MACHINE LEARNING ENGINEER
INTERVIEW CASE

In BESTSELLER TECH we have a planning tool that is being used by planners in all brands to manage delivery and replenishment of products to all customers.

This tool currently contains a simple, transparent but very manual forecast. There are several opportunities for improving the forecasts in this system.

The challenge is to design an MLOps platform where models can be deployed and serve forecasts to the planning tool.

1. Describe the minimal requirements of an MLOps platform?
    a. What importance will you put on each element?
2. Using the example of needing to improve foreasts in the planning tool, what would an architecture drawing look like for an ML-driven forecast developed and maintained following MLOps principles and its integration with the planning tool? The planning tool is run in a Kubernetes cluster in the cloud and is supported by a SQL-database for storing information.
    a. What integrations patterns would you consider?
    b. How do the MLOps elements discussed above fit into this architecture?
3. Assuming we have a forecasting model, let's consider how to deploy this as an online endpoint.
    a. Write a Flask or FastAPI application that serves the model's predictions as a REST API. The API should accept POST requests with the necessary input data and return a prediction.

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b. Create a Dockerfile to containerize the application. Make sure to include the necessary components such as the Python runtime, necessary libraries, the application code, and the trained model. The Dockerfile should specify all necessary steps to build the image and run the containerized application.

The purpose of the exercise is to have a foundation for discussion. Please only use a couple of hours on this exercise – we are not looking for a fully detailed architecture diagram.

If there are any questions, please do reach out.