*1. Get familiar with the company.*

* *How many months has the company been operating? Which months do you have enough information to calculate a churn rate?*
* *What segments of users exist?*

select distinct strftime('%Y %m', subscription\_start) start from subscriptions order by start ;

select distinct strftime('%Y %m', subscription\_end) ee from subscriptions order by ee ;

select distinct segment from subscriptions;

*2. What is the overall churn trend since the company started?*

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

union

select

'2017-04-01' as first\_day,

'2017-04-30' as last\_day

union

select

'2017-05-01' as first\_day,

'2017-05-31' as last\_day

union

select

'2017-06-01' as first\_day,

'2017-06-30' as last\_day

union

select

'2017-07-01' as first\_day,

'2017-07-31' as last\_day

union

select

'2017-08-01' as first\_day,

'2017-08-31' as last\_day

union

select

'2017-09-01' as first\_day,

'2017-09-30' as last\_day

union

select

'2017-10-01' as first\_day,

'2017-10-31' as last\_day

union

select

'2017-11-01' as first\_day,

'2017-11-30' as last\_day

union

select

'2017-12-01' as first\_day,

'2017-12-31' as last\_day),

jointable 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\_cancel from jointable

),

status\_aggregate as (

select month, sum(is\_active) as active, sum(is\_cancel) as cancel from status group by month

)

select month, 1.0\*cancel / active as churn from status\_aggregate;

*3. Compare the churn rates between user segments.*

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

union

select

'2017-04-01' as first\_day,

'2017-04-30' as last\_day

union

select

'2017-05-01' as first\_day,

'2017-05-31' as last\_day

union

select

'2017-06-01' as first\_day,

'2017-06-30' as last\_day

union

select

'2017-07-01' as first\_day,

'2017-07-31' as last\_day

union

select

'2017-08-01' as first\_day,

'2017-08-31' as last\_day

union

select

'2017-09-01' as first\_day,

'2017-09-30' as last\_day

union

select

'2017-10-01' as first\_day,

'2017-10-31' as last\_day

union

select

'2017-11-01' as first\_day,

'2017-11-30' as last\_day

union

select

'2017-12-01' as first\_day,

'2017-12-31' as last\_day),

jointable as(

select \* from subscriptions cross join months ),

status as (

select id , segment, 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 jointable),

status\_aggregate as (select month, segment,

sum(is\_active) as active,

sum(is\_canceled) as canceled

from status

group by month,segment)

select month,segment,1.0\*canceled/active from status\_aggregate;