with

first\_payments as (select user\_id,

min(transaction\_datetime)::date as first\_payment\_date

from skyeng\_db.payments

where status\_name ='success'

group by user\_id),

all\_dates as (select distinct date\_trunc ('day',class\_start\_datetime) as dt

from skyeng\_db.classes

where date\_trunc ('year',class\_start\_datetime) = '2016-01-01 00:00'),

all\_dates\_by\_user as (

select fp.user\_id,

ad.dt

from first\_payments fp

inner join all\_dates ad

on fp.first\_payment\_date <= ad.dt

order by fp.user\_id,

ad.dt),

payments\_by\_dates as

(select user\_id,

date\_trunc ('day', transaction\_datetime)as payment\_date,

sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

where status\_name = 'success'

and id\_transaction is not null

group by user\_id,

payment\_date),

payments\_by\_dates\_cumsum as

(

select ad.user\_id,

ad.dt,

coalesce(pbd.transaction\_balance\_change,0) as transaction\_balance\_change,

sum (coalesce(pbd.transaction\_balance\_change,0) ) over (partition by ad.user\_id order by ad.dt) as transaction\_balance\_change\_cs

from all\_dates\_by\_user ad

left join payments\_by\_dates pbd

on ad.user\_id = pbd.user\_id

and ad.dt = pbd.payment\_date

order by ad.user\_id,

ad.dt),

classes\_by\_dates as

(

select sdbc.user\_id,

date\_trunc ('day',sdbc.class\_start\_datetime):: date as class\_date,

(-1) \* count (id\_class) as classes

from skyeng\_db.classes as sdbc

where class\_status in ('success', 'failed\_by\_student')

and class\_type != 'trial'

group by sdbc.user\_id,

class\_date),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id,

ad.dt,

coalesce(cbd.classes,0) as classes,

sum (coalesce(cbd.classes,0) ) over (partition by ad.user\_id order by ad.dt) as classes\_cs

from all\_dates\_by\_user ad

left join classes\_by\_dates cbd

on ad.user\_id = cbd.user\_id

and ad.dt = cbd.class\_date

order by ad.user\_id,

ad.dt),

balances as

(

select

pbdc.user\_id,

pbdc.dt,

pbdc.transaction\_balance\_change,

pbdc.transaction\_balance\_change\_cs,

cbdc.classes,

cbdc.classes\_cs,

classes\_cs + transaction\_balance\_change\_cs as balance

from payments\_by\_dates\_cumsum as pbdc

join classes\_by\_dates\_dates\_cumsum as cbdc

on pbdc.user\_id = cbdc.user\_id

and pbdc.dt = cbdc.dt

order by pbdc.user\_id,

pbdc.dt)

,

balances\_rn as

(

select \*,

row\_number() over (order by user\_id, dt asc) as rn

from balances

limit 1000

)

select\*,

sum(transaction\_balance\_change+transaction\_balance\_change\_cs+classes+classes\_cs+balance) over (order by dt) as sum\_cls

from balances\_rn