Retention rate

INTRODUCTION

In order to implement customer care services, we need to determine if the business organization can retain customers, which means having customer retention evaluation metrics.

Are there many evaluation metrics for a business to determine if they can retain customers?

- **Retention rate:** Retention rate is the percentage of customers or users who continue to use a company's product or service within a certain period of time. This metric measures a company's ability to retain customers and customer satisfaction with the product/service.

  - Customer retention rate based on the number of users: This metric is calculated as the percentage of users who continue to use the product/service.

  - Customer retention rate over time.

  - ***Retention rate = ((New customers – Lost customers during the period) / Starting customers)) x 100***

- **Churn Rate** is the percentage that represents the level of user abandonment of your product/service. And of course, you would expect your Churn Rate to be as low as possible.

  - **Customer Churn Rate** → Answers the question of how many users the business is losing *(after a certain period of time)*.

  - **Revenue Churn Rate** → Answers the question of how much MRR *(Monthly Recurring Revenue)* the business is losing each month.

Context

Here we use retention rate to evaluate and analyze the ability to retain customers for the store.

The retention rate will be calculated using the simple formula below:

- ***Retention rate = Number of new customers at the beginning of the month / Number of returning customers in the following months.***

output: will be in the following format

Column Name	Type
first_mth	time
mtn	time
retention_customer	integer
new_customer	integer
retention_rate	demical

SQL coding

đầu tiên, ta cần lấy tháng từ trường Date với hàm DATETRUNC()

sau đó ta tìm tháng đầu tiên của từng khách hàng đã thực hiện mua hàng mới hàm MIN(), những tháng đó gọi là first_mth.

đếm số khách hàng của từng tháng mới đó, số lượng khách hàng này được coi là số lượng khách hàng mới của từng tháng.

sau đó ta đi tính số lượng khách hàng từng tháng tiếp theo.

```
with data_set as (SELECT Customer_ID, [Date] , Quantity, Sales_Amount
        , DATETRUNC(month,[Date]) as mth
from dbo.scanner_data),

        first_mth_tbl as (SELECT Customer_ID
        , MIN(mth) first_mth
FROM data_set
GROUP BY Customer_ID),

        new_cust_tbl as ( SELECT first_mth,
                                COUNT(distinct Customer_ID) as new_customer
FROM first_mth_tbl
GROUP BY first_mth),
```

```
        retentio_tbl as (SELECT data_set.Customer_ID, data_set.mth,
                              first_mth_tbl.first_mth
 FROM data_set
 JOIN first_mth_tbl
 ON data_set.Customer_ID = first_mth_tbl.Customer_ID),

        retention1_tbl as (SELECT first_mth, mth,
             COUNT(distinct Customer_ID) as retention_cust
 FROM retentio_tbl
 GROUP BY first_mth, mth),

        retention2_tbl as (SELECT  retention1_tbl.first_mth,
                              retention1_tbl.mth, retention1_tbl.retention_cust,
                              new_cust_tbl.new_customer
 FROM retention1_tbl
 JOIN new_cust_tbl
        ON retention1_tbl.first_mth = new_cust_tbl.first_mth
 )

 SELECT *
        , ROUND(100.0*retention_cust/new_customer,2) as retention_rate
 FROM retention2_tbl
 ORDER by first_mth, mth
```

ta thư được kết quả có dạng như sau:

first_mth	mth	retention_cust	new_customer	retention_rate
01/01/2016	01/01/2016	3396	3396	100
01/01/2016	01/02/2016	1306	3396	38,46
01/01/2016	01/03/2016	1025	3396	30,18
01/01/2016	01/04/2016	597	3396	17,58
01/01/2016	01/05/2016	266	3396	7,83
01/01/2016	01/06/2016	197	3396	5,8
01/01/2016	01/07/2016	152	3396	4,48
01/01/2016	01/08/2016	137	3396	4,03
01/01/2016	01/09/2016	90	3396	2,65
01/01/2016	01/10/2016	56	3396	1,65
01/01/2016	01/11/2016	41	3396	1,21
01/01/2016	01/12/2016	40	3396	1,18
01/02/2016	01/02/2016	2221	2221	100

| 01/02/2016 | 01/03/2016 | 478 | 2221 | 21,52 |
| 01/02/2016 | 01/04/2016 | 291 | 2221 | 13,1 |