--1

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),

--2

all\_dates as(

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

from skyeng\_db.classes

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

--3

all\_dates\_by\_user as(

select user\_id,

dt

from first\_payments

join all\_dates

on dt >= first\_payment\_date),

--4

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),

--5

payments\_by\_dates\_cumsum as(

select a\_d.user\_id,

dt,

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

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

from all\_dates\_by\_user a\_d

left join payments\_by\_dates p\_d

on a\_d.user\_id = p\_d.user\_id

and payment\_date = dt),

--6

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')

group by user\_id,

class\_date),

--7

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) classes\_cs

from all\_dates\_by\_user ad

left join classes\_by\_dates cd

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

and dt = class\_date),

--8

balances as (

select pdc.user\_id,

pdc.dt,

transaction\_balance\_change,

transaction\_balance\_change\_cs,

classes,

classes\_cs,

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

from payments\_by\_dates\_cumsum pdc

left join classes\_by\_dates\_dates\_cumsum cddc

on pdc.user\_id = cddc.user\_id

and pdc.dt = cddc.dt)

--задание 1

-- select \*

-- from balances

-- order by user\_id, dt

-- limit 1000

--9

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

Выводы:

задание 1: у юзера 1984910 нерегулярные транзакции, и он 3 раза уходил в минус на балансе; у юзеров 3335256, 886758861 не было повторных транзакций, а уроки списываются дальше, и баланс ушел в минус.

задание 2: чаще всего большее количество покупок, судя по transaction balance change, происходит в осенний период. Основной пик покупок уроков был 1 ноября (260 уроков), возможно, там была проведена какая-либо акция. 1 апреля и 1 июля были начисления корпоративным клиентам, поэтому был очередной пик. В целом, в летний период покупок меньше, однако выраженного спада по transaction balance change не наблюдается.