**Data Link :** [Hotel Bookings](https://drive.google.com/file/d/1TwGAq_E4iRY1_YrxmvF-QbA24Y4BktNO/view?usp=drive_link)

**Data Transformation and Data Cleaning :**

1. Convert names to lowercase and replace spaces with underscores for columns like Customer Name and Booking Status.
2. Convert CheckInDate and CheckOutDate to datetime format only if they contain valid date strings; use errors='coerce'.
3. For numeric columns like TotalAmount, use the mean if missing values are less than 5%; otherwise, drop those rows. For CustomerName, fill with mode if the missing percentage is below 10%.
4. Create Column Duration only if both CheckInDate and CheckOutDate are valid and non-null; set duration to None otherwise

(if [CheckInDate] <> null and [CheckOutDate] <> null then Duration.Days([CheckOutDate] - [CheckInDate]) else null)

1. Standardize RoomType only if it has more than 5 unique values, mapping variations like "deluxe" and "Deluxe" to "Deluxe"
2. Remove rows where CheckOutDate is earlier than CheckInDate or where either date is null.
3. Generate statistics only for continuous columns like TotalAmount and NumberOfGuests where non-null entries exceed 50%.
4. Remove duplicates based on BookingID only if there are more than 2 duplicates found.
5. Pivoting : one-hot encoding for RoomType only if it has fewer than 10 unique value
6. Replace missing SupportRep with a default value (e.g., "Unassigned").
7. Use the median value for SatisfactionScore to fill missing scores.
8. Remove leading and trailing whitespace from string fields like CustomerName and IssueDescription.
9. Remove rows where CreatedDate or ResolvedDate are NULL or not valid dates.

**Filter Data as per following conditions :**

* allow selection of a specific room type (e.g., "Deluxe")
* Use the "Advanced Filter" option to keep rows where NumericColumn is greater than MinValue and less than MaxValue
* Only Confirmed Customers