



Calculating Churn Rates

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1. Get Familiar with Codeflix

Getting Familiar with Codeflix

- Codeflix has been operating between 12/2016 and 03/2017
- There is only enough information to calculate churn during the months of January, February, and March 2017. Because subscriptions last a month, the churn cannot be calculate for Codeflix's first operating month.
 - Codeflix's first subscription ended 2017-01-01
- Two segments of users exist: 87 and 30

Segments

87

30

first_start	last_start	first_end	last_end
2016-12-01	2017-03-30	2017-01-01	2017-03-31

```
SELECT
    MIN(subscription_start) AS first_start,
    MAX (subscription_start)AS last_start,
    MIN(subscription_end) AS first_end,
    MAX(subscription_end) AS last_end
FROM subscriptions;
```

```
SELECT
    DISTINCT segment
FROM subscriptions;
```

2. What is the Overall Churn Rate by Month?

Churn Trends

The overall churn rate has increased since Codeflix started

- Churn was 15.1% during January, Codeflix's second month of operation
 - This was the first month that users were able to cancel subscriptions
- Since beginning operations, churn rates have risen and fallen. The overall rate has increased, but it does not appear that churn has stabilized
 - As a new service, it is difficult from this data alone to whether this overall churn is related to seasonality or due to Codeflix's offerings to users

churn_rate	month
0.151142355008787	2017-01-01
0.538775510204082	2017-02-01
0.274258219727346	2017-03-01

```
SELECT
    1.0 * (canceled_87 + canceled_30) /
    (active_87 + active_30) AS churn_rate,
    month
FROM status_aggregate
GROUP BY month;
```

3. Compare the Churn Rates between Segments

Churn Rates between Segments

- Segment 87's users churned at a higher rate in March than they did in January
 - Churn for this user segment was also extremely high in February
- Segment 30's users also churned at a higher rate over the same time period, but the increase was less dramatic

month	eightyseven_churn	thirty_churn
2017-01-01	0.233812949640288	0.0721649484536082
2017-02-01	0.878787878787879	0.235521235521236
2017-03-01	0.485875706214689	0.11731843575419

```
SELECT
    month,
    (1.0 * canceled_87 / active_87 ) AS
    eightyseven_churn,

    (1.0 * canceled_30 / active_30) AS thirty_churn

FROM status_aggregate
GROUP BY month;
```


Which Segment of Users Should Codeflix Expand?

- For every operating month in 2017, Segment 30 users churned at a lower rate than Segment 87
- Due to a significantly lower churn rate, Segment 30 users have a higher lifetime customer value. Codeflix should focus on expanding this segment
- However, there are still other considerations that are not completely captured by the data
 - Profit per user and user acquisition costs are two other factors that Codeflix consider, for example. If these metrics are the same across segments, Codeflix should focus on expanding Segment 30
- Even though Segment 30 is more attractive right now, there may be more room for churn-improvement in Segment 87. Codeflix should dive deeper to understand the differences between these two segments

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