with first\_payments as

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

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id),

all\_dates as

(select distinct class\_start\_datetime:: date as dt

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2016-12-31 23:59:59'),

all\_dates\_by\_user as

(select user\_id, dt

from all\_dates

join first\_payments

on dt>=first\_payment\_date

order by 1,2),

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 adu.user\_id

,dt

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

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

from all\_dates\_by\_user adu

left join payments\_by\_dates pbd

on adu.user\_id = pbd.user\_id

and dt=payment\_date),

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\_type != 'trial' and class\_status in ('failed\_by\_student','success')

group by user\_id, class\_date),

classes\_by\_dates\_dates\_cumsum as

(select adu.user\_id,

dt,

coalesce(classes,0) as classes,

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

from all\_dates\_by\_user adu

left join classes\_by\_dates cbd

on adu.user\_id = cbd.user\_id

and adu.dt = cbd.class\_date),

balances as

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

payments\_by\_dates\_cumsum.dt,

transaction\_balance\_change,

transaction\_balance\_change\_cs,

classes,

classes\_cs,

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

from payments\_by\_dates\_cumsum

left join classes\_by\_dates\_dates\_cumsum

on payments\_by\_dates\_cumsum.user\_id=classes\_by\_dates\_dates\_cumsum.user\_id

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

order by payments\_by\_dates\_cumsum.user\_id, payments\_by\_dates\_cumsum.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