EOR Analytics Challenge

Congratulations on reaching this stage of the recruitment process! As discussed during our introductory call, we are thrilled to present you with the Deel Analytical Challenge. This task is designed to assess your analytical skills and problem-solving capabilities.

Task Description and Timeframes:
Upon receiving the email containing the challenge details, your mission begins! You will have **24 hours** to analyze the given problem thoroughly and present your results. In exceptional cases, alternative timeframes can be arranged, so please feel free to communicate any concerns beforehand.

Requirements:
We encourage you to leverage any analytical tools you are comfortable with for parsing and analyzing the provided data.
To ensure a comprehensive evaluation, we kindly request that you showcase your work and code. Your methodology, assumptions, and data processing steps are crucial aspects we will be looking for in your submission.

Presentation Format:
Along with your analysis, we ask you to prepare a visually engaging presentation in PDF, Keynote, or PowerPoint format. Structuring your findings and outcomes clearly will enhance the impact of your results. Feel free to be creative, but remember to maintain a professional approach and keep in mind that we might ask you to present your findings in the next step of the recruitment process.

Business context

Deel is the leading global company in **Employer of Record (EOR) services**, empowering businesses to hire and manage talent in over 100 countries. Our platform simplifies the complexities of global hiring by handling local compliance, payroll, taxes, and benefits, enabling businesses to focus on growth.

At Deel, we recognize that **our success lies in making the onboarding experience as seamless as possible**. This is a critical touchpoint where we ensure a smooth start for new hires, setting the stage for their productivity and satisfaction. For our clients, a frictionless onboarding process ensures they can rely on Deel to quickly integrate their talent into their operations.

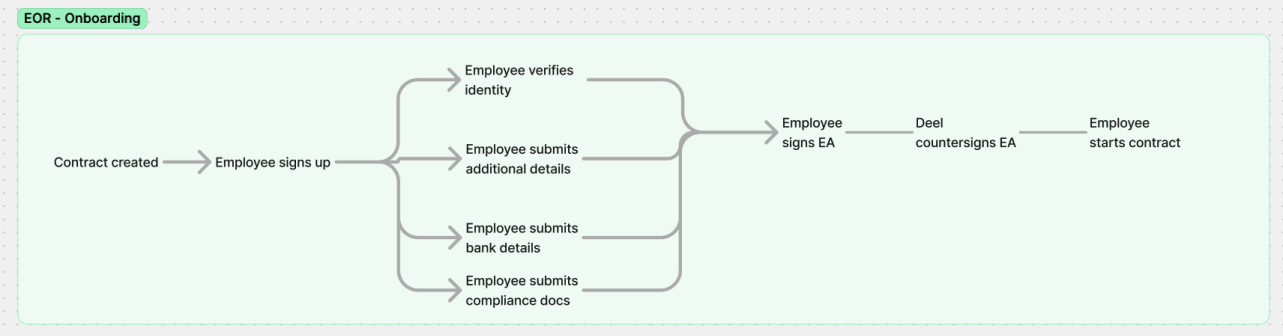
Problem

Deel operates in over 100 countries, each with its own set of legal requirements, documentation standards, and compliance procedures for onboard a new worker. This variability introduces potential bottlenecks in the onboarding process, where delays can arise due to:

- Missing or incorrect documentation.
- Inefficient workflows or prolonged review processes.
- Variations in processing times across regions.

Such delays negatively impact the experience of both clients and employees, creating friction in Deel's otherwise seamless platform experience.

To maintain our leadership position, **we need to identify and address the root causes of onboarding delays.** We know a contract is delayed when the *Actual Start Date* is later than the *Start Date*. Understanding why contracts get delayed will enable us to implement targeted improvements, reduce friction, and enhance both client and employee satisfaction.



Relevant files:

- *eor_contracts_activated.csv*

Task #1

(Note - This task aims to test your Analytical skills)

Objective: Evaluate the ability to analyze and interpret key metrics from operational data.
Scenario: Analyze the activation process for contracts. Highlight bottlenecks and provide actionable insights.

Instructions:

- Calculate % contracts where the Start date was delayed.

- Break down into the top reasons why these contracts were delayed.
- Draw some hypothesis on why contracts might be delayed and suggest actionable recommendations to improve the onboarding timeline.

Task #2

(Note - This task aims to test your SQL skills)

Objective: Assess the SQL proficiency in extracting meaningful insights from structured data.
Scenario: Deel wants to monitor the efficiency of contract activations across different regions.

Instructions:

1. Write a query to calculate the average onboarding time (in days) for contracts by region.
2. Write a query to list all contracts where onboarding exceeded 14 days.
3. Write a query to get the average (%) of onboardings delayed by week.

Task #3

(Note - This task aims to test your Modelling skills)

Objective: Assess the ability to design scalable and logical data pipelines.
Scenario: Deel aims to create a robust reporting system for contract activations.

Instructions:

- Design a data pipeline with the following layers:
    1. **Ingestion Layer:** Source data from `eor_contracts_activated.csv`.
    2. **Transformation Layer:** Include timestamp calculations for key milestones (e.g., document submission, contract started).
    3. **Analytics Layer:** The final table/s which are going to be used from the end users and in the BI tool. Please present the structure of your final table(s) with all the columns/fields you would like to include, along with their format; e.g. | col_name1 | col_name2 | col_name3| etc.)

Task #4

(Note - This task aims to test your A/B test skills)

Objective: Evaluate the understanding of A/B testing principles and their application.
Scenario: Deel implemented a new feature to automatically review the compliance documents

using AI. The feature was tested with a subset of users.

Instructions:

1. Describe the methodology to set up this A/B test, including the control and variant groups.
2. Describe which metric/metrics you would validate the success of the experiment
3. Assuming the Variant got better results than the Control, explain why the results were statistically significant and recommend whether the feature should be rolled out to all users.