

Project Overview

You are provided with one year of transaction-level hotel revenue data from a hotel located in **Dubai**. Each record in the dataset represents a single transaction, with the following key fields:

- **Check Total:** Represents the revenue generated from that specific transaction.
- **Meal Period:** Specifies the mealtime category (e.g., Breakfast, Lunch, Dinner).
- **Revenue Center:** Identifies one of the 9 different revenue centers within the hotel.

Project Objectives

1. Forecast revenue by meal period [breakfast, lunch and dinner] and revenue center using the historical data.
2. Forecast total revenue per day per revenue center for the next 3 months.

Guidelines & Flexibility

- You have complete freedom to select any AI/ML model or forecasting technique (e.g., deep learning, time series models, ensemble methods, etc.).
- This is a 2-member group project. You are free to choose your own group partner.
- While the project will be submitted as a team, individual contributions will be evaluated separately.

Evaluation Criteria

Your project will be assessed based on the following dimensions:

- **Forecasting Performance:** Accuracy and deviation from actual results (using metrics like RMSE, MAE, MAPE, etc.).
- **Training Efficiency:** Time and resources taken to train the model (use of high computation is acceptable and will be factored in).
- **Forecasting Speed:** Time taken to generate future predictions.

Model Transparency & Insights:

- Visualizations of training and validation loss/accuracy curves.
- A correlation matrix highlighting relationships between dependent features such as day of the week, week of the month, holidays, etc.