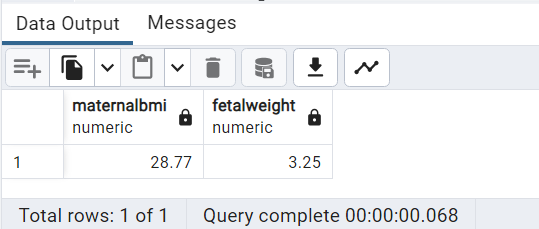
**SQL Hackathon June 2024**

**--1. What was the average BMI of the mothers and the average fetal weight in Kgs at delivery?**

select round(avg(current\_bmi),2) MaternalBMI,round(avg(newborn\_weight)/1000,2) fetalweight from public.patient\_history

join public.hospitalization\_labor

on patient\_history.caseid=hospitalization\_labor.caseid;



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**--2. In how many of deliveries did newborn weight come within 5% of expected weight for the newborn?**

with DiffPercent as

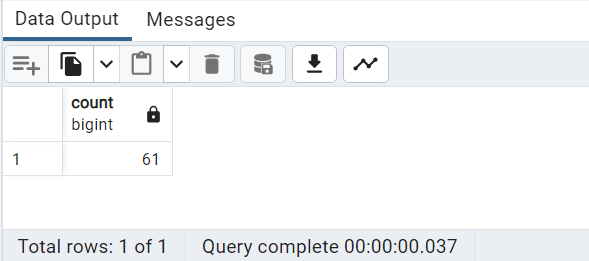
(

select caseid,round((((expected\_weight\_for\_the\_newborn)-(newborn\_weight))/expected\_weight\_for\_the\_newborn)\*100,2) weightdiff

from public.hospitalization\_labor

)

select count(\*) from DiffPercent where weightdiff between -5 and 5



---------------------------------------------------------------------------------------------------------------

**--3. Of all Miscarriages recorded what percentage were drug or alcohol users and what % were not?**

with AlcoholDrugs as

(

select count(distinct patient\_history.caseid) AlcoholDrugUsers from public.fetal\_health\_risk

join public.patient\_history on

fetal\_health\_risk.caseid=patient\_history.caseid

join public.hospitalization\_labor on

fetal\_health\_risk.caseid=hospitalization\_labor.caseid

where drugs\_preference<>'No' and alcohol\_use=1

and miscarriage=1

),

NoAlcoholDrugs as

(

select count(distinct patient\_history.caseid) teetotalers from public.fetal\_health\_risk

join public.patient\_history on

fetal\_health\_risk.caseid=patient\_history.caseid

join public.hospitalization\_labor on

fetal\_health\_risk.caseid=hospitalization\_labor.caseid

where drugs\_preference='No' and alcohol\_use=0

and miscarriage=1

),

TotalCount as

(

select count(distinct patient\_history.caseid) total from public.patient\_history

join public.hospitalization\_labor on

patient\_history.caseid=hospitalization\_labor.caseid

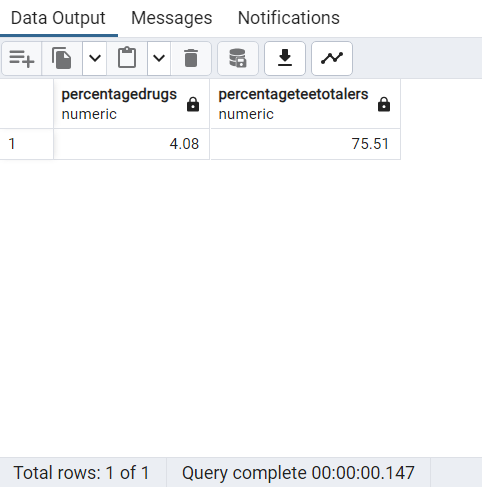
where miscarriage=1

)

select Round((sum(AlcoholDrugUsers)/sum(total))\*100,2) PercentageDrugs,

round((sum(teetotalers)/sum(total))\*100,2) percentageTeetotalers from

AlcoholDrugs, NoAlcoholDrugs, TotalCount;



---------------------------------------------------------------------------------------------------------------

**--4. What is the correlation between alcohol and drug use and BMI?**

With DrugsAlcohol as

(

select (sum(alcohol\_use)+sum(case when drugs\_preference<>'No' then 1 else 0 end)) AD,

avg(coalesce(current\_bmi,0)) bmi from public.fetal\_health\_risk

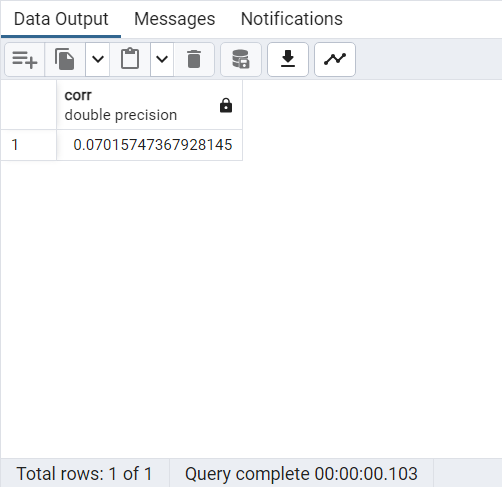
join public.patient\_history on

fetal\_health\_risk.caseid=patient\_history.caseid

group by patient\_history.caseid

)

Select corr(AD,bmi) from DrugsAlcohol;



---------------------------------------------------------------------------------------------------------------

**--5. Create a function that takes all lifestyle conditions into account and returns a health score any case\_id that is given as input. You can choose the lifestyle conditions and the method by which a score is assigned**

CREATE OR REPLACE FUNCTION GET\_HealthScore(INPUT\_CID bigint)

RETURNS TABLE (HEALTHSCORE bigint)

LANGUAGE PLPGSQL

AS $$

DECLARE R RECORD;

BEGIN

RETURN QUERY

SELECT sum(coalesce(chronic\_diabetes,0)+coalesce(chronic\_diseases,0)

+coalesce(hypertension\_past\_reported,0)+coalesce(diabetes\_mellitus\_dm\_reported,0))

FROM public.hospitalization\_labor, public.patient\_history

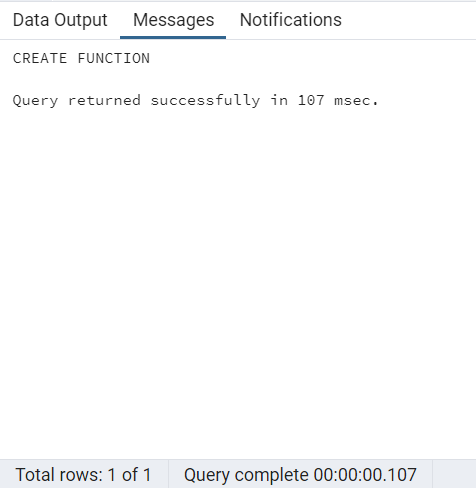
WHERE

hospitalization\_labor.caseid=patient\_history.caseid and

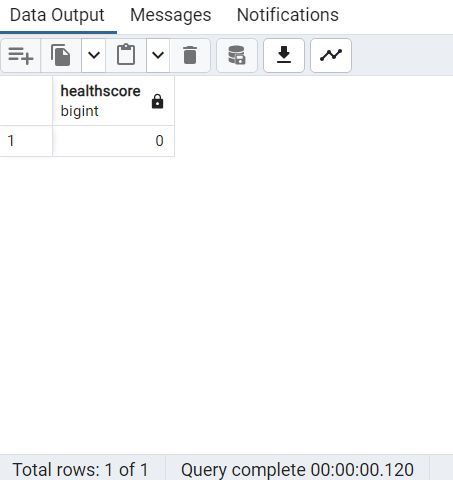
patient\_history.caseid = INPUT\_CID;

END;

$$



SELECT \* FROM GET\_HealthScore(7);



---------------------------------------------------------------------------------------------------------------

**--6. Assuming there are 272 patients what % of all patients reported having hypertension or Diabetes?**

with HTN as

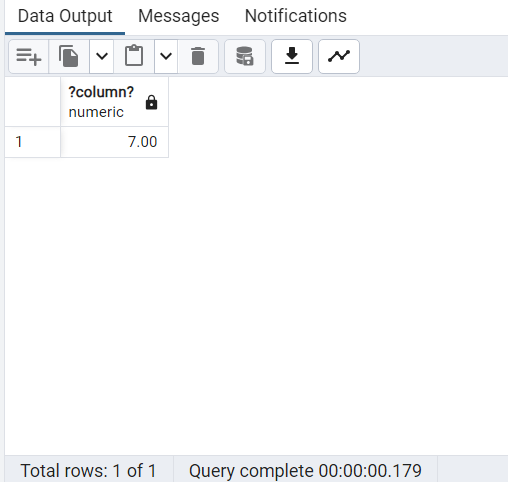
(

select count(\*) HTN\_DM

from public.patient\_history where diabetes\_mellitus\_dm\_reported=1 or hypertension\_past\_reported=1

)

select round(sum(HTN\_DM)/272,2)\*100 from HTN



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**--7. Create a table with patientID and fetal weight in kg. Add an auto generated sequence as the first column**

create table Labor

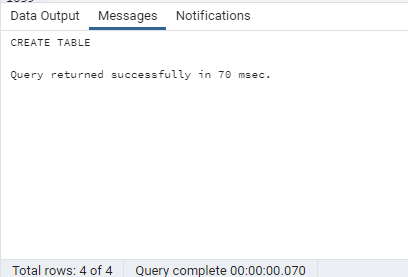
(

CaseID serial,

patid int,

fetalweight numeric

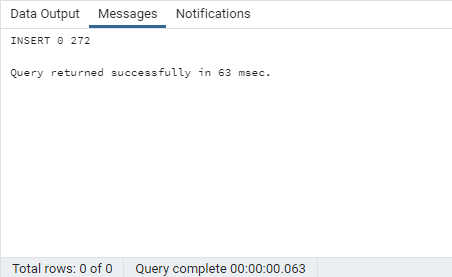
);



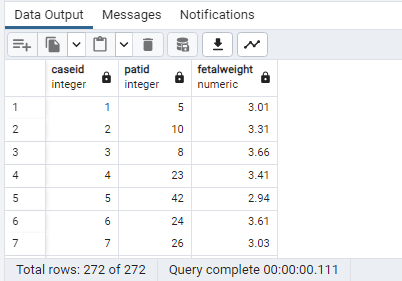
INSERT INTO Labor (patid, fetalweight)

SELECT patient\_history.caseid, round((newborn\_weight)/1000,2) FROM public.patient\_history, public.hospitalization\_labor

where patient\_history.caseid=hospitalization\_labor.caseid



select \* from Labor;



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**--8. Assuming there are 272 patients. What % of all women have Gestational Diabetes and Of that what % have complications in their delivery?**

with GDM as

(

SELECT count(\*) GDMCount FROM public.fetal\_health\_risk where

gestational\_diabetes\_mellitus=1

),

complications as

(

select count(\*) AllComplications from public.hospitalization\_labor

where delivery\_mode not like '%Vag%'

),

gdmcomplications as

(

select count(\*) GDMComplications from public.hospitalization\_labor,public.fetal\_health\_risk

where

fetal\_health\_risk.caseid=hospitalization\_labor.caseid

and delivery\_mode not like '%Vag%'

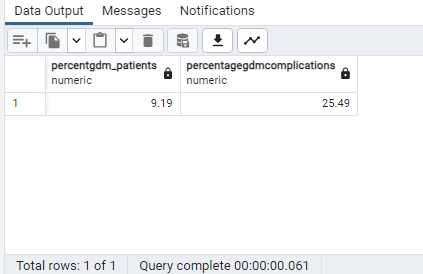
and gestational\_diabetes\_mellitus=1

)

Select round((sum(GDMCount)/272)\*100,2) PercentGDM\_Patients,

round((sum(GDMComplications)/sum(AllComplications))\*100,2) PercentageGDMComplications

from GDM,gdmcomplications,complications;



---------------------------------------------------------------------------------------------------------------

**--9. Calculate body fat % using using the 3-site skinfold method**

with sumSkinFold as

(

select (sum(coalesce(mean\_tricciptal\_skinfold,0))+sum(coalesce(mean\_subscapular\_skinfold,0))+

sum(coalesce(mean\_supra\_iliac\_skin\_fold,0))) sumSkinFolds, caseid

from public.maternal\_fat\_assmt group by caseid

),

Density as

(

select (1.0994921 - (0.0009929 \* sum(sumSkinFolds))+

(0.0000023 \* (sum(sumSkinFolds)\*sum(sumSkinFolds)))-(0.0001392 \* avg(age\_years\_old))) BodyDensity,

sumSkinFold.caseid Patientno

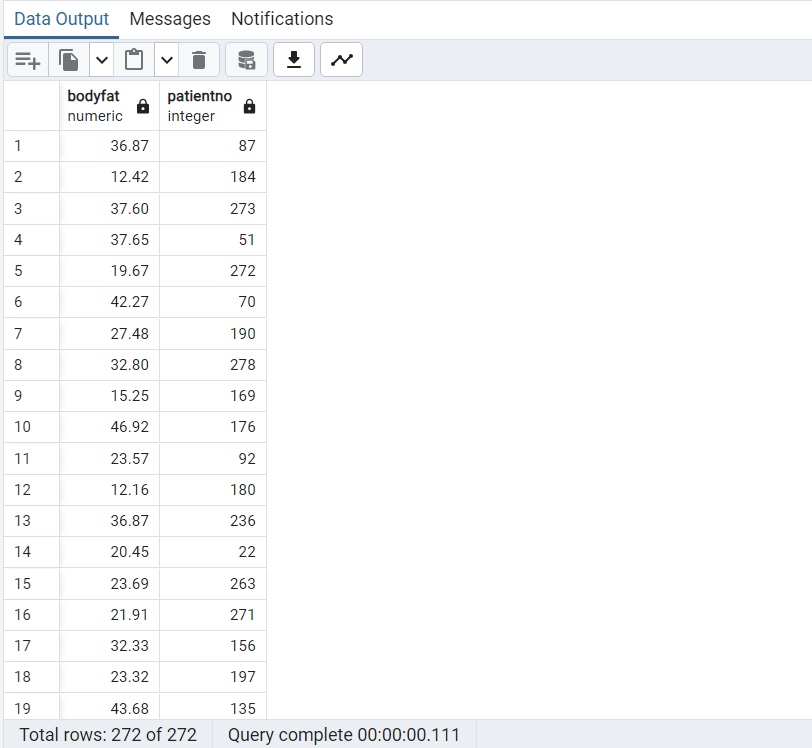
from public.patient\_history,

sumSkinFold where sumSkinFold.caseid=patient\_history.caseid

group by 2

)

select round(((495/sum(BodyDensity))-450),2) BodyFat, Patientno from Density group by 2



---------------------------------------------------------------------------------------------------------------

**--10. Create a trigger to stop patient records from being deleted from the patient History table**

CREATE OR REPLACE FUNCTION Dont\_Delete\_Patients()

RETURNS TRIGGER

LANGUAGE plpgsql

AS $$

BEGIN

IF (TG\_OP='DELETE') then

RAISE EXCEPTION 'You cannot delete patient records';

END IF;

RETURN null;

END;

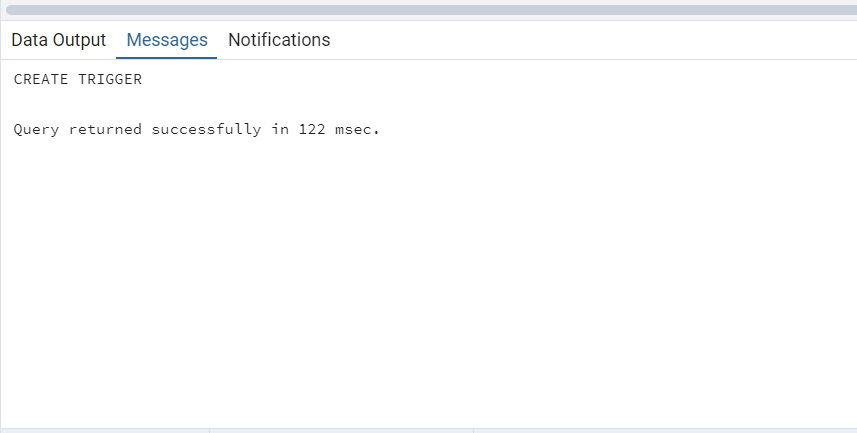
$$;



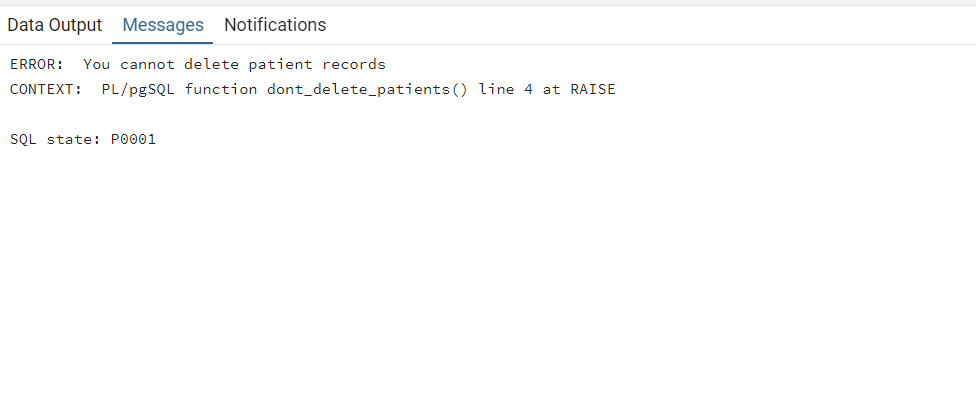
create trigger DonotDelete

before delete on public.patient\_history

execute function Dont\_Delete\_Patients();



delete from public.patient\_history where caseid=2;

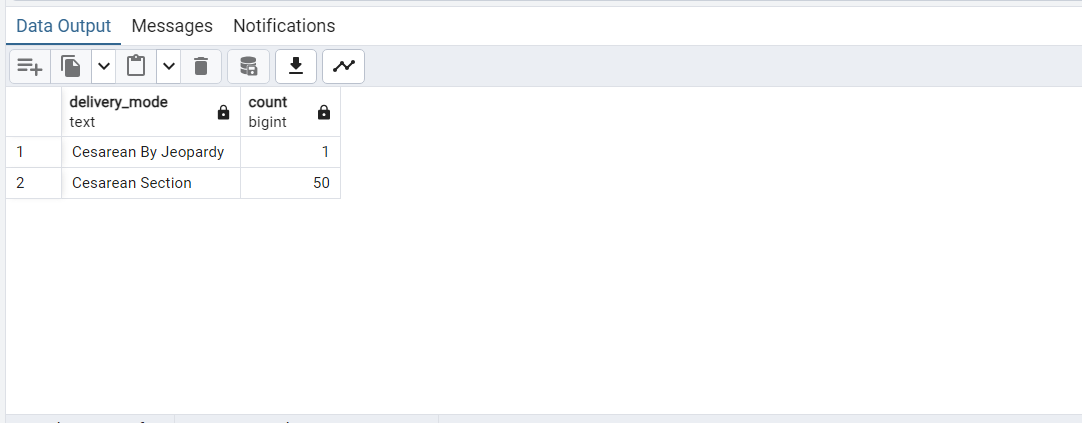


select \* from public.patient\_history where caseid=2;

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**--11. What number of all deliveries were cesareans and what were the primary reasons. Display the number against each reason.**

select distinct delivery\_mode, count(\*) from public.hospitalization\_labor where delivery\_mode like 'C%' group by 1;



---------------------------------------------------------------------------------------------------------------

**--12. What is the ratio of visceral fat to subcutaneous fat for every patient?**

select (1/sum(periumbilical\_visceral\_fat+preperitoneal\_visceral\_fat))\* 100 Visceral,

(1/sum(periumbilical\_subcutanous\_fat+preperitoneal\_subcutaneous\_fat))\*100 Subcutaneous,

caseid

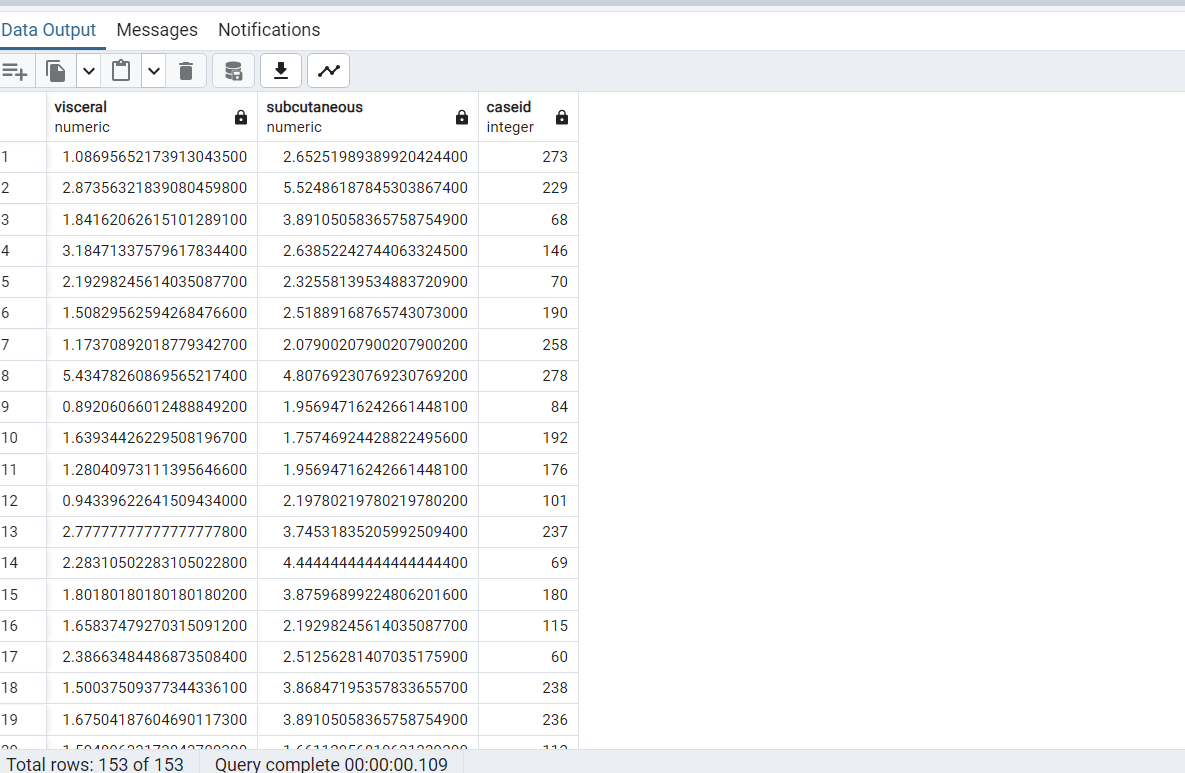
from public.maternal\_fat\_assmt

where

periumbilical\_visceral\_fat is not null and preperitoneal\_visceral\_fat is not null

and periumbilical\_subcutanous\_fat is not null and preperitoneal\_subcutaneous\_fat is not null

group by caseid



---------------------------------------------------------------------------------------------------------------

**--13. What is the waist:hip circumference ratio for every patient and what category do they fall into: Healthy or Unhealthy?**

with waisthip as

(

select round(avg(maternal\_waist\_circumference)/avg(maternal\_hip\_circumference),2) WHRatio,

caseid from public.maternal\_fat\_assmt group by 2

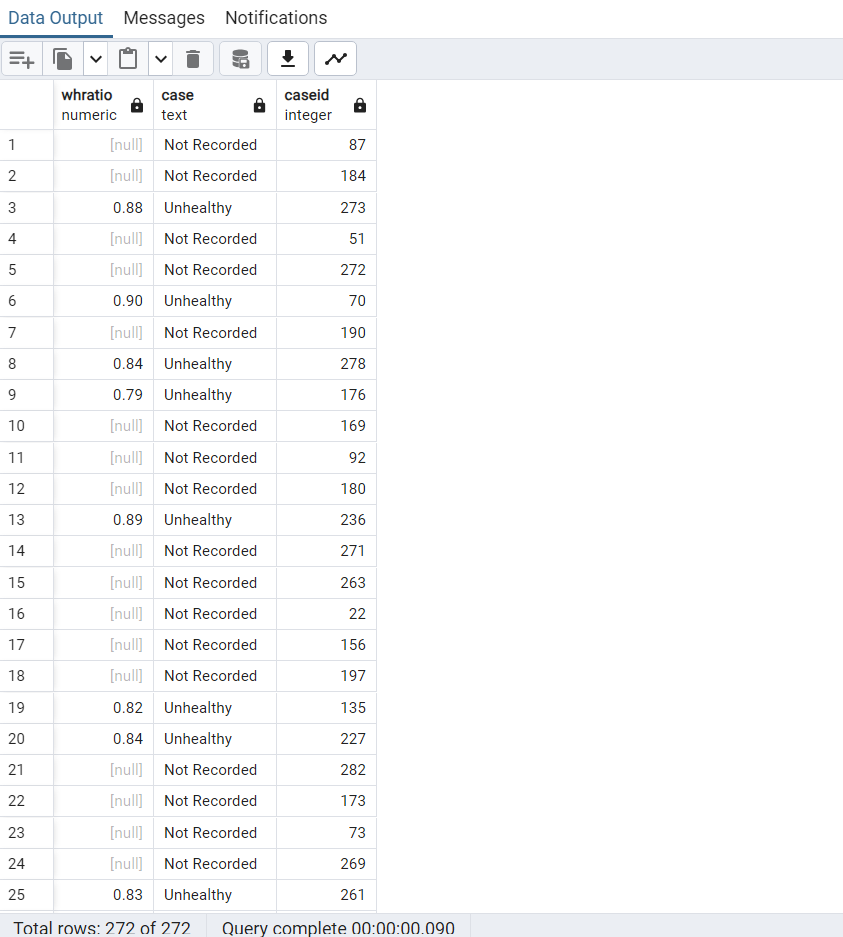
)

select WHRatio,

case when WHRatio<0.7 then 'Healthy'

when WHRatio isnull then 'Not Recorded' else 'Unhealthy' end,

caseid from waisthip;



---------------------------------------------------------------------------------------------------------------

**--14. Calculate body fat percentage for every patient using the circumferences provided**

SELECT

495 / (1.29579 - 0.35004 \* (LOG10((maternal\_waist\_circumference + maternal\_hip\_circumference - maternal\_neck\_circumference)))

+ 0.22100 \* (LOG10(height\_at\_inclusion\*100))) -450 BFPercent , maternal\_fat\_assmt.caseid

FROM public.patient\_history

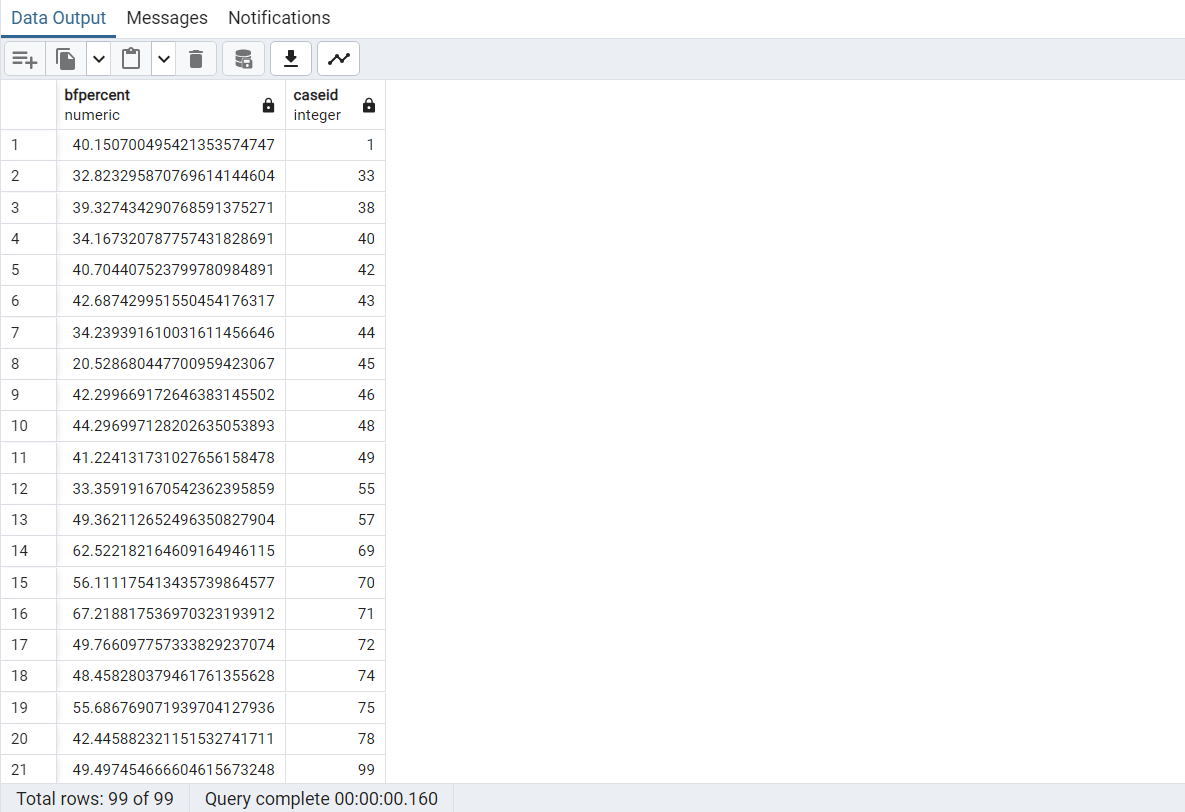
JOIN public.maternal\_fat\_assmt ON patient\_history.caseid = maternal\_fat\_assmt.caseid

where maternal\_waist\_circumference is not null and

maternal\_hip\_circumference is not null and

maternal\_neck\_circumference is not null and

height\_at\_inclusion is not null;



---------------------------------------------------------------------------------------------------------------

**--15. What is the total thickness of visceral fat among patients with a bodyfat>40% by the US Navy Seal Method**

with FatBF as

(

select sum(preperitoneal\_visceral\_fat+periumbilical\_visceral\_fat) ThicknessFat,

495 / (1.29579 - 0.35004 \* (LOG10((maternal\_waist\_circumference + maternal\_hip\_circumference - maternal\_neck\_circumference)))

+ 0.22100 \* (LOG10(height\_at\_inclusion\*100))) -450 BFPercent , maternal\_fat\_assmt.caseid PatID

FROM public.patient\_history

JOIN public.maternal\_fat\_assmt ON patient\_history.caseid = maternal\_fat\_assmt.caseid

where maternal\_waist\_circumference is not null and

maternal\_hip\_circumference is not null and

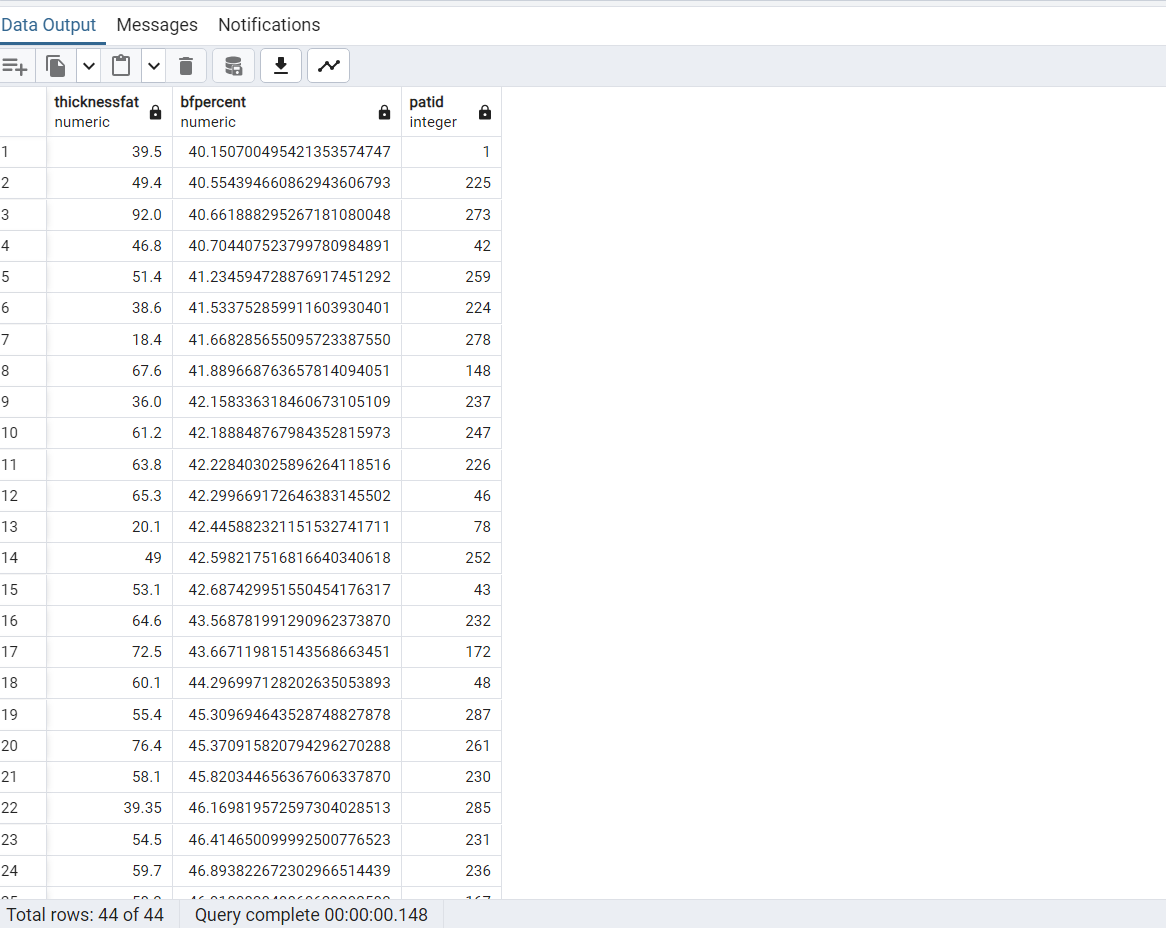
maternal\_neck\_circumference is not null and

height\_at\_inclusion is not null and periumbilical\_visceral\_fat is not null and preperitoneal\_visceral\_fat is not null

group by 2,3

)

select ThicknessFat,BFPercent,PatID from FatBF where BFPercent>40;



---------------------------------------------------------------------------------------------------------------

**--16. Create a crosstab that displays the count of patients under each delivery mode**

CREATE EXTENSION IF NOT EXISTS tablefunc;

SELECT \* FROM CROSSTAB

(

'SELECT

CASE WHEN chronic\_diabetes = 1 THEN ''Diabetic'' ELSE ''Non-diabetic'' END AS Diabetes,

delivery\_mode DMode,

COUNT(caseid)

FROM public.hospitalization\_labor

GROUP BY 1, 2

ORDER BY 1'

) AS CT

(Diabetes text, "Cesarean Section" bigint, "Cesarean By Jeopardy" bigint,

"VaginalVaginal Forcipe" bigint, "Vaginal Forcipe" bigint, "Vaginal" bigint,

"Vaginal W/ Episiotomy and Forcipe" bigint, "Vaginal W/O Episiotomy" bigint, "Vaginal W/ Episiotomy" bigint);

--Alternate Query--

CREATE EXTENSION IF NOT EXISTS tablefunc;

SELECT \* FROM CROSSTAB

(

$$

SELECT

CASE WHEN chronic\_diabetes = 1 THEN 'Diabetic' ELSE 'Non-diabetic' END AS Diabetes,

delivery\_mode AS DMode,

COUNT(caseid)

FROM public.hospitalization\_labor

WHERE delivery\_mode IS NOT NULL

GROUP BY 1, 2

ORDER BY 1, 2

$$,

$$

SELECT DISTINCT delivery\_mode

FROM public.hospitalization\_labor

WHERE delivery\_mode IS NOT NULL

ORDER BY 1

$$

) AS CT

(

Diabetes text,

"Cesarean Section" bigint,

"Cesarean By Jeopardy" bigint,

"Vaginal Vaginal Forcipe" bigint,

"Vaginal Forcipe" bigint,

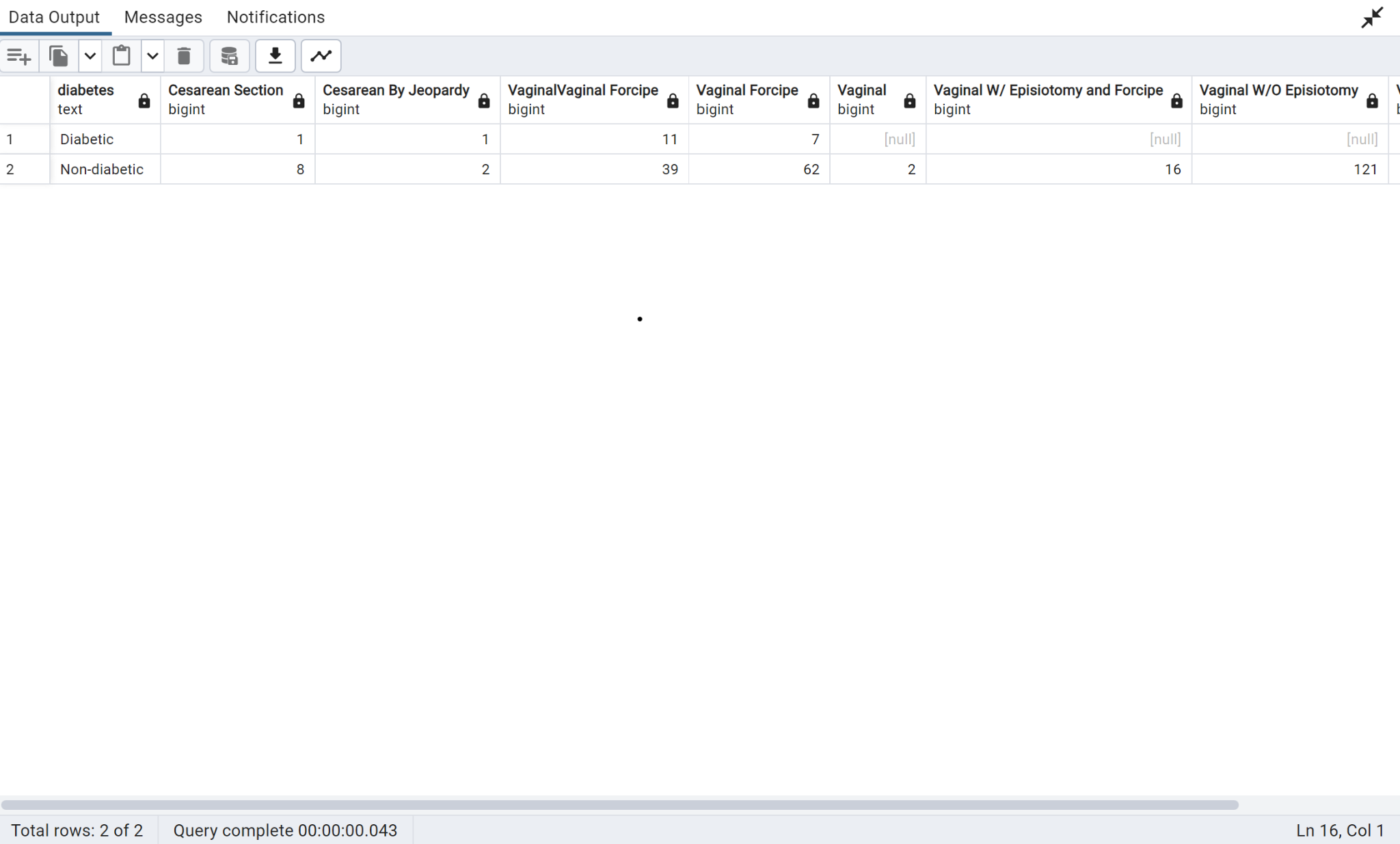
"Vaginal" bigint,

"Vaginal W/ Episiotomy and Forcipe" bigint,

"Vaginal W/O Episiotomy" bigint,

"Vaginal W/ Episiotomy" bigint

);

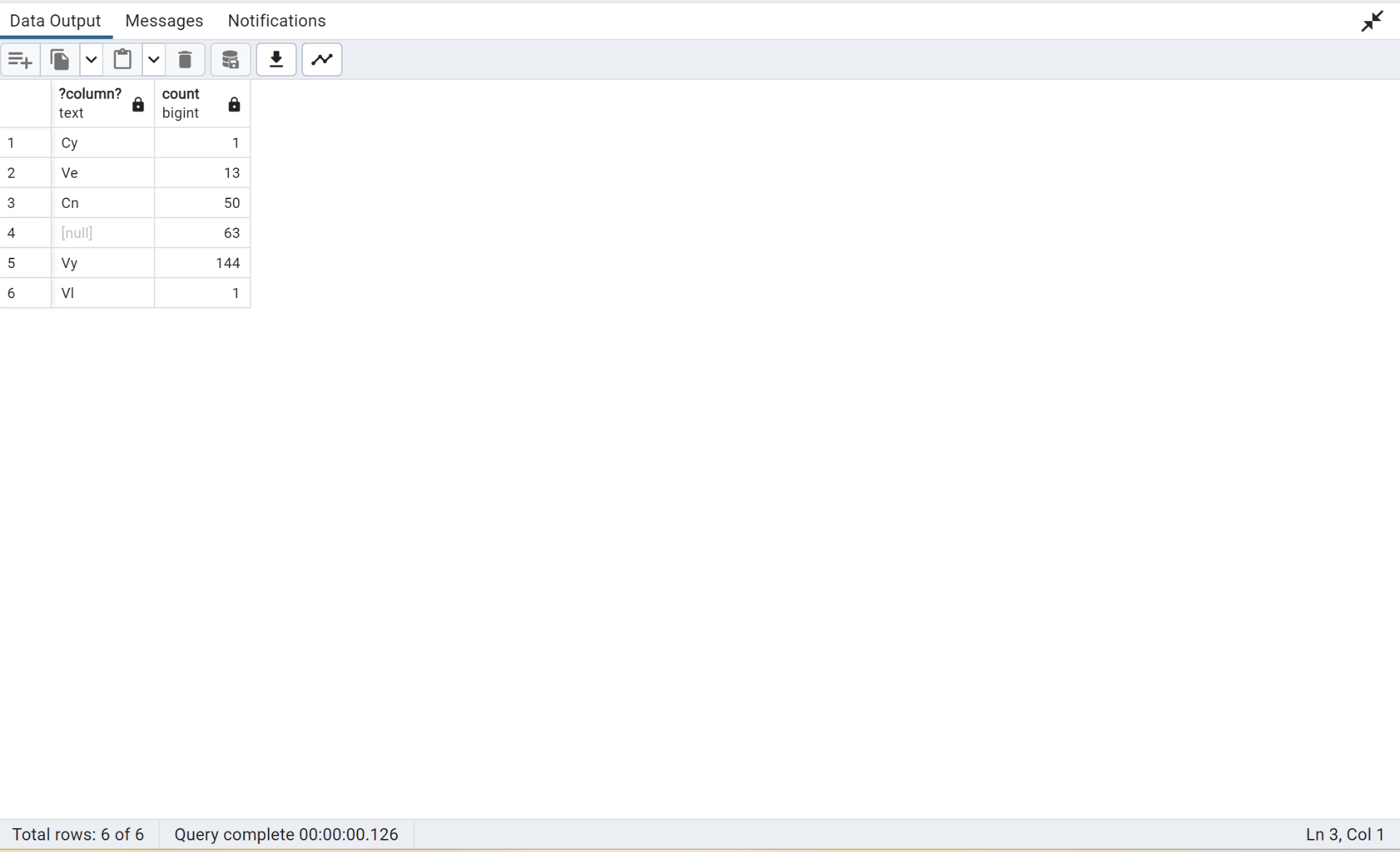


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**--17. Display the first and last letter of the column delivery mode and the count of patients in each category.**

select substring(delivery\_mode,1,1)||substring(reverse(delivery\_mode),1,1),count(caseid) from public.hospitalization\_labor

group by 1;



---------------------------------------------------------------------------------------------------------------

**--18. Assuming the alcohol content of fermented alcohol is 10% and distilled is 40%. How many patients are considered high risk alcohol consumers?**

With GetAlchohol as

(

select

case when alcohol\_preference =’0’ then alcohol\_quantity\_milliliters\*.4

when alcohol\_preference=’1’ then alcohol\_quantity\_milliliters\*.1 else 0 end as AlcUnits,

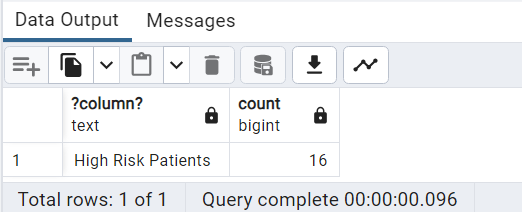
CaseID

from public.fetal\_health\_risk where alcohol\_quantity\_milliliters is not null and alcohol\_preference is not null

)

Select 'High Risk Patients', Count(Caseid) from GetAlchohol where

AlcUnits/10>35;



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**--19. What is the correlation between Visceral fat: Subcutaneous fat and insulin resistance in the 1st trimester for every patient?**

with fatratio as

(

select (sum(periumbilical\_visceral\_fat+preperitoneal\_visceral\_fat))/

(sum(periumbilical\_subcutanous\_fat+preperitoneal\_subcutaneous\_fat)) ViscSubcutaneous,

max(first\_tri\_fasting\_blood\_glucose) fastingglucose,

maternal\_fat\_assmt.caseid patid

from public.maternal\_fat\_assmt, public.maternal\_labs

where

maternal\_labs.caseid=maternal\_fat\_assmt.caseid and

periumbilical\_visceral\_fat is not null and preperitoneal\_visceral\_fat is not null

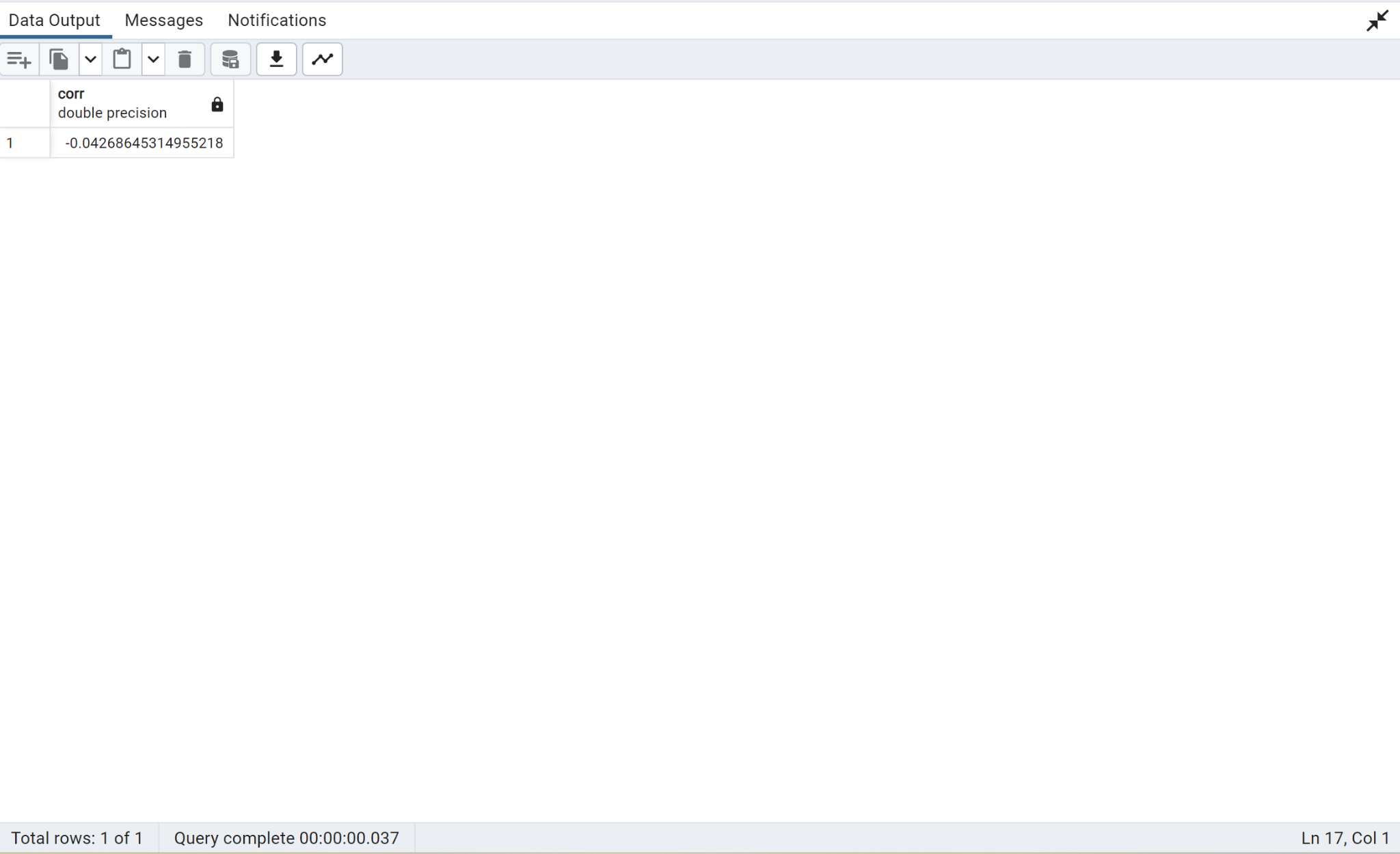
and periumbilical\_subcutanous\_fat is not null and preperitoneal\_subcutaneous\_fat is not null

and first\_tri\_fasting\_blood\_glucose is not null

group by 3

)

select corr(ViscSubcutaneous,fastingglucose) from fatratio;



---------------------------------------------------------------------------------------------------------------

**--20. What is the average APGAR score for patients with a body fat % of over 40.**

with FatBF as

(

select 495 / (1.29579 - 0.35004 \* (LOG10((maternal\_waist\_circumference + maternal\_hip\_circumference - maternal\_neck\_circumference)))

+ 0.22100 \* (LOG10(height\_at\_inclusion\*100))) -450 BFPercent , maternal\_fat\_assmt.caseid PatID

FROM public.patient\_history

JOIN public.maternal\_fat\_assmt ON patient\_history.caseid = maternal\_fat\_assmt.caseid

where maternal\_waist\_circumference is not null and

maternal\_hip\_circumference is not null and

maternal\_neck\_circumference is not null and

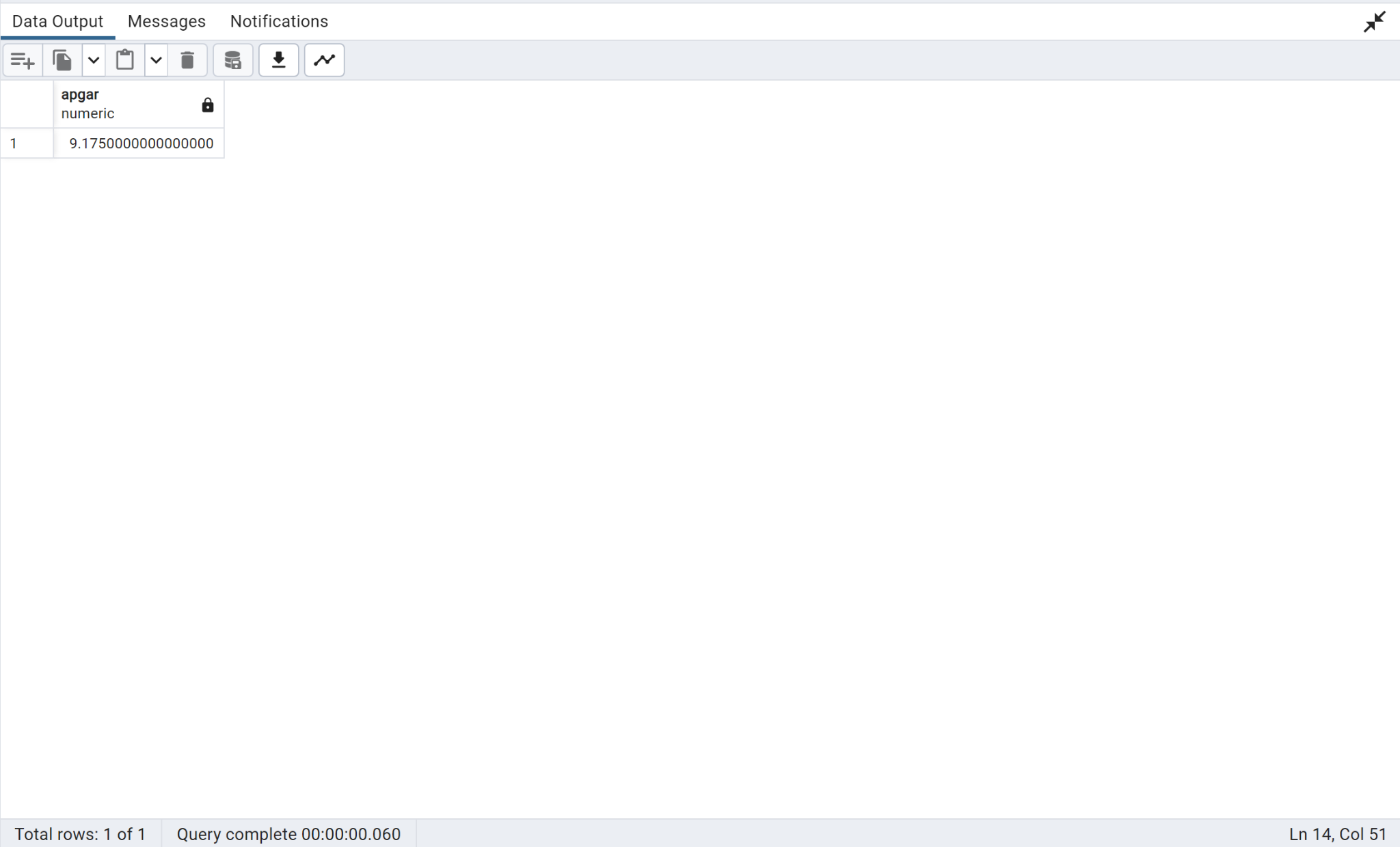
height\_at\_inclusion is not null and periumbilical\_visceral\_fat is not null and preperitoneal\_visceral\_fat is not null

)

select avg(apgar\_5th\_min)APGAR from FatBF, hospitalization\_labor

where FatBF.PatID=hospitalization\_labor.caseid and

BFPercent>40;



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**--21. Write a function to get comma-separated values of patient details. (Use a maximum of 6 columns from different tables)**

CREATE OR REPLACE FUNCTION getPatientDet(\_patid int)

RETURNS TABLE(caseid int,current\_bmi numeric,hospital\_systolic\_blood\_pressure numeric,

periumbilical\_total\_fat numeric,fruits int) AS

$$

BEGIN

RETURN QUERY

select

pat.caseid,

pat.current\_bmi,

hosp.hospital\_systolic\_blood\_pressure,

fat.periumbilical\_total\_fat,

nutr.caseid

from public.patient\_history pat

join public.maternal\_fat\_assmt fat on

pat.caseid=fat.caseid

join public.hospitalization\_labor hosp

on hosp.caseid=fat.caseid

join public.pregnancy\_nutrition nutr

on hosp.caseid=nutr.caseid

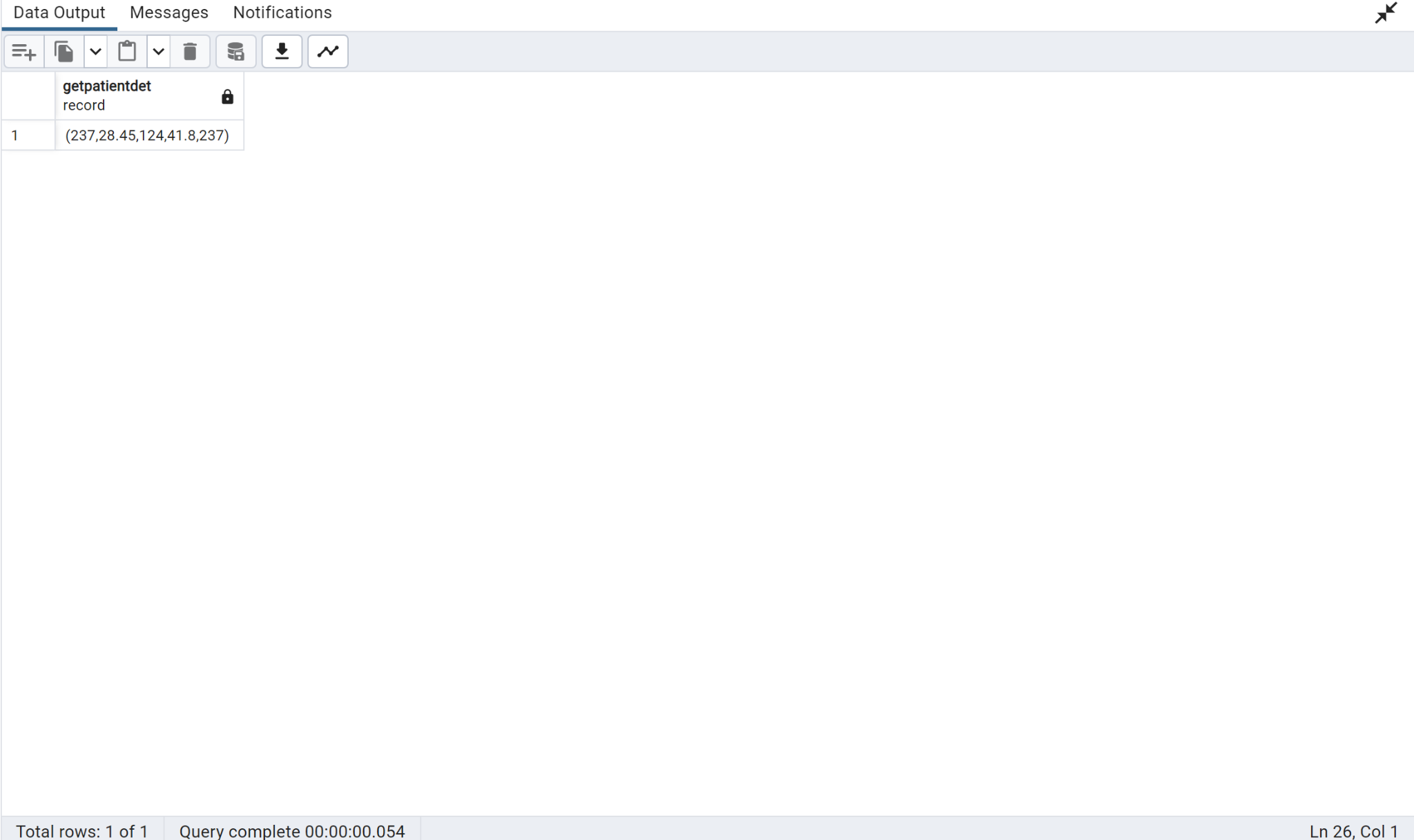
and pat.caseid = \_patid;

END

$$

LANGUAGE plpgsql;

SELECT getPatientDet(237);



---------------------------------------------------------------------------------------------------------------

**--22. How many patients with high risk drinking habits have Gestational Diabetes?**

With GetAlchohol as

(

select

case when alcohol\_preference =’0’ then alcohol\_quantity\_milliliters\*.4

when alcohol\_preference=’1’ then alcohol\_quantity\_milliliters\*.1 else 0 end as AlcUnits,

CaseID, gestational\_diabetes\_mellitus

from public.fetal\_health\_risk where alcohol\_quantity\_milliliters is not null and alcohol\_preference is not null

)

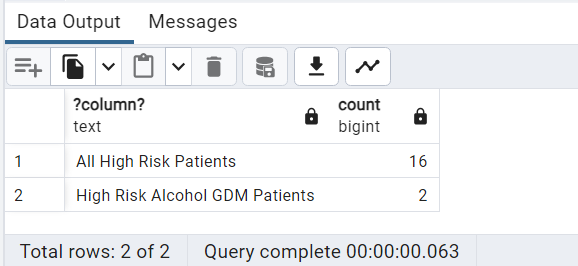
Select 'All High Risk Patients', Count(Caseid) from GetAlchohol where

AlcUnits/10>35

union all

Select 'High Risk Alcohol GDM Patients', Count(Caseid) from GetAlchohol where

AlcUnits/10>35 and gestational\_diabetes\_mellitus=1;



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**--23. Assuming any pregnancy less than 34 weeks is pre-term, what is the average thickness of total fat(subcutaneous and visceral) in patients with pre-term births?**

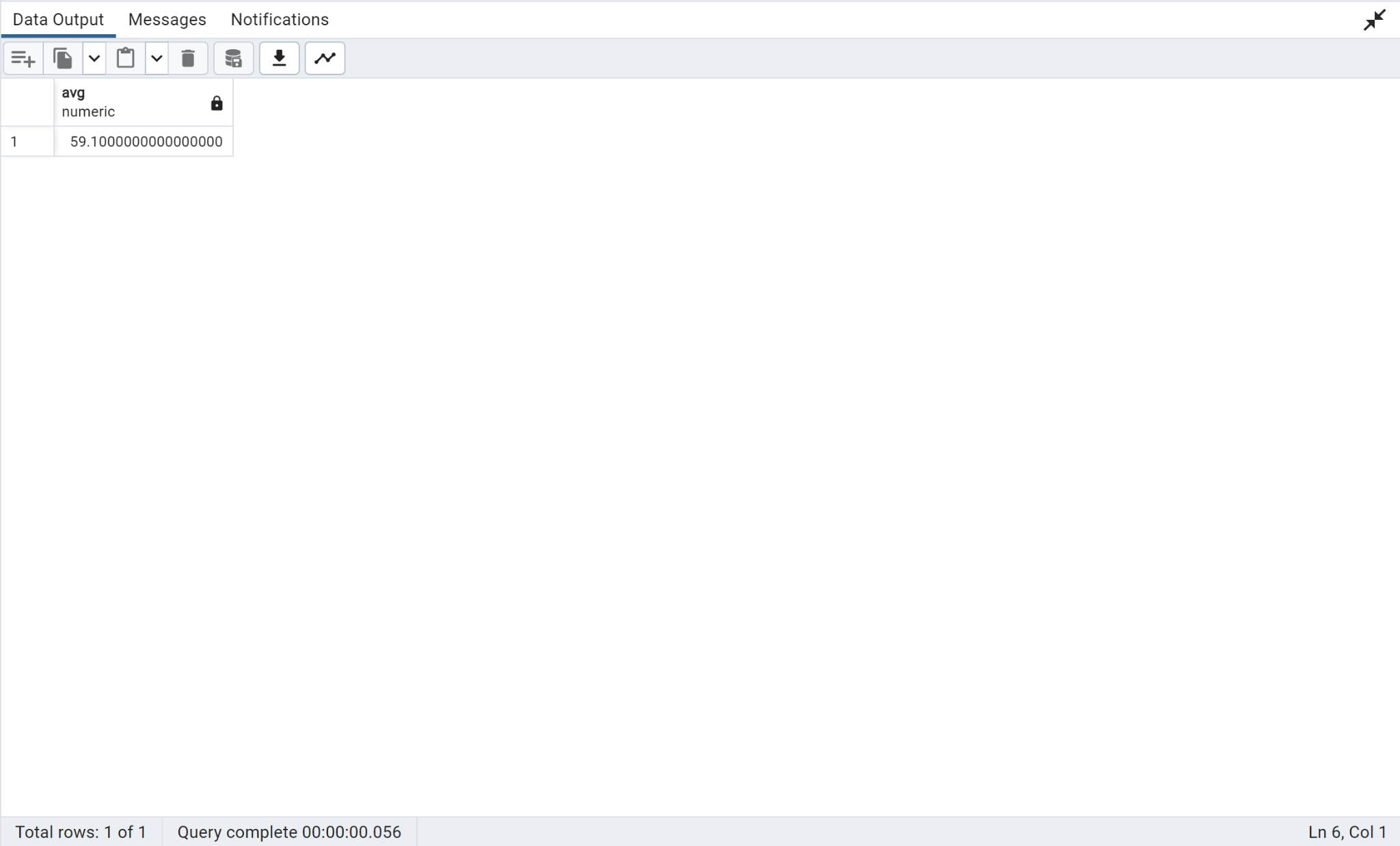
select avg(periumbilical\_subcutanous\_fat+periumbilical\_visceral\_fat+preperitoneal\_subcutaneous\_fat+preperitoneal\_visceral\_fat)

from public.hospitalization\_labor,public.maternal\_fat\_assmt

where

hospitalization\_labor.caseid=maternal\_fat\_assmt.caseid and

gestational\_age\_at\_birth<34;



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**--24. Group the patients into 4 categories of total periumblical fat and show the count of patients in each category**

with PatientTotalFat as

(

select periumbilical\_total\_fat::int TotalFat, caseid PID from public.maternal\_fat\_assmt

where periumbilical\_total\_fat is not null

group by 1,2

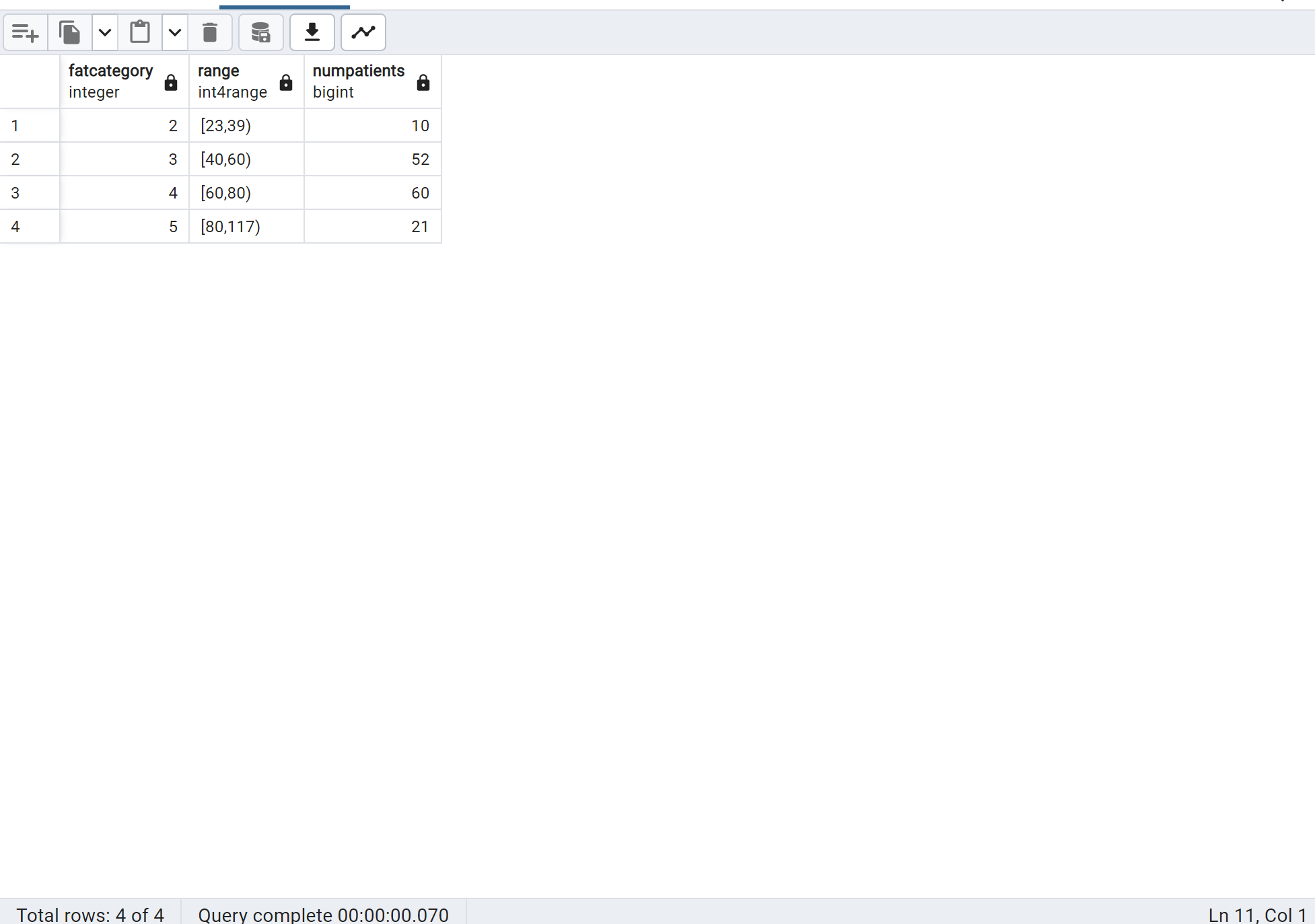
)

select width\_bucket(TotalFat,0,80,4) as FatCategory, int4range(min(TotalFat),max(TotalFat),'[]') as range,

count(PID) as NumPatients from PatientTotalFat

group by 1

order by 1;



---------------------------------------------------------------------------------------------------------------

**--25. Write a query to get the list of patients whose Ultrasound test values and fasting blood glucose are null.**

select distinct maternal\_labs.caseid from public.maternal\_fat\_assmt, public.maternal\_labs

where

maternal\_fat\_assmt.caseid=maternal\_labs.caseid and

first\_tri\_fasting\_blood\_glucose is null and

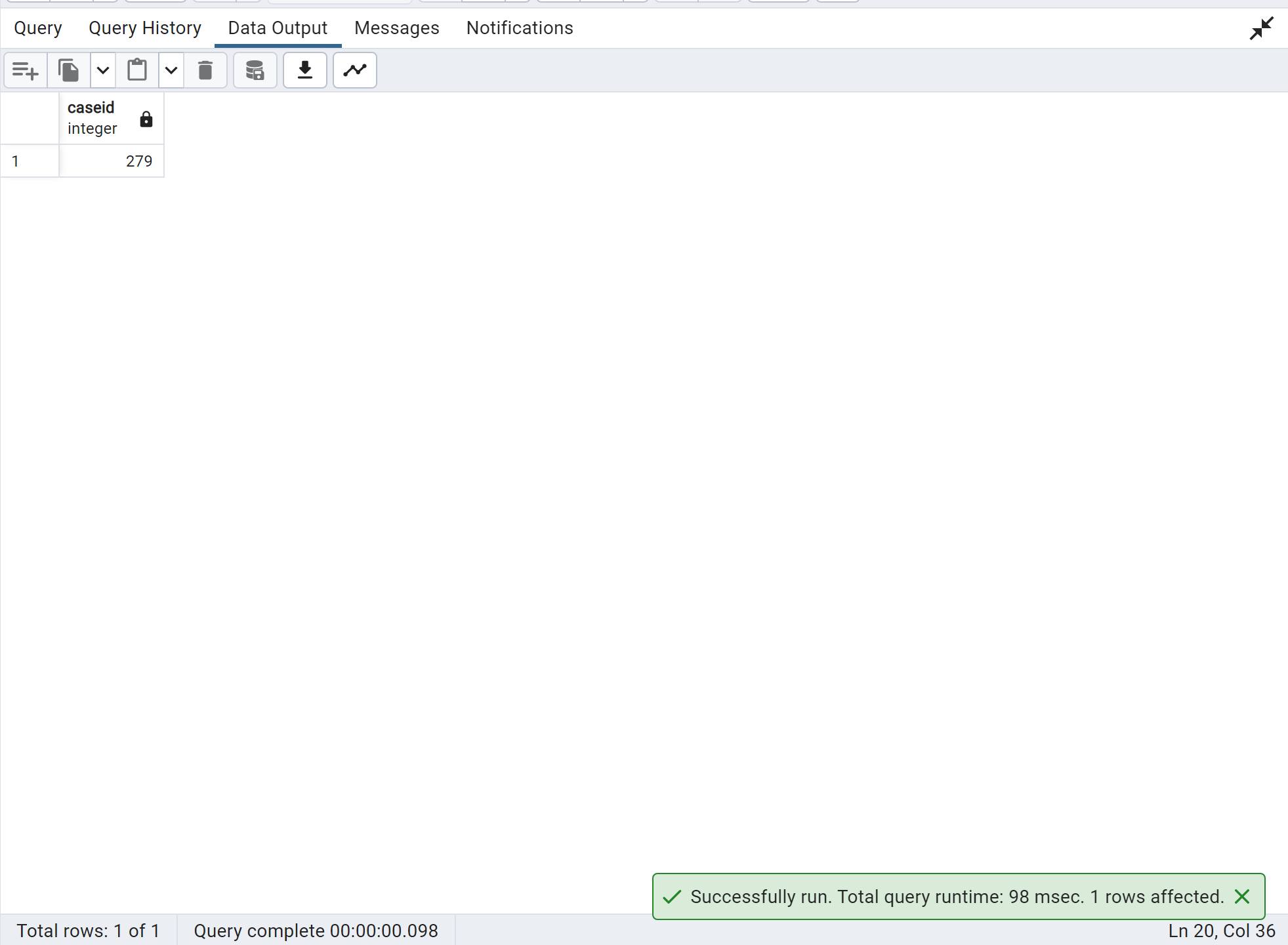
periumbilical\_subcutanous\_fat is null and

periumbilical\_visceral\_fat is null and

periumbilical\_total\_fat is null and

preperitoneal\_subcutaneous\_fat is null and

preperitoneal\_visceral\_fat is null;



---------------------------------------------------------------------------------------------------------------

**--26. Create a stored procedure to make user ids for the given starting sequence id.**

CREATE OR REPLACE PROCEDURE patient\_userid(\_caseid int, INOUT val refcursor)

LANGUAGE plpgsql

AS $BODY$

BEGIN

OPEN val FOR

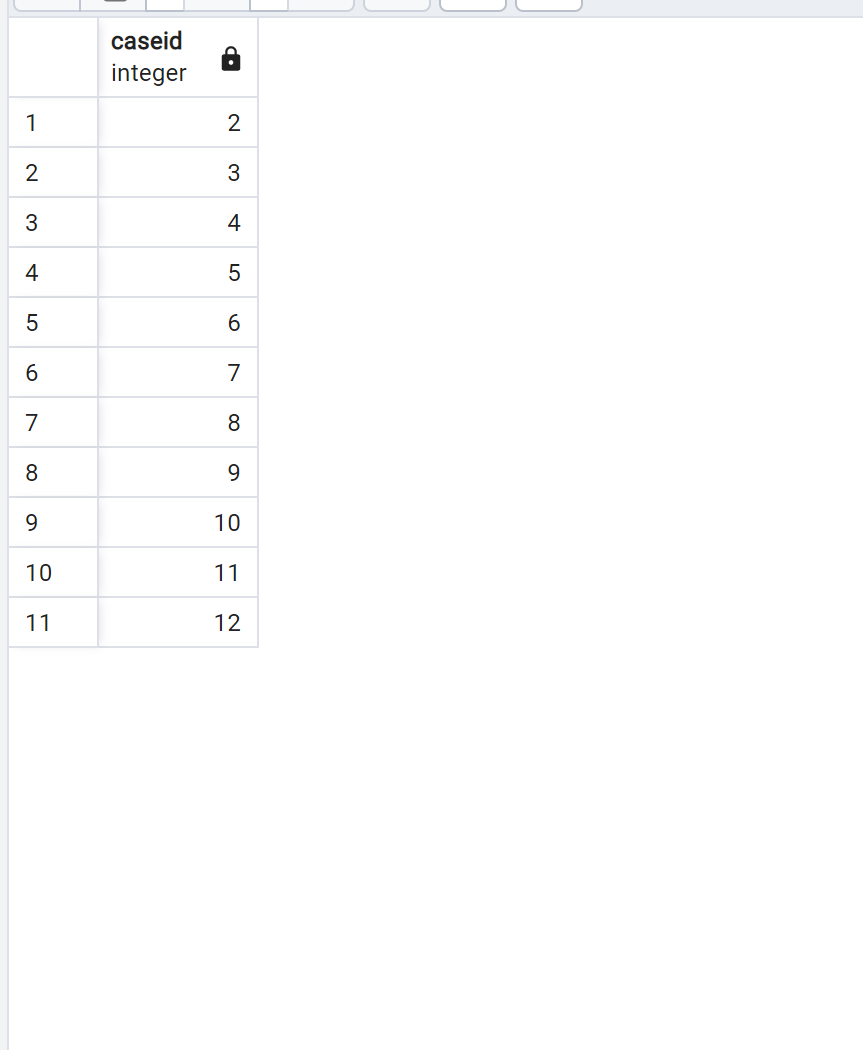
SELECT generate\_series(\_caseid, \_caseid + 10) AS caseid;

END

$BODY$;

CALL patient\_userid(2,'ref');

FETCH ALL IN "ref";



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**--27. What is average thickness of total fat(subcutaneaous and visceral) in patients with preeclampsia?**

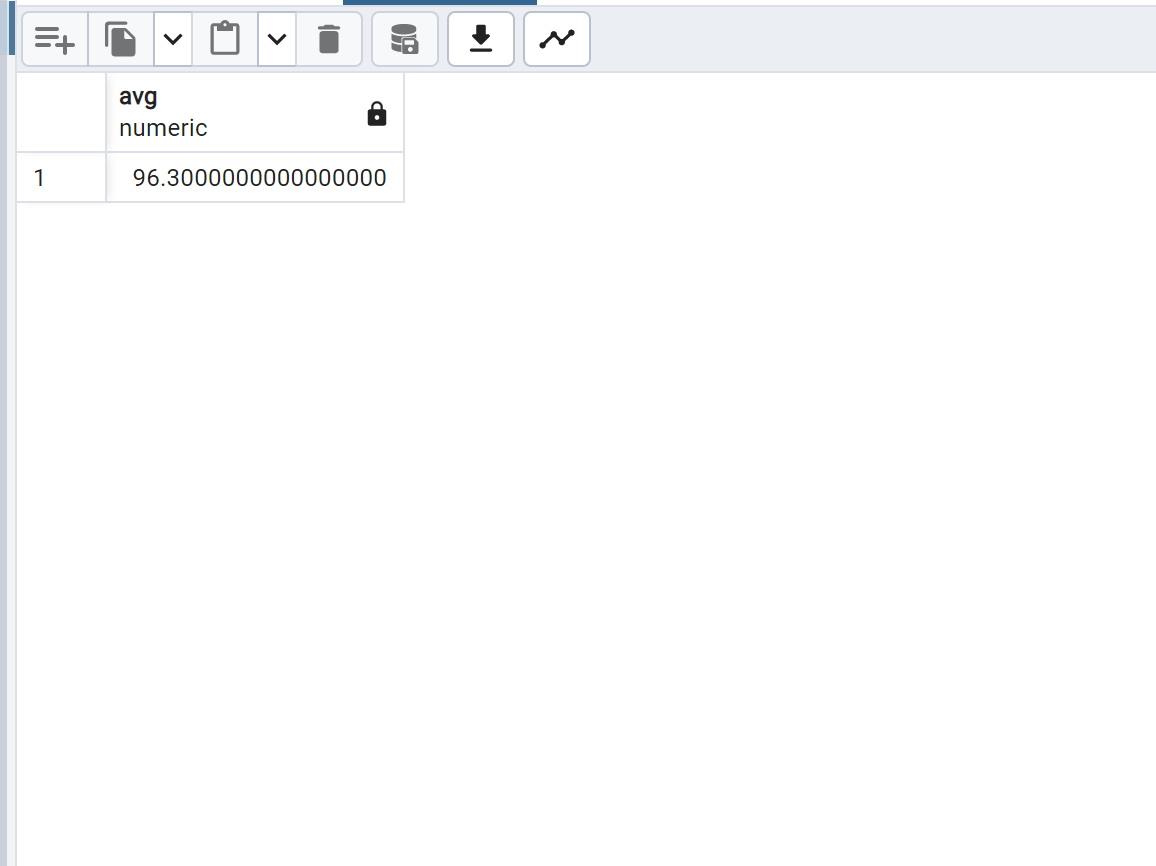
select avg(periumbilical\_subcutanous\_fat+periumbilical\_visceral\_fat+preperitoneal\_subcutaneous\_fat+preperitoneal\_visceral\_fat)

from public.hospitalization\_labor,public.maternal\_fat\_assmt

where

hospitalization\_labor.caseid=maternal\_fat\_assmt.caseid and

preeclampsia\_record\_pregnancy=1;



**--Alternate Query--**

with cte as

(select M.caseid,avg(M.periumbilical\_subcutanous\_fat+M.periumbilical\_visceral\_fat+

M.preperitoneal\_subcutaneous\_fat+M.preperitoneal\_visceral\_fat) as total\_fat,

H.preeclampsia\_record\_pregnancy

from hospitalization\_labor as H join maternal\_fat\_assmt as M

on

H.caseid=M.caseid

group by 1,3)

select corr(total\_fat,preeclampsia\_record\_pregnancy) from cte where preeclampsia\_record\_pregnancy=1;

---------------------------------------------------------------------------------------------------------------

**--28. What is the correlation between total fat(subcutaneaous and visceral) and patients with preeclampsia?**

with TotalFat as

(

select avg(periumbilical\_subcutanous\_fat+periumbilical\_visceral\_fat+preperitoneal\_subcutaneous\_fat+preperitoneal\_visceral\_fat) TotalThickness,

maternal\_fat\_assmt.caseid patid, preeclampsia\_record\_pregnancy

from public.hospitalization\_labor,public.maternal\_fat\_assmt

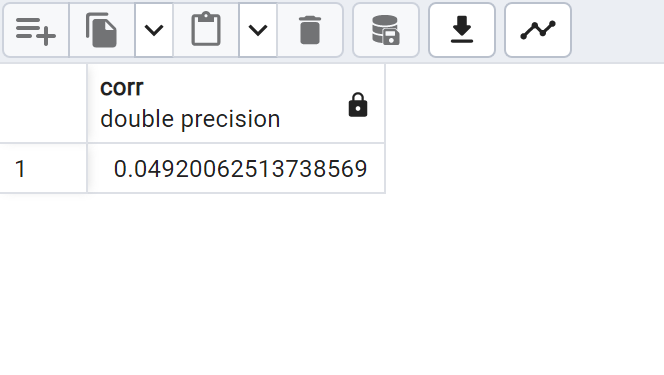
where

hospitalization\_labor.caseid=maternal\_fat\_assmt.caseid

group by 2,3

)

select corr(TotalThickness,preeclampsia\_record\_pregnancy) from TotalFat;



---------------------------------------------------------------------------------------------------------------

--29. Write a query to produce a multiplication table using a recursive view.

WITH RECURSIVE MultiplicationTable AS (

SELECT 9 AS multiplicand, 1 AS multiplier, 9 AS product

UNION ALL

SELECT

multiplicand,

multiplier + 1,

multiplicand \* (multiplier + 1) AS product

FROM

MultiplicationTable

WHERE

multiplier < 10

);

SELECT \* FROM MultiplicationTable;

---------------------------------------------------------------------------------------------------------------

--30. Use windows functions to get the patient with the highest fasting blood glucose in trimester 3

with HighGlucose as

(

select caseid PatientID, rank() over (order by third\_tri\_fasting\_blood\_glucose desc) glucoserank

from public.maternal\_labs

where third\_tri\_fasting\_blood\_glucose is not null

)

select \* from HighGlucose where glucoserank=1;

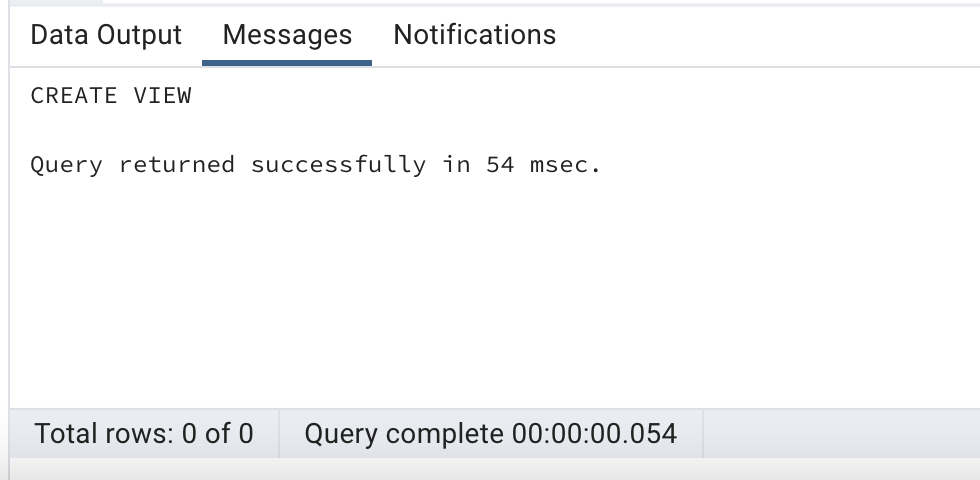


---------------------------------------------------------------------------------------------------------------

--31. Create a trigger to raise notice and prevent deletion of the view created in question 50

create view fetalhealth as

select \* from public.fetal\_health\_risk;



---------------------------------------------------

create or replace function deletefetalrisk()returns trigger as $DonotDelete$

begin

if (TG\_OP = 'DELETE') then

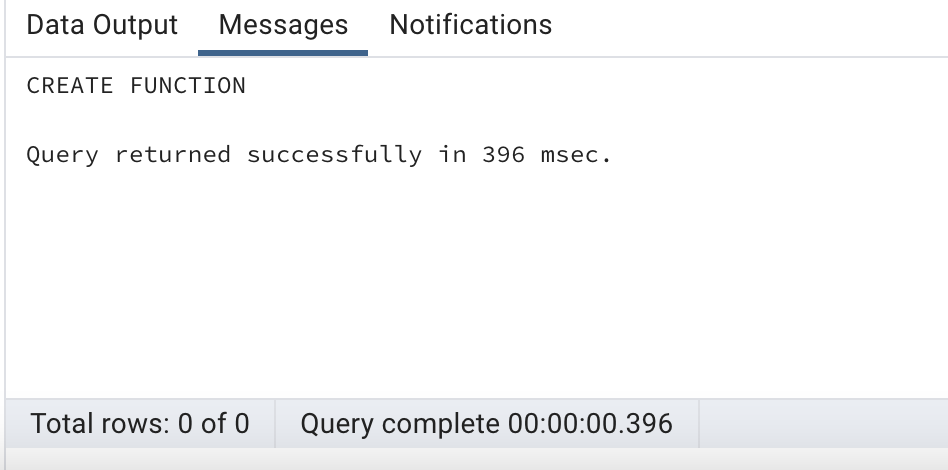
Raise exception 'YOU ARE NOT ALLOWED TO DELETE';

end if;

return null;

end;

$DonotDelete$ language plpgsql;



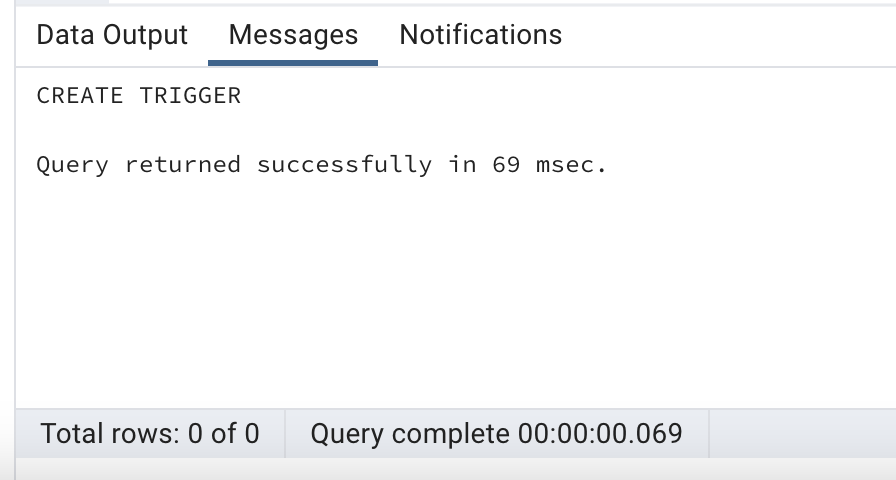
----trigger---

create trigger DonotDelete

instead of delete on fetalhealth

for each row

execute function deletefetalrisk();



-------------------

delete from fetalhealth;

---------------------------------------------------------------------------------------------------------------

--32. Create a view without using any schema or table and check the created view using a select statement.

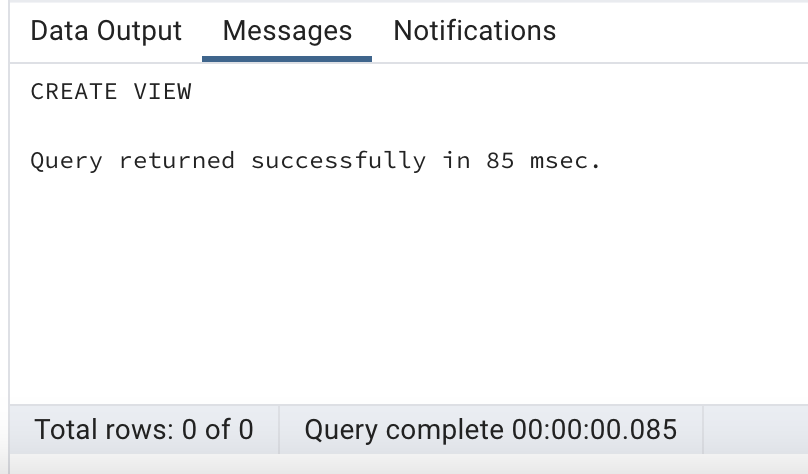
Create or Replace View NoTabView

as

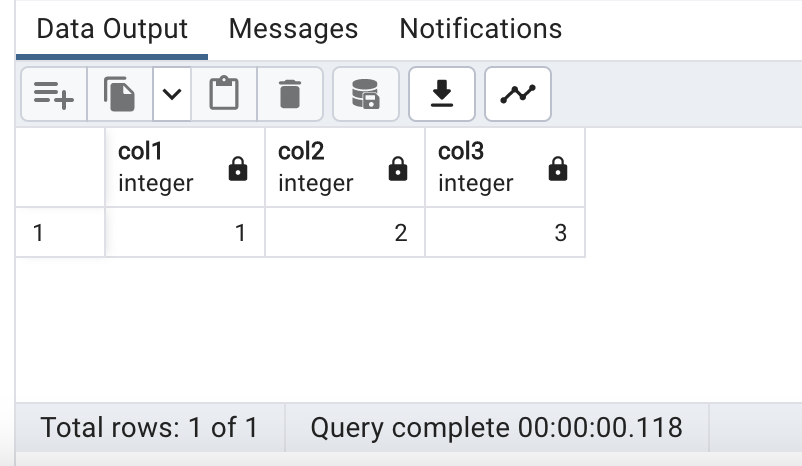
(

Select 1 Col1, 2 Col2, 3 Col3

);



select \* from NoTabView;



---------------------------------------------------------------------------------------------------------------

--33. Get the number of patients who used every type of drug using the windows function.

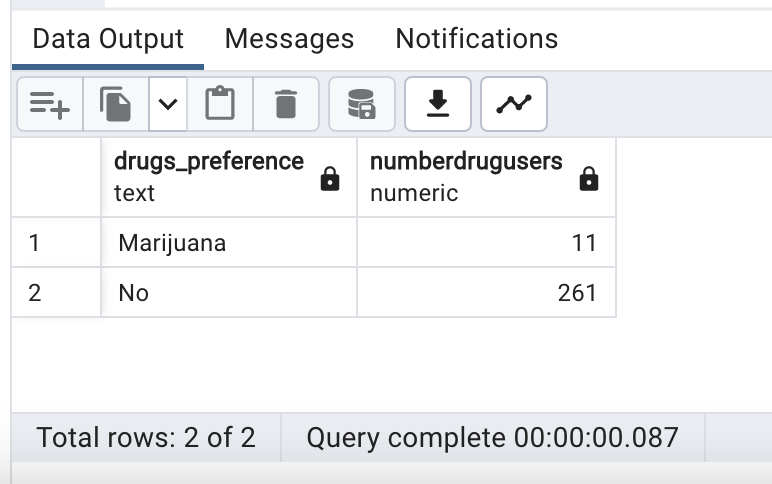
SELECT drugs\_preference,

sum(COUNT(\*)) over (Partition by drugs\_preference) NumberDrugUsers

FROM

public.fetal\_health\_risk

GROUP BY 1;



---------------------------------------------------------------------------------------------------------------

--34. Write a query to get patients who satisfy these conditions: Low hematrocit, low hemaglobin or low fasting blood glucose in the 1st tri.

--use the string agg function to show how many conditions are satisfied by each patient"

With Conditions as

(

select caseid, 'Low Hemaglobin' as PatientCondition from

public.maternal\_labs

where first\_trimester\_hemoglobin<11.5

group by caseid,PatientCondition

Union All

select caseid, 'Low hematrocit' as PatientCondition from

public.maternal\_labs

where first\_trimester\_hematocrit<29

group by caseid,PatientCondition

Union All

select caseid, 'Low Blood Glucose' as PatientCondition from

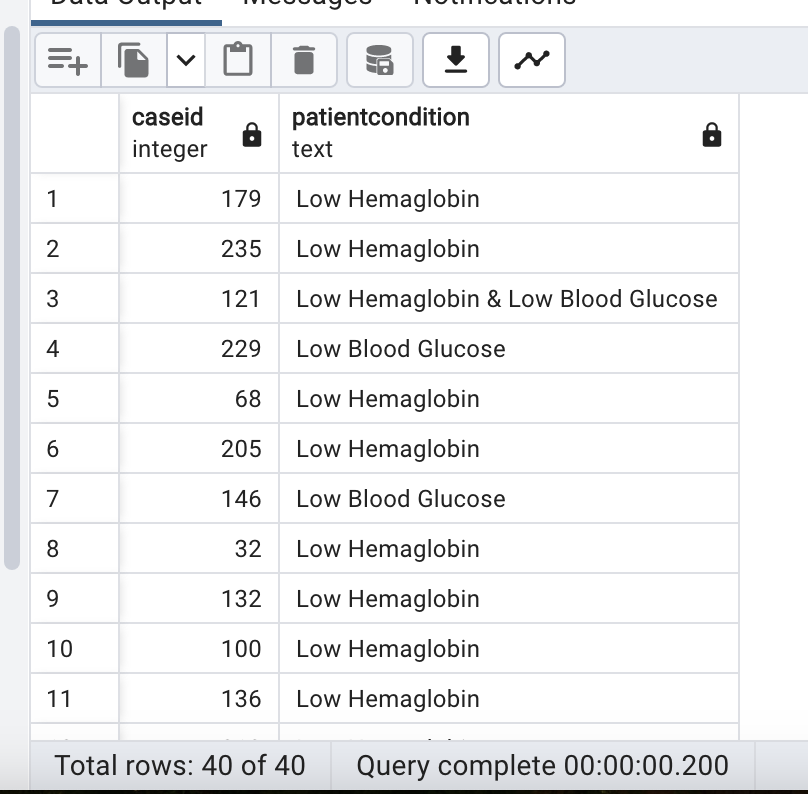
public.maternal\_labs

where first\_tri\_fasting\_blood\_glucose<70

group by caseid,PatientCondition

)

select caseid, string\_agg(PatientCondition,' & ') as PatientCondition from Conditions group by 1;



---------------------------------------------------------------------------------------------------------------

--35. What % of all patients with high fasting glucose don't consume breakfast?

with Nobreakfast as

(

select count(maternal\_labs.caseid) PatientNoBreakF

from public.pregnancy\_nutrition,public.maternal\_labs

where

pregnancy\_nutrition.caseid=maternal\_labs.caseid and

breakfast\_meal=0 and first\_tri\_fasting\_blood\_glucose>100

),

HighGlucose as

(

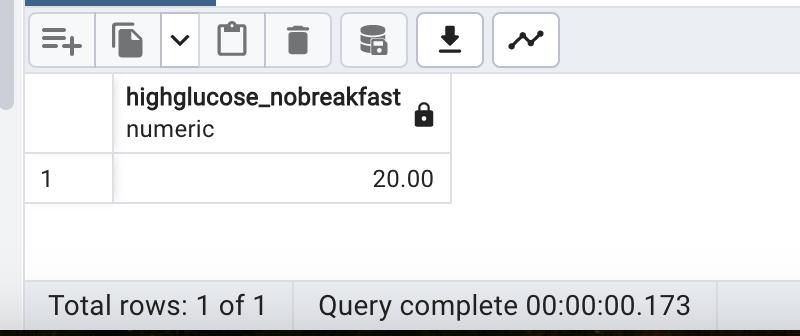
select count(caseid) PatientHighG

from public.maternal\_labs

where first\_tri\_fasting\_blood\_glucose>100

)

select round(sum(PatientNoBreakF)/sum(PatientHighG),2)\*100 HighGlucose\_NoBreakfast from HighGlucose,Nobreakfast;



---------------------------------------------------------------------------------------------------------------

--36. Write a trigger that calls a function, for checking new rows inserted for

-- caseids not null and all color ethnicity values are in title case "

create or replace function checking\_space\_case() returns trigger as $tgr\_insert$

begin

if new.caseid is null then

raise exception 'cannot be null ';

end if;

if initcap(new.color\_ethnicity) <> new.color\_ethnicity then

raise exception 'Please check Title case';

end if;

if substring(new.color\_ethnicity,' ') is not null then

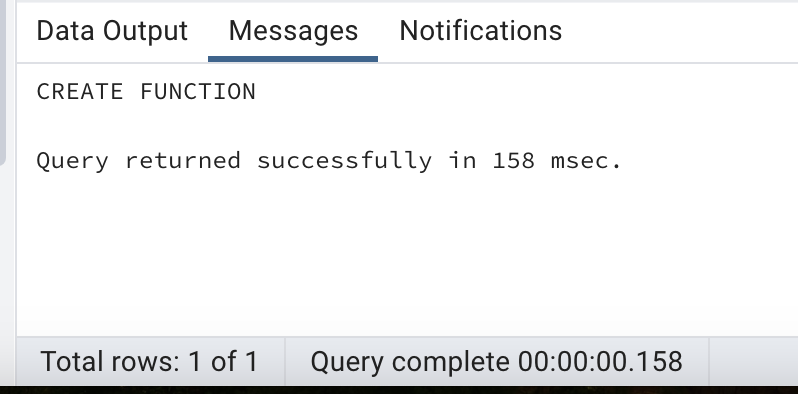
raise exception 'cannot have spaces ';

end if;

return new;

end;

$tgr\_insert$ language plpgsql;



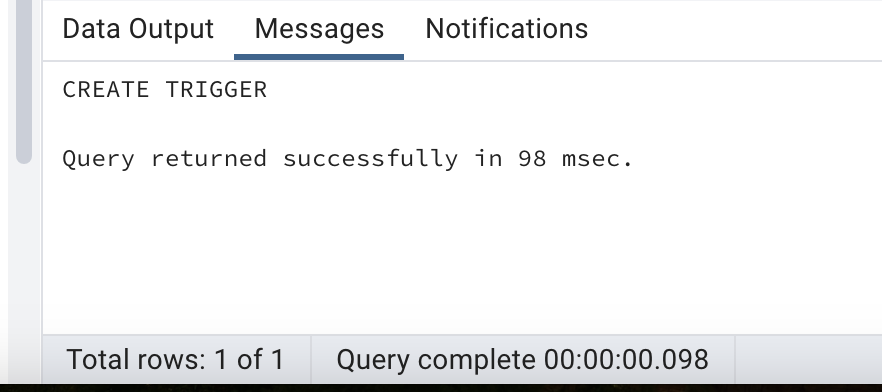
----trigger---

CREATE TRIGGER tgr\_insert

BEFORE INSERT ON public.patient\_history

FOR EACH ROW

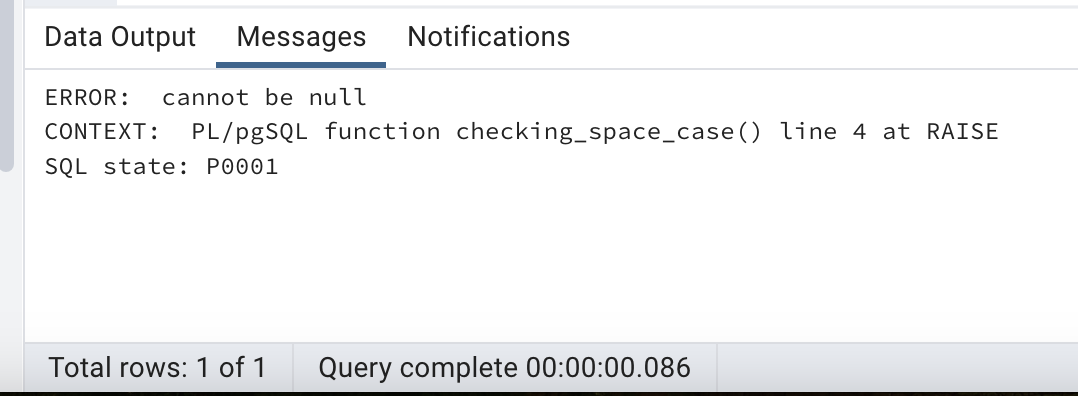
EXECUTE function checking\_space\_case();



------------------------------------------

INSERT INTO public.patient\_history (caseid,color\_ethnicity)

VALUES(null,'abcD');



---------------------------------------------------------------------------------------------------------------

--37. Display the mean, standard deviation and variance of all prepregnant weight in the patient history table

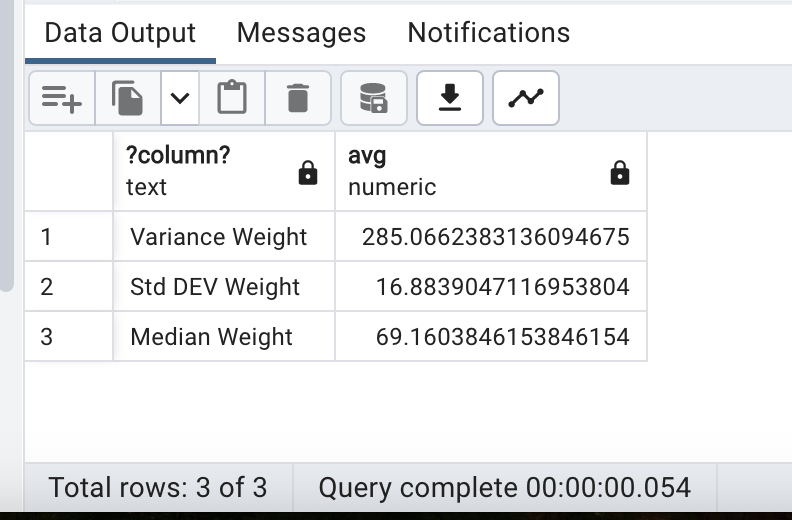
select 'Median Weight',avg(prepregnant\_weight) from public.patient\_history

union

select 'Std DEV Weight',stddev\_pop(prepregnant\_weight) from public.patient\_history

union

select 'Variance Weight',var\_pop(prepregnant\_weight) from public.patient\_history;



--Alternate Query--

select avg(prepregnant\_weight) avgwt, stddev\_pop(prepregnant\_weight) stdevwt, var\_pop(prepregnant\_weight) varwt

from patient\_history

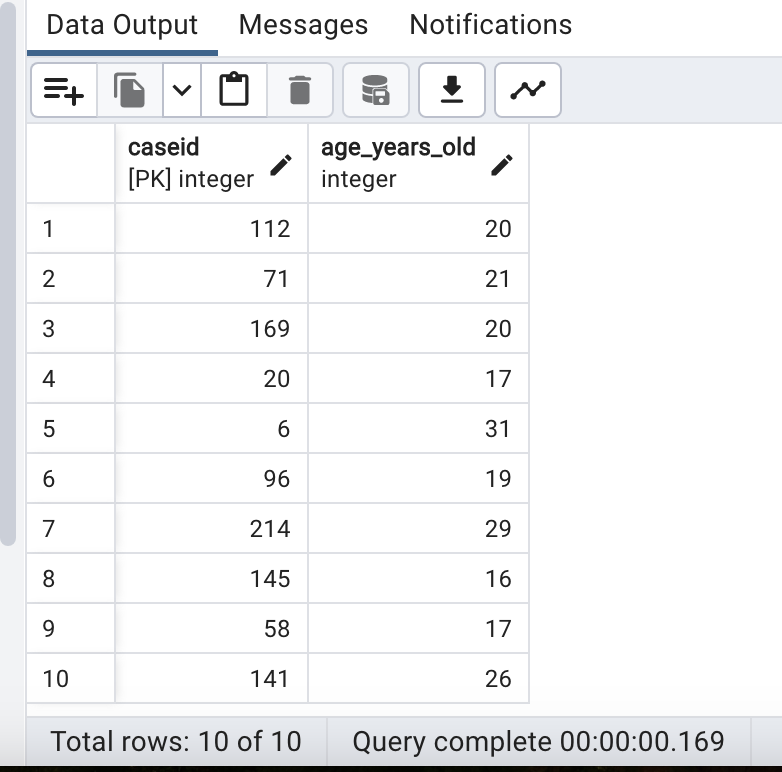


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--38. Display any 10 random patients along with their age

select caseid,age\_years\_old from public.patient\_history order by random()

limit 10;



---------------------------------------------------------------------------------------------------------------

--39. What % of all overweight patients consume cookies.

with BMI as

(

select count(patient\_history.caseid) CookiesEaten

from public.patient\_history,public.pregnancy\_nutrition

where

pregnancy\_nutrition.caseid=patient\_history.caseid and

cookies=1 and current\_bmi>30

),

Cookies as

(

select count(patient\_history.caseid) OvPatients

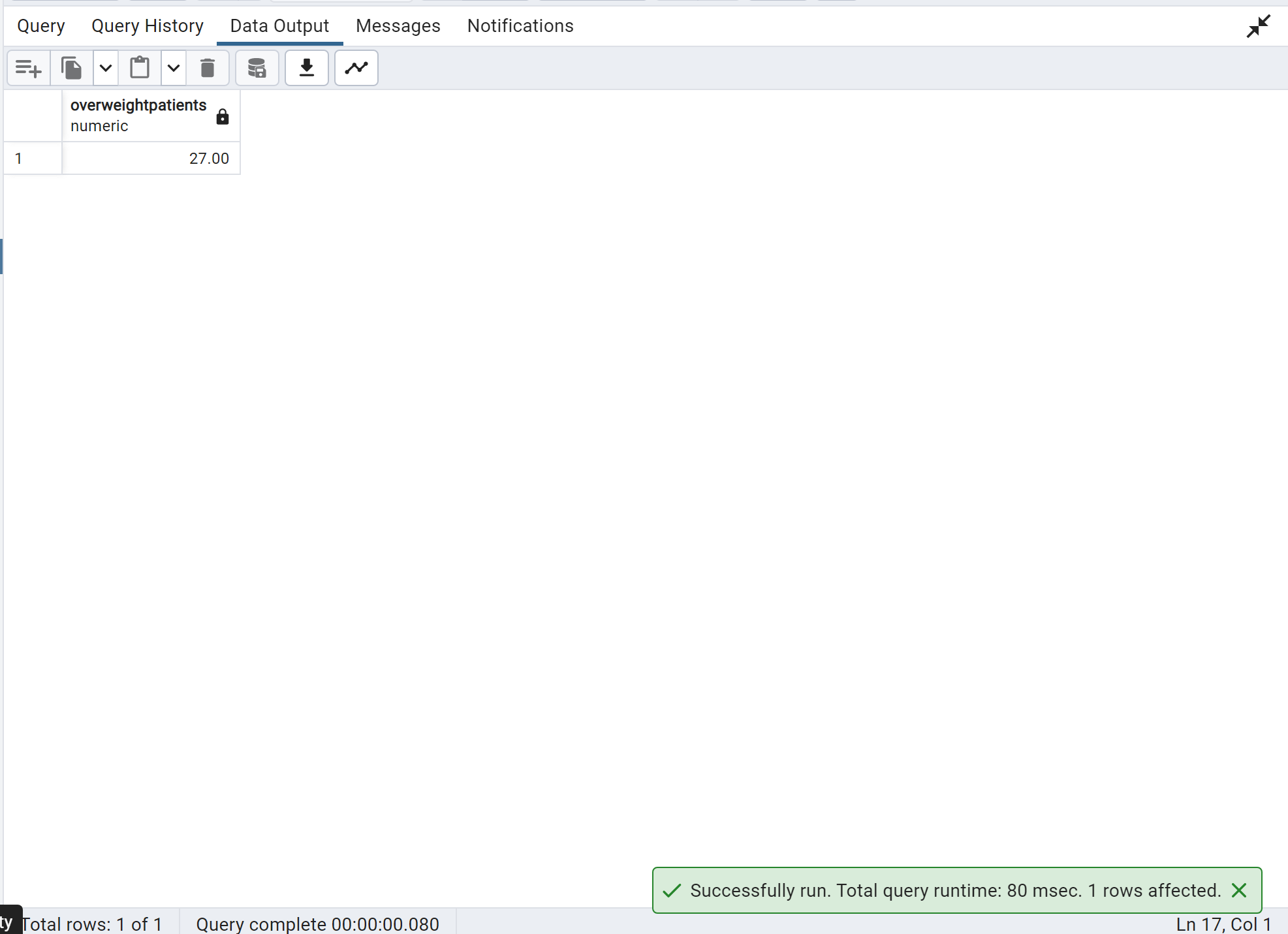
from public.patient\_history

where

current\_bmi>30

)

select round(sum(CookiesEaten)/sum(OvPatients),2)\*100 OverweightPatients from BMI,Cookies;



---------------------------------------------------------------------------------------------------------------

--40. What was the average 1-minute APGAR score for newborns who's mothers had had at least 2 prior pregnancies vs mothers who had no prior pregnancies?

select 'More than 2 pregnancies',avg(apgar\_1st\_min)

from public.prior\_gestational\_health,

public.hospitalization\_labor

where

hospitalization\_labor.caseid=prior\_gestational\_health.caseid and

gestational\_age\_past\_newborn\_2 =1 or

gestational\_age\_past\_newborn\_3=1 or

gestational\_age\_past\_newborn\_4=1

union all

select 'First Pregnancy',avg(apgar\_1st\_min)

from public.prior\_gestational\_health,

public.hospitalization\_labor

where

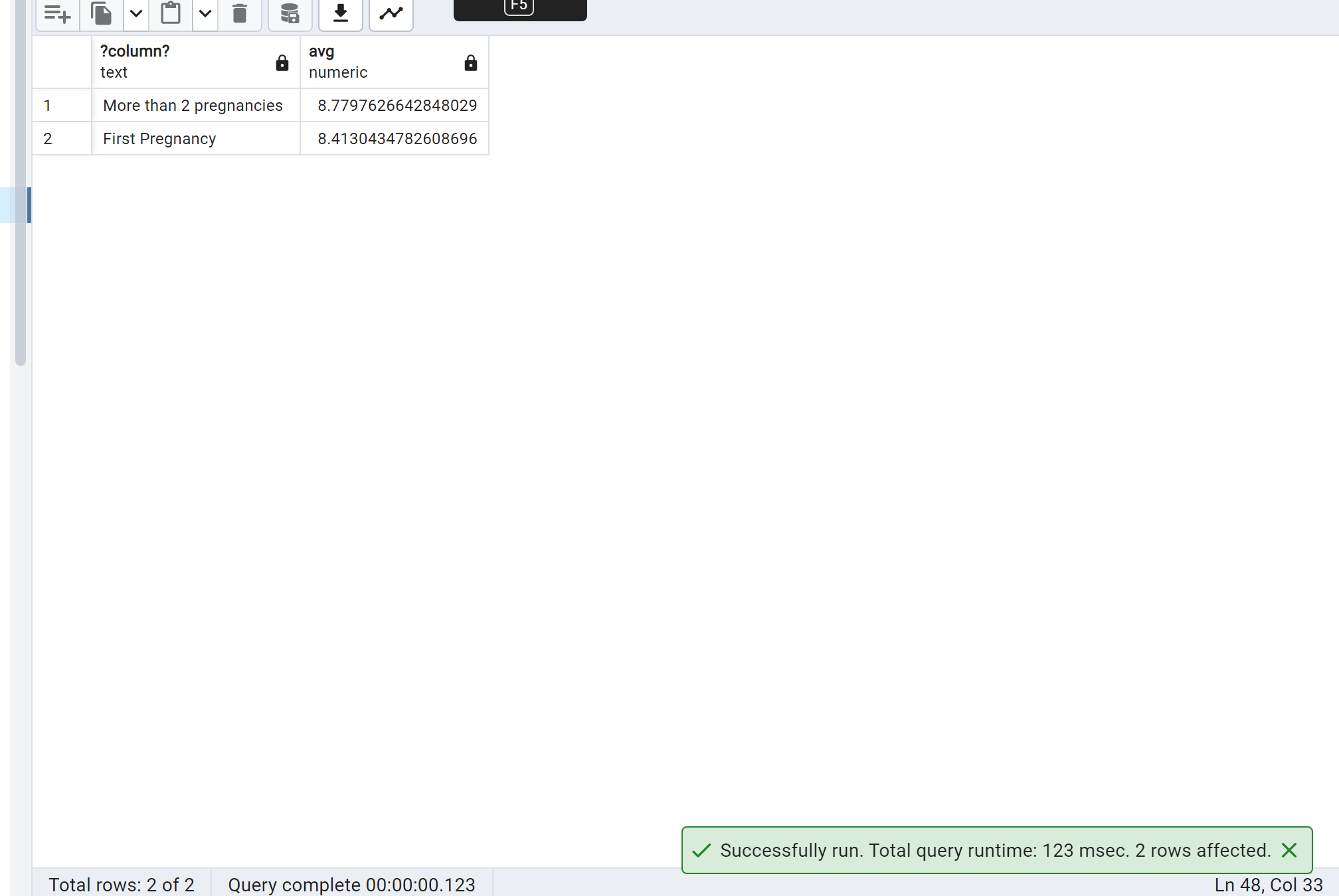
hospitalization\_labor.caseid=prior\_gestational\_health.caseid and

gestational\_age\_past\_newborn\_1=0 and

gestational\_age\_past\_newborn\_2 =0 and

gestational\_age\_past\_newborn\_3=0 and

gestational\_age\_past\_newborn\_4=0



--Alternate Query--

select 'Atleast 2 past pregnancies',avg(apgar\_1st\_min)

from public.prior\_gestational\_health,

public.hospitalization\_labor

where public.prior\_gestational\_health.caseid=public.hospitalization\_labor.caseid

and past\_pregnancies\_number>= 2

union all

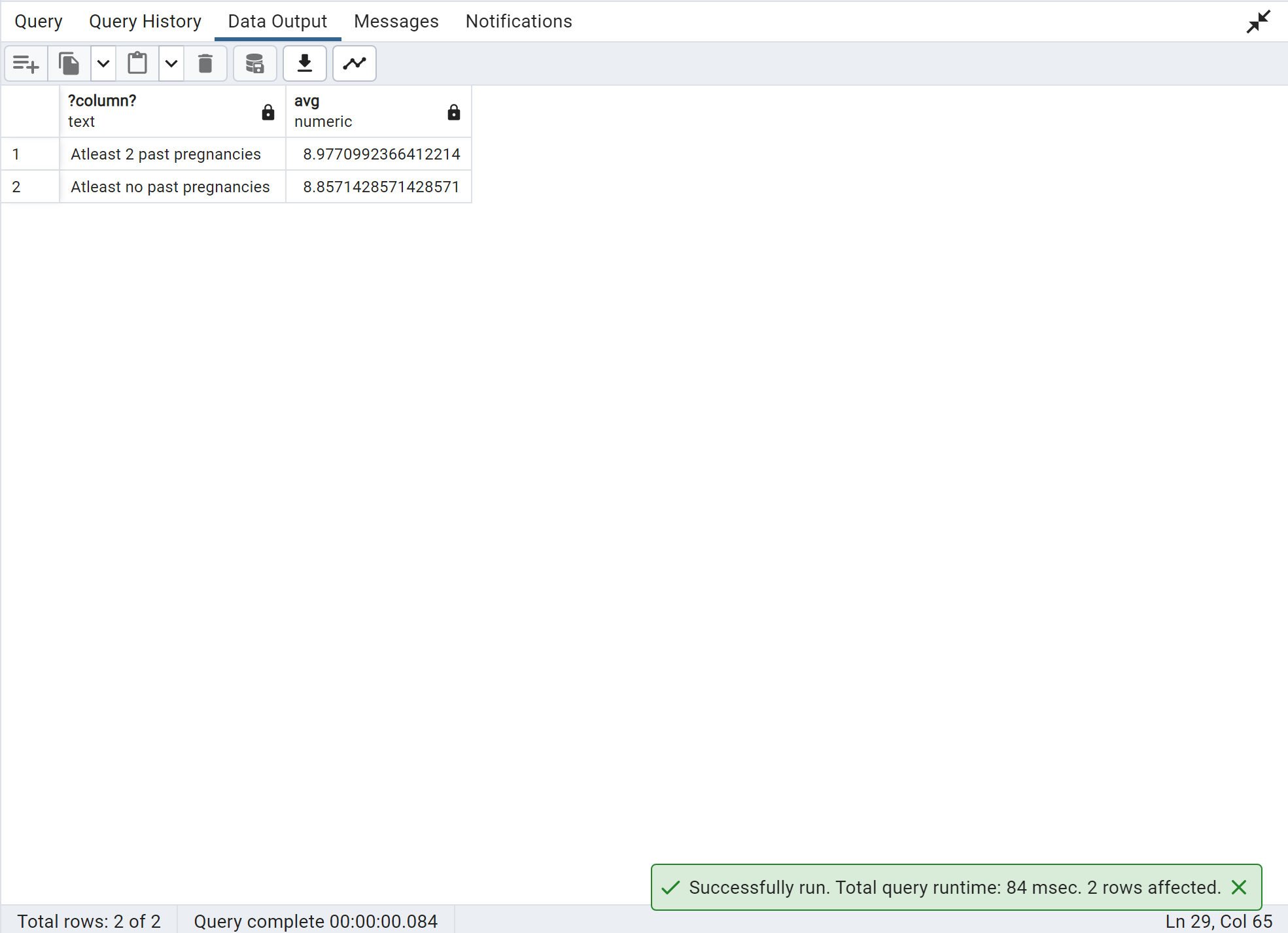
select 'Atleast no past pregnancies',avg(apgar\_1st\_min)

from public.prior\_gestational\_health,

public.hospitalization\_labor

where public.prior\_gestational\_health.caseid=public.hospitalization\_labor.caseid

and past\_pregnancies\_number is null or past\_pregnancies\_number=0



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--41. Write a query to calculate the moving average of newborn weight in kgs between every 2 pregnancies

--for every patient using windows moving/sliding dynamic average functions.

with Pivottable as

(

select distinct caseid, past\_newborn\_1\_weight Newbornweight from public.prior\_gestational\_health where past\_newborn\_1\_weight is not null

union all

select distinct caseid, past\_newborn\_2\_weight Newbornweight from public.prior\_gestational\_health where past\_newborn\_2\_weight is not null

union all

select distinct caseid, past\_newborn\_3\_weight Newbornweight from public.prior\_gestational\_health where past\_newborn\_3\_weight is not null

union all

select distinct caseid, past\_newborn\_4\_weight Newbornweight from public.prior\_gestational\_health where past\_newborn\_4\_weight is not null

order by caseid

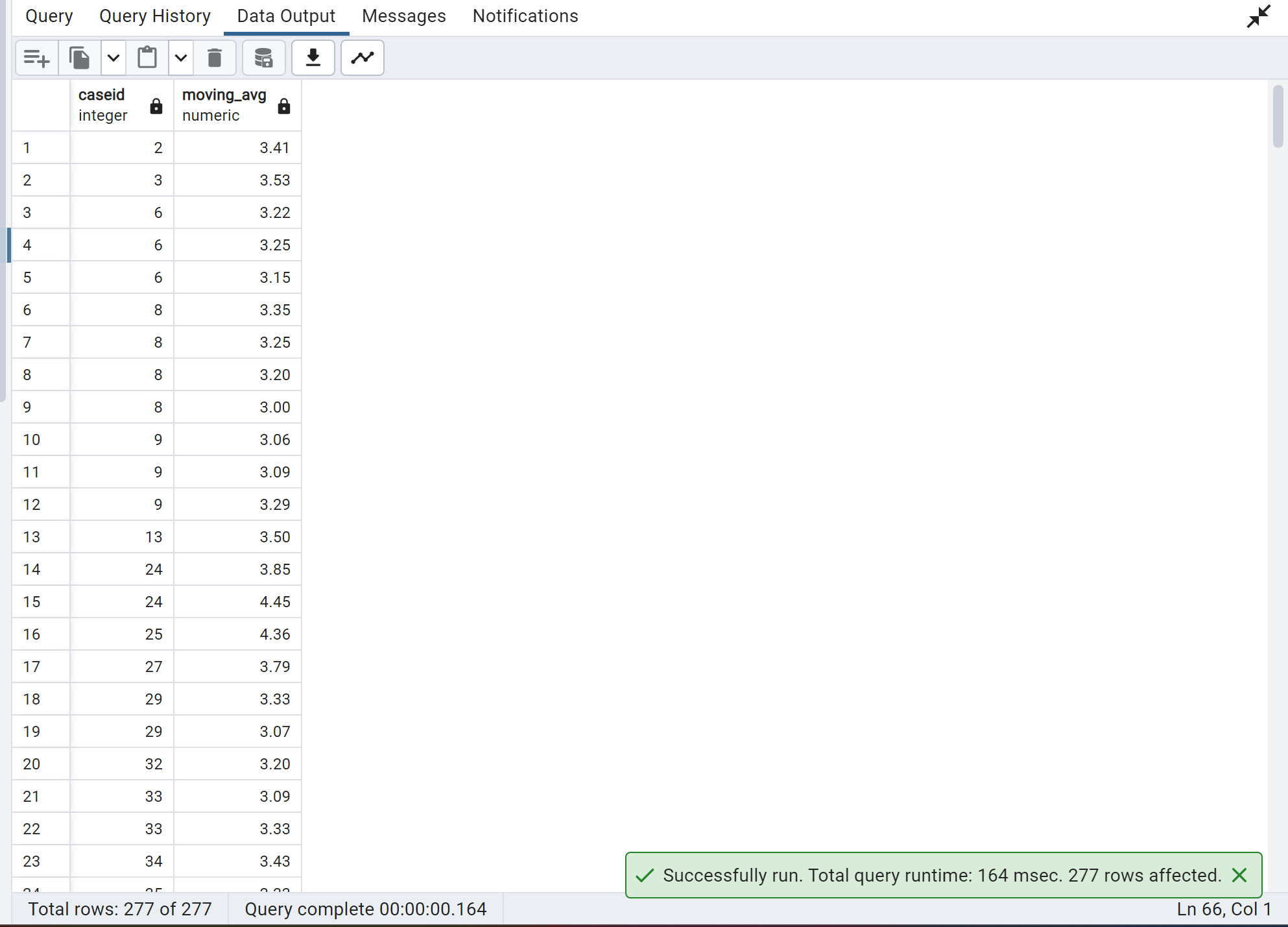
)

select caseid,

round(avg(Newbornweight) over

(order by caseid rows between 2 preceding and current row )/1000,2) moving\_Avg

from Pivottable;



---------------------------------------------------------------------------------------------------------------

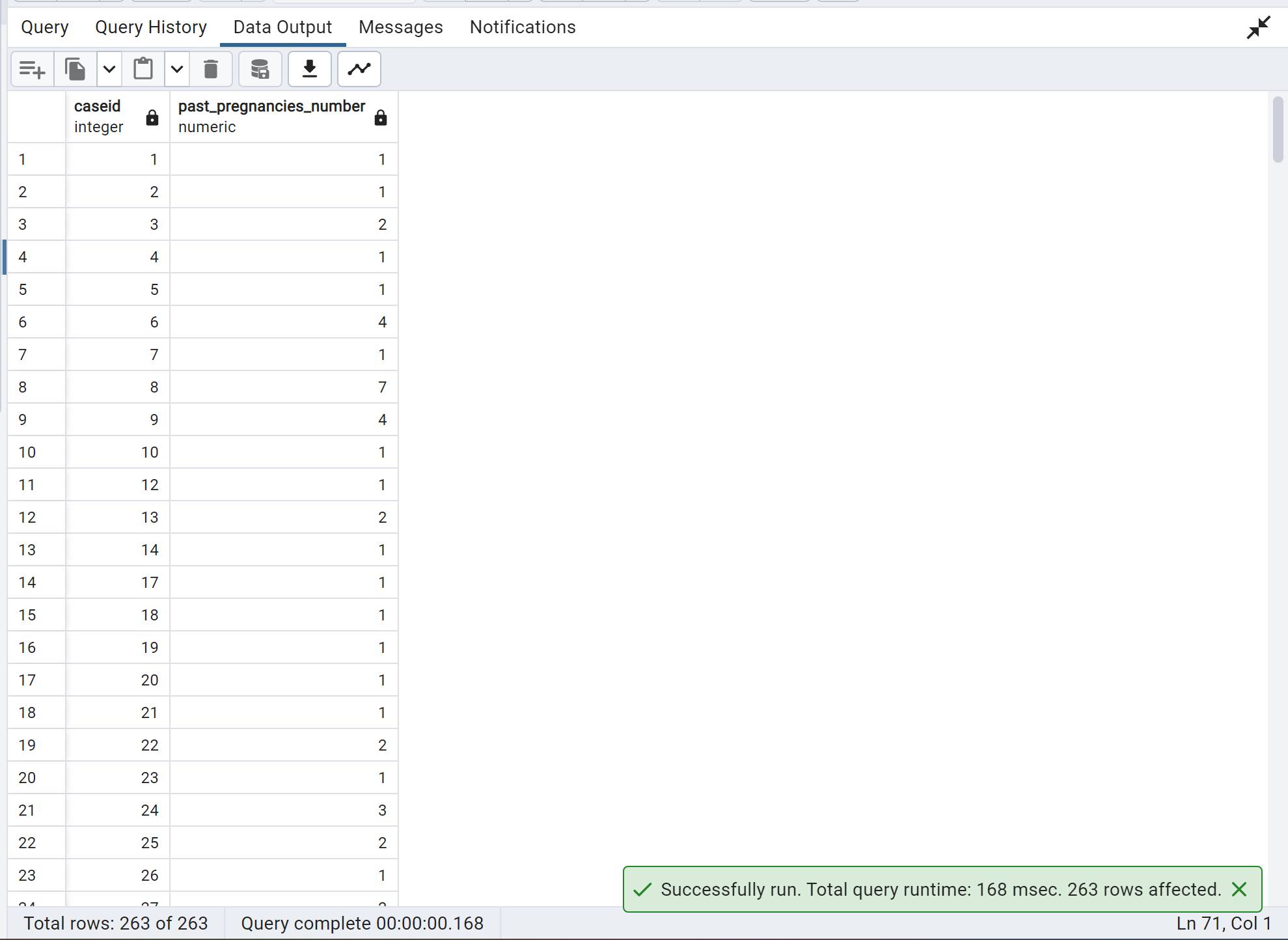
**--42. How many past pregnancies has each patient had?**

select caseid, past\_pregnancies\_number from public.prior\_gestational\_health

where past\_pregnancies\_number is not null

group by caseid,past\_pregnancies\_number

order by caseid;

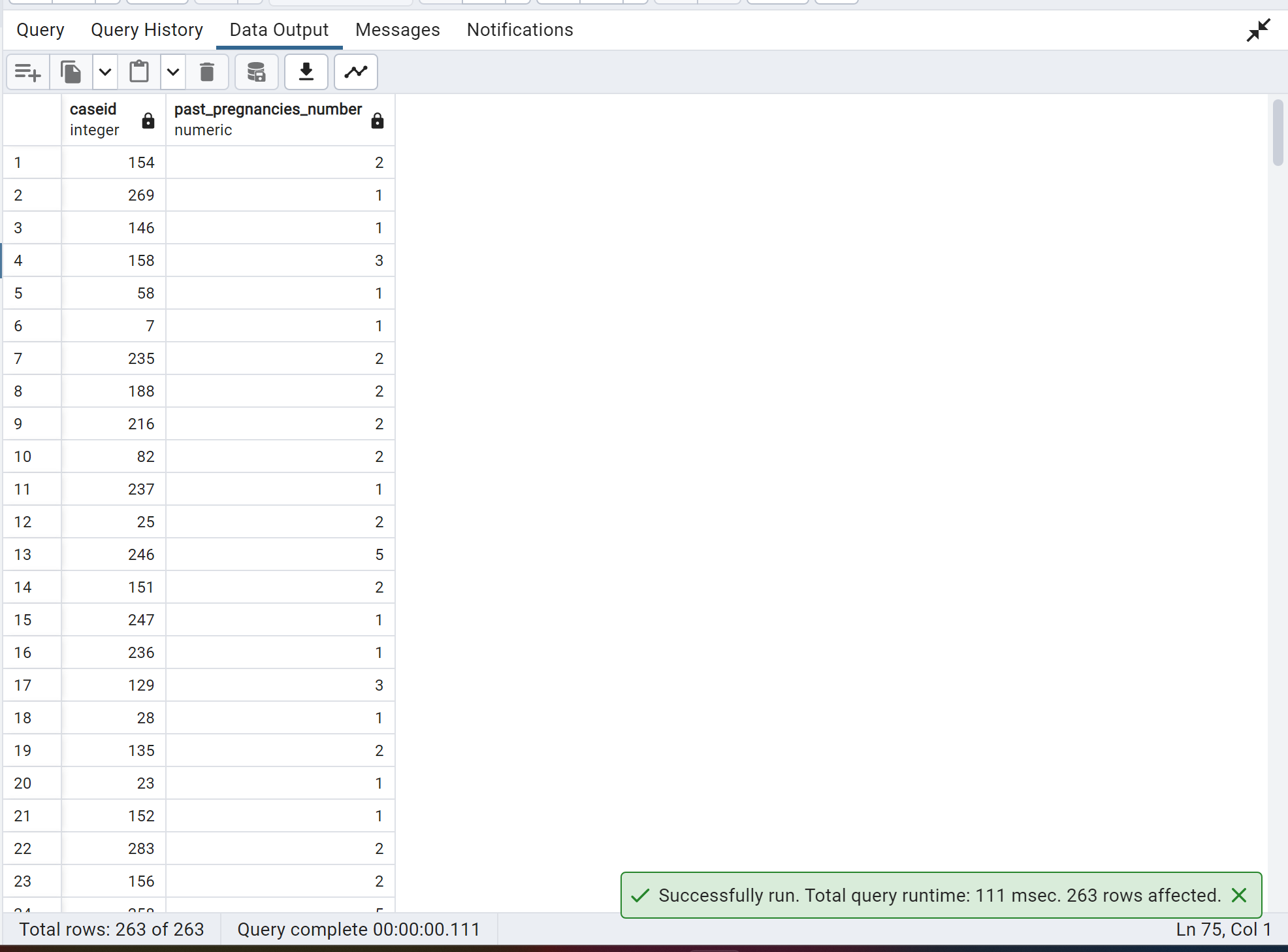


**--Alternate Query--**

select caseid, past\_pregnancies\_number from public.prior\_gestational\_health

where past\_pregnancies\_number is not null

group by caseid,past\_pregnancies\_number



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select caseid, case

when past\_pregnancies\_number is null then 0

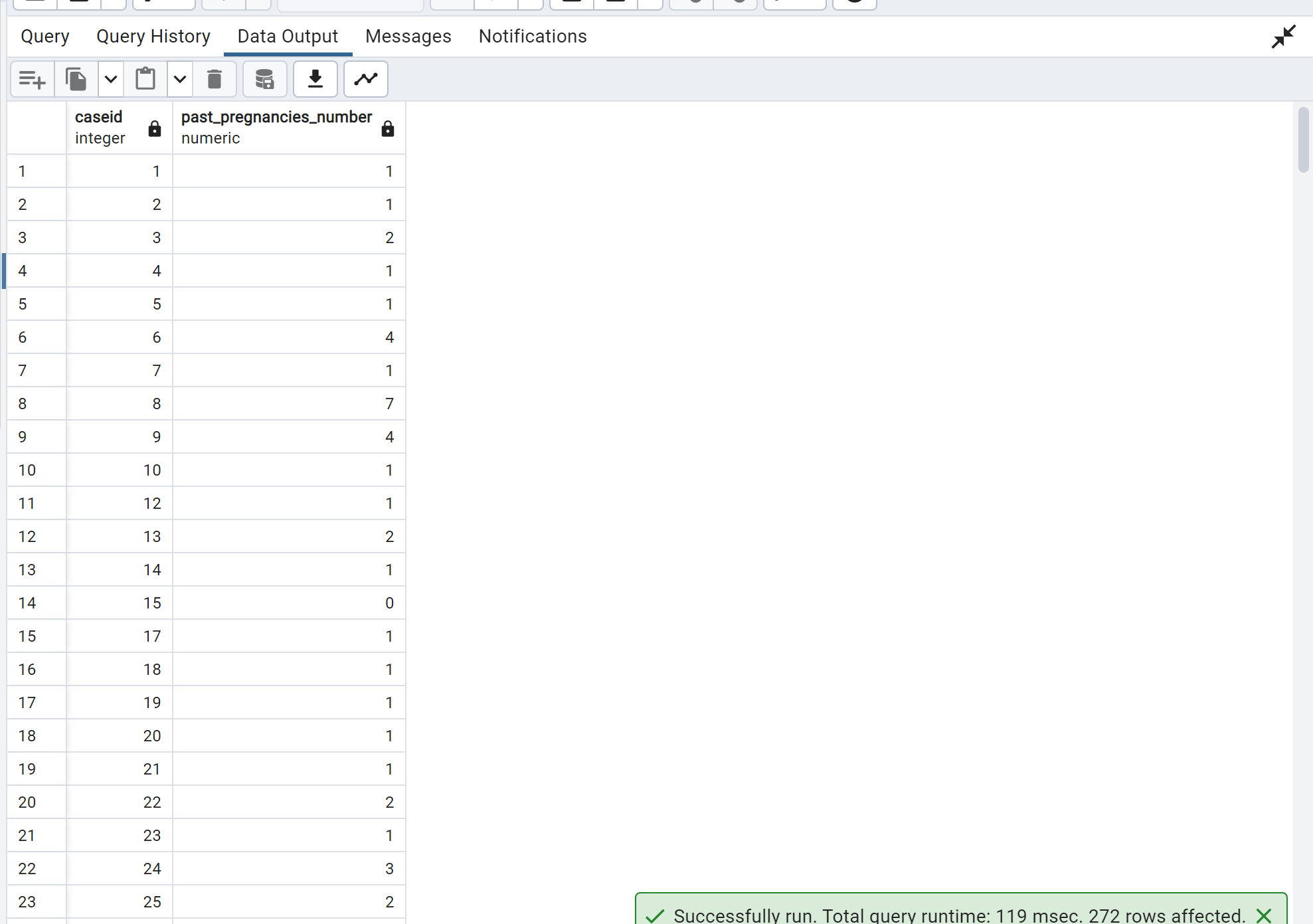
else past\_pregnancies\_number

end

from public.prior\_gestational\_health

group by caseid,past\_pregnancies\_number

order by caseid;



---------------------------------------------------------------------------------------------------------------

**--43. What was the average newborn weight of each patients past pregnancies combined in kgs?**

select round((sum(coalesce(past\_newborn\_2\_weight,0)+coalesce(past\_newborn\_3\_weight,0)+coalesce(past\_newborn\_4\_weight,0))/

sum(coalesce(gestational\_age\_past\_newborn\_1,0)+coalesce(gestational\_age\_past\_newborn\_2,0)+

coalesce(gestational\_age\_past\_newborn\_3,0)+coalesce(gestational\_age\_past\_newborn\_4,0)))/1000,2) as AvgNewbornWeight, caseid

from public.prior\_gestational\_health

where (gestational\_age\_past\_newborn\_1 =1 or

gestational\_age\_past\_newborn\_2 =1 or

gestational\_age\_past\_newborn\_3 =1 or

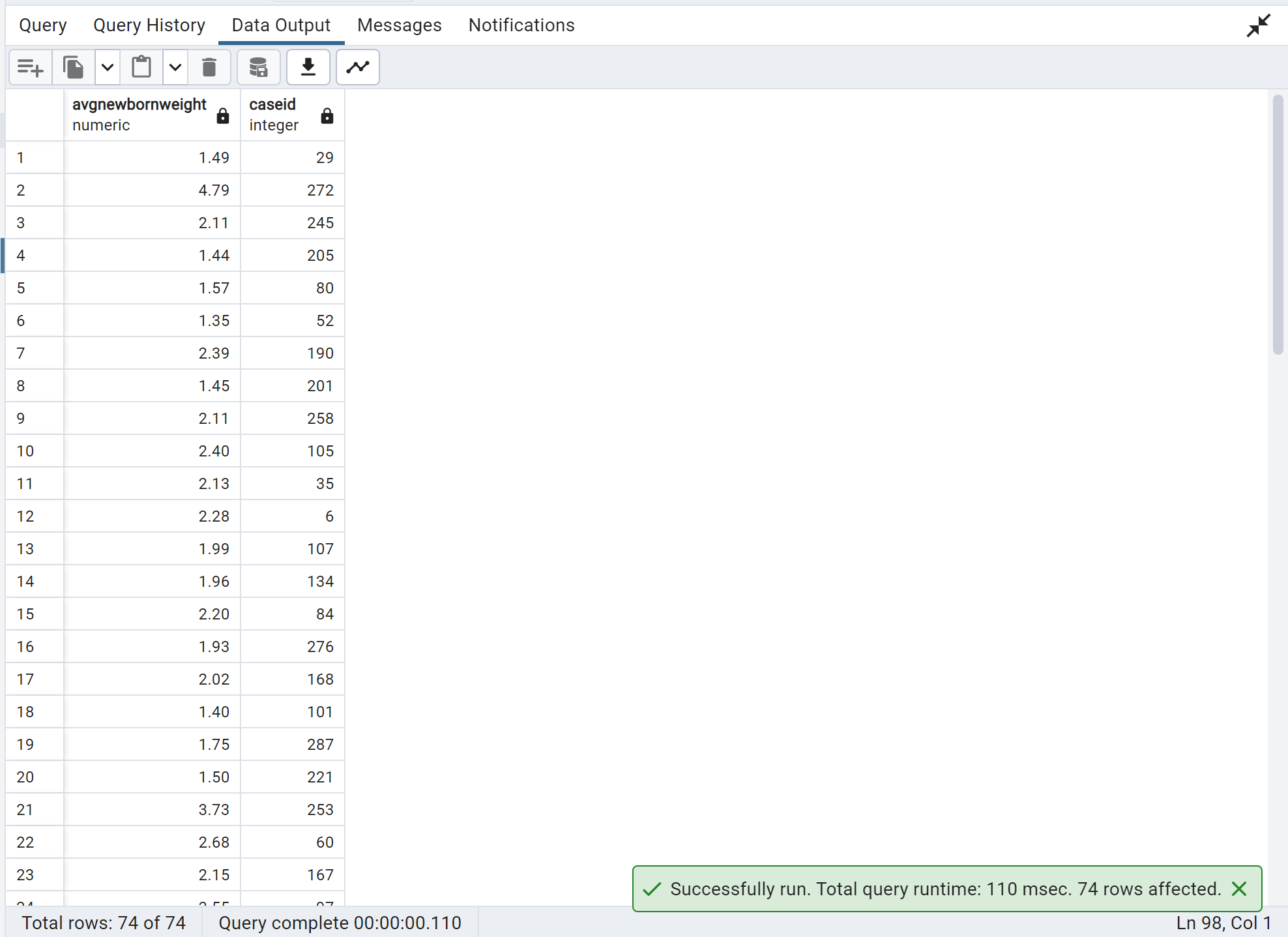
gestational\_age\_past\_newborn\_4 =1) and

(past\_newborn\_2\_weight is not null or

past\_newborn\_3\_weight is not null or

past\_newborn\_4\_weight is not null)

group by caseid;



**--Alternate Query--**

select round((avg(coalesce(past\_newborn\_1\_weight,0) + coalesce(past\_newborn\_2\_weight,0)+

coalesce(past\_newborn\_3\_weight,0)+

coalesce(past\_newborn\_4\_weight,0)))/1000,2) as AvgNewbornWeight, caseid

from public.prior\_gestational\_health

where

(

past\_newborn\_1\_weight is not null or

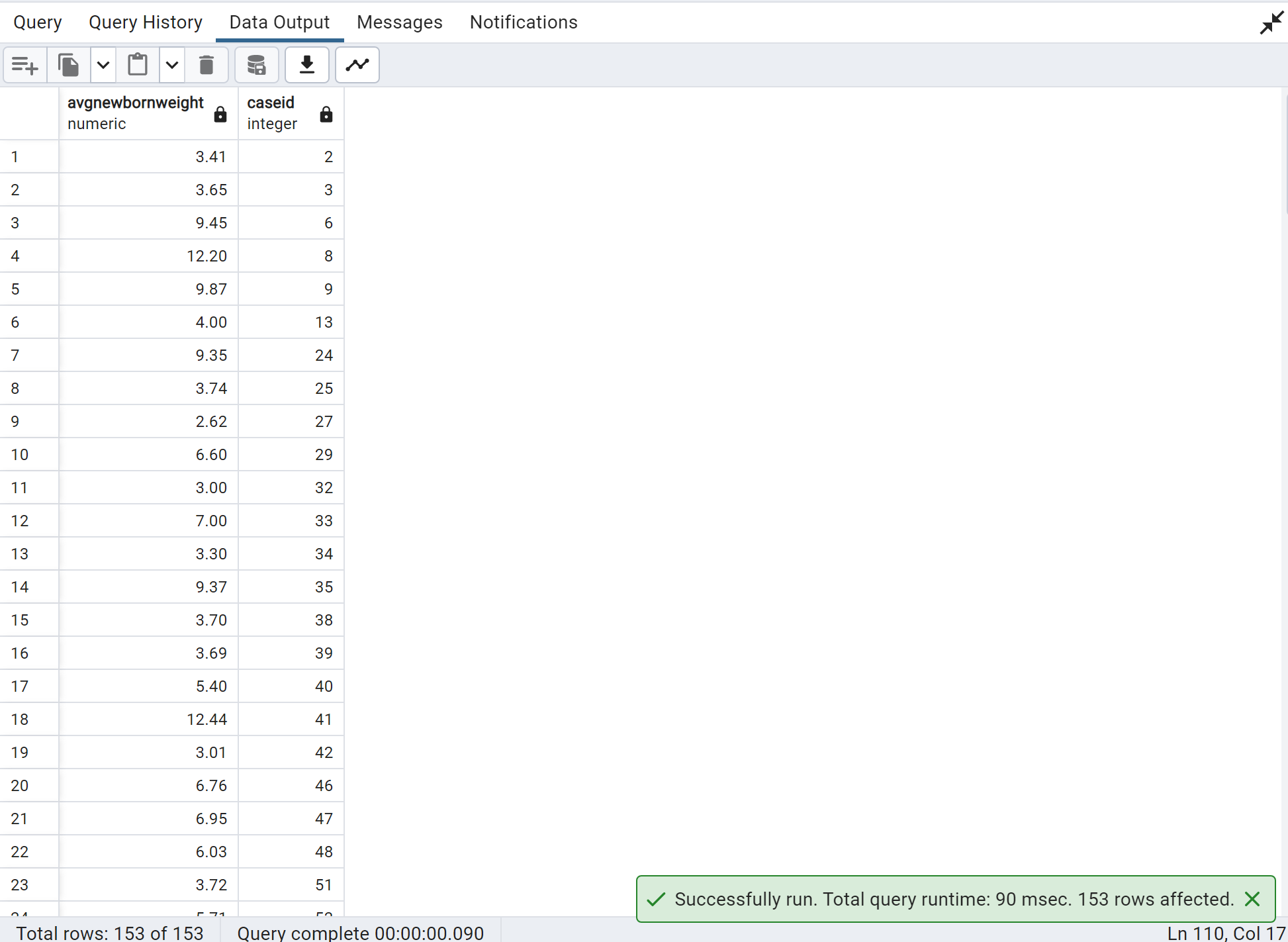
past\_newborn\_2\_weight is not null or

past\_newborn\_3\_weight is not null or

past\_newborn\_4\_weight is not null)

group by caseid

order by caseid;



---------------------------------------------------------------------------------------------------------------

**--44. Create a procedure for checking if an ethnicity entered by user exists and return number of records found.**

CREATE OR REPLACE PROCEDURE public.chkrace(

IN \_inrace text)

LANGUAGE 'plpgsql'

AS $BODY$

declare raceout bigint;

begin

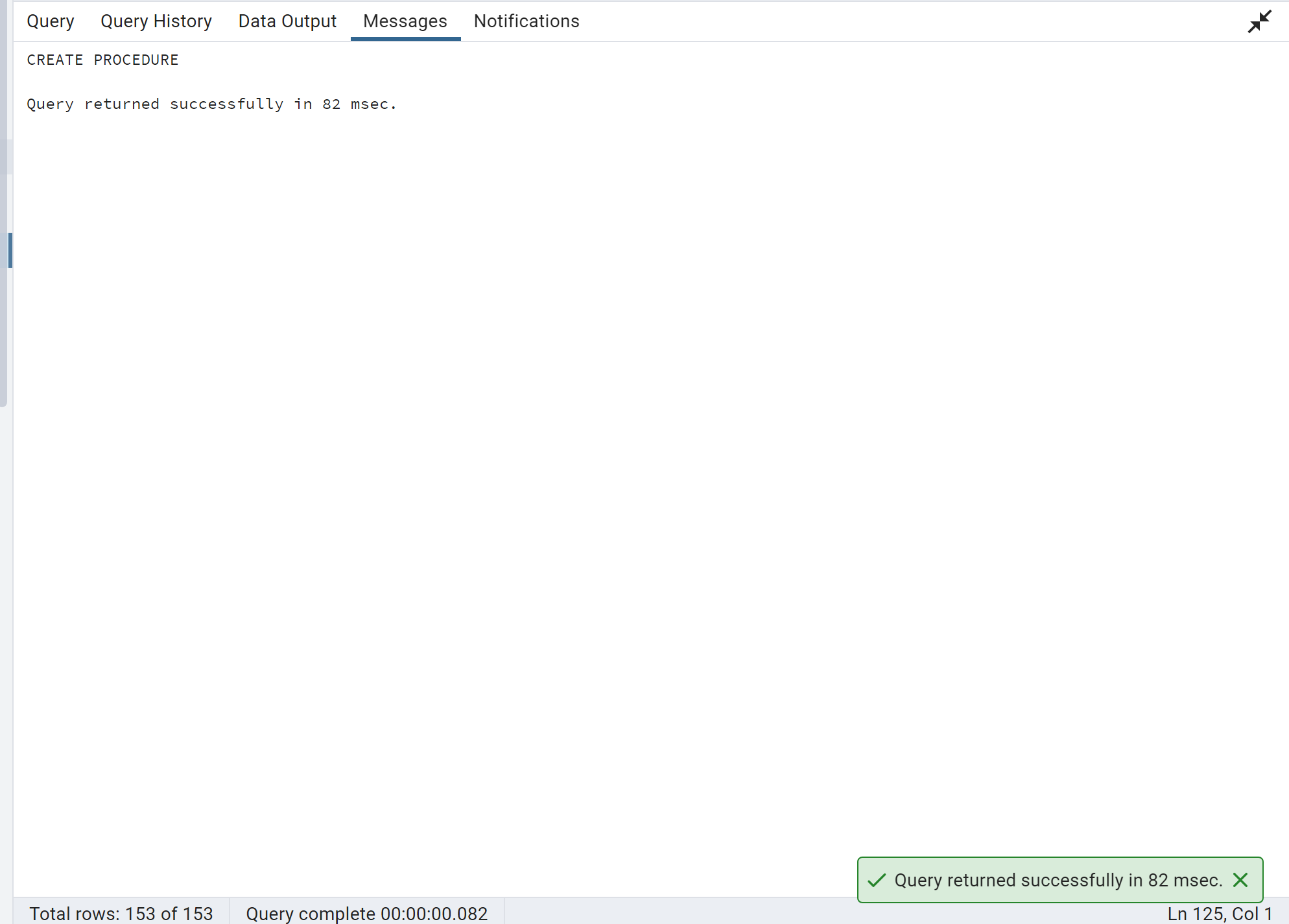
raceout= (select count(\*) from public.patient\_history

where color\_ethnicity=\_inrace);

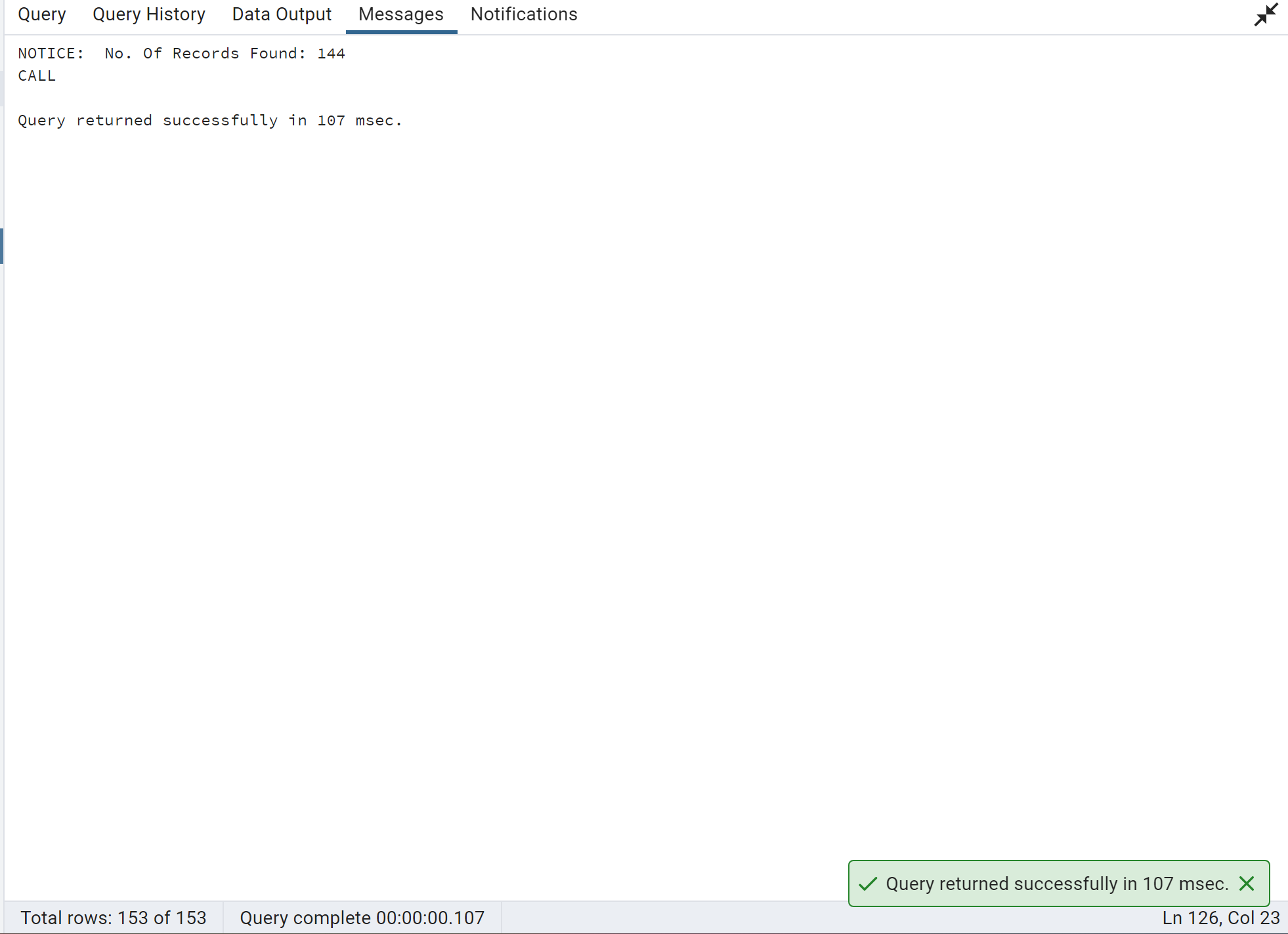
RAISE notice 'No. Of Records Found: %', raceout;

end;

$BODY$;



call chkrace('White');



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**--45. What was the increase in % of risk of preeclampsia in mothers with hypertension recorded in the hospital vs others.**

with Hypertension as

(

select count(\*) PreeclampsiaHyper

from public.hospitalization\_labor

where

preeclampsia\_record\_pregnancy=1

and hospital\_hypertension =1

),

NoHypertension as

(

select count(\*) PreeclampsiaNoHyper

from public.hospitalization\_labor

where

preeclampsia\_record\_pregnancy=1

and hospital\_hypertension =0

),

AllPreeclampsia as

(

select count(\*) Preeclampsia

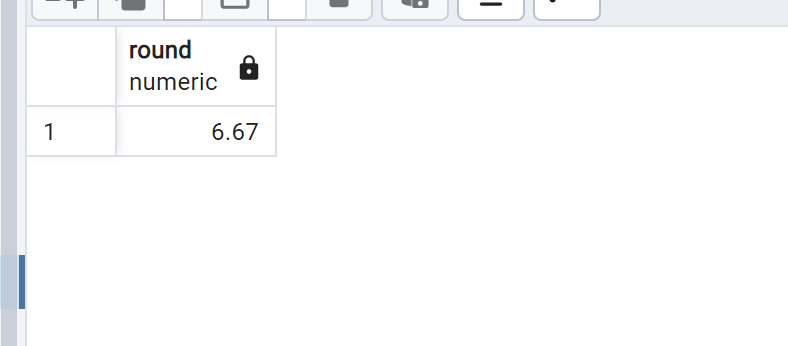
from public.hospitalization\_labor

where

preeclampsia\_record\_pregnancy=1

)

select round(((sum(PreeclampsiaHyper)-sum(PreeclampsiaNoHyper))/sum(Preeclampsia))\*100,2) from Hypertension,NoHypertension,AllPreeclampsia;



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**--46. Group the patients into 4 categories of total Visceral fat and show the count of patients in each category that had a C-section**

with PatientViscFat as

(

select (periumbilical\_visceral\_fat+preperitoneal\_visceral\_fat)::int VisceralFat,

maternal\_fat\_assmt.caseid PID

from public.maternal\_fat\_assmt, public.hospitalization\_labor

where maternal\_fat\_assmt.caseid=hospitalization\_labor.caseid

and periumbilical\_visceral\_fat is not null

and preperitoneal\_visceral\_fat is not null

and delivery\_mode like 'C%'

group by 1,2

)

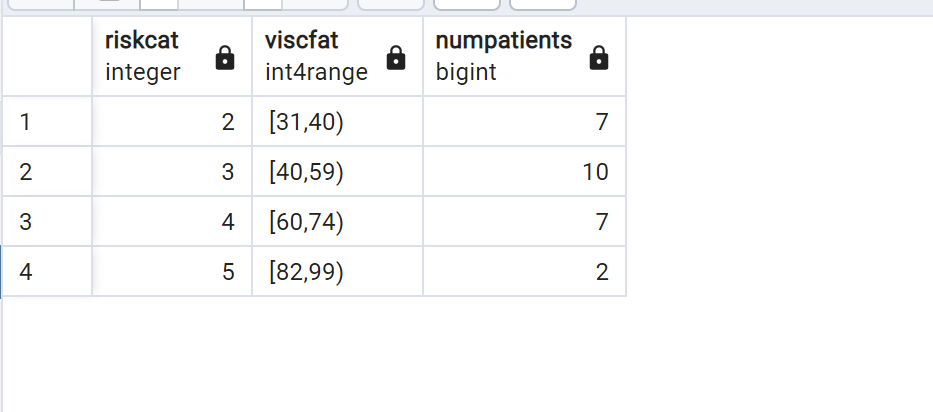
select width\_bucket(VisceralFat,0,80,4) as RiskCat,

int4range(min(VisceralFat),max(VisceralFat),'[]') ViscFat,

count(PID) as NumPatients from PatientViscFat

group by 1

order by 1;



---------------------------------------------------------------------------------------------------------------

**--47. create a function to check if a patient was born in a leap year.**

CREATE OR REPLACE FUNCTION born\_leap\_year(patient\_id int)

RETURNS BOOLEAN AS $$

DECLARE

birth\_year int;

age int;

BEGIN

SELECT age\_years\_old INTO age

FROM public.patient\_history

WHERE caseid = patient\_id;

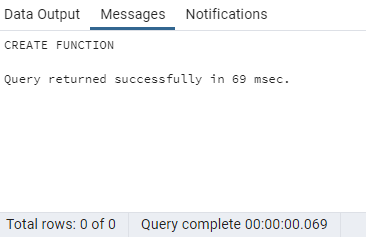
birth\_year := EXTRACT(YEAR FROM NOW()) - age;

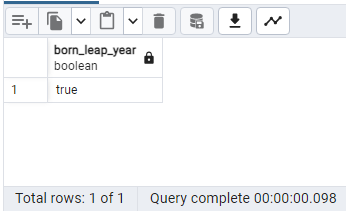
RETURN date\_part('day', make\_date(birth\_year, 3, 1) - '1 day'::interval) = 29;

END

$$ LANGUAGE plpgsql;

SELECT born\_leap\_year(1);





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**--48. Calculate Mean Arterial pressure for all patients.**

select caseid,

round((hospital\_systolic\_blood\_pressure + (hospital\_systolic\_blood\_pressure - hospital\_diastolic\_blood\_pressure)/3),2) MAP

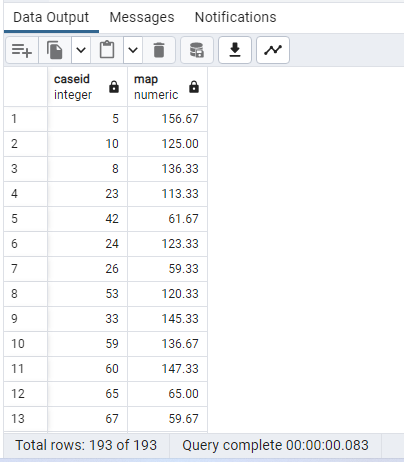
from

public.hospitalization\_labor

where

hospital\_systolic\_blood\_pressure is not null and

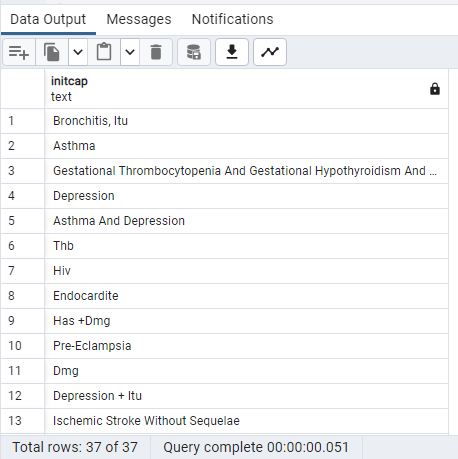
hospital\_diastolic\_blood\_pressure is not null;



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**--49. Display all diseases diagnosed during pregnancy, ensure that that output is Title cased**

Select distinct initcap(disease\_diagnose\_during\_pregnancy) from public.hospitalization\_labor;



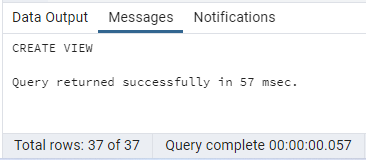
---------------------------------------------------------------------------------------------------------------

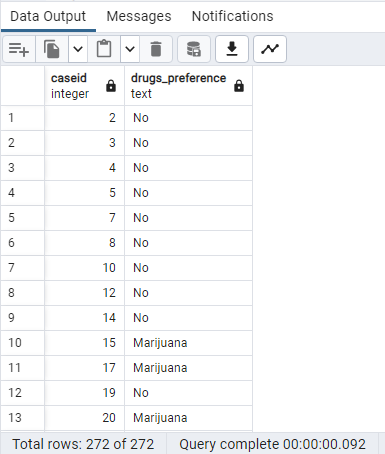
**--50. Create a view on the fetal health risk table using the check constraint**

create or replace view fetal\_risk

as select caseid,drugs\_preference from public.fetal\_health\_risk with check option;

select \* from fetal\_risk;





---------------------------------------------------------------------------------------------------------------

**--51. Write a query to get which race has the maximum number of patients with bodyfat>45.**

select color\_ethnicity, count(\*) from

public.patient\_history,public.maternal\_fat\_assmt

where

patient\_history.caseid=maternal\_fat\_assmt.caseid

and

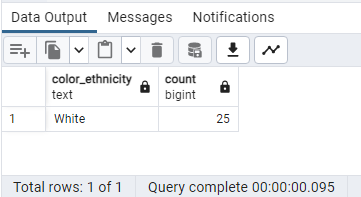
(495 / (1.29579 - 0.35004 \* (LOG10((maternal\_waist\_circumference + maternal\_hip\_circumference - maternal\_neck\_circumference)))

+ 0.22100 \* (LOG10(height\_at\_inclusion\*100))) -450)>45

group by 1

order by 2 desc

limit 1;



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**--52. Write a query using the trigger that fires after insert on the labs table if the patient has abnormal fasting glucose values.**

CREATE OR REPLACE FUNCTION Lab\_Check() RETURNS TRIGGER AS $$

BEGIN

if (New.first\_tri\_fasting\_blood\_glucose>110)then

raise notice 'Blood Glucose high';

end if;

RETURN NULL;

END;

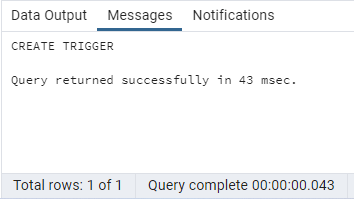
$$ LANGUAGE plpgsql;

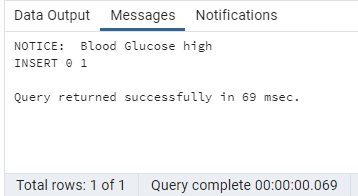
Create trigger Lab\_tgr

After insert ON public.maternal\_labs

for each row Execute function Lab\_Check();

insert into public.maternal\_labs (caseid, first\_tri\_fasting\_blood\_glucose) Values(198,,140);





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**--53. Count patients by first letter of disease treatment during pregnancy.**

SELECT LEFT(treatment\_disease\_pregnancy,1),COUNT(\*)

FROM public.hospitalization\_labor

GROUP BY 1

ORDER BY 1;

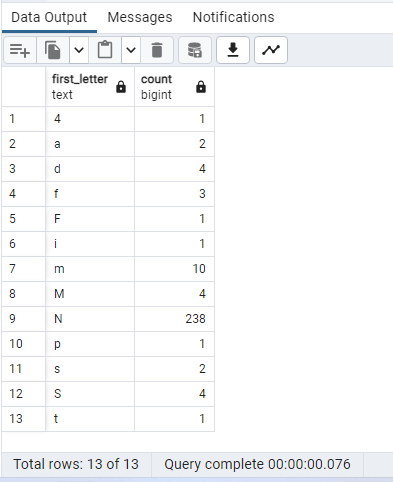
**--Alternate Query--**

select substring(treatment\_disease\_pregnancy,1,1) first\_letter, count(caseid)

from public.hospitalization\_labor

group by first\_letter

order by first\_letter;



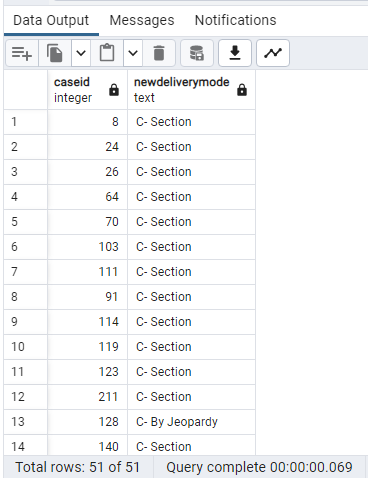
---------------------------------------------------------------------------------------------------------------

**--54. Display Patients With Delivery contains 'Cesarean' and replace it with 'C-'.**

SELECT Caseid,REGEXP\_REPLACE(Delivery\_mode,'Cesarean','C-') AS NewDeliveryMode

FROM public.hospitalization\_labor

WHERE Delivery\_mode LIKE 'C%';



---------------------------------------------------------------------------------------------------------------

**--55. Create any type of trigger on a view containing all blood pressure details.**

Create view blood\_pressure\_view as

(

Select hospital\_systolic\_blood\_pressure,hospital\_diastolic\_blood\_pressure,hospital\_hypertension from public.hospitalization\_labor

);

CREATE OR REPLACE FUNCTION Blood\_Pressure\_view() RETURNS TRIGGER AS $$

BEGIN

if (tg\_op='DELETE') then

raise notice 'for delete';

end if;

RETURN NULL;

END;

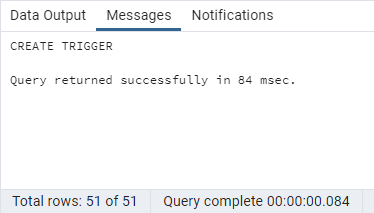
$$ LANGUAGE plpgsql;

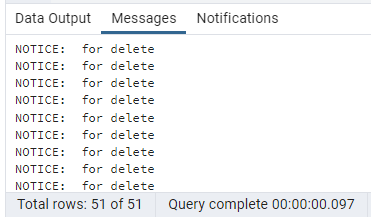
Create trigger tgr\_BP\_view

instead of delete ON public.Blood\_Pressure\_view

for each row Execute function Blood\_Pressure\_view();

Delete from public.Blood\_Pressure\_view;



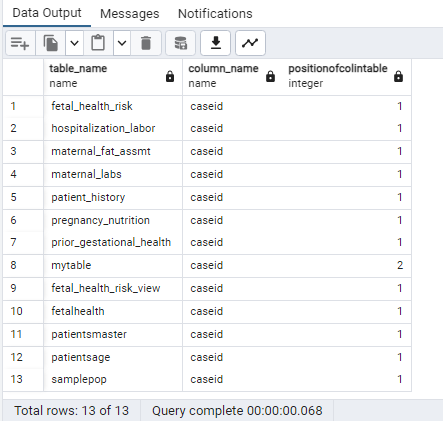


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**--56. Find all tables where column caseid is present. (Display column position number with respective table also)**

select table\_name, column\_name,

ordinal\_position PositionOfColInTable from information\_schema.columns where column\_name = 'caseid';



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**--57. Add 2 datetime column to patient history table. One should just contain todays date, the other should only contain time. The data should be inserted along with the addition of columns, not as a separate command**

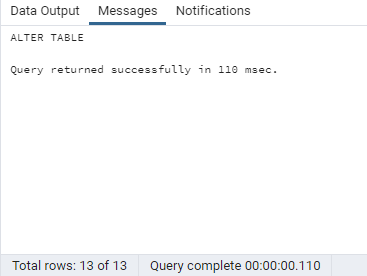
alter table public.patient\_history

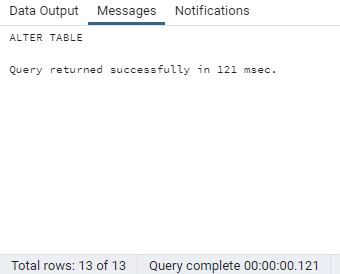
add column casedate date default now();

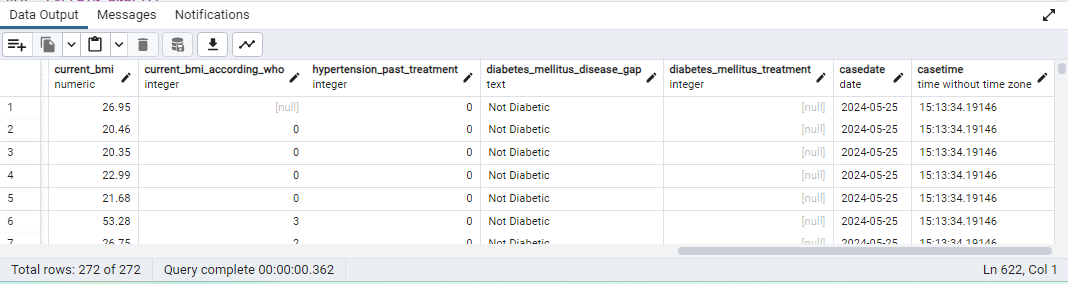
alter table public.patient\_history

add column casetime time default now()::time;

select \* from public.patient\_history;





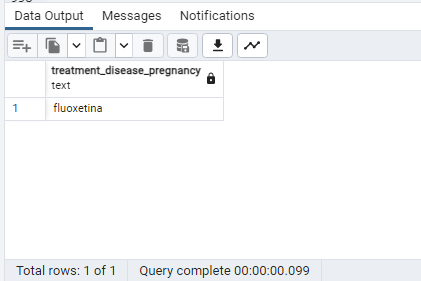


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**--58. Select the disease treatment mode starting with f and has uox as the 3rd,4th and 5th character and any letters after**

select distinct treatment\_disease\_pregnancy

from public.hospitalization\_labor where treatment\_disease\_pregnancy like 'f\_uox%';

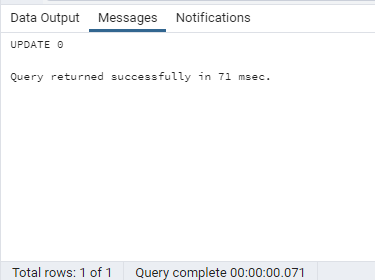


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**--59. Write a query to update hospitalization table set all values of disease diagnoses to capital letters where disease diagnosis starts with h.**

update public.hospitalization\_labor set disease\_diagnose\_during\_pregnancy=upper(disease\_diagnose\_during\_pregnancy)

where (disease\_diagnose\_during\_pregnancy) ilike 'h%';

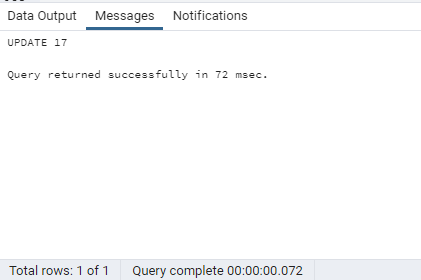


**--Alternate Query--**

update public.hospitalization\_labor

set disease\_diagnose\_during\_pregnancy = upper(disease\_diagnose\_during\_pregnancy)

where (disease\_diagnose\_during\_pregnancy) like 'h%';



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**--60. Write a function to query the database for all user defined functions based on a user-specified return type.**

CREATE OR REPLACE FUNCTION public.find\_function(\_dtype text)

RETURNS TABLE(routine\_name text, routine\_schema text, return\_type text)

LANGUAGE sql

AS $function$

select routine\_name, routine\_schema, data\_type

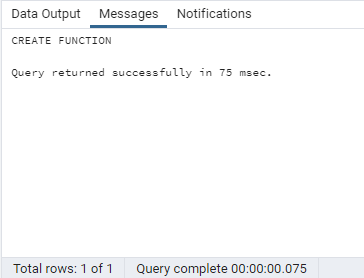
from information\_schema.routines

where specific\_schema not in ('pg\_catalog', 'information\_schema')

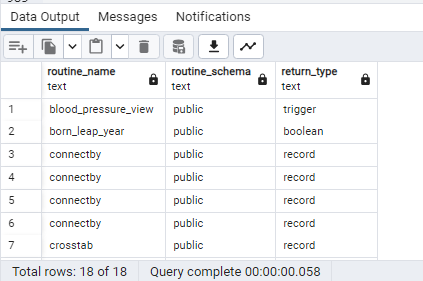
and upper(data\_type) like upper(\_dtype) ||'%'

order by routine\_name;

$function$;



select \* from find\_function('');



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-**-61. Create materialized view with no data, to display no patients within each race.**

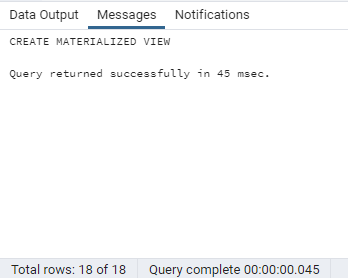
CREATE MATERIALIZED VIEW patient\_gender\_count

AS

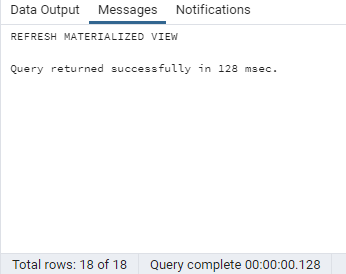
select color\_ethnicity , count(\*) from public.patient\_history

group by 1

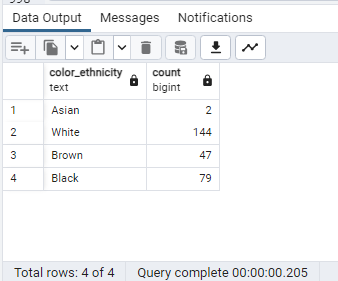
WITH NO DATA;



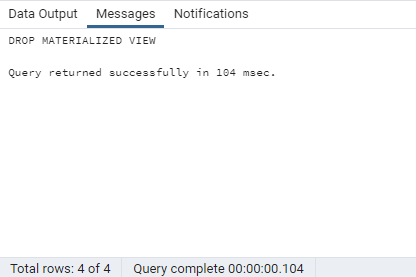
REFRESH MATERIALIZED VIEW patient\_gender\_count;



select \* from patient\_gender\_count;



Drop MATERIALIZED VIEW patient\_gender\_count;



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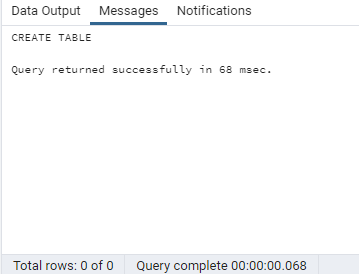
**--62. Write a query to create a master Patient table and its child table. Make sure that the child table inherits all the fields from the parent Patient table.**

CREATE TABLE PatientsMaster (

caseid text,

color\_ethnicity Int

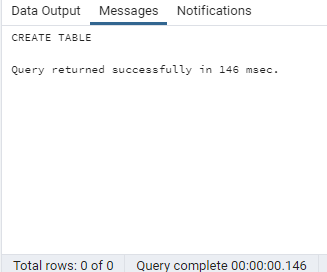
);



CREATE TABLE PatientsAge (

age\_years\_old text

) INHERITS (PatientsMaster);



select \* from PatientsAge;



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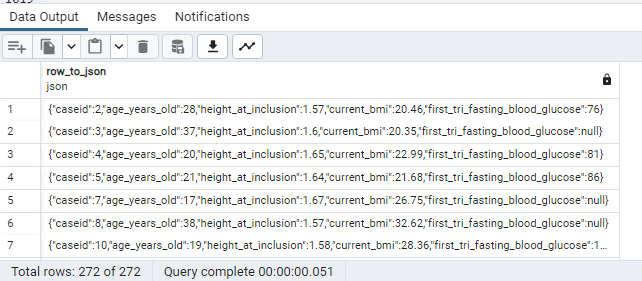
**--63. Show every patients fasting blood glucose in the first trimester marker along with physical attributes and labels in a json friendly format**

SELECT row\_to\_json(combined) FROM

(select patient\_history.caseid,age\_years\_old,height\_at\_inclusion,current\_bmi,first\_tri\_fasting\_blood\_glucose

from public.patient\_history,public.maternal\_labs

where patient\_history.caseid=maternal\_labs.caseid) combined;

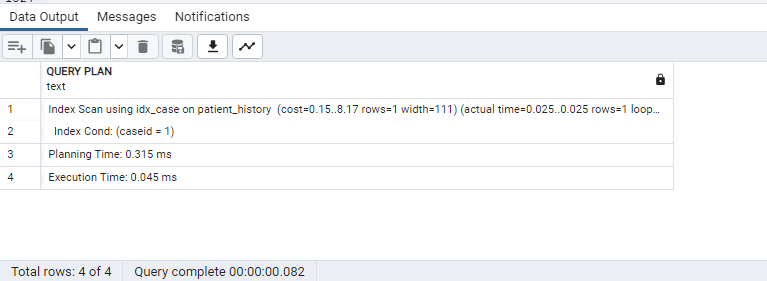


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**--64. Create an index on any table and use explain analyze to show differences if any.**

CREATE INDEX idx\_case ON public.patient\_history(caseid);

EXPLAIN ANALYZE SELECT \* FROM public.patient\_history where caseid=1;



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**--65. calcuate the number of patients who have chronic diabetes and low HB count**

select count(\*) NumCases

from

public.hospitalization\_labor, public.maternal\_labs

where

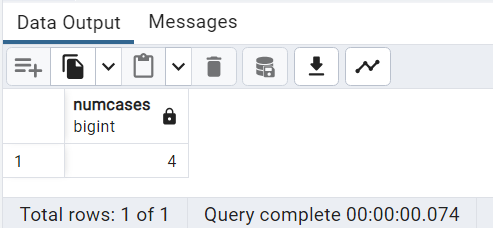
hospitalization\_labor.caseid=maternal\_labs.caseid and

(first\_trimester\_hemoglobin<11 or

second\_trimester\_hemoglobin<11 or

third\_trimester\_hemoglobin<11) and

chronic\_diabetes=1;



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**--66. Create a normally distributed list of sample patients and their 3rd tri hemaglobin and hematrocit levels based on the averages in the lab table based on Gaussian distribution.**

Create Table SamplePop as

(

with hematrocit as

(

select avg(third\_trimester\_hemoglobin) AvgHB, Avg(third\_trimester\_hematocrit) AvgHCT FROm public.maternal\_labs

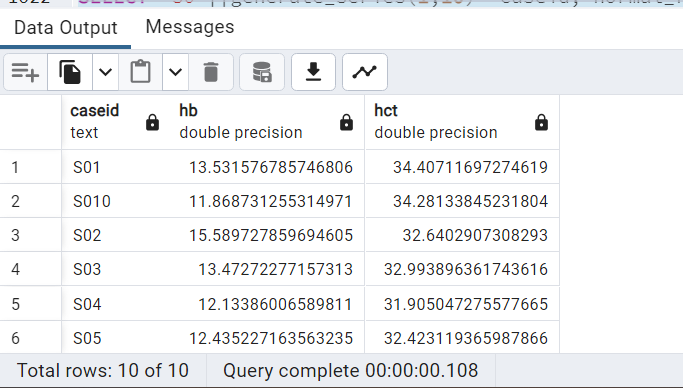
)

SELECT 'S0'||generate\_series(1,10) Caseid, normal\_rand(10,AvgHB ,1) as HB,

normal\_rand(10, AvgHCT,2) HCT FROM hematrocit ORDER BY 1

);

Select \* from SamplePop;



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**--67. write a query to get the number of patients for each age bin without using the CASE statement.(Bin size - 5)**

with AgeInt as (

select age\_years\_old::int Age, caseid from public.patient\_history

)

select width\_bucket(Age,0,100,20) as Agebucket,

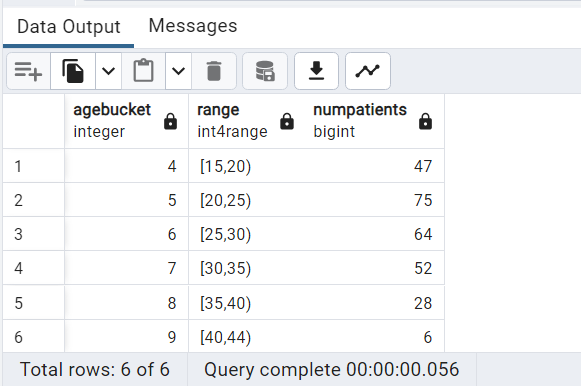
int4range(min(Age),max(Age),'[]') as range,

count(caseid) as NumPatients

from AgeInt

group by 1

order by 1;



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**--68. How many patients had a first trimester hematrocit that was higher than their third trimester hematrocit and vice versa.**

select max(First\_higher) First\_higher,

max(Third\_higher) Third\_higher from

(

select count(caseid) First\_higher, 0 Third\_higher from public.maternal\_labs

where first\_trimester\_hematocrit>third\_trimester\_hematocrit and

first\_trimester\_hematocrit is not null and third\_trimester\_hematocrit is not null

union all

select 0 First\_higher,count(caseid) Third\_higher

from public.maternal\_labs

where first\_trimester\_hematocrit<third\_trimester\_hematocrit and

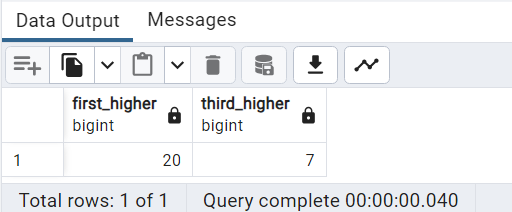
first\_trimester\_hematocrit is not null and third\_trimester\_hematocrit is not null) Glucosetest;

**--Alternate Query--**

select count(case when first\_trimester\_hematocrit > third\_trimester\_hematocrit then 1 else null end) as first\_higher\_third,

count(case when first\_trimester\_hematocrit < third\_trimester\_hematocrit then 1 else null end) as third\_higher\_first

from maternal\_labs;



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**--69. Create a crosstab with number of miscarriages as columns and chronic diseases- yes or no as rows and show count of patients in each group.**

select \* from crosstab

( 'select case when chronic\_diseases = 1 then ''Has'' else ''No'' end as Chronic\_Disease,

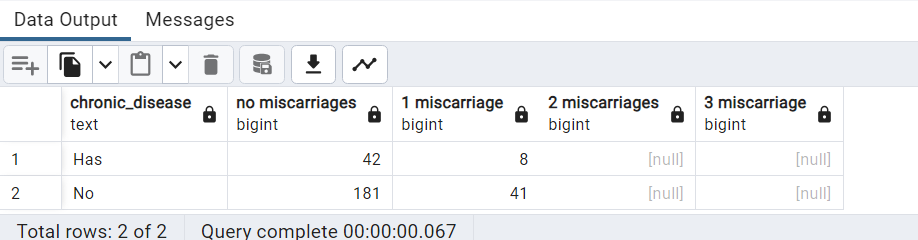
miscarriage,

count(caseid)

from hospitalization\_labor

group by 1,2 order by 1,2') as ct

(Chronic\_Disease text,"no miscarriages" bigint, "1 miscarriage" bigint, "2 miscarriages" bigint, "3 miscarriage" bigint)



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**--70. List of patients from rows 30-40 of any table without using the where condition**

SELECT caseid FROM public.fetal\_health\_risk LIMIT 11 OFFSET 29;

**--Alternate Query--**

select \* from public.patient\_history

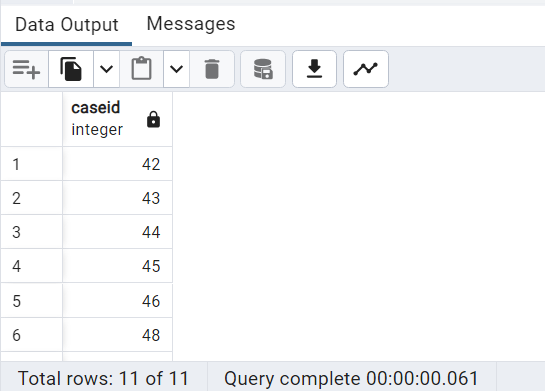
offset 29 fetch next 11 rows only;

select ROW\_NUMBER() over (order by caseid) as rownumber, caseid

from public.fetal\_health\_risk

limit 11

offset 29;



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**--71. Write a query to find Average age for patients with high blood pressure.**

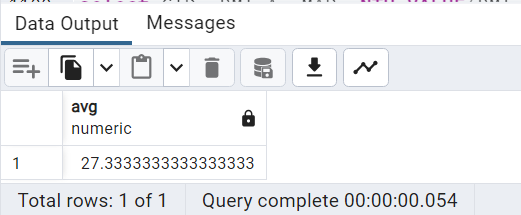
select avg(age\_years\_old) from public.patient\_history, public.hospitalization\_labor

where

hospitalization\_labor.caseid=patient\_history.caseid and

hospital\_systolic\_blood\_pressure > 130 and

hospital\_diastolic\_blood\_pressure > 90;



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**--72. What is the 2nd highest BMI of the patients with 5 highest day time MAP during labor. Use windows functions in solution**

With PatientMap as

(

select patient\_history.caseid CID,current\_bmi BMI,

round((hospital\_systolic\_blood\_pressure + (hospital\_systolic\_blood\_pressure - hospital\_diastolic\_blood\_pressure)/3),2) AvgMAP

from public.patient\_history

join public.hospitalization\_labor

on patient\_history.caseid=hospitalization\_labor.caseid

)

select CID, BMI,AvgMAP, NTH\_VALUE(BMI, 2) OVER

(ORDER BY AvgMAP DESC RANGE BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING) SeconHighestBMI

from PatientMap limit 5;

**--Alternate Query--**

With PatientMap as(

select patient\_history.caseid as case\_id, patient\_history.current\_bmi as BMI,

round(hospital\_diastolic\_blood\_pressure+ ((hospital\_systolic\_blood\_pressure-hospital\_diastolic\_blood\_pressure)/3),2) as MAP

from patient\_history join hospitalization\_labor

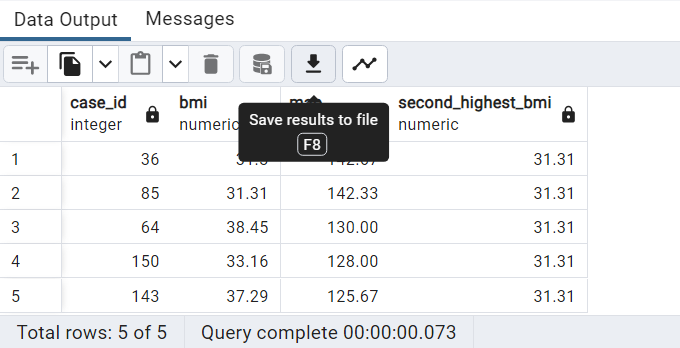
on patient\_history.caseid = hospitalization\_labor.caseid

order by MAP desc nulls last limit 5 )

select case\_id,BMI, MAP , nth\_value(BMI, 2)

over (order by MAP desc RANGE BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING)

as second\_highest\_BMI from PatientMap;



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**--73. Divide patients by race and partition average Newborn weight into 2 buckets each, label them as appropriate**

With Race as

(

select color\_ethnicity Race,avg(newborn\_weight) AvgFetus

from public.patient\_history

join public.hospitalization\_labor on

patient\_history.caseid=hospitalization\_labor.caseid

group by 1

order by 1

),

NewFetus as

(

Select Race,AvgFetus, NTILE(2) Over(Partition by Race order by AvgFetus) NewbornWt from Race order by 3

)

Select Race,NewbornWt,

Case when NewbornWt=1 then 'Lower Percentile'||'-'||NewbornWt

when NewbornWt=2 then 'Higher Percentile'||'-'||NewbornWt

end FetusGroup

from NewFetus;

--Alternate Query--

With Race as

(

select color\_ethnicity Race,newborn\_weight baby\_weight,

NTILE(2) Over(Partition by color\_ethnicity order by newborn\_weight) NewbornWt

from public.patient\_history join public.hospitalization\_labor on patient\_history.caseid=hospitalization\_labor.caseid

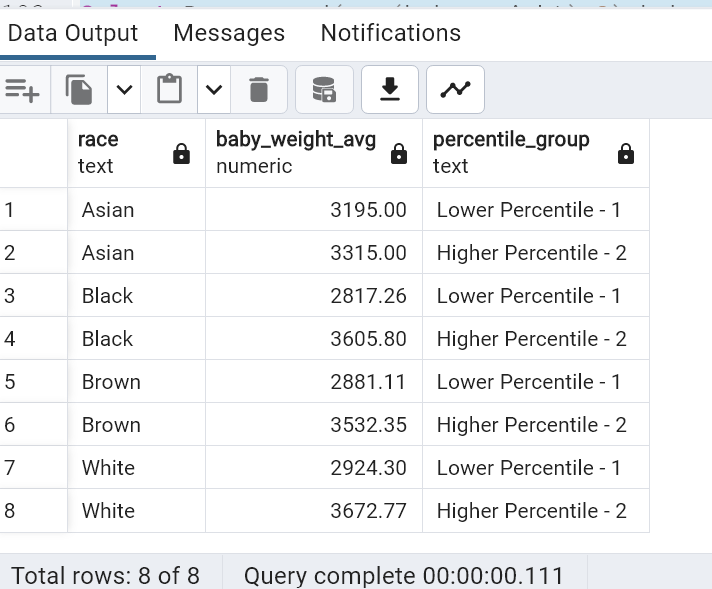
where newborn\_weight is not null

)

Select Race,round(avg(baby\_weight),2) baby\_weight\_avg,

Case when NewbornWt=1 then 'Lower Percentile - '||NewbornWt when NewbornWt=2 then 'Higher Percentile - '||NewbornWt end percentile\_group

from Race group by Race,percentile\_group order by race,percentile\_group desc;



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**--74. Write a query to fetch the first 10, caseids, ages and all 3 maternal trimester weights using a recursive Common Table Expression**

with recursive patient\_hierarchy as (

select 1 as S\_No,caseid,age\_years\_old,current\_maternal\_weight\_1st\_tri,current\_maternal\_weight\_2nd\_tri,current\_maternal\_weight\_3rd\_tri

from patient\_history

where caseid=1

union all

select S\_No+1, ph.caseid,

ph.age\_years\_old,ph.current\_maternal\_weight\_1st\_tri,ph.current\_maternal\_weight\_2nd\_tri,ph.current\_maternal\_weight\_3rd\_tri

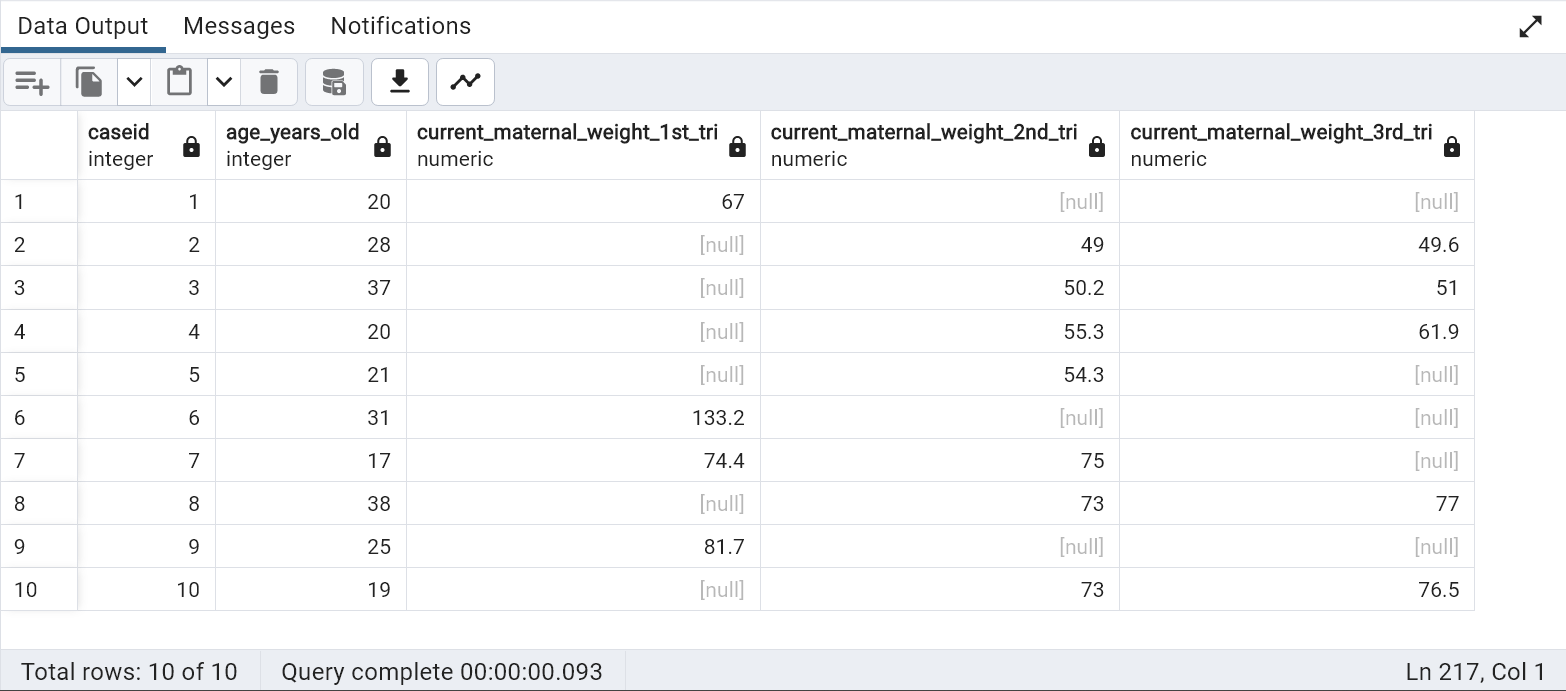
from patient\_history ph, patient\_hierarchy hier where ph.caseid = S\_No+1

)

select hier.caseid,

hier.age\_years\_old,hier.current\_maternal\_weight\_1st\_tri,hier.current\_maternal\_weight\_2nd\_tri,hier.current\_maternal\_weight\_3rd\_tri

from patient\_hierarchy hier limit 10;



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--75. Create a pie chart based on age vs tobacco use

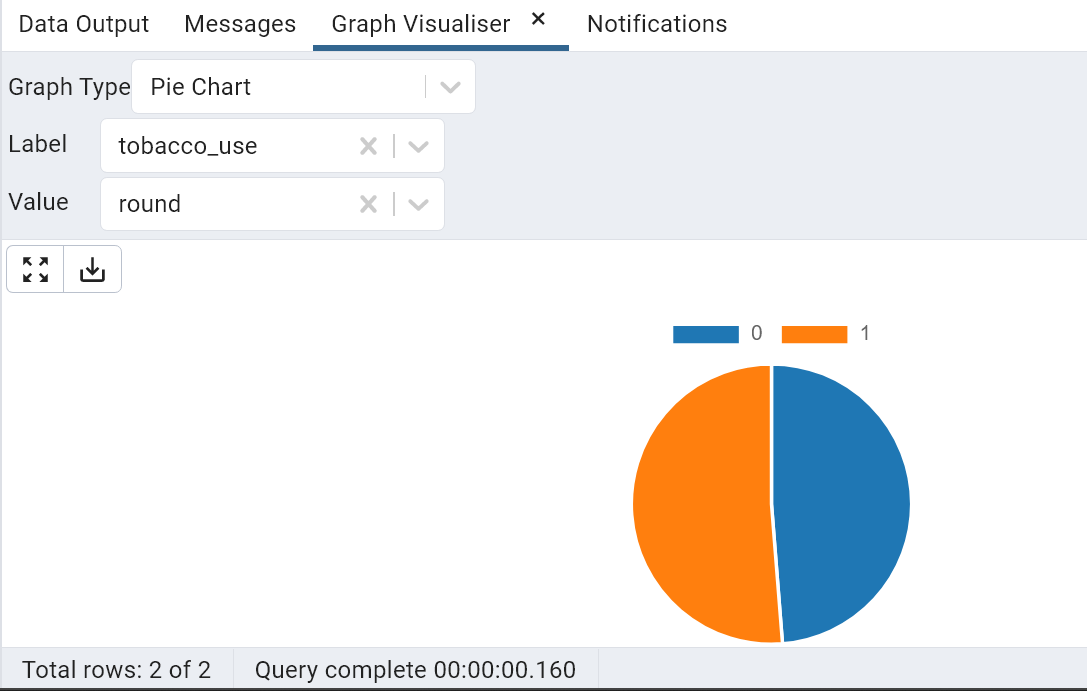
SELECT

tobacco\_use,avg(age\_years\_old) from

public.patient\_history,public.fetal\_health\_risk

where patient\_history.caseid=fetal\_health\_risk.caseid

group by 1;



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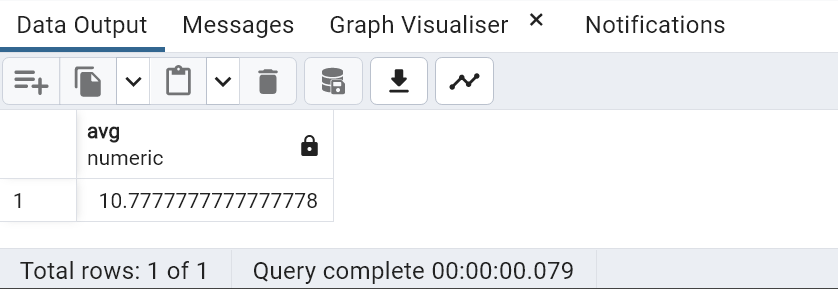
**--76. How many prenatal visits did GDM (gestational diabetes mellitus) patients have on average?**

select avg(number\_prenatal\_appointments) from public.hospitalization\_labor,public.fetal\_health\_risk

where

hospitalization\_labor.caseid=fetal\_health\_risk.caseid and

gestational\_diabetes\_mellitus=1;



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**--77. Display mean, Interquartile range, 2 standard deviations above mean, and 2 standard deviations below mean of any one systolic Blood pressure for all patients in the database grouped by race**

Select color\_ethnicity,

percentile\_cont(0.5) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) +stddev\_pop(right\_systolic\_blood\_pressure) OneStdDevAboveMedian,

percentile\_cont(0.5) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) +2\*stddev\_pop(right\_systolic\_blood\_pressure) TwoStdDevBAboveMedian,

percentile\_cont(0.5) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) MedianHB1AC,

percentile\_cont(0.5) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) -stddev\_pop(right\_systolic\_blood\_pressure) OneStdDevBelowMedian,

percentile\_cont(0.5) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) -2\*stddev\_pop(right\_systolic\_blood\_pressure) TwoStdDevBelowMedian

from public.maternal\_labs,public.patient\_history

where maternal\_labs.caseid= patient\_history.caseid

group by color\_ethnicity;

--Alternate Query--

Select color\_ethnicity,

round(avg(right\_systolic\_blood\_pressure),2) as mean,

percentile\_cont(0.75) WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) - percentile\_cont(0.25)

WITHIN GROUP (ORDER BY right\_systolic\_blood\_pressure) as iqr,

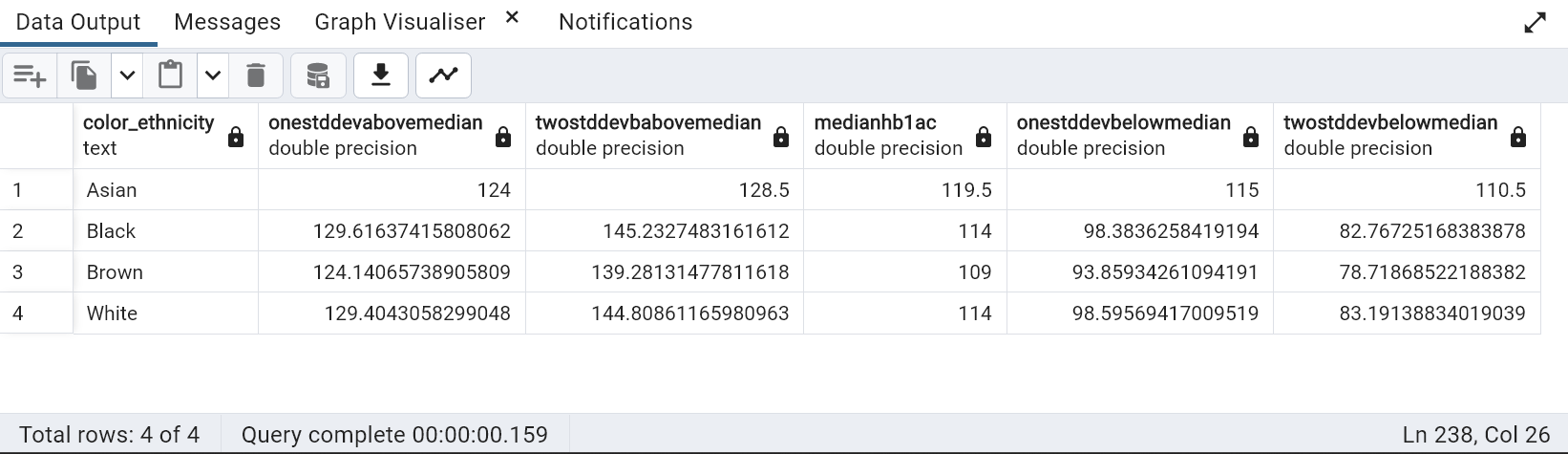
round(avg(right\_systolic\_blood\_pressure)+2\*stddev\_pop(right\_systolic\_blood\_pressure),2) as Two\_StdDev\_AboveMean,

round(avg(right\_systolic\_blood\_pressure)-2\*stddev\_pop(right\_systolic\_blood\_pressure),2) as Two\_StdDev\_BelowMean

from public.maternal\_labs,public.patient\_history

where maternal\_labs.caseid= patient\_history.caseid

group by color\_ethnicity;



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**--78. Display the number of mothers who had cesareans in 3 categories: those that had been tobacco users for under 2 years, 2-10 years, and over 10 years "**

select count(f1.caseid),

(case when tobacco\_use\_in\_months < 24 then 'Under 2 yrs'

when tobacco\_use\_in\_months < 120 then '2-10 yrs'

else 'more than 10 yrs' end) tobacco\_use\_duration

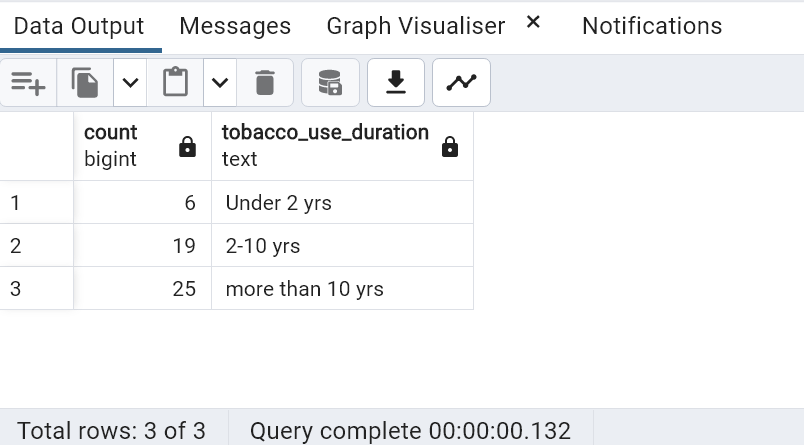
from fetal\_health\_risk f1,hospitalization\_labor l1

where f1.caseid = l1.caseid

and tobacco\_use\_in\_months is not null

group by 2

order by 1



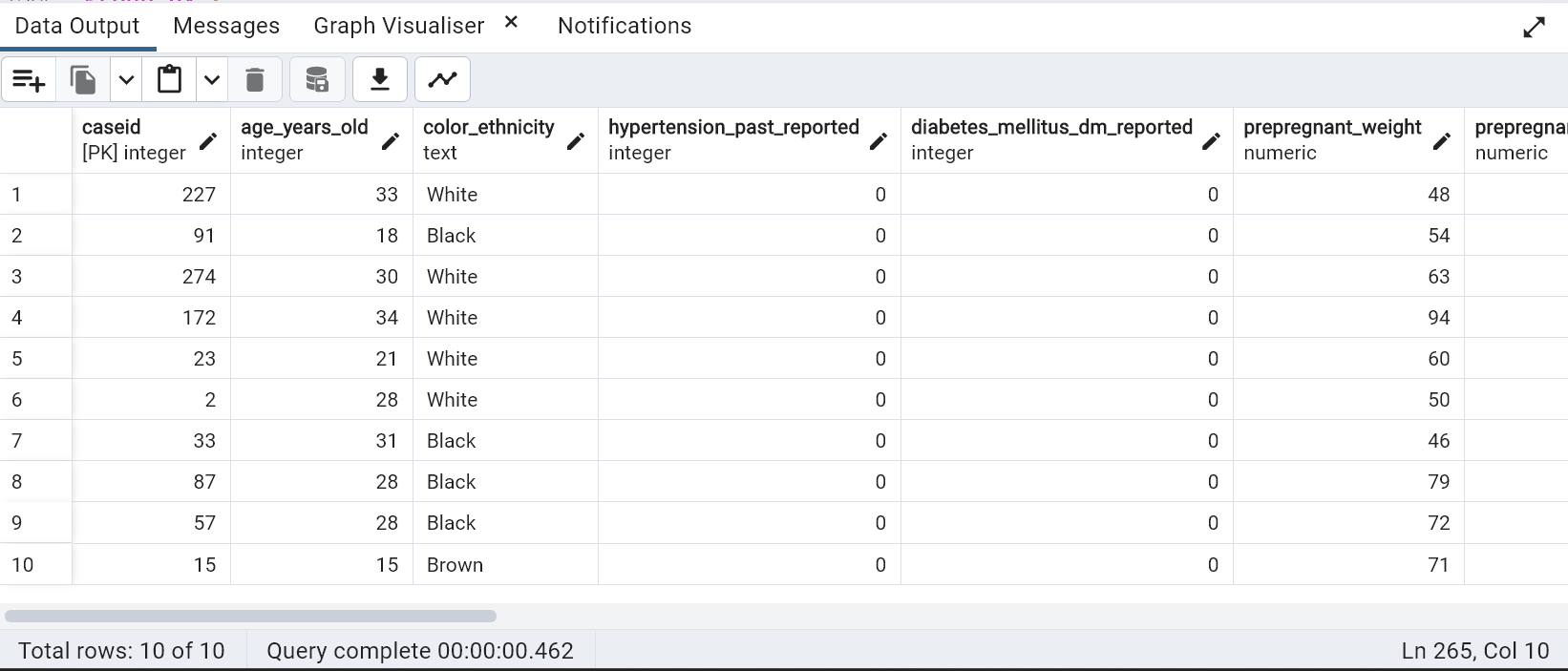
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--79. Display any 10 random rows from patient history table

select \* from public.patient\_history

order by random()

limit 10;



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--80. Provide the cumulative distribution for delivery mode based on BMI below or above 30.

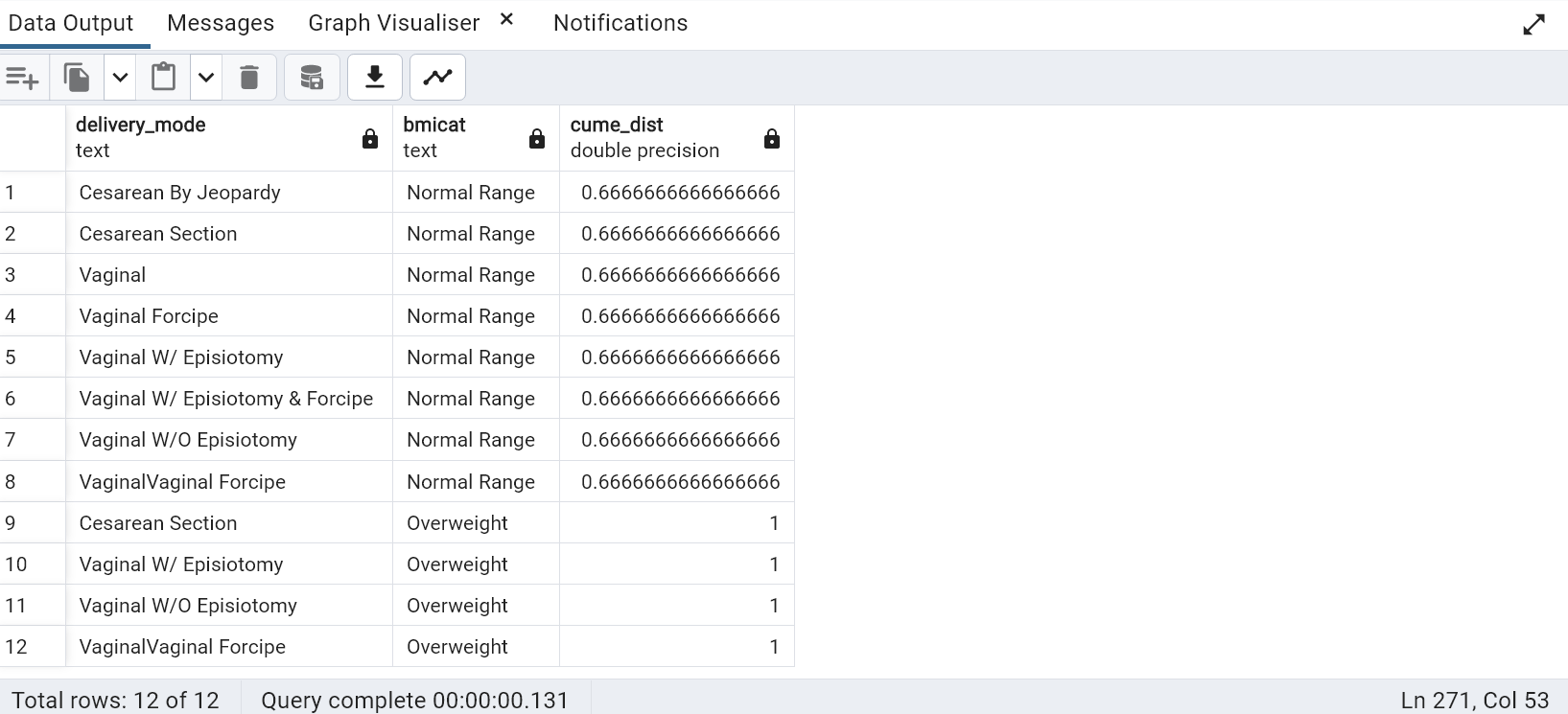
select delivery\_mode,BMICAT, CUME\_DIST() OVER ( ORDER BY BMICAT) FROM

(SELECT ( CASE when prepregnant\_bmi<=30 then 'Normal Range' else 'Overweight' END) BMICAT, delivery\_mode

from patient\_history, hospitalization\_labor where patient\_history.caseid = hospitalization\_labor.caseid

and prepregnant\_bmi is not null

and delivery\_mode is not null group by 1,2 )SubQuery



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