WITH first\_payments AS

(SELECT user\_id,DATE\_TRUNC('day' , MIN (transaction\_datetime)) first\_payment\_date

FROM skyeng\_db.payments

WHERE status\_name ='success'

GROUP BY user\_id

ORDER BY 1),

all\_dates AS

(SELECT DISTINCT DATE\_TRUNC ('day' , class\_start\_datetime) dt

FROM skyeng\_db.classes

WHERE DATE\_TRUNC('year' , class\_start\_datetime) = '2016-01-01'

),

all\_dates\_by\_user AS

( SELECT fp.user\_id, ad.dt

FROM first\_payments fp JOIN all\_dates ad ON ad.dt>=fp.first\_payment\_date

ORDER BY 1,2

),

payments\_by\_dates AS

(SELECT user\_id, DATE\_TRUNC ('day' , transaction\_datetime) payment\_date, SUM (classes) transaction\_balance\_change

FROM skyeng\_db.payments

WHERE status\_name = 'success'

GROUP BY (user\_id, DATE\_TRUNC ('day' , transaction\_datetime))

ORDER BY (user\_id, DATE\_TRUNC ('day' , transaction\_datetime))

),

payments\_by\_dates\_1 AS

(SELECT db\_1.user\_id, db\_1.dt, (CASE WHEN transaction\_balance\_change IS NOT NULL THEN transaction\_balance\_change ELSE 0 END) transaction\_balance\_change

FROM all\_dates\_by\_user db\_1

LEFT JOIN payments\_by\_dates db\_2 ON db\_1.user\_id=db\_2.user\_id AND db\_1.dt=db\_2.payment\_date

),

payments\_by\_dates\_cumsum AS

(SELECT user\_id, dt, transaction\_balance\_change,

SUM(transaction\_balance\_change) OVER (PARTITION BY user\_id ORDER BY dt ) transaction\_balance\_change\_cs

FROM payments\_by\_dates\_1

),

classes\_by\_dates AS

(SELECT user\_id, DATE\_TRUNC('day' , class\_start\_datetime) class\_date, COUNT (id\_class)\*-1 classes

FROM skyeng\_db.classes

WHERE class\_type != 'trial'

AND class\_status IN ('success' , 'failed\_by\_student')

GROUP BY (user\_id, DATE\_TRUNC('day' , class\_start\_datetime))

),

classes\_by\_dates\_1 AS

(SELECT db\_1.user\_id, db\_1.dt, (CASE WHEN classes IS NOT NULL THEN classes ELSE 0 END) classes

FROM all\_dates\_by\_user db\_1

LEFT JOIN classes\_by\_dates cb ON db\_1.user\_id=cb.user\_id AND db\_1.dt=cb.class\_date

),

classes\_by\_dates\_cumsum AS

(SELECT user\_id, dt, classes,

SUM(classes) OVER (PARTITION BY user\_id ORDER BY dt ) classes\_cs

FROM classes\_by\_dates\_1

),

balances AS

( SELECT pdcs.user\_id, pdcs.dt, pdcs.transaction\_balance\_change, pdcs.transaction\_balance\_change\_cs,

cdcs.classes, cdcs.classes\_cs, cdcs.classes\_cs + pdcs.transaction\_balance\_change\_cs balance

FROM payments\_by\_dates\_cumsum pdcs JOIN classes\_by\_dates\_cumsum cdcs ON pdcs.user\_id = cdcs.user\_id AND pdcs.dt = cdcs.dt

)

SELECT dt, SUM (transaction\_balance\_change) transaction\_balance\_change\_gen,

SUM (transaction\_balance\_change\_cs) transaction\_balance\_change\_cs\_gen,

SUM (classes) classes\_gen,

SUM (classes\_cs) classes\_cs\_gen,

SUM (balance) balance\_gen

FROM balances

GROUP BY 1

ORDER BY 1

