Capstone Two: Project Proposal

Problem Statement: How can a hotel reduce their cancellations by 20% for next year by targeting bookings that are more likely to cancel with incentives to keep their reservation?

Context: Hotel booking cancellations can have a significant impact on revenue in the hospitality industry. Many hotels implement cancellation policies or use overbooking strategies to mitigate the effect of this, but this can have a negative impact on revenue and reputation of the hotel. Developing a machine learning model to predict which bookings are more likely to cancel can help hotels to better strategize and use more appropriate techniques to mitigate the impact that cancellations have on revenue. Bookings that are more likely to cancel can be targeted with incentives to not cancel, such as complimentary meals or extra nights.

Criteria For Success: Cancellations are reduced by 20% in the next year.

Scope of Solution Space: There may be other methods of reducing cancellations, but our focus is on predicting bookings that are likely to cancel.

Constraints: Predicting human behavior can sometimes not be explained by given features, so we have to be aware of possible confounding variables.

Stakeholders: CEO, hotel manager, head of marketing

Data Sources:
The data was found from a ScienceDirect article, but was originally sourced from Property Management System SQL databases. Included in the data are 31 columns from two different hotels in Portugal. Hotel 1 has 40,060 observations and hotel 2 has 79,330, where each observation represents a hotel booking. The target column ‘IsCanceled’ tells us if the reservation was canceled (1) or not (0).