**HOTEL RESERVATION CANCELLATION**

**FODS PROJECT  
ABSTRACT**

The increasing use of online booking platforms has revolutionized the hospitality industry but has also introduced challenges like frequent cancellations. These cancellations, driven by flexible policies and changing customer plans, result in revenue losses and operational inefficiencies for hotels. This project aims to predict hotel reservation cancellations by analyzing customer booking data and identifying key factors influencing cancellation behavior.

A dataset containing customer demographics, booking details, and other relevant variables was utilized. Data preprocessing steps included cleaning missing values, handling outliers, and encoding categorical features. Exploratory Data Analysis (EDA) revealed significant patterns, such as the impact of lead time, booking channels, and guest history on cancellations. Machine learning models, including Decision Tree Classifier, Random Forest Classifier, and Logistic Regression, were employed to build predictive models.

The findings provide actionable recommendations for hotel management, such as dynamic pricing strategies and targeted marketing efforts. By implementing predictive analytics, hotels can optimize operations, improve revenue management, and enhance customer satisfaction.

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