with first\_payments as ( select user\_id

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

from (select \*

, row\_number () over (partition by user\_id order by transaction\_datetime) as yu

from skyeng\_db.payments

where status\_name = 'success') fpd

where yu = 1

order by user\_id )

, all\_dates as ( select distinct class\_start\_datetime::date as dt

from skyeng\_db.classes

where date\_part ('year', class\_start\_datetime) = 2016)

, all\_dates\_by\_user as ( select user\_id

, dt

from first\_payments as fp

join all\_dates as ad

on ad.dt >= fp.first\_payment\_date)

, payments\_by\_date as ( select user\_id

, transaction\_datetime::date as payment\_date

, sum (classes) over (partition by user\_id, transaction\_datetime::date) as transaction\_balance\_change

from skyeng\_db.payments

where status\_name = 'success'

and date\_part ('year', transaction\_datetime) = 2016)

, payments\_by\_dates\_cumsum as ( select adbu.user\_id

, adbu.dt

, transaction\_balance\_change

, sum (transaction\_balance\_change) over (partition by adbu.user\_id order by adbu.dt) as transaction\_balance\_change\_cs

from all\_dates\_by\_user as adbu

left join payments\_by\_date as pbd

on pbd.user\_id = adbu.user\_id

and pbd.payment\_date = adbu.dt

group by adbu.user\_id

, dt

, transaction\_balance\_change)

, classes\_by\_dates as ( select user\_id

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

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

from skyeng\_db.classes

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

and class\_type != 'trial'

group by user\_id, class\_date)

, classes\_by\_dates\_dates\_cumsum as ( select adbu.user\_id

, adbu.dt

, classes

, sum (classes) over (partition by adbu.user\_id order by adbu.dt rows between unbounded preceding and current row) as classes\_cs

from all\_dates\_by\_user as adbu

left join classes\_by\_dates as cbd

on adbu.dt = cbd.class\_date

and adbu.user\_id = cbd.user\_id)

, balances as ( select pbdc.user\_id

, pbdc.dt

, transaction\_balance\_change

, transaction\_balance\_change\_cs

, classes

, classes\_cs

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

from payments\_by\_dates\_cumsum as pbdc

join classes\_by\_dates\_dates\_cumsum as cbddc

on pbdc.dt = cbddc.dt

and pbdc.user\_id = cbddc.user\_id

order by pbdc.user\_id, pbdc.dt)

select dt

, sum (transaction\_balance\_change) as sum\_tbc

, sum (transaction\_balance\_change\_cs) as sum\_tbc\_cs

, sum (classes) as sum\_c

, sum (classes\_cs) as sum\_c\_cs

, sum (balance) as sum\_b

from balances

group by dt

order by dt