**Summary of Hotel Reservation Data Analysis**

**1. Data Overview**

* **Database**: Hotel reservation database for the two years 2017 and 2018. Some of the attributes used are booking ID, adults and children numbers, number of nights, meal plan, car parking needed, type of room, lead time, market segment type - Online/Offline, status of cancellation Cancelled/Not\_Canceled, and average price per room.

**2. Cancellation Rates Analysis**

* **Cancellation Rates**:
  + Analyzed cancellation rates by month for both years.
  + Notable peak months: October showed higher reservations consistently across both years.
  + **Key Finding**: Cancellation rates were notably high during early July 2017, exceeding 50%.

**3. Market Segment Analysis**

* **Booking Channels**:
  + Segment data was Analyzed to differentiate between online and offline bookings.
  + **Key Insights**:
    - **Cancellation Rates**: Compared cancellation rates for online versus offline bookings, identifying patterns in booking behaviour.
    - **Total Bookings**: Visualized the total number of bookings for each market segment, providing insights into customer preferences.
    - **Average Pricing**: Analyzed average room prices for online and offline bookings to assess potential impacts on cancellation behaviour.

**4. Visualizations**

* Created various visualizations to present findings, including:
  + Bar plots showing cancellation rates by month and market segment.
  + Comparisons of total bookings by market segment type.
  + Average price per room segmented by booking channel.

**5. Conclusions**

* The analysis indicated that booking cancellations were influenced by various factors, including the price of rooms and the booking method (online vs. offline).
* Further exploration into targeted strategies for reducing cancellations during peak months and evaluating pricing strategies could enhance hotel revenue management.