Technical Test Foxintelligence
Data Quality Engineer – DataScience Team

Context

- Loyalty programs can be a powerful marketing weapon to increase engagement and lock-incustomers value. Following the path of "Amazon prime", various retailers have launched their own loyalty program, with varying degrees of success: Cdicount à volonté, Asos Premier, La Redoute et moi …
- The food-tech industry makes no exception to the rule: Deliveroo has implemented its own subscription membership plan, called "Deliveroo Plus". It was launched in France in September 2018.
- One of Foxintelligence food delivery client asked us to evaluate the effectiveness/performance of "Deliveroo Plus" to decide whether it should launch a similar loyalty program.
- The client team would like us to develop a Deliveroo Plus tag in order to estimate:
  - A lower bond for profitability per Deliveroo Plus customer (eg if needed, ignore customers who subscribe but do not order much)
  - The increase (if there is one) in the frequency of orders before vs after the subscription to Deliveroo Plus, at Deliveroo and/or at competition (eg does subscribing to Deliveroo Plus make customers less likely to order elsewhere?)

Questions

Using the provided transactional dataset:

1. Compute the market share per merchant per month for 2018 (in terms of number of orders).

2. Define and implement a methodology to identify users that have subscribed to "Deliveroo Plus" loyalty program and tag their orders.

Guidelines

Question 2

This question is "technical" but is strongly linked to the constraints from the client team. You can ask questions if the context is not clear enough.

- Take some time to properly define the right marker to flag Deliveroo Plus users
- How can you deal with un-subscription?
- Think about temporality: how can you deal with users with specific subscription patterns (subscription at d1, un-subscription at d2, re-subscription at d3 ... with d1 < d2 < d3)

In this question, you will transform data to create a new enrichment flag ("Deliveroo plus" users). We strongly recommend that you use an imperative programming language (Python, R...) to solve this question .

Do not forget to send us all the intermediary files you have used (excel file, pdf/word document and the code you have written).

Information about the transactional dataset

- The dataset is composed of synthetic French foodtech transactional data which reflect the actual behavior of customers. It was generated using e-receipts that are parsed from our panel of Cleanfox users. See the Deliveroo template to have an idea of where the data is collected from.
- The level granularity is the order (i.e one row equals one order/one transactional email)
- Just eat receipts only contain minimal information: we only have the number of orders (eg no order total paid value)
- Deliveroo does not send emails when users subscribe or unsubscribe from Deliveroo Plus so receipts are the only way to infer subscription

If you have any questions, feel free to contact:

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