Conditions for separating the customer types

Customer Types	Current Month	Current Month-1	Current Month-2	Current Month-3
New				
Repeat				
Reactive				
Churn				

The customers have transactions on the month.
The customers don't have the transactions on the month.
Not specified

Target Final Table for Exploring with Data Studio

date	cust_types	n_cust
2008-07-01	ChurnCustomer	xxxx
2008-07-01	RepeatCustome	xxx
2008-07-01	ReactiveCustom	xxxx
2008-06-01	NewCustomer	xx

Summary Result

Part1: Separate NewCustomer, RepeatCustomer and ReactivedCustomer from raw data

RUN SAVE SCHEDULE MORE

```
SELECT rpt_mth,cust_types,count (distinct cust_code) as n_cust
FROM
(
    SELECT cust_code,shop_months as rpt_mth
    ,CASE
        WHEN DATE_DIFF(shop_months,pre_mths,month) is null then "NewCustomer"
        WHEN DATE_DIFF(shop_months,pre_mths,month) = 1 then "RepeatCustomer"
        WHEN DATE_DIFF(shop_months,pre_mths,month) > 1 then "ReactivedCustomer"
    ELSE "OTHERS" END as cust_types
    from
    (
        SELECT DISTINCT cust_code, shop_months
        ,LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months ASC) AS pre_mths
        from
        (
            SELECT Distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
            FROM `basic-breaker-331409.supermarket.rawdata`
            where cust_code is not null
        )
    )
)
group by rpt_mth,cust_types
ORDER BY rpt_mth ASC
```

Processing location: EU

Query results SAVE RESULTS EXPLORE DATA

Query complete (21.0 sec elapsed, 129.4 MB processed)

Job information | Results | JSON | Execution details

74	2008-05-01	RepeatCustomer	966
75	2008-06-01	RepeatCustomer	997
76	2008-06-01	ReactivedCustomer	602
77	2008-07-01	RepeatCustomer	465
78	2008-07-01	ReactivedCustomer	130

Part2: Separate Churn Customers from raw data

RUN SAVE SCHEDULE MORE

```sql
SELECT count(*) as n_cust,rpt_mth,'ChurnCustomer' AS cust_types
FROM
(
    SELECT shop_months ,date_add(shop_months , INTERVAL 1 month) AS rpt_mth, cust_code
    FROM
    (
        SELECT Distinct cust_code, shop_months,
        LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months DESC) AS next_months,
        DATE_DIFF(LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months DESC), shop_months, MONTH) AS n_mth
        FROM
        (
            SELECT Distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
            FROM `basic-breaker-331409.supermarket.rawdata`
        )where cust_code is not null
    )WHERE (n_mth > 1 or n_mth is null)
) where shop_months < (SELECT MAX(shop_months) FROM (SELECT distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
    FROM `basic-breaker-331409.supermarket.rawdata`
    where cust_code is not null))
group by rpt_mth,cust_types
ORDER BY rpt_mth ASC
```

Processing location: EU

Query results SAVE RESULTS EXPLORE DATA

Query complete (18.8 sec elapsed, 258.9 MB processed)

Job information Results JSON Execution details

22	454	2008-02-01	ChurnCustomer
23	475	2008-03-01	ChurnCustomer
24	523	2008-04-01	ChurnCustomer
25	574	2008-05-01	ChurnCustomer
26	594	2008-06-01	ChurnCustomer
27	1134	2008-07-01	ChurnCustomer

Part3: Combine the data in Part1 and Part2 by using union all

Churn_6310422053.sql

```sql
SELECT rpt_mth,cust_types, count (distinct cust_code) as n_cust
FROM
(
    SELECT cust_code,shop_months as rpt_mth
    ,CASE
        WHEN DATE_DIFF(shop_months,pre_mths,month) is null then "NewCustomer"
        WHEN DATE_DIFF(shop_months,pre_mths,month) = 1 then "RepeatCustomer"
        WHEN DATE_DIFF(shop_months,pre_mths,month) > 1 then "ReactivedCustomer"
    ELSE "OTHERS" END as cust_types
    from
    (
        SELECT DISTINCT cust_code, shop_months
        ,LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months ASC) AS pre_mths
        from
        (
            SELECT Distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
            FROM `basic-breaker-331409.supermarket.rawdata`
            where cust_code is not null
        )
    )
    union all
    SELECT Distinct cust_code,rpt_mth,'ChurnCustomer' AS cust_types
    FROM
    (
        SELECT shop_months ,date_add(shop_months , INTERVAL 1 month) AS rpt_mth, cust_code
        FROM
        (
            SELECT Distinct cust_code, shop_months,
            LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months DESC) AS next_months,
            DATE_DIFF(LAG(shop_months, 1) OVER (PARTITION BY cust_code ORDER BY shop_months DESC), shop_months, MONTH) AS n_mth
            FROM
            (
                SELECT Distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
                FROM `basic-breaker-331409.supermarket.rawdata`
            )where cust_code is not null
        )WHERE (n_mth > 1 or n_mth is null)
    ) where shop_months < (SELECT MAX(shop_months) FROM (SELECT distinct cust_code, date_trunc(parse_date('%Y%m%d', cast(SHOP_DATE as string)), month) shop_months
        FROM `basic-breaker-331409.supermarket.rawdata`
        where cust_code is not null))
)
group by rpt_mth,cust_types
ORDER BY rpt_mth ASC
```

Part4: Result (Explore with Data Studio)