**Моделирование изменений балансов студентов в онлайн-школе. Курс по SQL**

with first\_payments as

(select

distinct user\_id,

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

from skyeng\_db.payments

where id\_transaction is not null

and status\_name = 'success'

group by 1),

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),

all\_dates\_by\_user as

(select user\_id, dt

from first\_payments as p

join all\_dates as d

on p.first\_payment\_date <= d.dt

order by 1),

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 1,2),

payments\_by\_dates\_cumsum as

(select u.user\_id, u.dt, coalesce (transaction\_balance\_change,0) as transaction\_balance\_change,

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

from payments\_by\_dates as b

right join all\_dates\_by\_user as u

on b.user\_id = u.user\_id and b.payment\_date = u.dt),

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 1,2),

classes\_by\_dates\_dates\_cumsum as

(select u.user\_id, u.dt, coalesce (classes,0) as classes,

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

from all\_dates\_by\_user as u

left join classes\_by\_dates as c

on c.user\_id = u.user\_id and c.class\_date = u.dt),

balances as

(select cc.user\_id, cc.dt, cc.classes, classes\_cs, transaction\_balance\_change, transaction\_balance\_change\_cs, (transaction\_balance\_change\_cs + classes\_cs) as balance

from classes\_by\_dates\_dates\_cumsum as cc

join payments\_by\_dates\_cumsum as pc

on pc.user\_id = cc.user\_id and pc.dt=cc.dt

order by 1,2)

select dt,

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

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

sum(classes) classes\_all,

sum (classes\_cs)classes\_cs\_all,

sum (balance) balance\_all

from balances

group by 1

order by 1 asc

limit 1000