HOTEL MANAGEMENT

1.How can the total number of unique customers be determined?

Solution: I used the DAX formula
`Unique Customers = DISTINCTCOUNT(Customers[Customer number])`
to calculate the total number of unique customers. It counts each customer only once by checking distinct values in the `Customer number` column of the `Customers` table.

2.How can the distribution of customer complaints be analyzed room-wise?

Solution:I created separate DAX measures to count each complaint type (Safety concerns, Technical Problems, Cleanliness Complaints) using `CALCULATE` and filtered by ticket category. Then, I used a stacked bar chart with Room Category on the x-axis and these measures stacked on the y-axis to visualize the distribution of complaints room-wise.

3.. How can the customer retention rate be calculated?

Solution: I first calculated the total number of unique customers using `DISTINCT COUNT` on the customer number. Then, I identified returning customers by counting those with more than one reservation using a filtered `CALCULATE` measure. Finally, I computed the customer retention rate by dividing the number of returning customers by the total customers, providing the percentage of customers who made repeat bookings.

4.How can the revenue be calculated for each room?

Solution: I calculated the total revenue for each room by multiplying the number of nights booked by the room price using `SUMX` and `RELATED` functions. Then, I aggregated this revenue per room using `CALCULATE` with `ALLEXCEPT` to keep the context by room number. Finally, I computed the revenue per available room by dividing the total room revenue by the total number of rooms multiplied by 365 days, providing a normalized revenue metric.