JOB-A-THON - June 2021

Online 26-06-2021 12:00 AM to 04-07-2021 11:59 PM

6362
Registered

Job Opportunities with Top Companies
Prizes

ENDS IN

2 DAYS 6 HOURS 33 MIN

Registered

About Problem Statement Solution Checker My Submissions Leaderboard Discuss Status

Marketplace Feature Table

Your **Client ComZ** is an ecommerce company. The company wants to focus on targeting the right **customers** with the right products to increase overall revenue and conversion rate.

To target the right customers with the right products, they need to build an ML model for marketing based on user interaction with products in the past like number of views, most viewed product, number of activities of user, vintage of user and others.

ComZ has contacted the Data Science and Engineering team to use this information to fuel the personalized advertisements, email marketing campaigns, or special offers on the landing and category pages of the company's website.

You, being a part of the data engineering team, are expected to "**Develop input features"** for the efficient marketing model given the **Visitor log data** and **User Data**.

1. **Visitor Log Data** – It is a browsing log data of all the visitors and the users. This table contains the following information:

WebClientID	Unique ID of browser for every system. (If a visitor is using multiple browsers on a system like Chrome, Safari, then there would be a different web clientid for each browser). The ID remains consistent unless the user clears their cookie.
VisitDateTime	Date and time of visit. There are two different formats for DateTime. • One is in datetime format "2018-05-07 04:28:45.970" • Another one is in unix datetime format "1527051855673000000"
ProductID	Unique ID of product browsed/ clicked by the visitor
UserID	Unique ID of the registered user. As expected, this is available for registered users only, not for all visitors.
Activity	Type of activity can be browsing (pageload) or clicking a product
Browser	Browser used by the visitor
OS	Operating System of the system used by the visitor

City	City of the visitor
Country	Country of the visitor

2. User Data – It has registered user information like signup date and segment.

UserID	Unique ID of the registered user.
Signup Date	Date of registration for the user
User Segment	User Segment (A/B/C) created based on historical engagement

Now based on the above two tables, you need to create an **input feature set** for the Marketing Model.

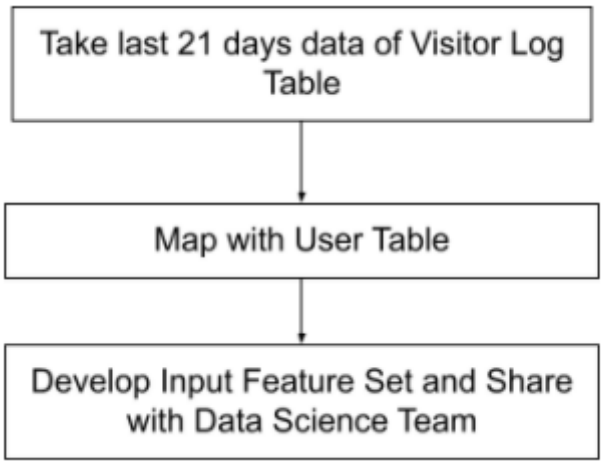
3. Input Feature table:

UserID	Unique ID of the registered user

No_of_days_Visited_7_Days	How many days a user was active on platform in the last 7 days.
No_Of_Products_Viewed_15_Days	Number of Products viewed by the user in the last 15 days
User_Vintage	Vintage (In Days) of the user as of today
Most_Viewed_product_15_Days	Most frequently viewed (page loads) product by the user in the last 15 days. If there are multiple products that have a similar number of page loads then , consider the recent one. If a user has not viewed any product in the last 15 days then put it as **Product101.**
Most_Active_OS	Most Frequently used OS by user.
Recently_Viewed_Product	Most recently viewed (page loads) product by the user. If a user has not viewed any product then put it as **Product101.**
Pageloads_last_7_days	Count of Page loads in the last 7 days by the user
Clicks_last_7_days	Count of Clicks in the last 7 days by the user

Process to create Input Feature:

When ComZ does a targeting campaign, It follows the below process.



In the current case, you are supposed to generate an input feature set as on 28-May-2018. So, the visitor table is from 07-May-2018 to 27-May-2018.

As a Data Engineer Creating ETL Pipeline would definitely be appreciated and provide you the added advantage in interviews, Your effort should be to build ETL Pipeline such that passing the information of user data and log data, It can generate the input feature

table automatically

How to make Submission:

- Use **Visitor Log Data and User Data** to generate the features mentioned in the sample submission
- You are supposed to generate all the features for all the users as mentioned in the sample submission or input feature table
- Make sure your **submission file's rows (user ids) are in the same orde**r as mentioned in the sample submission.
- All Submissions are to be done at the solution checker tab.
- For a step by step view on how to make a submission check the below video

Things you should take into consideration:

You are supposed to smartly clean and pre-process data like

- Imputing missing values effectively
- Handle different format of date time features
- Values stored in different case for the text information

Evaluation Metric:

- For continuous features, we will first calculate **Mean Absolute Percentage Error (MAPE)** for each continuous feature.

MAPE = Absolute Value (Derived Value - Actual Value)/ Actual Value

Then, we will calculate accuracy of Derived Value which is Mean Performance (**MP**)

MP = *(1 - MAPE)*

- For categorical features, we will calculate **Accuracy** for each categorical feature.
- Accuracy = Percentage of value same in both derived feature and actual feature.
- Finally, we will take the weighted sum of MP and Accuracy for all features.

Score = *1/8 (MP(No_of_days_Visited_7_Days) + MP(No_Of_Products_Viewed_15_Days) + MP(User_Vintage)+ Accuracy(Most_Viewed_product_15_Days) + Accuracy(Most_Active_OS) + Accuracy(Recently_Viewed_Product) + MP(Pageloads_last_7_days) + MP(Clicks_last_7_days))*

- Please note that scoring is going to be done using an automated script and difference in between the field names or order from the submission file format may result in zero scoring/error message due to the failure of the scoring script.
- Participants may do multiple submissions. They would have to select on the platform which one to be treated as the final submission. If not selected, the submission with the highest score would be considered as final.
- Only 5 submissions per day are allowed
- Final winners would be announced only after the submitted code reviews and the analysis of the rest of the document submissions made by the participants.
- Quality of code would be judged on the following parameters – functionality, reusability, modularity, documentation, testing and validation.
- Should be scalable to be executed on 10 GB data as well.

Final Submission:

Please ensure that your final submission includes the following:

- Solution file containing the input feature table for all the users.
- A Zipped file containing code & approach (Note that both code and approach document are mandatory for shortlisting)
    - Code: Clean code with comments on each part
    - Approach: Please share your approach to solve the problem (doc/ppt/pdf format). It should cover the following topics
        - A brief on the approach, which you have used to solve the problem.
        - What data-preprocessing / data cleaning ideas really worked? How did you discover them?
        - Which tools did you use to solve the problem?

How to Set Final Submission?

Hackathon Rules

- *The final standings would be based on the leaderboard score and your approach.*
- Use of external data is prohibited.
- You can only make **5 submissions** per day
- Entries submitted after the contest is closed, will not be considered
- The code file pertaining to your final submission is mandatory while setting final submission
- Throughout the hackathon, you are expected to respect fellow hackers and act with high integrity.
- Analytics Vidhya holds the right to disqualify any participant at any stage of the competition if the participant(s) are deemed to be acting fraudulently.
- Use of multiple Login IDs will lead to immediate disqualification

Data

Train File | Sample Submissions