# Project context & Objectives

You are a data scientist consultant within a big French consulting firm. Your client is a company that generates a lot of data but for the moment, no Machine learning model has been deployed to exploit them. They naturally asked for you to do so.

The company is running more than 3000 stores within 7 European countries. At the moment, the stores managers have to estimate their daily sales up until 6 weeks ahead. The sales depend on numerous factors such as promotions, competition, school holidays, seasonality and locality. With thousands of individual managers that predict their sales depending on their specific situation, the results precision can be highly variable.

With your team of data scientist consultants, you will gather the data available and handle a full project in order to exploit them and answer the problematic. You will prepare and present a delivery for the 6$^{th}$ of January which will be slides that gather all the conclusions drawn from your work including a demonstration that should present all the results of your ML model in a visual way destined for the end users. You will have 12 minutes to present your work to the client.

The stores managers and you when you will present your results ☺

# Different aspects to work on during the project

1

## Statistical Analysis and data validation

Perform a statistical analysis of the dataset and draw conclusions from it that will allow to help the business teams. The objective of this step is to extract the information from statistical indicators.

2

## Machine Learning modelling

Create a ML model that will address to the use case using the dataset. All the decisions taken that concern the choice of the evaluation metric, the validation strategy and the choice of the algorithm must be justified.

Note : The objective of this step is not to optimize the loss of 0.001 in your algorithm but rather create an argued methodology and put it into application.

3

## Results presentation & Recommendations

Perform an analysis of your model performances from a business point of view in order to convince the decision makers of the value to industrialize the model. Recommendations on industrializing (or not ) should be presented along with a simple demonstration presenting the model results in a visual way.

The application must use the ML model that you will have developed previously and destined to end users.

4

## Industrialization

Propose a scenario of model integration : how does your model will be used ? When will it run ? How will people interact with the model ? How is their job going to be transformed ? What gain do you expect ? …

# Focus on the project delivery

Presentation of your work during 15 minutes in Session 5 (+5 minutes of Q/A).

Presentation in .PDF or .PPTX to upload to Moodle before **January 6th 14h**.

Include the demonstration or a link to the demonstration within the presentation or upload it to the Moodle with the presentation if it's relevant.

1 delivery and 1 presentation per *project group* (4 students).