Data analyst test

*Datasets provided:*

1. Customers (customers.csv)
2. Contracts (contracts.csv)
3. Fuel Transactions (fuel transactions.csv)
4. Blue Stripes Parking Transactions (road parking transaction.csv)

**Question 1:**

Marketing department wants to encourage the use of the Telepass Pay application to pay the Blue Stripes Street Parking service in 3 main cities (Milan, Rome, Turin).

By knowing that the company earns in proportion to the amount of each transaction and not by its duration it is needed to provide an analysis of the customers that have used this service in 2019 to identify the best targets (based on transactions time slots and sociodemographic information) for a communication campaign.

It is required to:

* Show the source code used for each calculation (choosing from SQL, Python, R, etc…)
* Present, quantitatively and qualitatively, the evidences coming out from the dataset analysis

**Question 2:**

By using the 2 datasets of customers and contracts, it is required to calculate the monthly customers acquisition rate starting from October 2018 to October 2019 only the “Family” product typology (this product allows to pay Road Tolling, Parking, Milan’s Restricted Traffic Zone, Car Insurances and Travel Insurances.

The calculation of the monthly customer acquisition rate is the percentage ratio “A/B” where:

A = number of new customers that subscribed a Family contract in the current month

B = number of customers with an active Family contract at the end the previous month

*Example: March 2019 acquisition rate is the percentage ratio of new customers subscribing a Family contract in March 2019 and the number of customers with an active Family contract at the end of February 2019*

It is required to:

* Provide the source code used for each calculation (choosing from SQL, Python, R, etc…)
* Present, quantitatively and qualitatively, the evidences coming out from the dataset analysis

**Question 3:**

Telepass Pay is interested in extending its network of affiliated gas stations in Italy. At this moment, it is possible to pay via App the Fuel service in more than 2.000 gas stations but the long term goal is to cover the entire Italian network (around 10.000 gas stations). Instead, the short term goal is to plan new affiliations in all the geographic areas which present the best performances in terms of dispensed litres and/or unique customers and/or number of transactions, and/or fuel price.

**In case of extending the affiliation to 500 new gas stations, what should motivate the choice of the target?**

By using the fuel transactions, contracts and customers datasets, it is required to provide one or more set of performance KPIs. If necessary, it is possible to select one single significant month for this analysis

It is required to:

* Provide the source code used for each calculation (choosing from SQL, Python, R, etc…)
* Present, quantitatively and qualitatively, the evidences coming out from the dataset analysis
* Motivate the choice of the KPIs