**DATA Analyst**

# Part 1

VP Sales in GAC Group would like to analyse the profitability of businesses in different countries in a defined period. He was given access to all transactions done in all countries from 1993 to 2021. Specifically, he would like to know the following:

* What are the top 3 years in terms of profitability?
* What are the top 10 countries in terms of profitability?
* In which month during a year in average is the cost of doing business the lowest?
* Which day in a week do we generate more sales in average?
* In which time of day in average do we generate more sales, if we define time ranges as 00:00-05:59, 06:00-11:59, 12:00-17:59, and 18:00-23:59?
* How many transactions could not be matched to a specific country where the sale was made? Can you identify exact transactions to be able to fix them?
* How many transactions are duplicates, if a combination of date, time, and city is considered a unique identifier of a transaction?

However, data is in a raw format and stored in a very granular way and he doesn’t know where to start to get the information he needs. As a Data Analyst from a IG department, you have been assigned to help the VP Sales to get the required information.

# Part 2

To conduct required data analysis, you can use Microsoft Excel. Two data sets are available that you can use to conduct the analysis:

* Excel with 100,000 transactions recorded in a period from 1993-2021
* Excel with all locations, which includes cities and countries, among other data

# Part 3

After you have conducted your analysis, explain how the analysis was made, including:

* How did you calculate profit?
* How did you match cities in a transaction table to the list of locations to get country information?
* How did you identify entries that cannot be matched to a specific country?
* How did you identify duplicate transaction records?
* How did you group and sort records to get required information for a specific country, year, month, day in a week, and time of day?

# Glossary

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| IG | Information Governance |
| VP | Vice President |