

Technical Challenge

The exercise is divided into two parts: exploration data analysis and predictive modelling. While we suggest using a Jupyter Notebook and Python for the analysis and model development, you are free to use any tool that you prefer. Please provide your work in a GitHub repository and share the link with us, along with any necessary instructions to run the code if applicable. You have **5 days** to complete and submit the exercise.

During the technical interview, you will be asked to do a brief presentation (5-10 minutes). With this exercise, we want to see how you approach the problem, how you work with the data to extract insights, how you prepare the data for training, how you build and validate a model, and the conclusions you draw from the results. Additionally, we are interested in understanding your ability to communicate effectively with both technical and non-technical audiences.

Part 1 – *Exploration Data Analysis*

Your goal is to analyse the dataset, uncover patterns, and extract meaningful insights that could help inform business decisions and guide strategic choices. The description of the dataset columns can be found at the end of this document.

Part 2 – *Churn Prediction*

Using the same dataset, your goal is to develop a machine learning model to predict whether a customer is likely to churn based on the other features.

Dataset Description

Column Name	Description
CustomerID	Unique customer ID.
Churn	Flag indicating whether the customer churned (1) or not (0).
Tenure	Tenure of the customer in the organization.
PreferredLoginDevice	Preferred device used by the customer to login (e.g., mobile, web).
CityTier	City tier classification (e.g., Tier 1, Tier 2, Tier 3).
WarehouseToHome	Distance between the warehouse and the customer's home.
PreferredPaymentMode	Preferred payment method used by the customer (e.g., credit card, debit card, cash on delivery).
HourSpendOnApp	Number of hours spent on the mobile application or website.
NumberOfDeviceRegistered	Total number of devices registered to the customer's account.
PreferredOrderCat	Preferred order category of the customer in the last month.
SatisfactionScore	Customer's satisfaction score with the service.
NumberOfAddresses	Total number of addresses added to the customer's account.
OrderAmountHikeFromLastYear	Percentage increase in order value compared to last year.
CouponUsed	Total number of coupons used by the customer in the last month.
OrderCount	Total number of orders placed by the customer in the last month.
DaySinceLastOrder	Number of days since the customer's last order.
CashbackAmount	Average cashback received by the customer in the last month.