**ЗАДАЧА:**

Проведите когортный анализ пропущенных недель.

Когорты определять первым месяцем учебы ученика.

Составить запрос, как для каждой когорты ежемесячно меняется доля учеников,

пропустивших хотя бы одну неделю за все время от общего кол-ва активных учеников в конкретном месяце.

with

cohort\_per\_students as

(

select \*,

min(date\_trunc('month', lesson\_day)) over (partition by student\_id) as cohort,

extract(year from age(date\_trunc('month', lesson\_day), min(date\_trunc('month', lesson\_day)) over (partition by student\_id)))\*12

+ extract(month from age(date\_trunc('month', lesson\_day), min(date\_trunc('month', lesson\_day)) over (partition by student\_id))) as lt\_month,

date\_part('week', lesson\_day) as current\_week,

date\_part('week', lead(lesson\_day) over (partition by student\_id, teacher\_id order by lesson\_day)) as next\_week

from test\_lessons

)

,

diff as

(

select \*

, case when (next\_week - current\_week) < 0

then (next\_week - current\_week) + (select max(current\_week) from cohort\_per\_students where date\_part('year', lesson\_day) = 2020)

else (next\_week - current\_week)

end as difference\_week

from cohort\_per\_students

)

,

bad\_students as -- по когортам и LT считаем кол-во студентов, пропустивших более 1 недели

(

select cohort

, lt\_month

, count(distinct student\_id) as bad\_students

from diff

where difference\_week > 1

group by cohort

, lt\_month

)

,

all\_students as -- по когортам и LT считаем общее кол-во студентов

(

select cohort

, lt\_month

, count(distinct student\_id) as all\_students

from diff

group by cohort

, lt\_month

)

select a.cohort

, a.lt\_month

, bad\_students

, all\_students

, bad\_students::float/all\_students\*100 as dolya

from all\_students as a

left join bad\_students as b on a.cohort=b.cohort and a.lt\_month=b.lt\_month

order by 1, 2