WITH first\_payments as (select user\_id,

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

from skyeng\_db.payments

where status\_name = 'success' and id\_transaction is not null

group by user\_id

order by first\_payment\_date

)

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

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2017-01-01' and (class\_status = 'success' or class\_status = 'failed\_by\_student')

order by 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

order by payment\_date

),

all\_dates\_by\_user as (select a.user\_id, b.dt

from first\_payments a

left join all\_dates b on b.dt >=a.first\_payment\_date

)

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

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

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

from skyeng\_db.classes

where (class\_status = 'success' or class\_status = 'failed\_by\_student') and class\_type != 'trial'

group by user\_id, class\_date

)

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

, transaction\_balance\_change

, coalesce(sum(d.transaction\_balance\_change) over (partition by u.user\_id order by u.dt rows between unbounded preceding and current row),0) as transaction\_balance\_change\_cs

from all\_dates\_by\_user as u

left join payments\_by\_dates as d on u.user\_id = d.user\_id and d.payment\_date = u.dt

)

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

, classes

, coalesce(sum(p.classes) over (partition by h.user\_id order by h.dt rows between unbounded preceding and current row),0) as classes\_cs

from all\_dates\_by\_user as h

left join classes\_by\_dates as p on h.user\_id = p.user\_id and p.class\_date = h.dt

)

, balances as (select n.user\_id, n.dt

, transaction\_balance\_change

, transaction\_balance\_change\_cs

, classes

, classes\_cs

, m.classes\_cs::float + n.transaction\_balance\_change\_cs::float as balance

from payments\_by\_dates\_cumsum as n

join classes\_by\_dates\_dates\_cumsum as m on n.user\_id = m.user\_id and n.dt = m.dt

)

select dt

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

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

, sum (classes) as sum\_classes

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

, sum (balance) as sum\_balance

from balances

group by dt

order by dt