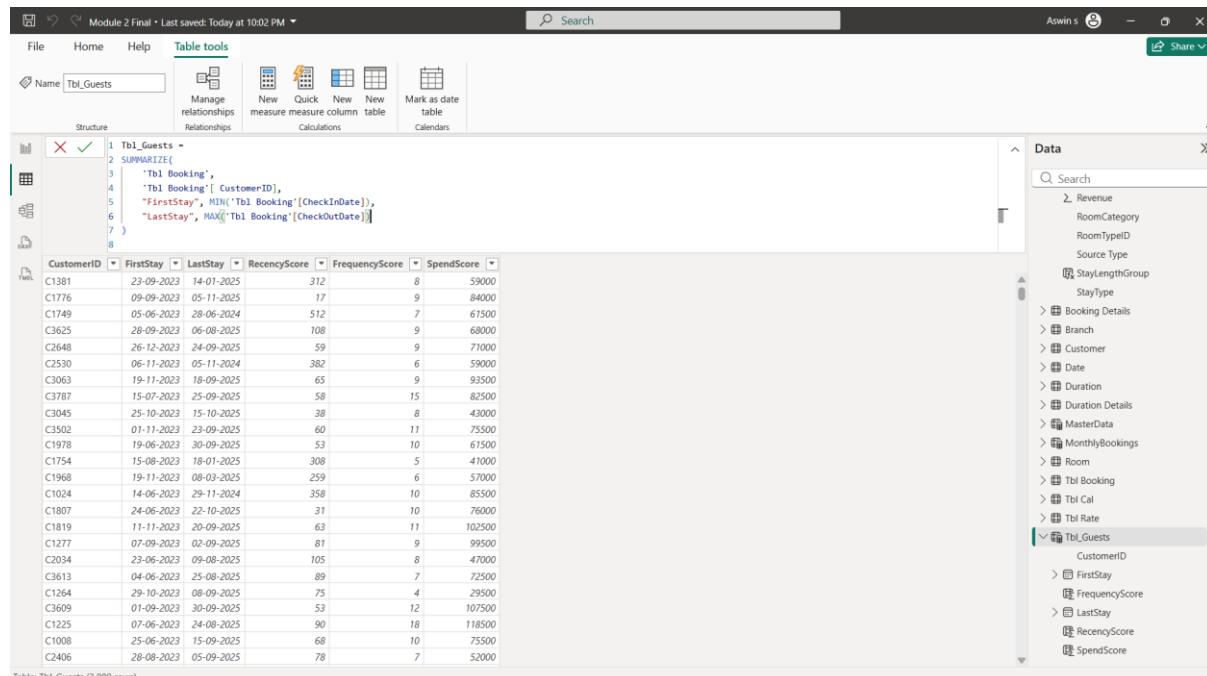
Stay Date Room Booked Count ADR Month MonthStart Occupancy % Quarter Revpar Season Total Rooms TotalRevenue Week Weekday

03 April 2025 27 ₹ 7,481.48 April 01-04-2025 1298.08% Q2 2025 ₹ 977.15 Spring 208 202000 14 Thursday
18 October 2024 27 ₹ 8,370.37 October 01-10-2024 1298.08% Q4 2024 ₹ 956.73 Autumn 208 199000 42 Friday
21 June 2025 27 ₹ 8,203.70 June 01-06-2025 1298.08% Q2 2025 ₹ 1,064.90 Summer 208 221500 25 Saturday
20 June 2024 27 ₹ 7,277.78 June 01-06-2024 1298.08% Q2 2024 ₹ 944.71 Summer 208 196500 25 Thursday
27 May 2025 27 ₹ 5,592.59 May 01-05-2025 1298.08% Q2 2025 ₹ 725.96 Spring 208 151000 22 Tuesday
04 August 2025 27 ₹ 8,037.04 August 01-08-2025 1298.08% Q3 2025 ₹ 1,043.27 Summer 208 217000 32 Monday
23 July 2025 27 ₹ 7,611.11 July 01-07-2025 1298.08% Q3 2025 ₹ 987.98 Summer 208 205500 30 Wednesday
14 August 2024 27 ₹ 6,388.89 August 01-08-2024 1298.08% Q3 2024 ₹ 829.33 Summer 208 172500 33 Wednesday
22 June 2025 27 ₹ 7,592.59 June 01-06-2025 1298.08% Q2 2025 ₹ 985.58 Summer 208 205000 26 Sunday
07 October 2023 27 ₹ 6,795.30 October 01-10-2023 1298.08% Q4 2023 ₹ 882.21 Autumn 208 183500 40 Saturday
23 August 2024 27 ₹ 7,111.11 August 01-08-2024 1298.08% Q3 2024 ₹ 923.08 Summer 208 192000 34 Friday
19 October 2023 27 ₹ 6,962.96 October 01-10-2023 1298.08% Q4 2023 ₹ 1,163.46 Autumn 208 242000 42 Thursday
13 October 2024 27 ₹ 6,685.19 October 01-10-2024 1298.08% Q4 2024 ₹ 1,127.40 Autumn 208 234500 42 Sunday
26 March 2024 27 ₹ 6,628.63 March 01-03-2024 1298.08% Q1 2024 ₹ 1,120.19 Spring 208 233000 13 Tuesday
06 September 2023 27 ₹ 7,666.67 September 01-09-2023 1298.08% Q3 2023 ₹ 995.19 Autumn 208 207000 36 Wednesday
28 December 2024 27 ₹ 9,407.41 December 01-12-2024 1298.08% Q4 2024 ₹ 1,221.15 Winter 208 254000 52 Saturday
15 September 2025 27 ₹ 7,370.37 September 01-09-2025 1298.08% Q3 2025 ₹ 956.73 Autumn 208 199000 38 Monday
05 March 2025 27 ₹ 5,481.48 March 01-03-2025 1298.08% Q1 2025 ₹ 711.54 Spring 208 148000 10 Wednesday
07 July 2024 27 ₹ 9,814.81 July 01-07-2024 1298.08% Q3 2024 ₹ 1,274.04 Summer 208 265000 28 Sunday
11 September 2025 27 ₹ 5,962.96 September 01-09-2025 1298.08% Q3 2025 ₹ 774.04 Autumn 208 161000 37 Thursday
29 March 2024 27 ₹ 7,055.56 March 01-03-2024 1298.08% Q1 2024 ₹ 915.87 Spring 208 196500 13 Friday
28 April 2024 27 ₹ 9,685.19 April 01-04-2024 1298.08% Q2 2024 ₹ 1,257.21 Spring 208 261500 18 Sunday
06 January 2025 27 ₹ 6,000.00 January 01-01-2025 1298.08% Q1 2025 ₹ 1,038.46 Winter 208 216000 2 Monday
08 November 2024 27 ₹ 7,129.63 November 01-11-2024 1298.08% Q4 2024 ₹ 925.48 Autumn 208 192500 45 Friday
03 September 2025 27 ₹ 7,666.67 September 01-09-2025 1298.08% Q3 2025 ₹ 995.19 Autumn 208 207000 36 Wednesday
27 May 2024 27 ₹ 6,962.96 May 01-05-2024 1298.08% Q2 2024 ₹ 903.85 Spring 208 188000 22 Monday
31 August 2025 27 ₹ 10,370.37 August 01-08-2025 1298.08% Q3 2025 ₹ 1,346.15 Summer 208 280000 36 Sunday
07 January 2025 27 ₹ 7,055.56 January 01-01-2025 1298.08% Q1 2025 ₹ 915.87 Winter 208 190500 2 Tuesday
31 January 2024 27 ₹ 5,259.26 January 01-01-2024 1298.08% Q1 2024 ₹ 682.69 Winter 208 142000 5 Wednesday
11 August 2024 27 ₹ 7,407.41 August 01-08-2024 1298.08% Q3 2024 ₹ 961.54 Summer 208 200000 33 Sunday

Table: Tbl Cal (901 rows)

## 16.Creating a New Table Using DAX Formula and Add new Columns :

```
Tbl_Guests =  
SUMMARIZE(  
    'Tbl Booking',  
    'Tbl Booking'[CustomerID],  
    "FirstStay", MIN('Tbl Booking'[CheckInDate]),  
    "LastStay", MAX('Tbl Booking'[CheckOutDate])  
)  
  
1. FrequencyScore =  
    CALCULATE(  
        COUNTROWS('Tbl Booking'),  
        FILTER('Tbl Booking', 'Tbl Booking'[CustomerID] = 'Tbl_Guests'[CustomerID])  
    )  
  
2. RecencyScore =  
    DATEDIFF(  
        CALCULATE(  
            MAX('Tbl Booking'[CheckOutDate]),  
            FILTER('Tbl Booking', 'Tbl Booking'[CustomerID] = 'Tbl_Guests'[CustomerID])  
        ),  
        TODAY(),  
        DAY  
    )  
  
3. SpendScore =  
    CALCULATE(  
        SUM('Tbl Booking'[Day Revenue]),  
        FILTER('Tbl Booking', 'Tbl Booking'[CustomerID] = 'Tbl_Guests'[CustomerID])  
    )
```



The screenshot shows the Power BI Desktop interface with the following details:

- File ribbon:** File, Home, Help, Table tools.
- Table tools ribbon:** Structure, Data.
- Structure tab:** Shows the DAX code for the table:

```
1 Tbl_Guests =  
2 SUMMARIZE(  
3     'Tbl Booking',  
4     'Tbl Booking'[CustomerID],  
5     "FirstStay", MIN('Tbl Booking'[CheckInDate]),  
6     "LastStay", MAX('Tbl Booking'[CheckOutDate])  
7 )  
8
```
- Data tab:** Shows the data view with columns: CustomerID, FirstStay, LastStay, RecencyScore, FrequencyScore, and SpendScore. The data consists of 3,000 rows of guest information.
- Bottom status bar:** Table: Tbl\_Guests (3,000 rows).

## 17. Creating Visuals in Power BI

This report visualizes monthly hotel performance by calculating and plotting the Average ADR, RevPAR, and Occupancy% using aggregated room availability, room sold, and revenue data, supported by KPI cards and a detailed summary table.

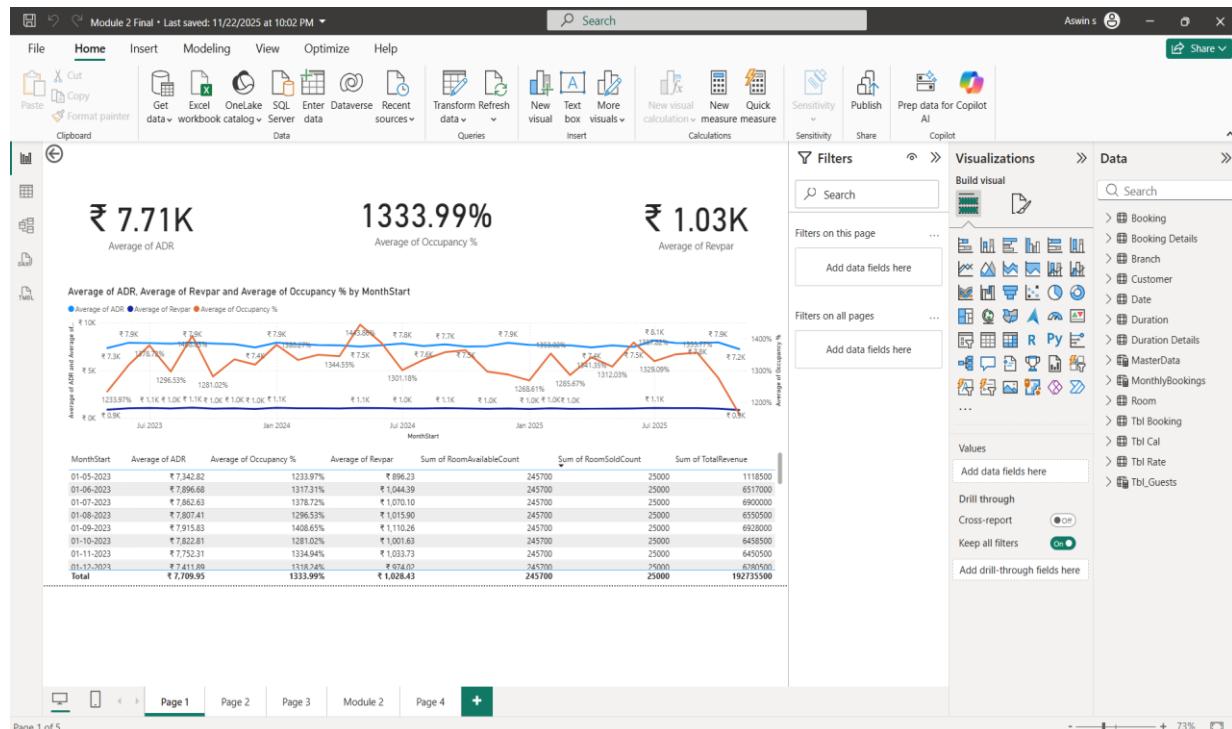
**Average ADR** - Displays the overall Average Daily Rate (ADR) calculated from the aggregated revenue and room-sold data.

**Average Occupancy %** - Shows the overall Occupancy Percentage derived by dividing rooms sold by rooms available across all selected months.

**Average RevPAR** - Presents the overall Revenue per Available Room (RevPAR) calculated from total revenue and room-availability data.

**Multi-Line Chart** - Plots monthly trends of ADR, RevPAR, and Occupancy% on a combined line chart to compare performance patterns over time.

**Table** - Displays a tabular breakdown of each month's ADR, Occupancy%, RevPAR, rooms available, rooms sold, and total revenue for detailed analysis.



## 18.Create visualization for Room Booked

### Column Chart – RoomsBookedPerMonth by Year, Quarter, Month, and Day

Shows the number of rooms booked on each day across different months.

Helps identify daily booking patterns, peak periods, and low-demand days.

### Line Chart – Sum of Duration by Revenue and Source Type

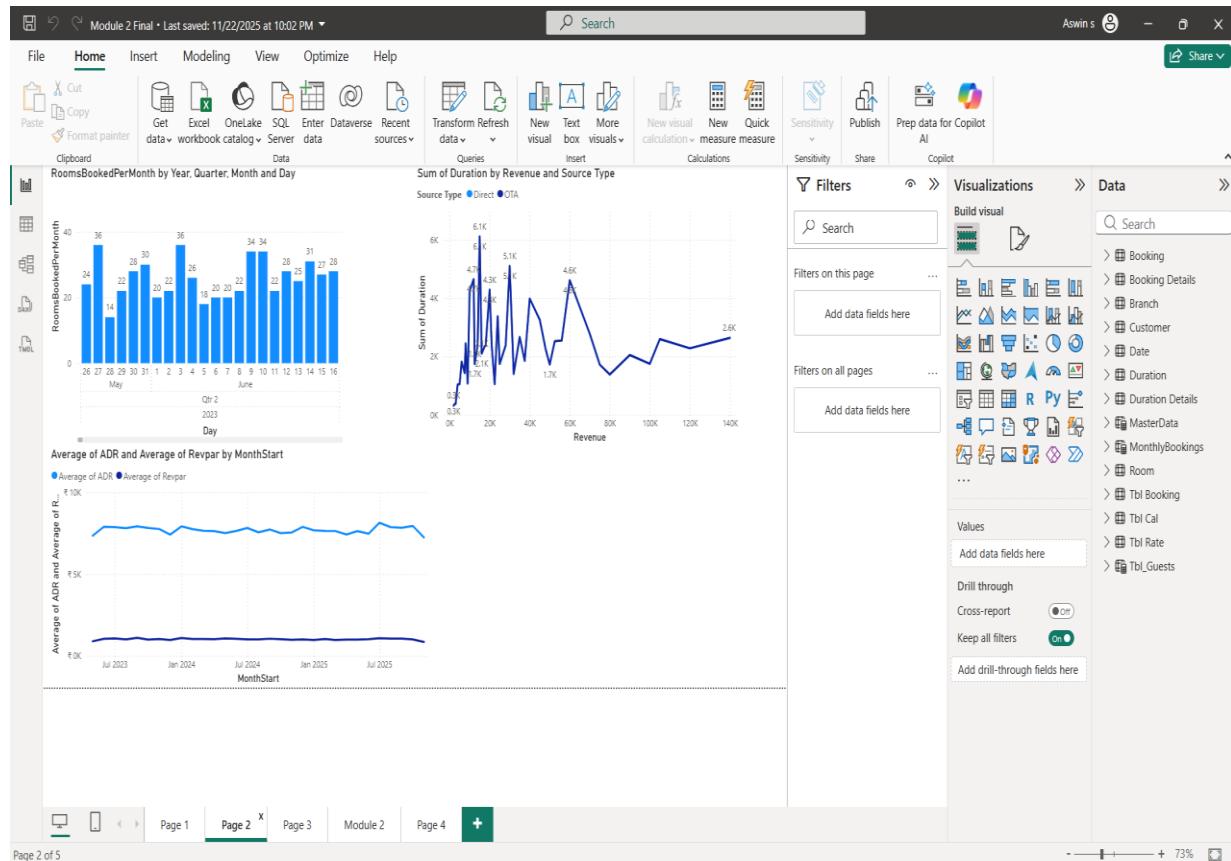
Plots total stay duration against revenue, categorized by booking source (Direct/OTA).

Useful for comparing how stay length changes with revenue across channels.

### Line Chart – Average of ADR and Average of RevPAR by MonthStart

Displays month-wise trends for ADR and RevPAR.

Helps track pricing performance and revenue efficiency over time.



## Branch-wise Room Type (Matrix Table)

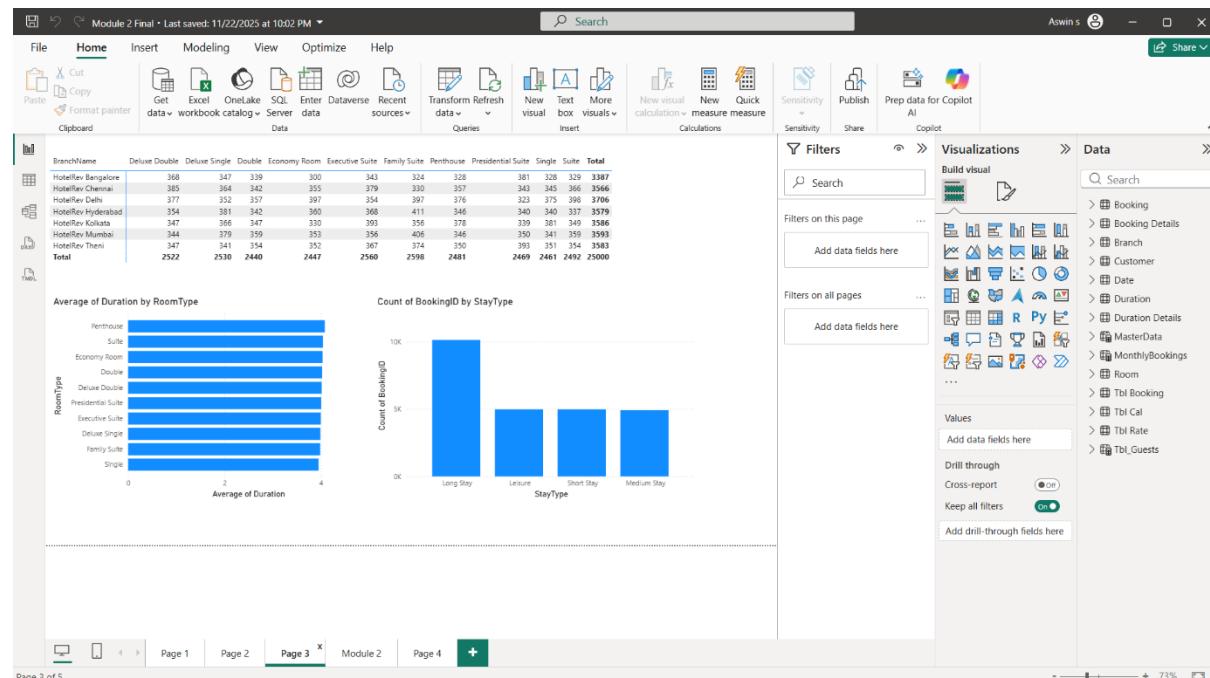
- Shows booking counts for each **RoomType** across all branches.
- Helps compare performance between branches.
- Useful to identify top-performing room types.
- Gives a complete overview of total bookings branch-wise.

## Average Duration by RoomType (Bar Chart)

- Displays the **average stay duration** for every room type.
- Helps understand which room types attract longer stays.
- Useful for pricing and stay-pattern analysis.
- Shows clear duration differences between budget and premium rooms.

## Count of BookingID by StayType (Column Chart)

- Shows the **number of bookings** for each **StayType** category.
- Helps identify the most common type of stay (e.g., Long Stay, Leisure).
- Useful for understanding guest purpose and stay behavior.
- Supports planning for promotions or seasonal packages.



## Daily Performance (Line chart)

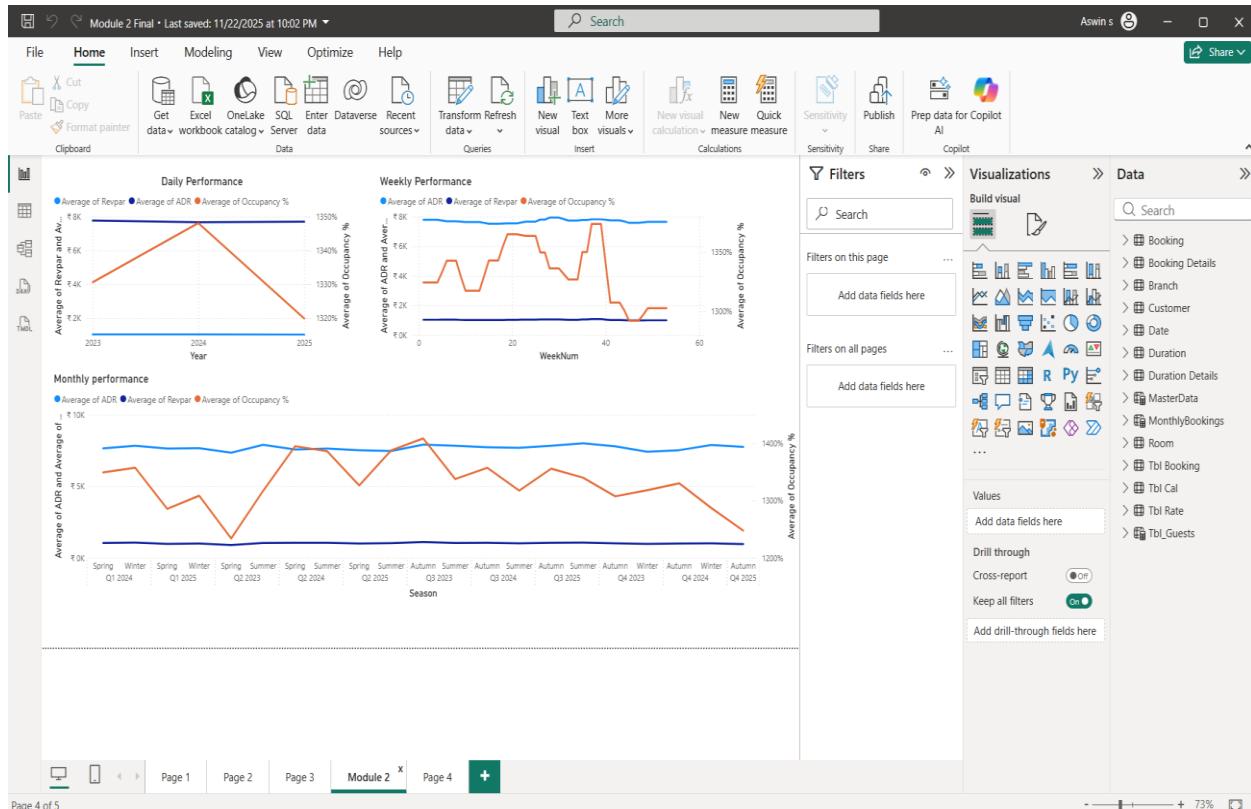
Shows ADR, RevPAR, and Occupancy % by Year

## Weekly Performance (Line chart)

Shows ADR, RevPAR, and Occupancy % by Week Number

## Monthly/Seasonal Performance (Line chart)

Shows ADR, RevPAR, and Occupancy % by Season / Month



## Daily Performance Line Chart

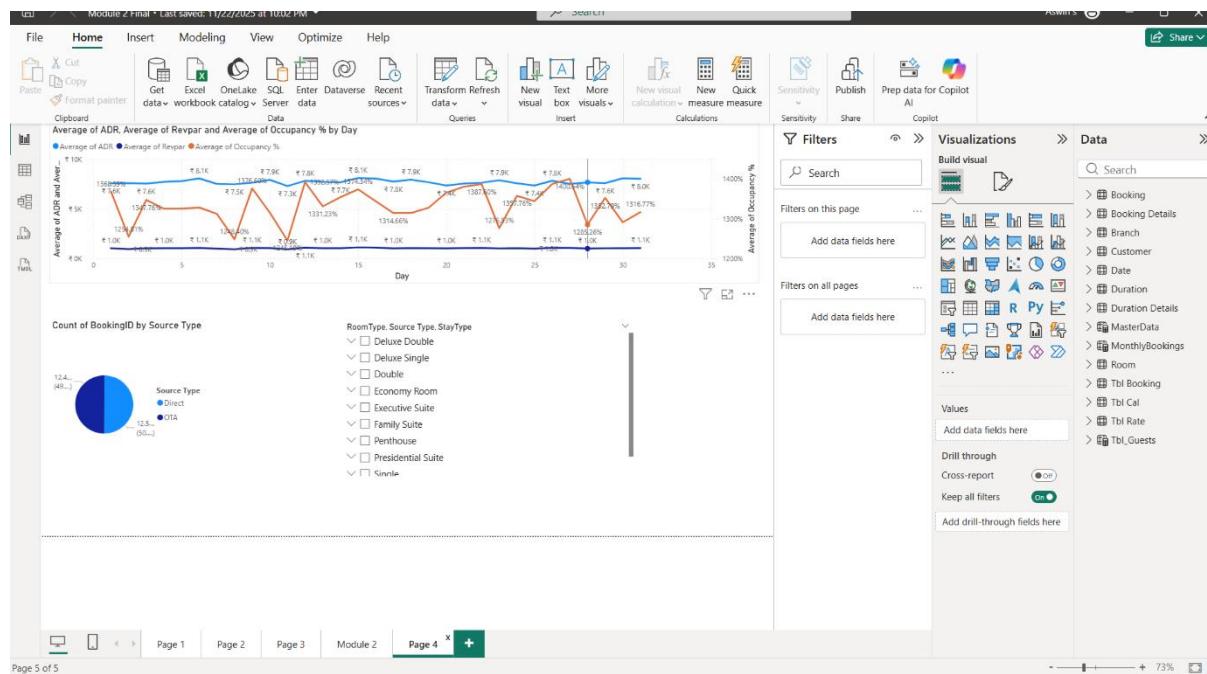
- Shows ADR, RevPAR, and Occupancy %
- Visualized day-by-day
- Helps track short-term performance trends

## Booking Count by Source Type (Pie Chart)

- Shows **Direct vs OTA booking share**
- Helps understand which booking channel performs better

## Room Type + Source Type + Stay Type Slicer (Multi-level Filter)

- Interactive slicer with **RoomType, SourceType, StayType**
- Helps filter visuals dynamically based on selections
- Useful to analyze specific room behaviour per source/stay type



## **MODULE 3: GUEST ANALYSIS**