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Learn SQL from Scratch

CODEFLIX, A STREAMING VIDEO STARTUP

FIRST QUARTER CHURN RATE

Adam Pesaturo

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CODEFLIX

- Began subscriptions on DECEMBER 1, 2016
  - monthly subscription service
  - subscriptions are not prorated

```sql
SELECT MIN(subscription_start),
  MAX(subscription_end)
FROM subscriptions;
```

FIRST MONTH	LAST MONTH
December 2016	March 2017

- It has been FOUR months, what is our CHURN RATE?
  - Will assess **January 1, 2017 through March 31, 2017**

TEXT

USERS

- Our service has TWO segments of users

```
1   SELECT DISTINCT segment
2   FROM subscriptions;
```

SEGMENT
87
30

TEXT

WHAT IS THE CHURN RATE SINCE THE COMPANY STARTED?

```sql
WITH months AS
(SELECT
  '2017-01-01' as first_day,
  '2017-01-31' as last_day
 UNION
 SELECT
  '2017-02-01' as first_day,
  '2017-02-28' as last_day
 UNION
 SELECT
  '2017-03-01' as first_day,
  '2017-03-31' as last_day
),
cross_join AS
(SELECT *
FROM subscriptions
CROSS JOIN months
),
status AS
(SELECT id,
  first_day as month,
  CASE
    WHEN (subscription_start < first_day)
      AND (subscription_end > first_day
        OR subscription_end IS NULL)
    THEN 1
    ELSE 0
  END as is_active,
  CASE
    WHEN (subscription_end BETWEEN first_day AND last_day)
    THEN 1
    ELSE 0
  END as is_canceled
FROM cross_join
),
status_aggregate AS
(SELECT month,
  SUM(is_active) as sum_active,
  SUM(is_canceled) as sum_canceled
FROM status
GROUP BY month
)
SELECT month,
  1.0 * sum_canceled/sum_active as churn_rate
FROM status_aggregate;
```

MONTH	CHURN RATE
JANUARY 2017	16.2%
FEBRUARY 2017	19.0%
MARCH 2017	27.4%

OVERALL	45%

For every 2 persons who subscribed during the first four months, about 1 person has cancelled during that time period.

This was calculated using a temporary time table using 2016-12-01 as first day and 2017-03-31 as last day along with a temporary status table checking for subscription_end IS NULL for is_canceled and subscription_end IS NOT NULL for is_active

COMPARE CHURN RATES BETWEEN SEGMENTS

	CHURN RATE	
MONTH	Segment 87	Segment 30
JANUARY 2017	25.2%	7.6%
FEBRUARY 2017	32%	7.3%
MARCH 2017	48.6%	11.7%

Codeflix should focus on expanding subscribers from SEGMENT 30

```
WITH months AS
(SELECT
  '2017-01-01' as first_day,
  '2017-01-31' as last_day
 UNION
 SELECT
  '2017-02-01' as first_day,
  '2017-02-28' as last_day
 UNION
 SELECT
  '2017-03-01' as first_day,
  '2017-03-31' as last_day
),
cross_join AS
(SELECT *
FROM subscriptions
CROSS JOIN months
),
status AS
(SELECT id,
  first_day as month,
  CASE
    WHEN (subscription_start < first_day)
      AND (subscription_end > first_day
        OR subscription_end IS NULL)
      AND (segment = 87)
    THEN 1
    ELSE 0
  END as is_active_87,
  CASE
    WHEN (subscription_start < first_day)
      AND (subscription_end > first_day
        OR subscription_end IS NULL)
      AND (segment = 30)
    THEN 1
    ELSE 0
  END as is_active_30,
  CASE
    WHEN (subscription_end BETWEEN
first_day AND last_day)
      AND (segment = 87)
    THEN 1
    ELSE 0
  END as is_canceled_87,
  CASE
    WHEN (subscription_end BETWEEN
first_day AND last_day)
      AND (segment = 30)
    THEN 1
    ELSE 0
  END as is_canceled_30
FROM cross_join
),
status_aggregate AS
(SELECT month,
  SUM(is_active_87) as sum_active_87,
  SUM(is_active_30) as sum_active_30,
  SUM(is_canceled_87) as sum_canceled_87,
  SUM(is_canceled_30) as sum_canceled_30
FROM status
GROUP BY month
)
SELECT month,
  1.0 * sum_canceled_87/sum_active_87 as
churn_rate_87,
  1.0 * sum_canceled_30/sum_active_30 as
churn_rate_30
FROM status_aggregate;
```

TEXT

CONCLUSIONS

- Codeflix has been accepting subscriptions for four consecutive months
  - December 2016 through March 2017
- Our subscribers are divided among two segments
  - Segment 87
  - Segment 30
- Overall our churn rate has been increasing each month
  - Most recent: 27.4%
- However, this rate is heavily influenced by the subscribers is Segment 87
  - Churn rate is 3-5x higher than the rate of Segment 30
- **Codeflix should begin to focus on building subscribers within Segment 30**