

Introduction:

We would like to assess your capabilities in analytical thinking, technical proficiency, and communication. The questions are purposefully broad, leaving room for various approaches and solutions. We appreciate responses that are simple, creative, and intelligent, using tools like Google Sheets, SQL, or Python. [Here you find the data](#) for solving the problems.

Question 1:

In Tab One, you will find various KPIs aggregated by city and week. More detailed explanations can be found below each KPI.

- A) Compose a concise text message to the Head of Operations highlighting any abnormalities observed during this time. Provide advice on the most urgent issues and key points he should be aware of. Feel free to include graphs to illustrate your findings. Keep in mind that the Head of Operations has a very tight schedule.
- B) Additionally, draft a more detailed report for your manager. This report should cover the current status, abnormalities with the data, potential causes for any issues, and whether you can categorize the cities into specific problem areas.

Question 2:

Tab Two contains hourly order numbers for an entire week.

Our goal is to have an optimal number of couriers each hour to ensure timely deliveries without incurring unnecessary costs. Your task is to develop an optimal shift plan for our couriers, providing a list of shifts with columns for start date, start time, and end time. This can be done using Google Sheets, SQL, or Python.

Assumptions:

- The given order numbers are accurate forecasts for the upcoming week.
- A courier can handle up to 3 orders per hour while maintaining a reasonable delivery time.
- All couriers will attend their shifts (no no-shows).
- Shifts can either be 8 hours or 5 hours long.

If you are unable to solve this within a reasonable timeframe, explain what is needed to solve it and describe your approach.

Question 3:

In reality, the problem in Question 2 is complex due to factors like courier absenteeism, changing weather conditions, and events like strikes and demonstrations. Propose a courier and payment strategy that ensures cost reduction while maintaining excellent delivery service for customers.