**Chananchida Rattanaumpol  6310422005**

## Churn Analysis : Supermarket (CRM 7105)

```sql
-- SELECT CUST_CODE, LEFT(CAST(SHOP_DATE AS STRING),6) AS MTH FROM `supermarket-331410.supermarket.supermarket`
-- where CUST_CODE is not null LIMIT 1000;

with churnrate as (
SELECT CUST_CODE,
    CASE   WHEN M200802=1 AND M200604+M200605+M200606+M200607+M200608+M200609+M200610+M200611+M200612
+M200701+M200702+M200703+M200704+M200705+M200706+M200707+M200708+M200709+M200710+M200711+M200712
        +M200801=0 THEN 'NEW'
      WHEN M200802=1 AND M200801=1 THEN 'REPEAT'
      WHEN M200802=1 THEN 'REACTIVATE'
      WHEN M200802=0 AND M200801=1 THEN 'CHURN' END AS AT200802,

    CASE   WHEN M200801=1 AND M200604+M200605+M200606+M200607+M200608+M200609+M200610+M200611+M200612
+M200701+M200702+M200703+M200704+M200705+M200706+M200707+M200708+M200709+M200710+M200711+M200712=0 THEN
'NEW'
      WHEN M200801=1 AND M200712=1 THEN 'REPEAT'
      WHEN M200801=1 THEN 'REACTIVATE'
      WHEN M200801=0 AND M200712=1 THEN 'CHURN' END AS AT200801,

FROM
(
SELECT CUST_CODE,
  SUM(M200604) AS M200604,
  SUM(M200605) AS M200605,
  SUM(M200606) AS M200606,
  SUM(M200607) AS M200607,
  SUM(M200608) AS M200608,
  SUM(M200609) AS M200609,
  SUM(M200610) AS M200610,
  SUM(M200611) AS M200611,
  SUM(M200612) AS M200612,
  SUM(M200701) AS M200701,
  SUM(M200702) AS M200702,
  SUM(M200703) AS M200703,
  SUM(M200704) AS M200704,
  SUM(M200705) AS M200705,
  SUM(M200706) AS M200706,
  SUM(M200707) AS M200707,
  SUM(M200708) AS M200708,
  SUM(M200709) AS M200709,
```

```sql
    SUM(M200710) AS M200710,
    SUM(M200711) AS M200711,
    SUM(M200712) AS M200712,
    SUM(M200801) AS M200801,
    SUM(M200802) AS M200802,
    SUM(M200803) AS M200803,
    SUM(M200804) AS M200804,
    SUM(M200805) AS M200805,
    SUM(M200806) AS M200806,
    SUM(M200807) AS M200807
FROM
(
SELECT CUST_CODE,
    CASE WHEN MTH = '200604' THEN 1 ELSE 0 END AS M200604,
    CASE WHEN MTH = '200605' THEN 1 ELSE 0 END AS M200605,
    CASE WHEN MTH = '200606' THEN 1 ELSE 0 END AS M200606,
    CASE WHEN MTH = '200607' THEN 1 ELSE 0 END AS M200607,
    CASE WHEN MTH = '200608' THEN 1 ELSE 0 END AS M200608,
    CASE WHEN MTH = '200609' THEN 1 ELSE 0 END AS M200609,
    CASE WHEN MTH = '200610' THEN 1 ELSE 0 END AS M200610,
    CASE WHEN MTH = '200611' THEN 1 ELSE 0 END AS M200611,
    CASE WHEN MTH = '200612' THEN 1 ELSE 0 END AS M200612,
    CASE WHEN MTH = '200701' THEN 1 ELSE 0 END AS M200701,
    CASE WHEN MTH = '200702' THEN 1 ELSE 0 END AS M200702,
    CASE WHEN MTH = '200703' THEN 1 ELSE 0 END AS M200703,
    CASE WHEN MTH = '200704' THEN 1 ELSE 0 END AS M200704,
    CASE WHEN MTH = '200705' THEN 1 ELSE 0 END AS M200705,
    CASE WHEN MTH = '200706' THEN 1 ELSE 0 END AS M200706,
    CASE WHEN MTH = '200707' THEN 1 ELSE 0 END AS M200707,
    CASE WHEN MTH = '200708' THEN 1 ELSE 0 END AS M200708,
    CASE WHEN MTH = '200709' THEN 1 ELSE 0 END AS M200709,
    CASE WHEN MTH = '200710' THEN 1 ELSE 0 END AS M200710,
    CASE WHEN MTH = '200711' THEN 1 ELSE 0 END AS M200711,
    CASE WHEN MTH = '200712' THEN 1 ELSE 0 END AS M200712,
    CASE WHEN MTH = '200801' THEN 1 ELSE 0 END AS M200801,
    CASE WHEN MTH = '200802' THEN 1 ELSE 0 END AS M200802,
    CASE WHEN MTH = '200803' THEN 1 ELSE 0 END AS M200803,
    CASE WHEN MTH = '200804' THEN 1 ELSE 0 END AS M200804,
    CASE WHEN MTH = '200805' THEN 1 ELSE 0 END AS M200805,
    CASE WHEN MTH = '200806' THEN 1 ELSE 0 END AS M200806,
    CASE WHEN MTH = '200807' THEN 1 ELSE 0 END AS M200807
FROM
(
SELECT DISTINCT LEFT(CAST(SHOP_DATE AS STRING),6) AS MTH ,CUST_CODE
```

```sql
FROM `supermarket-331410.supermarket.supermarket`
WHERE CUST_CODE IS NOT NULL
)
)
GROUP BY 1
)
)


SELECT *
FROM
(
SELECT 'M200802' as month,
    AT200802 as churn,
    count(CUST_CODE) as num
FROM churnrate
group by 1,2

UNION ALL

SELECT 'M200801' as month,
    AT200801 as churn,
    count(CUST_CODE) as num
FROM churnrate
group by 1,2
)
WHERE churn IS NOT NULL
```