Data Analytics - Bootcamp May-2024

Project - Hotel booking analysis

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Hotel booking Demand Analysis

- **Project overview:**
  - This project analyzes hotel bookings utilizing a [dataset](#) from two specific hotels: one located in a city and the other in a resort area.
  - Encompasses reservation status, booking details, guest demographics, country of origin, market segment, distribution channel, room types, and more.
- **Data cleaning:**
  - Ensuring data accuracy and completeness.
  - Handling missing values and duplicates.
- **Goals:**
  - Gain insights into guest behaviors, booking patterns and cancellations
  - Inform strategic decisions in the hospitality industry.

Business Questions

- **Geographical insights:**

  - Where do our guests predominantly come from?

- **Seasonal patterns:**

  - During which times of the year do we observe increased booking activity?

- **Booking channel performance:**

  - Which booking channels contribute the most reservations?

- **Cancellations analysis:**

  - What factors contribute to booking cancellations?

  - How does market segmentation influence cancellations?

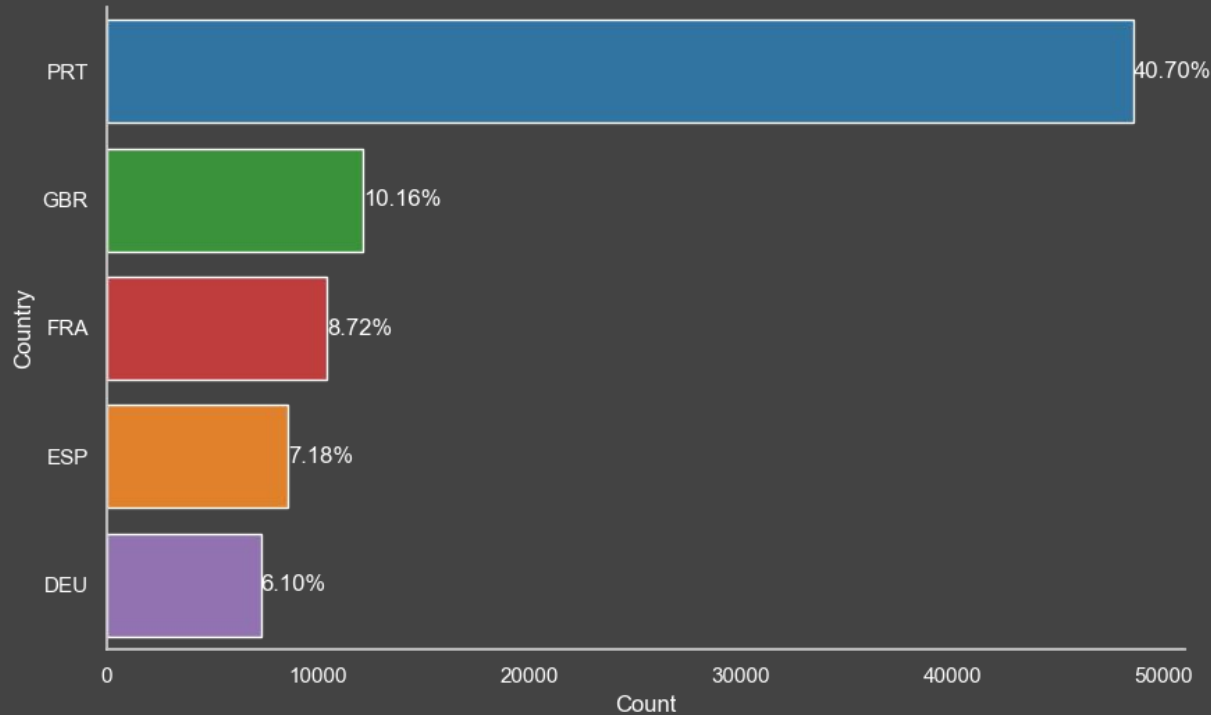# Where do our guests predominantly come from?

Fig. 1 - Distribution of guest origin.

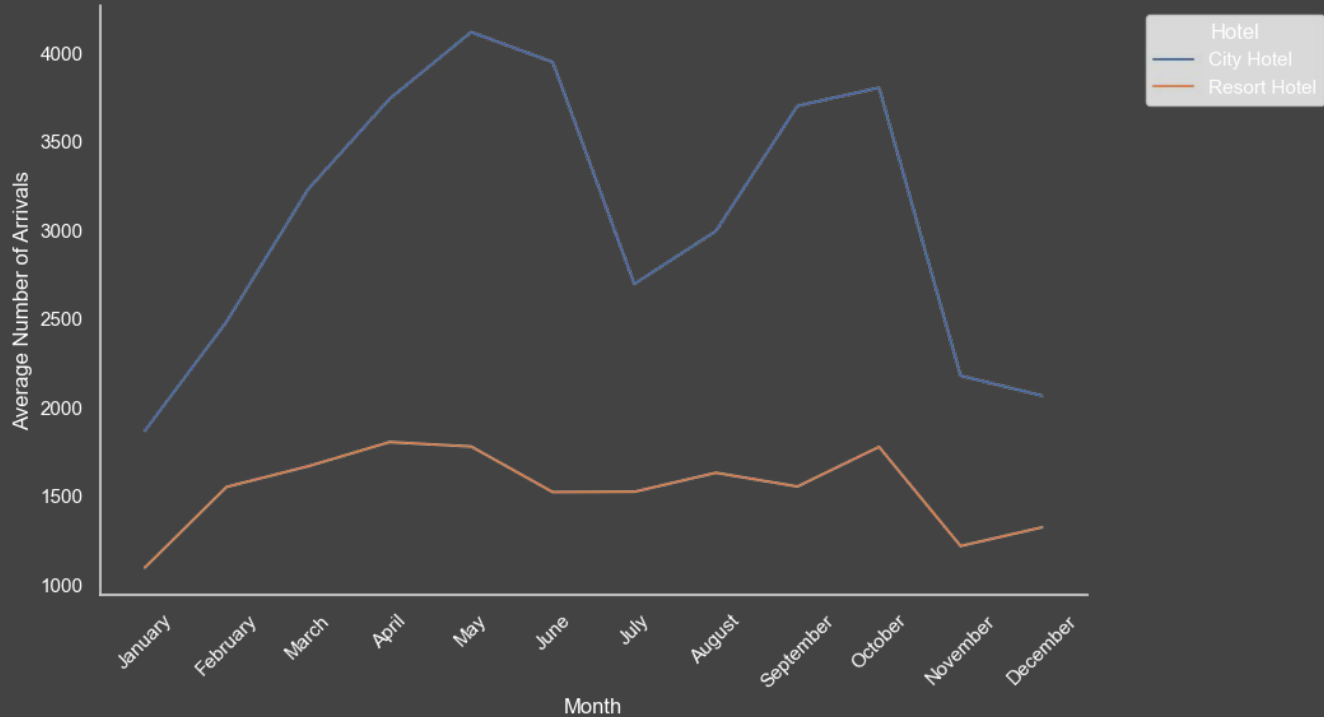# During which times of the year do we observe increased booking activity?

Fig.2 - Average monthly arrivals per year.

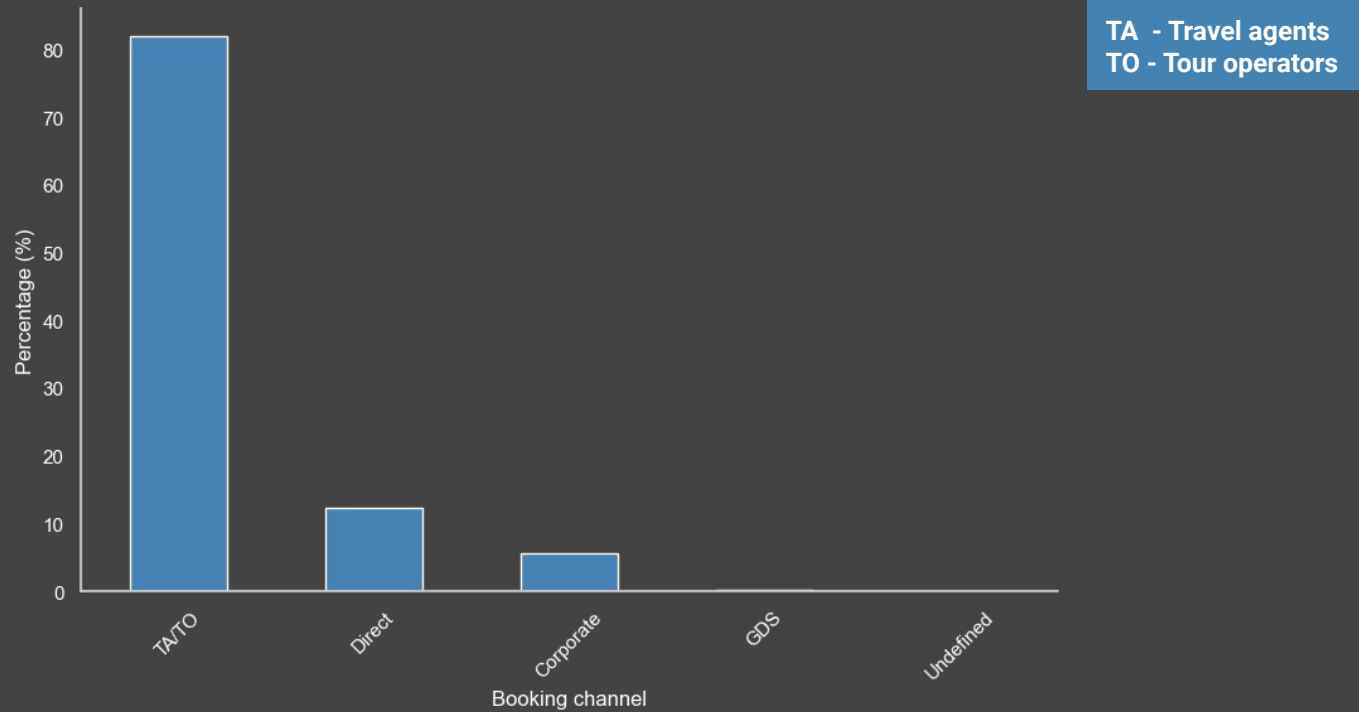# Which booking channels contribute the most reservations?

Fig. 3 - Distribution of booking channels.

What factors contribute to booking cancellations?
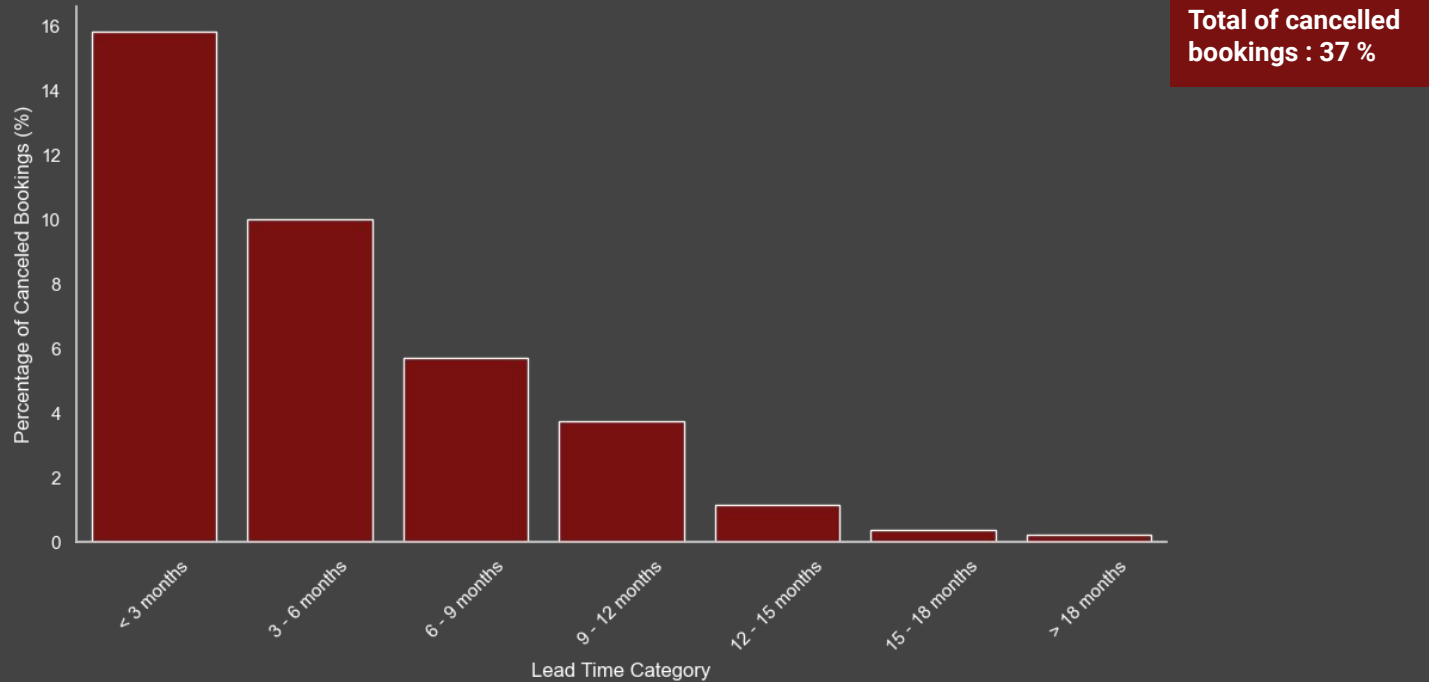

Total of cancelled bookings : 37 %

Fig. 4 - Cancellation analyses based on lead time.

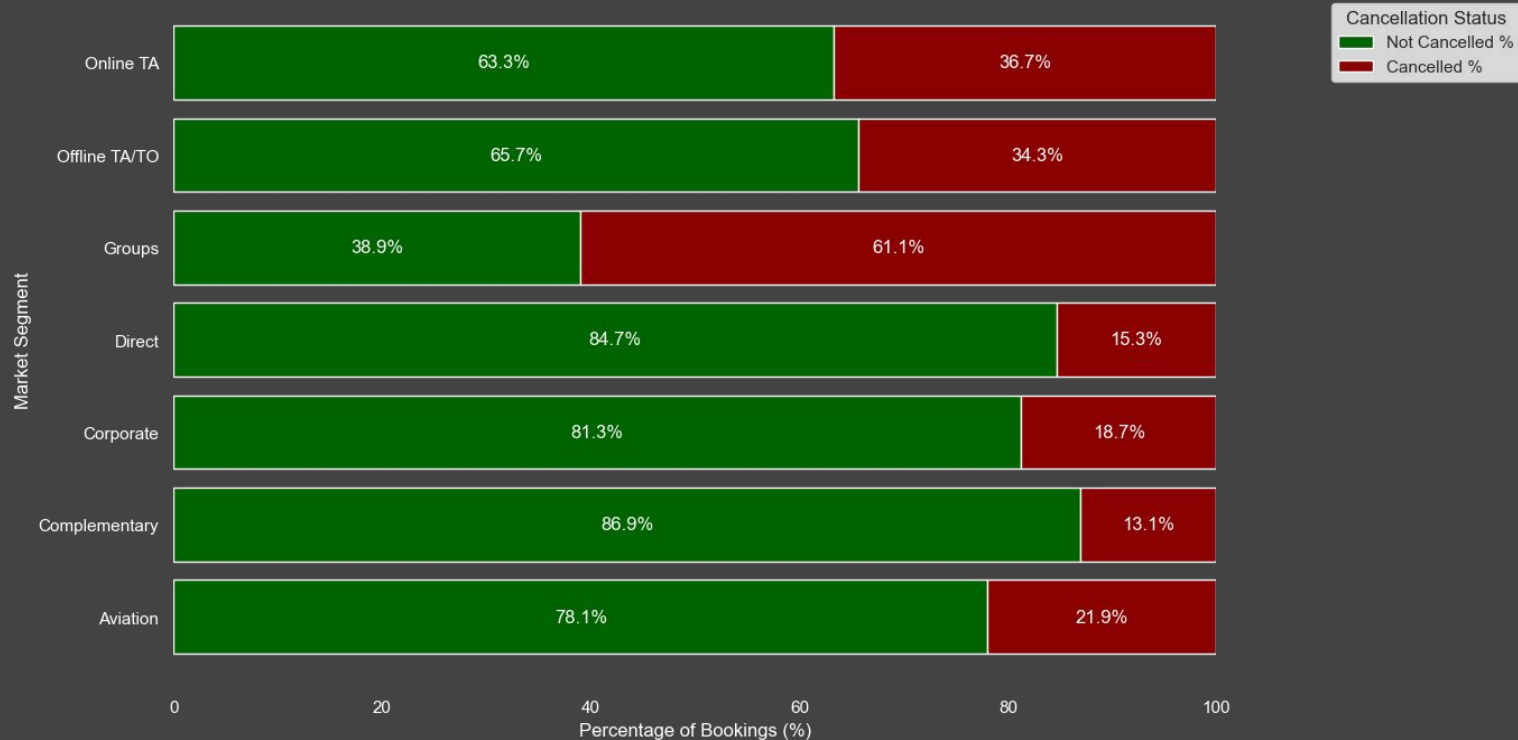# How does market segmentation influence cancellations?

Fig. 5 - Analyzing market segmentation and cancellation status.

Conclusions

- **Geographical insights:**
  - Most guests come from PRT, followed by GRB and FRA.
- **Seasonal Patterns:**
  - The busiest periods for both hotels are observed from March until June and August until October.
- **Booking Channel performance:**
  - TA/TO channels are responsible for the majority of reservations.
- **Cancellations Analysis:**
  - What factors contribute to booking cancellations?
    - As lead time increases, the probability of cancellation decreases.
  - How does market segmentation influence cancellations?
    - 61% of group bookings end in cancellations, indicating a significant cancellation rate within this segment.

Thank you!