“Hotel Revenue Management” Project Proposal – Data Science for Business

- **What is the exact business problem? How can the proposed solution add to its business value?**

Cancellations can significantly impact a hotel’s daily operations and revenues. When a customer cancels the reservation, the hotel might not be able to maximize its profit. If there is a model that can predict customer cancellations before the check-in date, hotels can adjust accordingly and as a result, increase efficiency and profit. The business problem we are exploring is to better predict cancellations based on a variety of customer attributes.

- **What is the use scenario?**

The use scenario will be for hotels to predict whether a customer will cancel the reservation and subsequently free up the predicted canceled room for a new reservation.

- **What is the Data Source and the data instance/unit?**

The data source we are using is from the open data resource platform Kaggle. The data instance/unit is cancellations.

https://www.kaggle.com/datasets/jessemostipak/hotel-booking-demand

What might be the target variable and what features would be useful?

The target variable in the analysis will be cancellations. There are several features that will be useful in our predictive modeling. Some of these features may be the lead time of the booking, the day of the week they are staying, the booking distribution channel, and whether the customer has previous cancellations.

- **What precisely is the data mining problem and is it supervised or unsupervised?**

Predict whether the customer will cancel the hotel booking under certain circumstances or with different demographic characteristics. It could be unsupervised once we have built the model completely. Hotels could input and update their newest data to the model to accurate the model.