FLOWARD
فـــلاورد

Food Preparation Time Prediction - Case Study

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Outline

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Problem Statement

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- In order to **ensure the best customer experience**, a food delivery company wants to implement the most efficient model of how long it takes to prepare food orders.

Scope

- Historical data available for all orders placed between ***2022-06-01*** and ***2022-07-01***, including the restaurant information.

Context

- The company operates in **4** countries (*UK, France, Ireland, and Germany*), and **22** cities.
- In the period considered, **78%** of orders were placed with restaurants located in **London, UK**.
- There are **83** types of food suggested across all restaurants.
- **80%** of orders were associated with the same **15** food types (**18%** of total food types) during the period considered.
- The most popular (frequently ordered) food types include: **italian**, **burgers**, **thai**, and **american**.
- In general, and during the period considered, orders are placed **more frequently** on **Sundays**, while **Wednesday** is usually the day with the **fewer orders**.

(More about this here)

Suggested Solution

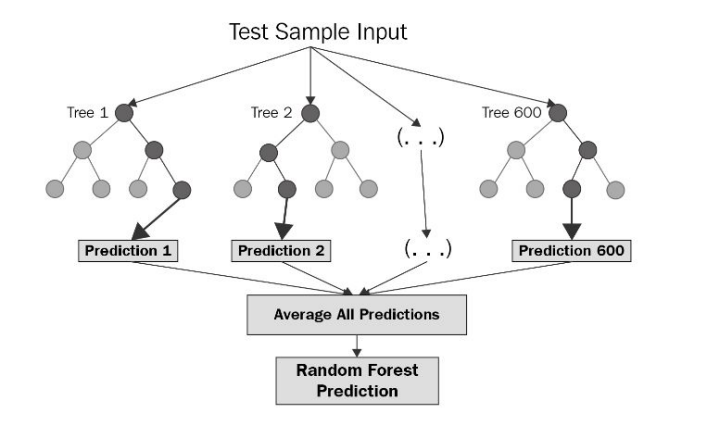
Implementing a machine learning model to predict orders’ prep times.

Why Machine Learning?

- Machine learning is one of the most powerful concepts that can help make accurate predictions.
- In the UAE food delivery market, the largest players (***Zomato, Careem, Talabat, etc.***) use machine learning to improve their users' experience by providing them with reliable estimates of when their orders will arrive.

How does it work?

- The idea is to use historical data, analyze it, and then leverage it to make future predictions.
- The predicted outcome will be dependant on some variables (that are already proven in the literature to be related to the outcome).
    - *For example, we know that the food type will affect the preparation time.*
- ***Random Forest*** is the machine learning model selected. The logic of the model is based on decision trees. There is a high degree of accuracy and a low margin of error associated with this model.



(Source: Random Forest Application)

Conclusion