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'

group by user\_id),

all\_dates as (

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

from skyeng\_db.classes

where date\_trunc('day', class\_start\_datetime ) between '2016-01-01' and '2016-12-31'

),

all\_dates\_by\_user as(

select user\_id, dt

from first\_payments

join all\_dates

on dt >= first\_payment\_date

)

,

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'

group by user\_id, payment\_date)

,

payments\_by\_dates\_cumsum as

(

select ad.user\_id

, dt

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

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

from all\_dates\_by\_user ad

left join payments\_by\_dates pd

on ad.user\_id = pd.user\_id

and payment\_date = dt

),

classes\_by\_dates as (select user\_id

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

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

from skyeng\_db.classes

where class\_status = 'failed\_by\_student'

or class\_status = 'success'

group by user\_id, class\_date),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id

, dt

,coalesce(classes, 0) as classes

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

from all\_dates\_by\_user ad

left join classes\_by\_dates cd

on ad.user\_id = cd.user\_id

and class\_date = dt

order by 1,2

)

,

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

payments\_by\_dates\_cumsum.dt,

payments\_by\_dates\_cumsum.transaction\_balance\_change,

payments\_by\_dates\_cumsum.transaction\_balance\_change\_cs,

classes,

classes\_cs,

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

from payments\_by\_dates\_cumsum

join classes\_by\_dates\_dates\_cumsum

on classes\_by\_dates\_dates\_cumsum.dt = payments\_by\_dates\_cumsum.dt

and classes\_by\_dates\_dates\_cumsum.user\_id = payments\_by\_dates\_cumsum.user\_id)

select dt,

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

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

sum(classes) as classes,

sum(classes\_cs) as classes\_cs,

sum(balance) as balance

from balances

group by dt

order by dt