

Investigate Business Hotel using Data Visualization



Created by:

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“Nabil is a data enthusiast who graduated from The University of Brawijaya majoring in Management. He has a high interest in a data-related roles such as data science, data engineering, and data and analytics. Pursuing experience and knowledge through Bootcamp, courses, and projects.”

"It is very important for a company to always analyze its business performance. On this occasion, we will explore more business in the hospitality sector. The focus we aim is to find out how our customers behave in making hotel reservations, and how they relate to the cancellation rate of hotel bookings. The results of the insights we find will be presented in the form of visualization data to make it easier to understand and more persuasive."

```
## Handling null values
df['children'] = df['children'].fillna(0)
df['city'] = df['city'].fillna('Unknown')
df['agent'] = df['agent'].fillna(0)
df['company'] = df['company'].fillna(0)

# Fix the data type
df['children'] = df['children'].astype('int64')
df['agent'] = df['agent'].astype('int64')
df['company'] = df['company'].astype('int64')

# Fix incorrect value
# Replace 'Undefined' in 'meal' column with 'No Meal'
df['meal'] = df['meal'].replace(['Undefined'], 'No Meal')

# Membuat kolom baru bernama total_customer
df['total_customer'] = df['adults'] + df['children'] + df['babies']

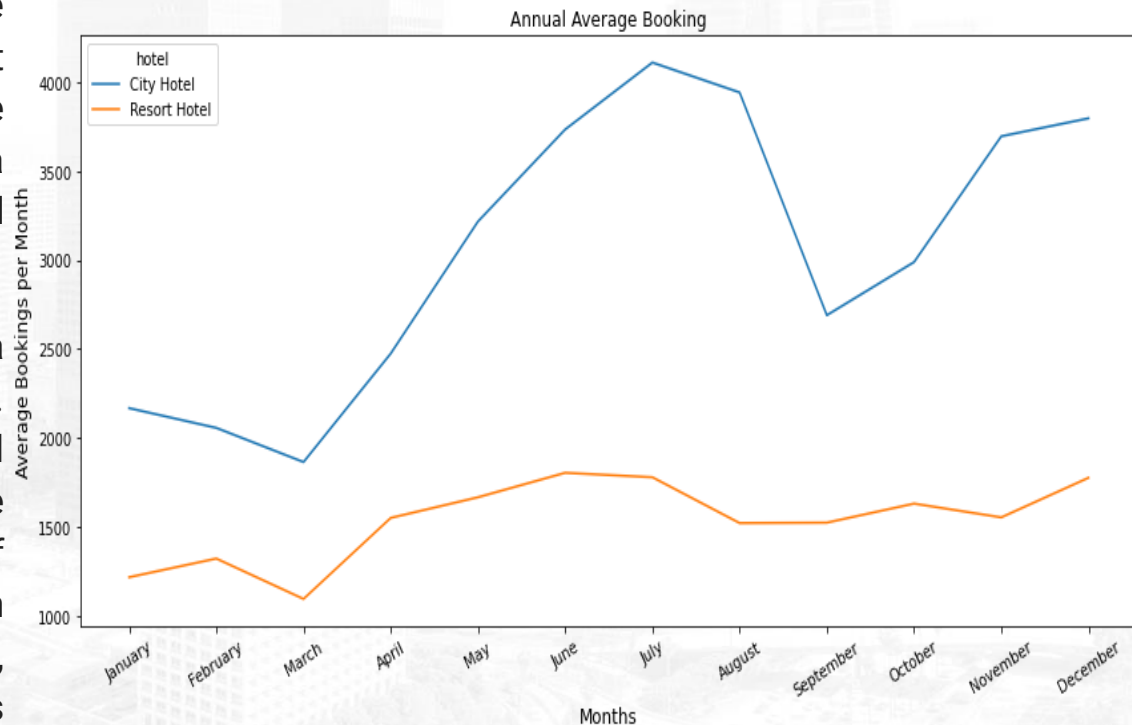
# Membuang nilai 0 pada kolom total_customer
df.drop(df[df['total_customer'] == 0].index, inplace = True)
```

- There are 4 columns that have null data, 3 columns of integer or float type we can fill with 0 while the remaining 1 column we fill with "unknown".
- There is data that does not match even though it has the same meaning in the "meal" column.
- There are 180 data that do not have the number of guests, this data we will exclude from the analysis.

Monthly Hotel Booking Analysis Based on Hotel Type

Based on the chart on the side, we can conclude that the peak season occurs in the middle and end of the year which is most likely a national holiday. After passing the peak season, hotel bookings experienced a decrease due to the end of the national holiday period.

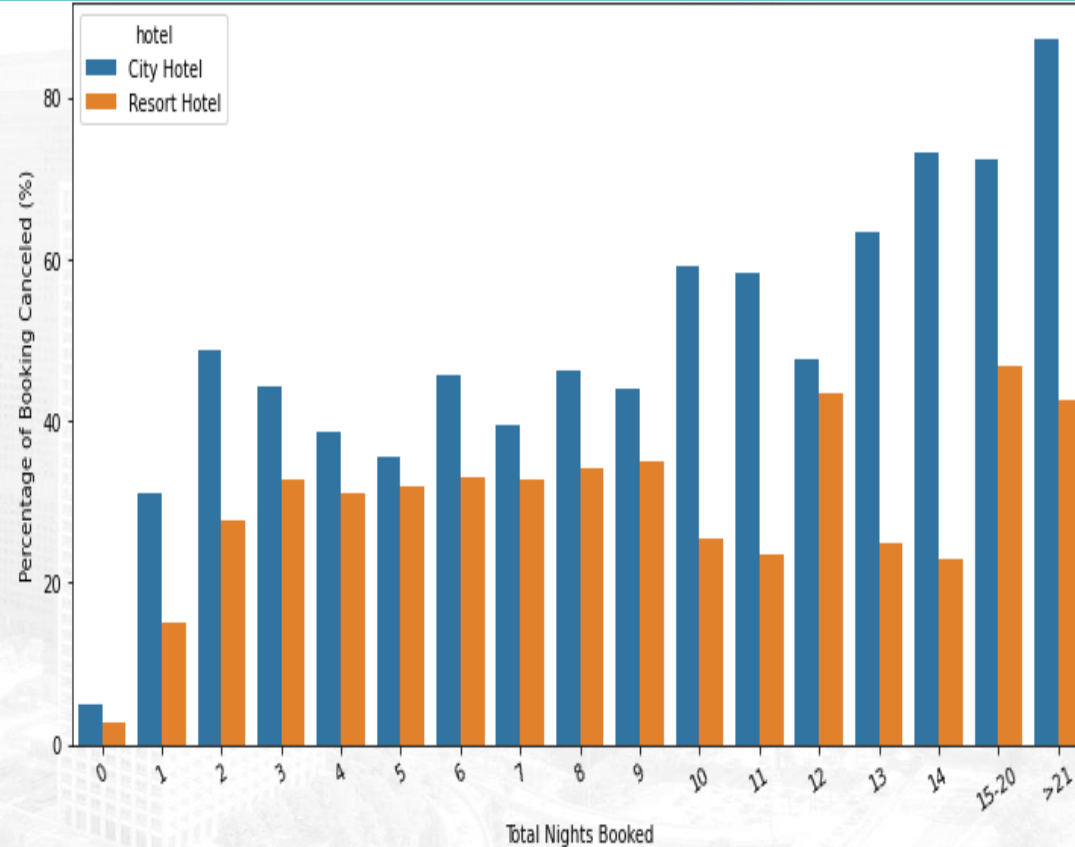
The hotel category that is the prima donna of customers is the city hotel every month. To anticipate unwanted things, the hotel management must always be ready to face national holidays, because the number of bookings can be ensured to increase. On days outside of national holidays, management can provide attractive promos so that booking rates are maintained.



Impact Analysis of Stay Duration on Hotel Bookings Cancellation Rates

Based on the chart on the side, we can see that there are fluctuations in cancellation rates against the duration of stays. The correlation above tends to be positive between the duration of the stay and the cancellation rate of the hotel booking. The longer the length of stay, the cancellation rate tends to increase as well. A temporary conclusion can be interpreted to mean that consumers doubt if they stay in one place for a long period, whether they will feel at home or not.

The decision of consumers to cancel their stays still has to be further tested whether the above allegations are true or due to other factors. The management can make policies to reduce the cancellation of hotel bookings without compromising the quality of service.



Impact Analysis of Lead Time on Hotel Bookings Cancellation Rate

Based on the chart on the side, we can see that there are fluctuations in cancellation rates against the length of waiting time. The correlation above tends to be positive between the length of waiting times and the rate of cancellation of hotel bookings. The longer the waiting time, the more the cancellation rate tends to increase as well.

A temporary conclusion can be interpreted that consumers do not want to wait too long in booking a hotel and may prefer other hotels that can be booked shortly.

The decision of consumers to cancel their stays still has to be further tested whether the above allegations are true or due to other factors. The management can make policies so that the waiting time becomes shorter without reducing the quality of service.

