

Investigate Hotel Business using Data Visualization

Abie Nugraha - 2023



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A photograph of a modern hotel lobby. The space is large and airy with a high ceiling and large windows that look out onto a city skyline. A prominent feature is a large, vertical green wall covered in plants. The lobby is furnished with several tables and chairs, some with green and brown upholstery. A bar area is visible on the left. The overall design is contemporary and sophisticated.

OVERVIEW

In this Project, I play the role of a member of the Data Scientist team in a hotel company. As a member of the Data Scientist team, my responsibility is to **provide insights** related to the hotel business performance. These insights can be obtained through data exploration, such as analyzing **customer behavior** in booking hotel tickets or identifying factors that influence hotel **ticket cancellations**. I will then present the insights I gather using data visualization techniques.

Profile

Mathematics student with a strong interest in data analysis and data science, I have a diverse set of skills and knowledge that allow me to tackle complex data-related challenges.



Data Preprocessing



Missing Values

City : 488
Agent : 16340
Company : 112593



Invalid Values

Meal : 'Undefined'



Unnecessary Data

Total Customer =
adult + children + babies

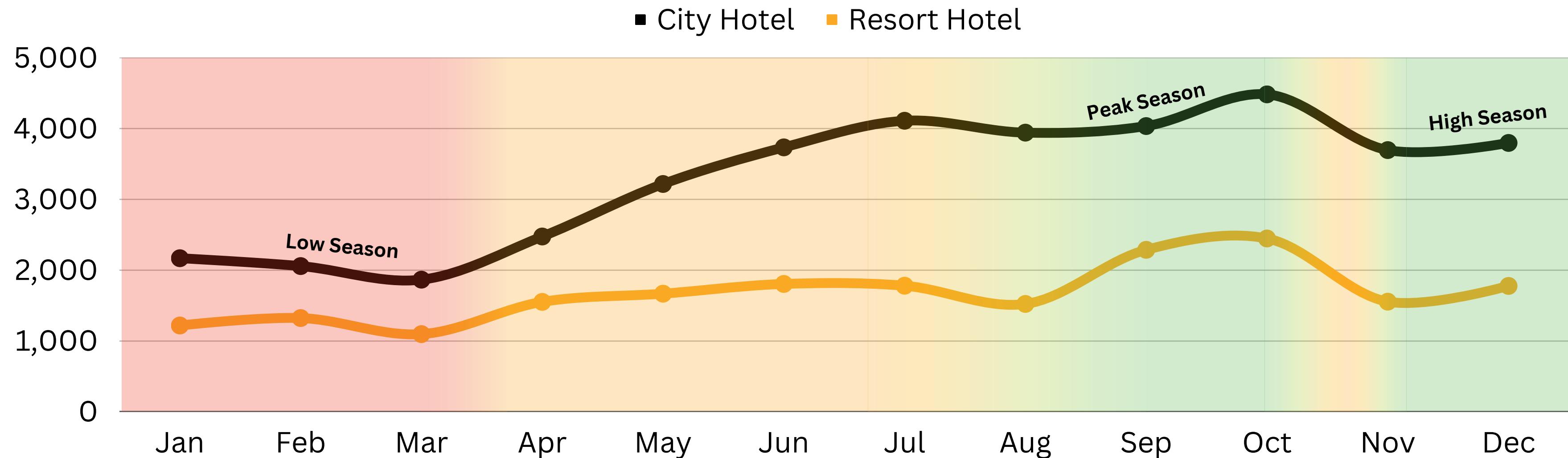


Type Data

Children : Int64
Agent : Int64
Company : Int64

Monthly Hotel Booking Analysis

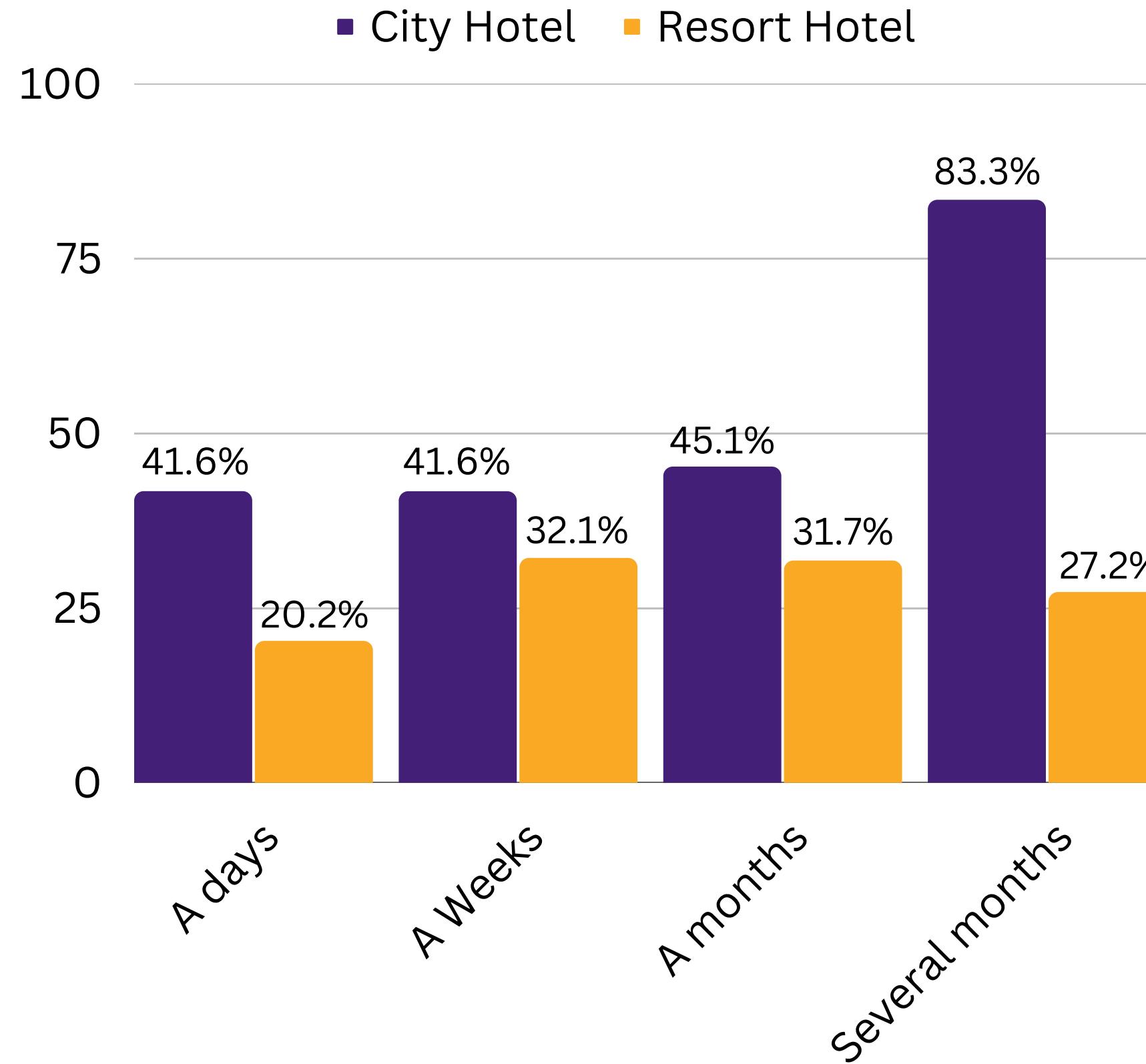
Based on Hotel Type



The data represents the number of visitors in City Hotel and Resort Hotel throughout the year. There is an **increase** in visitors during **holiday months**, such as **June, July, and August**, as well as in **December**. **City Hotel** has a **higher** overall number of visitors. Resort Hotel can attracts visitors in specific months like **April, May, and October**.

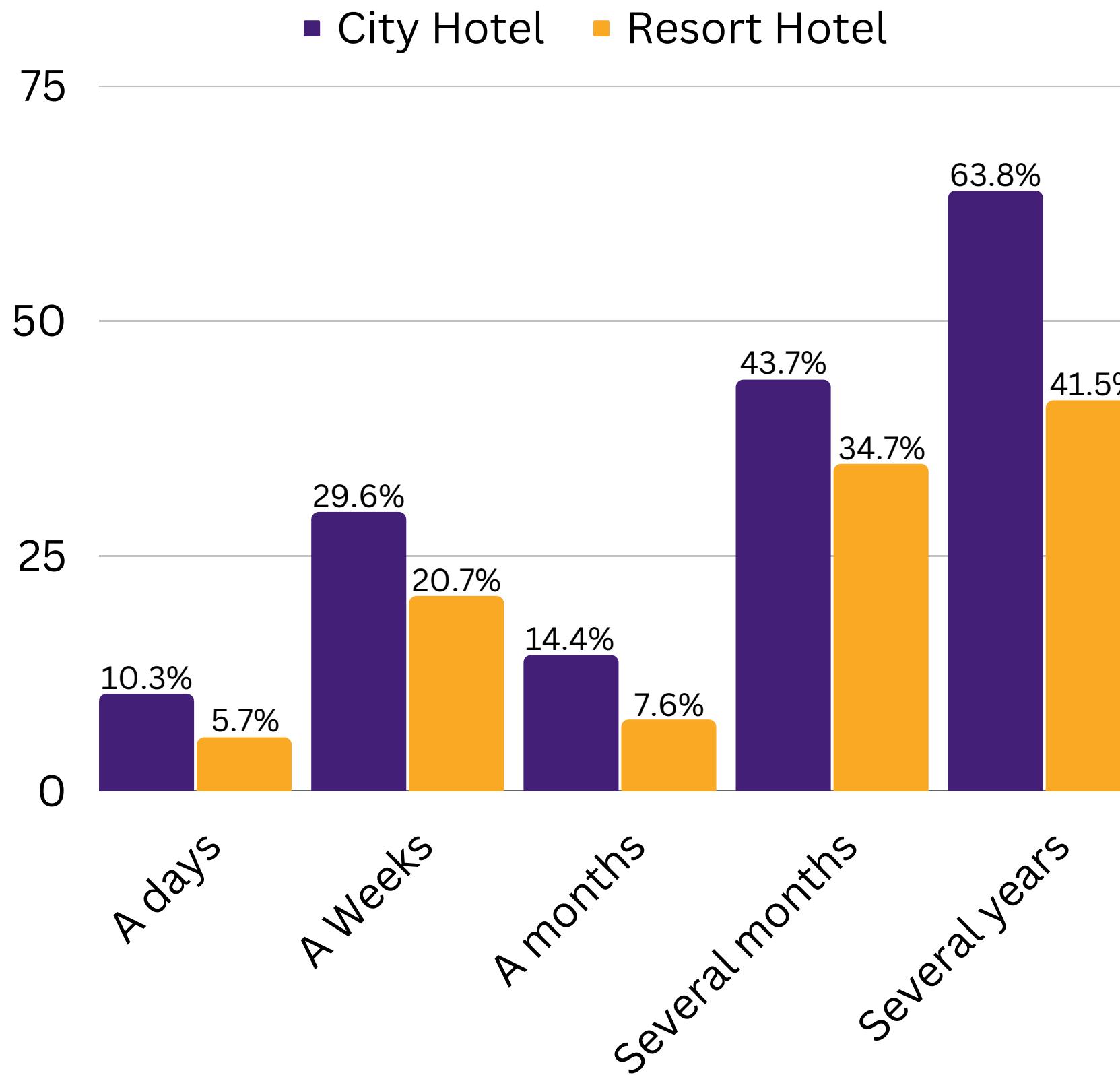
Stay Duration on Hotel Bookings

Cancellation Rates



Overall, the data indicates that the cancellation ratio varies based on the duration of hotel bookings and differs between City Hotel and Resort Hotel. **Long-term** bookings tend to have **higher cancellation ratios**, particularly in **City Hotel**. **Resort Hotel** generally exhibits **lower cancellation rates**, with the lowest cancellation ratio observed for bookings extending over several months.

Lead Time on Hotel Bookings Cancellation Rate



- The **longer** the lead time for hotel bookings, the **higher** the likelihood of **cancellation**.

- **City Hotels** have a **higher cancellation** ratio compared to Resort Hotels for each specific lead time category.

Consider flexible cancellation **policies**, provide **incentives** for **short-term** bookings, tailor **marketing strategies**, analyze data for demand **forecasting**, maintain active **communication** with customers, and regularly evaluate and adjust policies. These measures can help **minimize cancellation** rates and **improve** booking **retention**.



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