## Challenge Description

### **Project**: Hotel Booking Cancellation Prediction

#### **Task**

You are provided with a dataset of hotel bookings. The goal is to predict whether a booking will be canceled based on various features such as lead time, number of guests, meal preferences, and others.

Your task is to build a classification model to predict the target variable **is\_canceled**, which indicates whether a booking was canceled (1) or not (0).

#### **File Descriptions**

1. **train.csv** - The training set containing hotel booking data with labels (is\_canceled).
2. **test.csv** - The test set for which predictions are required. This file does not include the is\_canceled column.
3. **sample\_submission.csv** - A sample submission file showing the required format of predictions.

#### **Submission File**

For each booking in the test set, you must predict the probability of the booking being canceled. The submission file should contain a header and be in the following format:

id,is\_canceled

1,1

2,0

3,1

Where:

* id corresponds to the booking ID.
* is\_canceled is the binary classifcation of cancellation.

#### **Evaluation Metric**

**The evaluation metric will be the f1\_score with **average='macro'.****  Ensure your model achieves a balance between precision and recall to maximize the F1 score.

score = f1\_score(y\_true, y\_pred, **average='macro'**)