Capstone: Churn Rates

Learn SQL from Scratch

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1. Codeflix Overview

- Codeflix has been in operation for 4 months.
- Due to the minimum subscription length of 31 days, we can only obtain information from the last 3 months
- The marketing team provided data for 2 customer segments, 30 and 87

```
59    SELECT id, subscription_start,
      subscription_end, segment
60    FROM subscriptions;
```

id	subscription_start	subscription_end	segment
1	2016-12-01	2017-02-01	87
2	2016-12-01	2017-01-24	87
3	2016-12-01	2017-03-07	87
4	2016-12-01	2017-02-12	87
5	2016-12-01	2017-03-09	87
6	2016-12-01	2017-01-19	87
7	2016-12-01	2017-02-03	87
8	2016-12-01	2017-03-02	87
9	2016-12-01	2017-02-17	87
10	2016-12-01	2017-01-01	87
11	2016-12-01	2017-01-17	87
12	2016-12-01	2017-02-07	87
13	2016-12-01	Ø	30
14	2016-12-01	2017-03-07	30
15	2016-12-01	2017-02-22	30

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2. Overall Churn Trend

- Churn rate is defined as the percent of subscribers that have canceled within a given period, in this case, a month
- For each month, we use this formula:

$$\frac{\text{cancellations}}{\text{total subscribers}}$$

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2. Overall Churn Trend

- Since launch, Codeflix has experienced an overall churn rate of 22% between both customer segments

Query Results	
month	overall churn rate
2017-03-01	0.221745350500715

```
19  status as
20  (SELECT id, first_day as month,
21   CASE
22       WHEN
23       (subscription_start < first_day) AND
24        (subscription_end > first_day OR
25         subscription_end IS NULL)
26     THEN 1
27    ELSE 0
28   END as active_users,
29   CASE
30   WHEN subscription_end BETWEEN first_day
31         AND last_day
32     THEN 1
33    ELSE 0
34   END as is_canceled_30
35   FROM cross_join),
```

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3. Churn rates of different segments

```
37  status_aggregate as
38  (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
39   FROM status
40   GROUP BY month)
41
42   SELECT month,
    1.0*sum(sum_canceled_87)/sum(sum_active_87)
    as 'segment 87 churn rate',
    1.0*sum(sum_canceled_30)/sum(sum_active_30)
    as 'segment 30 churn rate'
43   FROM status_aggregate
44   GROUP BY month;
```

- In the last 3 months:
  - Segment 87's churn rate has increased from 25% to nearly 50%
  - Segment 30's churn rate is holding steady with a slight increase in March

Query Results		
month	**segment 87 churn rate**	**segment 30 churn rate**
2017-01-01	0.251798561151079	0.0756013745704467
2017-02-01	0.32034632034632	0.0733590733590734
2017-03-01	0.485875706214689	0.11731843575419

- If we calculate the churn rate for each segment over the past 3 months:

Query Results		
month	**segment 87 churn rate**	**segment 30 churn rate**
2017-03-01	0.374508261211644	0.0944262295081967

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4. Conclusion

- About half of all customers in segment 87 canceled their subscription in March
- About 10% of customers in segment 30 have consistently canceled in the past 3 months

With these facts in mind, marketing should focus their efforts on expanding segment 30 and reevaluate segment 87.

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