

**As the project requirements, We created a user profile etl (Extract-Load-Transform) feature engineering project, which generated a total of 160 customer tags after etl processing. We finally selected 22 attribute tags and**

**1 target classification predictor variable that have the greatest impact on user churn through user questionnaires, qualitative and quantitative analysis of data, and filtered them to be the input features of the algorithm, The 22 user tags are described as follows :**

**MEMBER\_ID : Member Unique Identification ( This attribute is not included and is only used to identify the member )**

**AGE : Membership Age**

**GENDER: Member gender**

**HAVE\_PHONE\_NUMBER: Weather the member willing to leave a phone number or not(0|1)**

**NDAYS\_MEMBER\_REGISTRATION: Number of days of membership registration**

**CHARGE\_MONEY: The member total amount of card recharge at salon in recently year**

**ACTIVATED\_CARDS: Number of activated member cards in recently year**

**ACTIVATED\_MONEY: Total money of member activation card in recently year**

**CARD\_INITIAL\_PRICE: The amount of money when cards first activated in recently year**

**CARD\_BALANCE: The fund balance of member stored value card in recently year**

**CARD\_EXPIRED\_DAY: Number of days the membership card has expired without being recharge to the present**

**TOTAL\_RECHARGE\_MONEY: The total amount of recharge of the member in the hair salon**

**TOTAL\_RECHARGE\_COUNT: The Total number of recharges in the Hair salon**

**FREQUENCY: Member consumption frequency in hair salon**

**MONEY :** Total amount spent by members in hair salon

**NUMBER\_OF\_CARD:** Number of member cards

**LAST\_YEAR\_TOTAL\_RECHARGE\_MONEY:** Member last year card recharged money in hair salon

**LAST\_YEAR\_CARD\_RECHARGE\_COUNTS:** Member last year card recharged counts in hair salon

**NUMBER\_OF\_CONSUMPTION:** Member Number of hairdressing service consumption.

**NUMBER\_OF\_DIFFERENT\_SERVICE\_HAIR\_STYLIST:** The number of hair stylists who have served the same member in the hair salon

**NUMBER\_OF\_CONSUMPTION\_RETAIL\_CATEGORY:** The number of different hairdressing and care retail products consumed by members in the hair salon

**NUMBER\_OF\_CONSUMPTION\_SERVICE\_CATEGORY:** The number of different services that members consume in the Hair salon by category.

**FAVORITE\_HAIR\_STYLIST\_STATUS :** The status of the hair stylist who likes and serves the most, has left or is normal

**CHURN\_STATUS :** User churn status, target predictor variable