<https://postgrespro.ru/docs/postgresql/15/functions-conditional>

Задание 1

<https://metabase.sky.pro/question/59723>

with first\_payments as -- дата первой успешной (со статусом success) транзакции

(

select user\_id, min(transaction\_datetime::date) as first\_payment\_date

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id

order by first\_payment\_date

),

all\_dates as -- все дни 2016 года

(

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

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2016-12-31'

order by dt

),

all\_dates\_by\_user as

(

select user\_id, dt -- все даты жизни студента после того, как произошла его первая транзакция

from first\_payments as fp

join all\_dates as ad on fp.first\_payment\_date <= ad.dt

order by user\_id, dt

),

classes\_by\_dates as

(

select user\_id, class\_start\_datetime::date 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 user\_id, class\_date

order by user\_id

),

payments\_by\_dates as -- список успешных транзакций

(

select user\_id, transaction\_datetime::date as payment\_date, sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

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

group by user\_id, payment\_date

order by user\_id, payment\_date

),

payments\_by\_dates\_cumsum as

(

select ad.user\_id, dt, transaction\_balance\_change,

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

from all\_dates\_by\_user as ad

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

)

select \*

from payments\_by\_dates\_cumsum

Задание 2

<https://metabase.sky.pro/question/59850>

with first\_payments as -- дата первой успешной (со статусом success) транзакции

(

select user\_id, min(transaction\_datetime::date) as first\_payment\_date

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id

order by first\_payment\_date

),

all\_dates as -- все дни 2016 года

(

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

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2016-12-31'

order by dt

),

all\_dates\_by\_user as

(

select user\_id, dt -- все даты жизни студента после того, как произошла его первая транзакция

from first\_payments as fp

join all\_dates as ad on fp.first\_payment\_date <= ad.dt

order by user\_id, dt

),

classes\_by\_dates as

(

select user\_id, class\_start\_datetime::date 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 user\_id, class\_date

order by user\_id

),

payments\_by\_dates as -- список успешных транзакций

(

select user\_id, transaction\_datetime::date as payment\_date, sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

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

group by user\_id, payment\_date

order by user\_id, payment\_date

),

payments\_by\_dates\_cumsum as

(

select ad.user\_id, dt, transaction\_balance\_change,

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

from all\_dates\_by\_user as ad

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

),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id, dt, classes,

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

from all\_dates\_by\_user as ad

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

)

select \*

from classes\_by\_dates\_dates\_cumsum

Задание 3

<https://metabase.sky.pro/question/59856>

with first\_payments as -- дата первой успешной (со статусом success) транзакции

(

select user\_id, min(transaction\_datetime::date) as first\_payment\_date

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id

order by first\_payment\_date

),

all\_dates as -- все дни 2016 года

(

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

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2016-12-31'

order by dt

),

all\_dates\_by\_user as

(

select user\_id, dt -- все даты жизни студента после того, как произошла его первая транзакция

from first\_payments as fp

join all\_dates as ad on fp.first\_payment\_date <= ad.dt

order by user\_id, dt

),

classes\_by\_dates as

(

select user\_id, class\_start\_datetime::date 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 user\_id, class\_date

order by user\_id

),

payments\_by\_dates as -- список успешных транзакций

(

select user\_id, transaction\_datetime::date as payment\_date, sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

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

group by user\_id, payment\_date

order by user\_id, payment\_date

),

payments\_by\_dates\_cumsum as

(

select ad.user\_id, dt, transaction\_balance\_change,

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

from all\_dates\_by\_user as ad

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

),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id, dt, classes,

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

from all\_dates\_by\_user as ad

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

),

balances as

(

select pdc.user\_id, pdc.dt, transaction\_balance\_change, transaction\_balance\_change\_cs, cddc.classes,

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

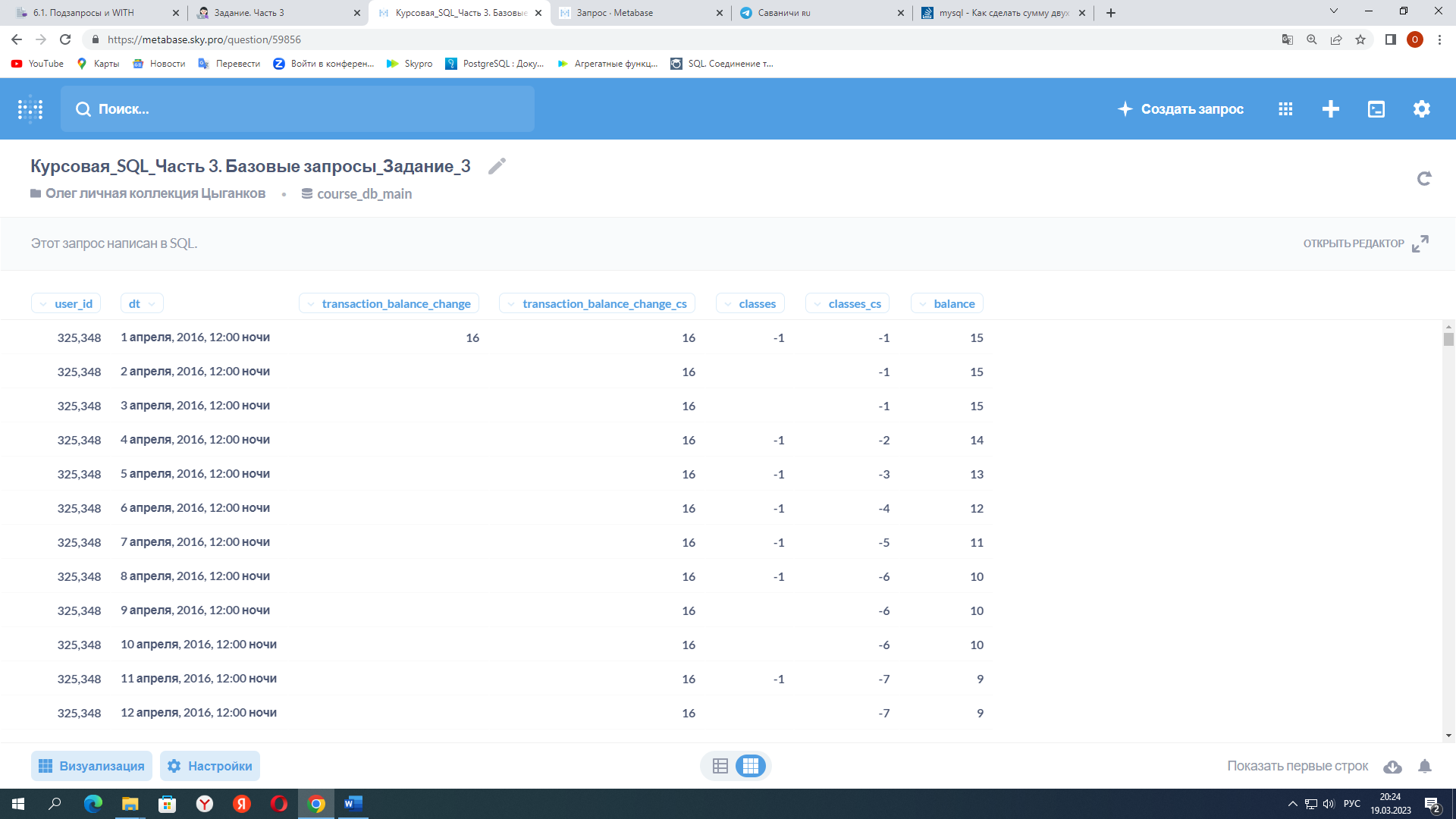
from payments\_by\_dates\_cumsum as pdc

left join classes\_by\_dates\_dates\_cumsum as cddc on pdc.user\_id=cddc.user\_id and pdc.dt=cddc.dt

)

select \*

from balances



Задание 4

<https://metabase.sky.pro/question/59862>

with first\_payments as -- дата первой успешной (со статусом success) транзакции

(

select user\_id, min(transaction\_datetime::date) as first\_payment\_date

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id

order by first\_payment\_date

),

all\_dates as -- все дни 2016 года

(

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

from skyeng\_db.classes

where class\_start\_datetime between '2016-01-01' and '2016-12-31'

order by dt

),

all\_dates\_by\_user as

(

select user\_id, dt -- все даты жизни студента после того, как произошла его первая транзакция

from first\_payments as fp

join all\_dates as ad on fp.first\_payment\_date <= ad.dt

order by user\_id, dt

),

classes\_by\_dates as

(

select user\_id, class\_start\_datetime::date 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 user\_id, class\_date

order by user\_id

),

payments\_by\_dates as -- список успешных транзакций

(

select user\_id, transaction\_datetime::date as payment\_date, sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

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

group by user\_id, payment\_date

order by user\_id, payment\_date

),

payments\_by\_dates\_cumsum as

(

select ad.user\_id, dt, transaction\_balance\_change,

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

from all\_dates\_by\_user as ad

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

),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id, dt, classes,

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

from all\_dates\_by\_user as ad

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

),

balances as

(

select pdc.user\_id, pdc.dt, transaction\_balance\_change, transaction\_balance\_change\_cs, cddc.classes,

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

from payments\_by\_dates\_cumsum as pdc

left join classes\_by\_dates\_dates\_cumsum as cddc on pdc.user\_id=cddc.user\_id and pdc.dt=cddc.dt

)

select \*

from balances

order by user\_id, dt

limit 1000

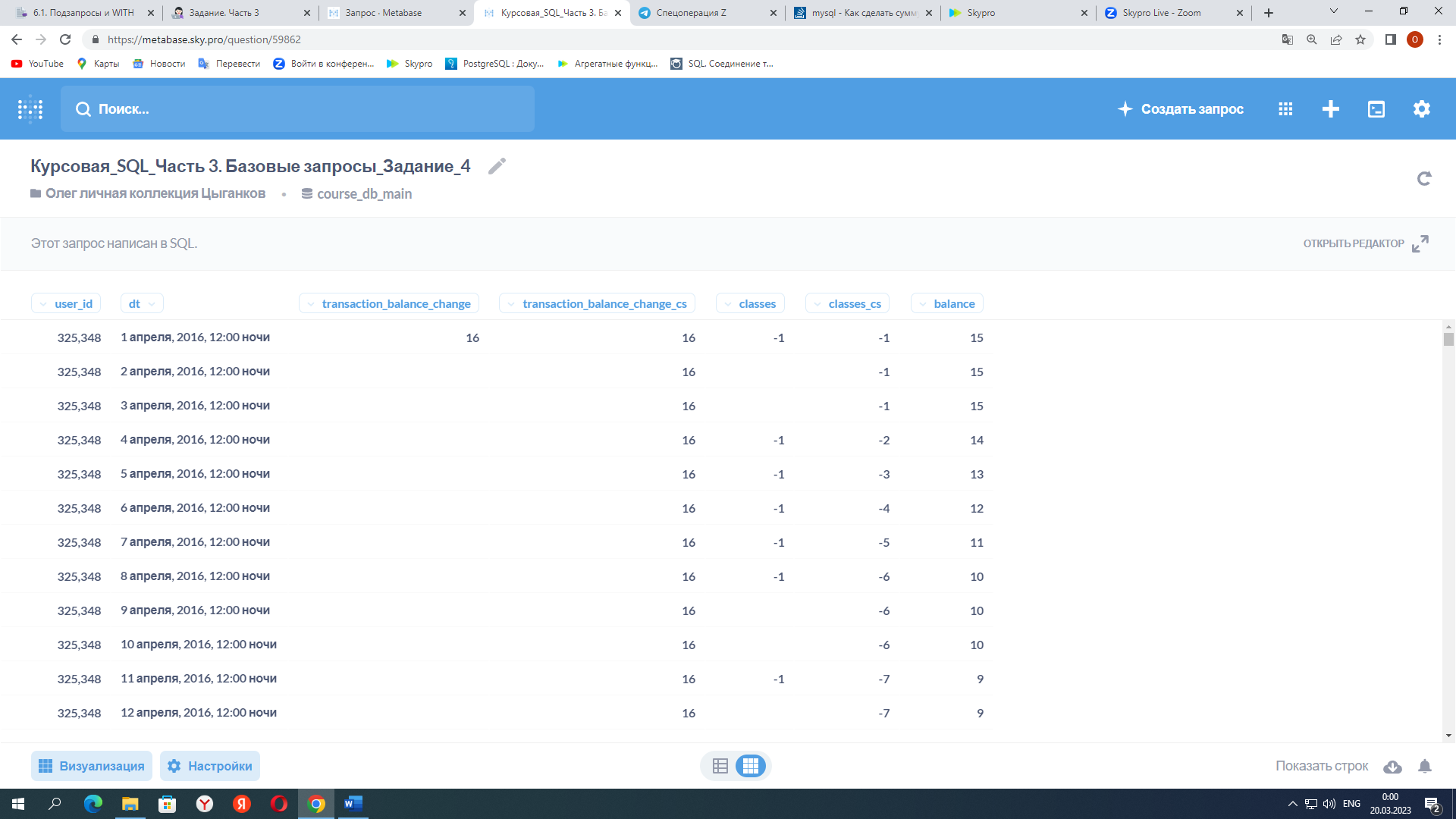
-- Анализируя изменения балансов студентов, видим, что некоторым студентам после исчерпания предоплаченных сумм, несколько уроков предоставляются в долг до следующей предоплаты:

-- user\_id 1984910 с 07.07.2016 по 31.07.2016

-- user\_id 3335256 с 09.11.2016 по 30.12.2016

-- user\_id 6270209 с 16.08.2016 по 27.09.2016

-- Либо это ошибки в данных по оплатам студентов, либо исчерпание баланса никак не фиксируется и не приостанавливается доступ к урокам?



Задание 5

<https://metabase.sky.pro/question/59873>

with first\_payments as -- дата первой успешной (со статусом success) транзакции

(

select user\_id, min(transaction\_datetime::date) as first\_payment\_date

from skyeng\_db.payments

where status\_name = 'success'

group by user\_id

order by first\_payment\_date

),

all\_dates as -- все дни 2016 года

(

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'

order by dt

),

all\_dates\_by\_user as

(

select user\_id, dt -- все даты жизни студента после того, как произошла его первая транзакция

from first\_payments as fp

join all\_dates as ad on fp.first\_payment\_date <= ad.dt

order by user\_id, dt

),

classes\_by\_dates as

(

select user\_id, class\_start\_datetime::date 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 user\_id, class\_date

order by user\_id

),

payments\_by\_dates as -- список успешных транзакций

(

select user\_id, transaction\_datetime::date as payment\_date, sum(classes) as transaction\_balance\_change

from skyeng\_db.payments

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

group by user\_id, payment\_date

order by user\_id, payment\_date

),

payments\_by\_dates\_cumsum as

(

select ad.user\_id, dt, transaction\_balance\_change,

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

from all\_dates\_by\_user as ad

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

),

classes\_by\_dates\_dates\_cumsum as

(

select ad.user\_id, dt, classes,

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

from all\_dates\_by\_user as ad

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

),

balances as

(

select pdc.user\_id, pdc.dt, transaction\_balance\_change, transaction\_balance\_change\_cs, cddc.classes,

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

from payments\_by\_dates\_cumsum as pdc

left join classes\_by\_dates\_dates\_cumsum as cddc on pdc.user\_id=cddc.user\_id and pdc.dt=cddc.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

