**SQL CODES**

**Creation of Master table**

create view brand1 as

select \* from audi

union

select \* from bmw

union

select \* from hyndai

union

select \* from merc

union

select \* from cclass1;

select \* from brand1;

create view master\_table1 as

select A.id,A.model\_id, A.year,A.price,A.mileage,A.tax,A.mpg,A.enginesize,A.car\_name,A.transmission\_id,A.fuel\_id,B.model\_name,C.fueltype,D.transmission

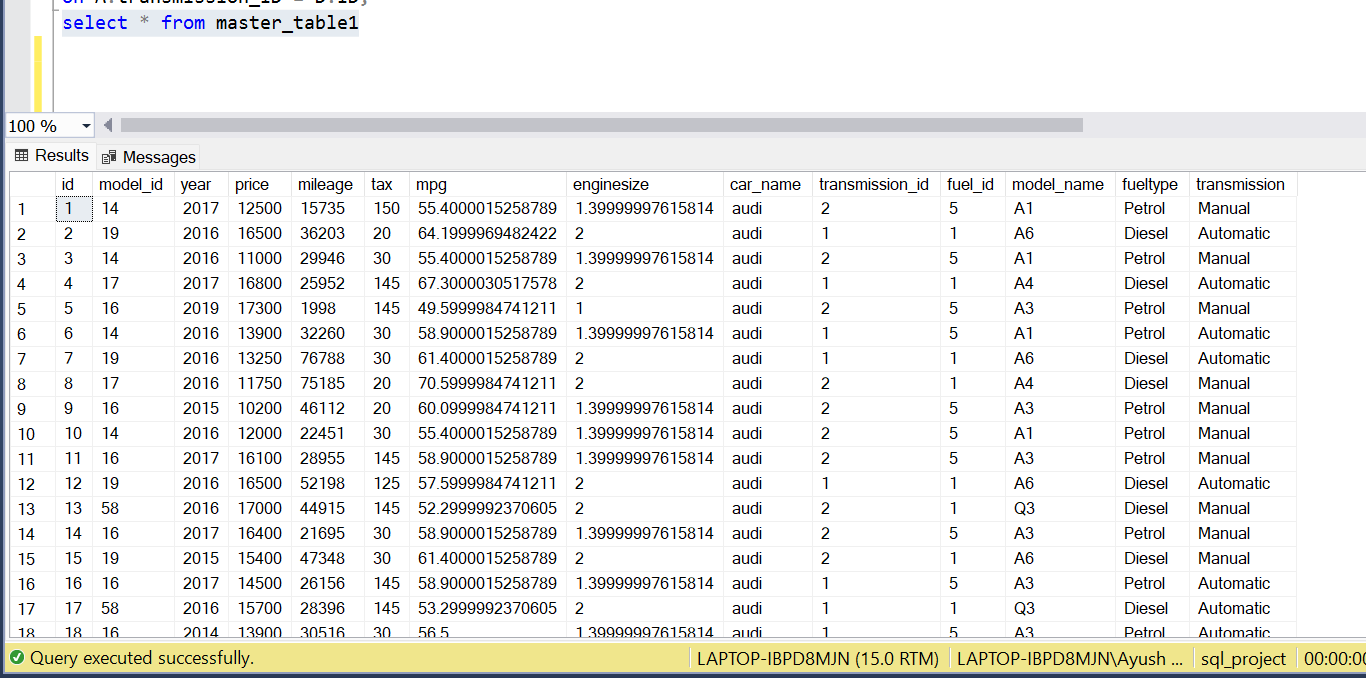
from brand1 A left join models B

on A.model\_ID = B.model\_ID left join fueltype C

on A.fuel\_ID = C.fuel\_id left join transmission D

on A.transmission\_ID = D.ID;

select \* from master\_table1



Q.1 a.  Create an analysis to find income class of UK citizens based on price of Cars(You can use per-capita income in UK from internet sources)

use sql\_project

select A.model\_id, A.model\_name, A.price,B.per\_capita\_income,A.car\_name ,B.year,abs((A.price)\*100/per\_capita\_income) as perc

from master\_table1 as A

inner join [dbo].[per capita income] as B on A.year=B.year

where A.year > 2018

order by A.year desc;

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create view view\_brand1 as

select A.model\_id, A.model\_name, A.price,B.per\_capita\_income,A.car\_name ,B.year,abs((A.price)\*100/per\_capita\_income) as perc

from master\_table1 as A

inner join [dbo].[per capita income] as B on A.year=B.year

where A.year > 2018;

select \* from view\_brand1;

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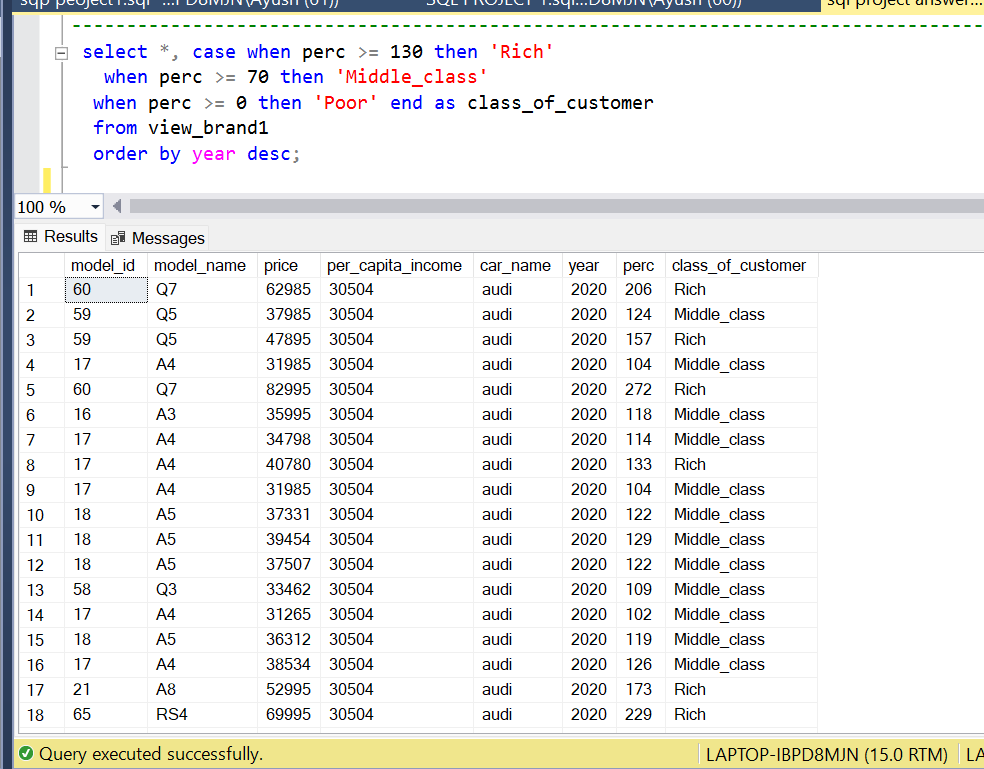
select \*, case when perc >= 130 then 'Rich'

when perc >= 70 then 'Middle\_class'

when perc >= 0 then 'Poor' end as class\_of\_customer

from view\_brand1

order by year desc;



---Q2.a. price changes across the years and identify the categories which has seen significant jump in its price

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create VIEW audie as

SELECT b.id,b.year, b.model\_id ,a.model\_name,b.price FROM models as a inner join audi as b on a.model\_ID = b.model\_ID

create VIEW audie2 as

SELECT avg(price) as avg\_price ,year,model\_name from audie where year > 2016 GROUP BY model\_name,year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM audie2

pivot (avg(avg\_price) for year in ([2016],[2017],[2018],[2019],[2020]))as a

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create VIEW bmwe as

SELECT b.id,b.year, b.model\_id ,a.model\_name,b.price FROM models as a inner join bmw as b on a.model\_ID = b.model\_ID

create VIEW bmwe1 as

SELECT avg(price) as avg\_price ,year,model\_name from bmwe GROUP BY model\_name,year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM bmwe1

pivot (avg(avg\_price) for year in ([2016],[2017],[2018],[2019],[2020]))as a

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create VIEW cclasse as

SELECT b.id,b.year, b.model\_id ,a.model\_name,b.price FROM models as a inner join cclass as b on a.model\_ID = b.model\_ID

create VIEW cclasse1 as

SELECT avg(price) as avg\_price ,year,model\_name from cclasse GROUP BY model\_name,year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM cclasse1

pivot (avg(avg\_price) for year in ([2016],[2017],[2018],[2019],[2020]))as a

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create VIEW hyndaie as

SELECT b.id,b.year, b.model\_id ,a.model\_name,b.price FROM models as a inner join hyndai as b on a.model\_ID = b.model\_ID

create VIEW hyndaie1 as

SELECT avg(price) as avg\_price ,year,model\_name from hyndaie GROUP BY model\_name,year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM hyndaie1

pivot (avg(avg\_price) for year in ([2016],[2017],[2018],[2019],[2020]))as a

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create VIEW merce as

SELECT b.id,b.year, b.model\_id ,a.model\_name,b.price FROM models as a inner join merc as b on a.model\_ID = b.model\_ID

create VIEW merce1 as

SELECT avg(price) as avg\_price ,year,model\_name from merce GROUP BY model\_name,year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM merce1

pivot (avg(avg\_price) for year in ([2016],[2017],[2018],[2019],[2020]))as a

--A part -

create VIEW pricee as

SELECT id,year, model\_id ,model\_name,price,car\_name FROM master\_table1 WHERE year > 2017

create VIEW pricee1 as

SELECT avg(price) as avg\_price ,year,model\_name, car\_name from pricee GROUP BY model\_name,year,car\_name

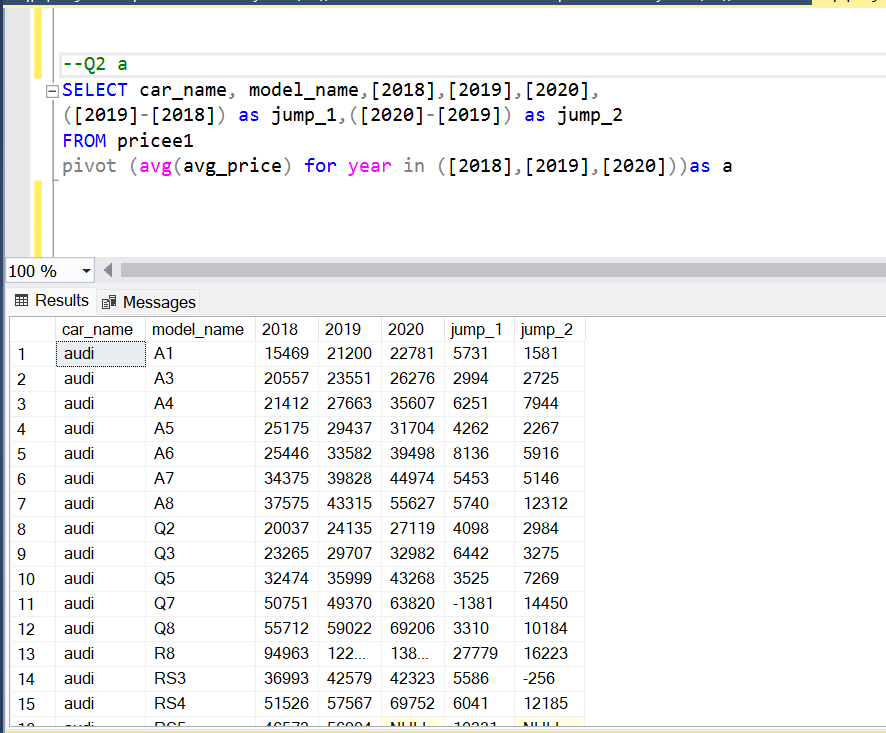
ORDER by year

SELECT car\_name, model\_name,[2018],[2019],[2020],

([2019]-[2018]) as jump\_1,([2020]-[2019]) as jump\_2

FROM pricee1

pivot (avg(avg\_price) for year in ([2018],[2019],[2020]))as a



----Q2.b. changes in no of cars sold across the years and identify the categories which has seen significant jump in its sale

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CREATE VIEW audiee as

SELECT b.year, count(b.model\_id) as mod ,a.model\_name,b.price FROM models as a inner join audi as b on a.model\_ID = b.model\_ID

GROUP by b.year,a.model\_name,b.price

CREATE VIEW audiee1 as

SELECT year,sum(mod) as b,model\_name FROM audiee GROUP by year,model\_name ORDER by year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM audiee1

pivot(avg(b) FOR year in ([2016],[2017],[2018],[2019],[2020])) as a

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CREATE VIEW bmwee as

SELECT b.year, count(b.model\_id) as mod ,a.model\_name,b.price FROM models as a inner join bmw as b on a.model\_ID = b.model\_ID

GROUP by b.year,a.model\_name,b.price

CREATE VIEW bmwee1 as

SELECT year,sum(mod) as count\_sales,model\_name FROM bmwee GROUP by year,model\_name ORDER by year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM bmwee1

pivot(avg(count\_sales) FOR year in ([2016],[2017],[2018],[2019],[2020])) as a

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CREATE VIEW cclassee as

SELECT b.year, count(b.model\_id) as mod ,a.model\_name,b.price FROM models as a inner join cclass as b on a.model\_ID = b.model\_ID

GROUP by b.year,a.model\_name,b.price

CREATE VIEW cclassee1 as

SELECT year,sum(mod) as count\_sales,model\_name FROM cclassee GROUP by year,model\_name ORDER by year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM cclassee1

pivot(avg(count\_sales) FOR year in ([2016],[2017],[2018],[2019],[2020])) as a

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CREATE VIEW hyndaiee as

SELECT b.year, count(b.model\_id) as mod ,a.model\_name,b.price FROM models as a inner join hyndai as b on a.model\_ID = b.model\_ID

GROUP by b.year,a.model\_name,b.price

CREATE VIEW hyndaiee1 as

SELECT year,sum(mod) as count\_sales,model\_name FROM hyndaiee GROUP by year,model\_name ORDER by year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM hyndaiee1

pivot(avg(count\_sales) FOR year in ([2016],[2017],[2018],[2019],[2020])) as a

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CREATE VIEW mercee as

SELECT b.year, count(b.model\_id) as mod ,a.model\_name,b.price FROM models as a inner join merc as b on a.model\_ID = b.model\_ID

GROUP by b.year,a.model\_name,b.price

CREATE VIEW mercee1 as

SELECT year,sum(mod) as count\_sales,model\_name FROM mercee GROUP by year,model\_name ORDER by year

SELECT model\_name,[2016],[2017],[2018],[2019],[2020],

([2017]-[2016]) as jump\_1,([2018]-[2017]) as jump\_2,([2019]-[2018]) as jump\_3,([2020]-[2019]) as jump\_4

FROM mercee1

pivot(avg(count\_sales) FOR year in ([2016],[2017],[2018],[2019],[2020])) as a

--b part

create VIEW car\_sale\_diff as

SELECT year, count(model\_id) as mod ,model\_name, price,car\_name FROM master\_table1 where year>'2017' group by

car\_name, year,model\_name,price

create view car\_sale\_diff1 as

SELECT year,sum(mod) as sale\_car,model\_name,car\_name FROM car\_sale\_diff

GROUP by year,model\_name,car\_name

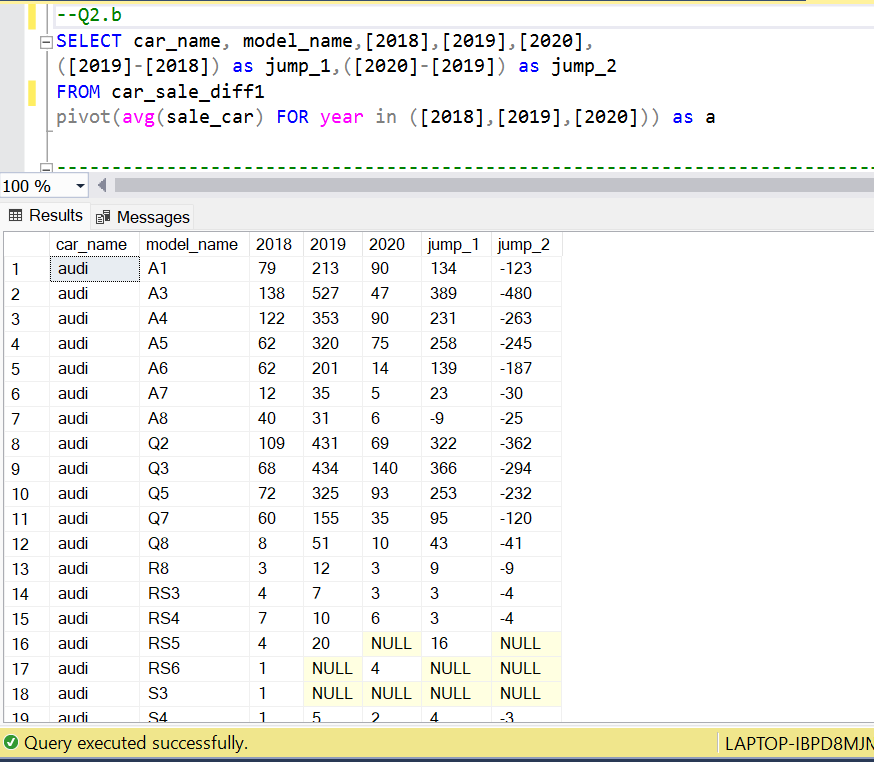
ORDER by year

SELECT car\_name, model\_name,[2018],[2019],[2020],

([2019]-[2018]) as jump\_1,([2020]-[2019]) as jump\_2

FROM car\_sale\_diff1

pivot(avg(sale\_car) FOR year in ([2018],[2019],[2020])) as a



--C . Find relationship between fuel efficiency & price of car/sales of car/fuel type/, etc.

use sql\_project

select \* into #recent from master\_table1

where year >'2016';

select \* from #recent;

select \* from master\_table1;

select max(mileage) from #recent

select min(mileage) from #recent

select max(price) from #recent

select min(Price) from #recent

select model\_id,mileage,price, DENSE\_RANK()over( order by mileage) from #recent

where car\_name = 'merc';

select count(id) from #recent

where car\_name = 'bmw' and fueltype = 'petrol';

select count(id) from #recent

where car\_name = 'bmw' and fueltype = 'diesel';

select \*,count(id) over(partition by fueltype order by mileage desc) from #recent

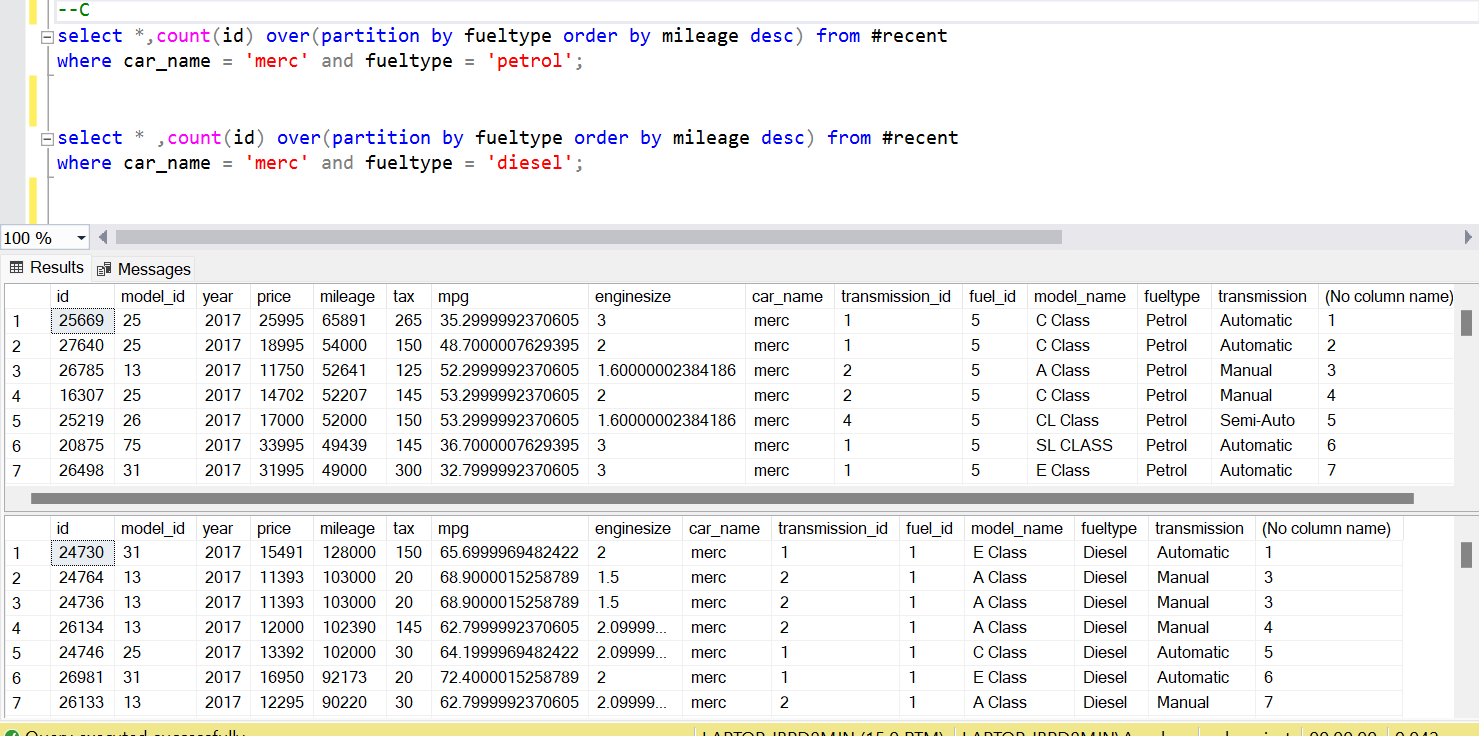
where car\_name = 'merc' and fueltype = 'petrol';

select \* ,count(id) over(partition by fueltype order by mileage desc) from #recent

where car\_name = 'merc' and fueltype = 'diesel';

select model\_id,mileage,price, DENSE\_RANK()over( order by mileage desc) from #recent

where car\_name = 'merc';



--Q.4 You are also asked to rank across all the models based on their total sales, average price, average mileage, average engine size, etc.

--and now filter the top 5 basis their sales. Observe the identified models and provide your inference.

--avg price

create proc avg\_price @car\_name varchar(50) as begin

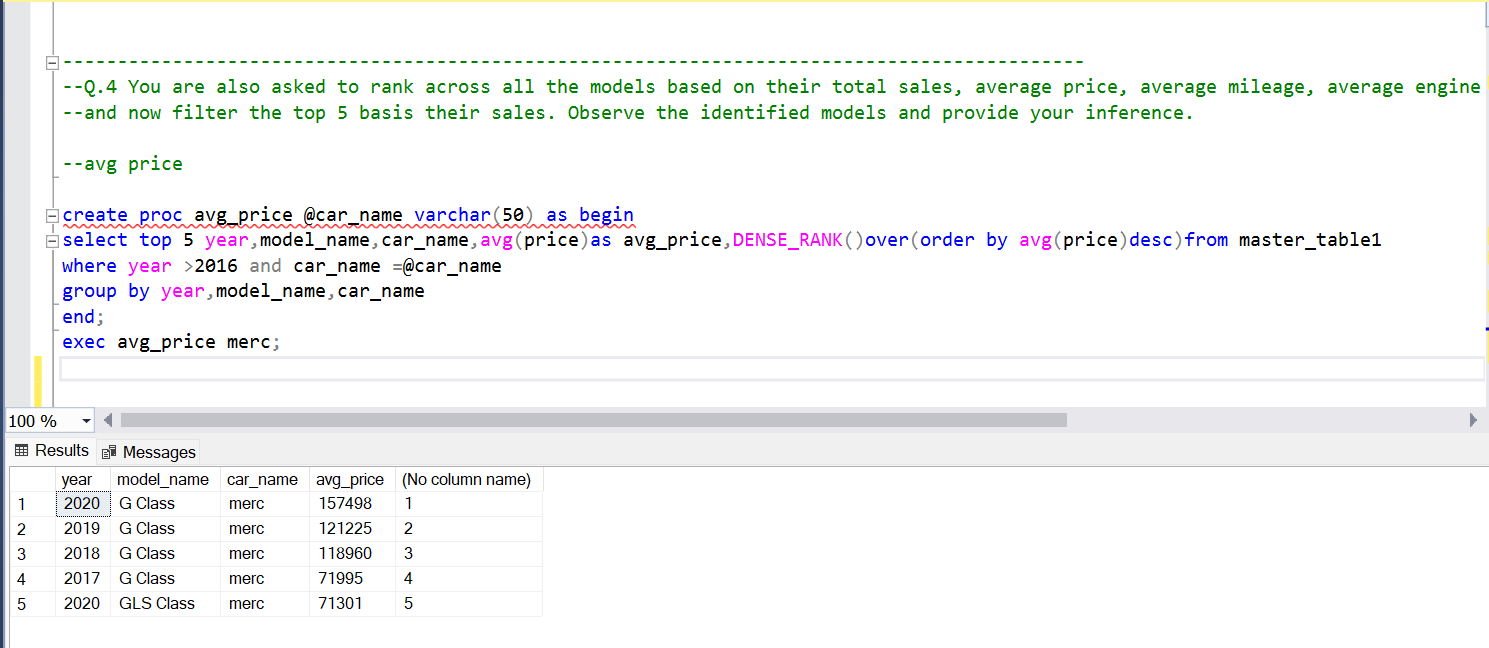
select top 5 year,model\_name,car\_name,avg(price)as avg\_price,DENSE\_RANK()over(order by avg(price)desc)from master\_table1

where year >2016 and car\_name =@car\_name

group by year,model\_name,car\_name

end;

exec avg\_price merc;



--total sales

ALTER proc total\_sales @car\_name varchar(50) as begin

select top 5 year,model\_name,car\_name,count(model\_id)as total\_sales ,DENSE\_RANK()over(order by count(model\_id)desc) as rank

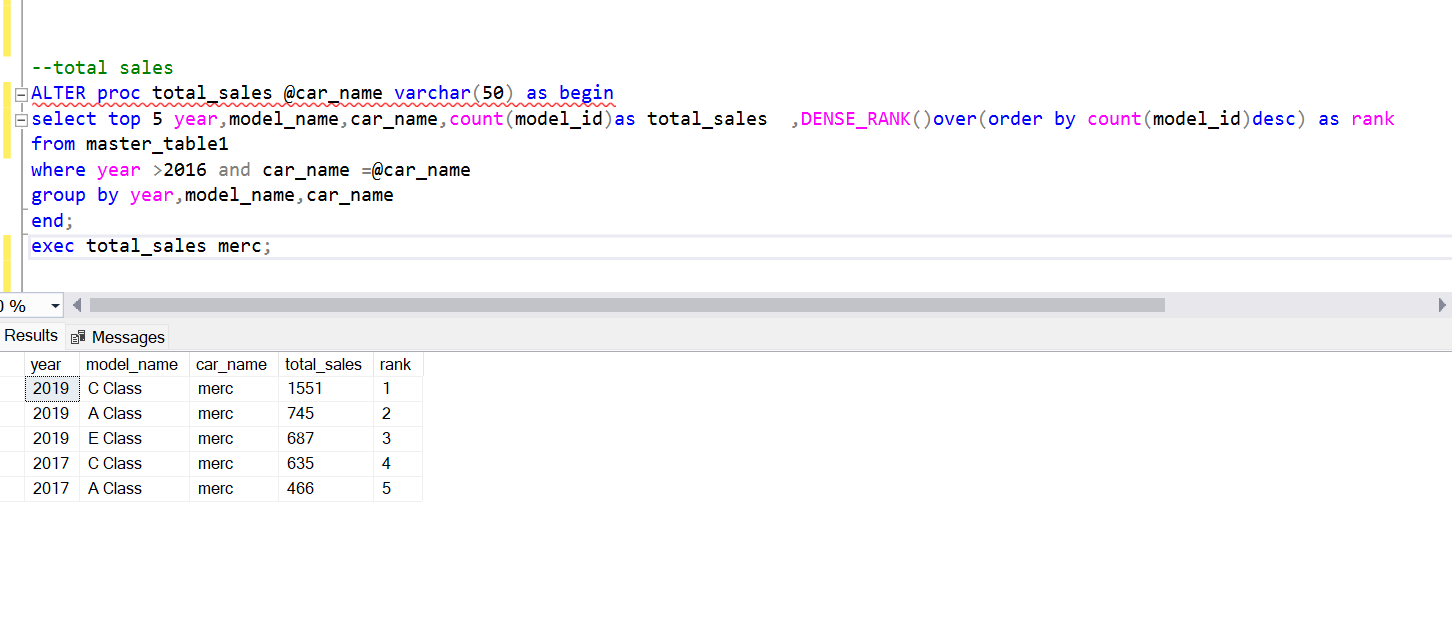
from master\_table1

where year >2016 and car\_name =@car\_name

group by year,model\_name,car\_name

end;

exec total\_sales merc;



----avg\_mileage

create proc avg\_mileage @car\_name varchar(50) as begin

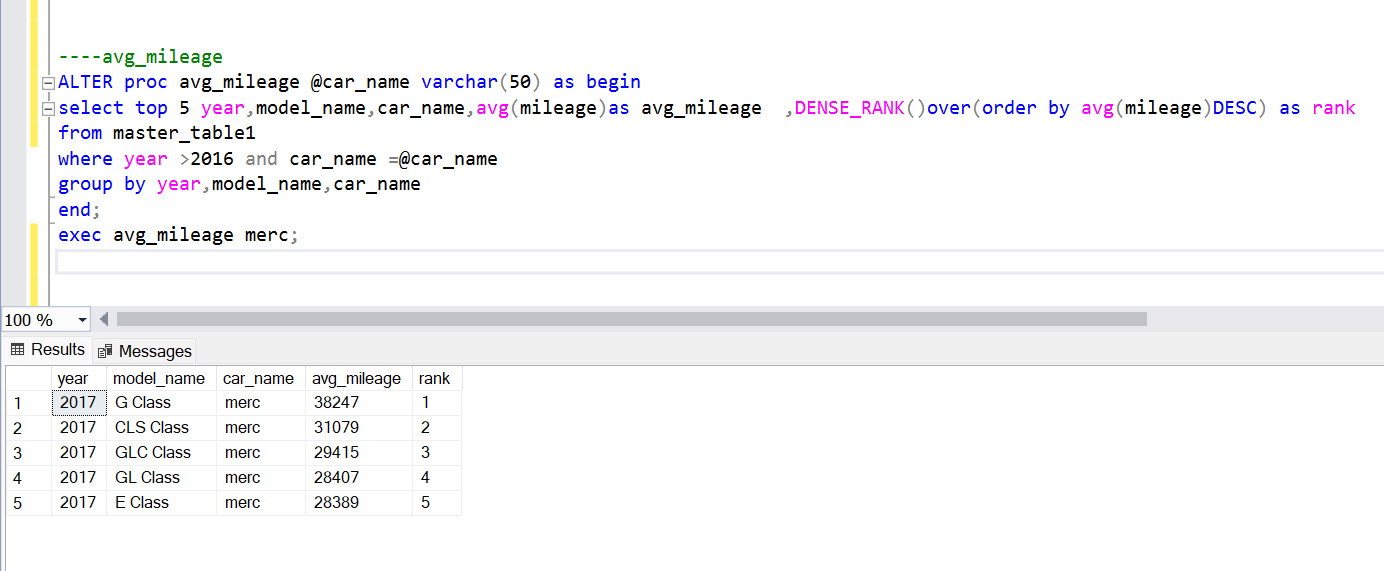
select top 5 year,model\_name,car\_name,avg(mileage)as avg\_mileage ,DENSE\_RANK()over(order by avg(mileage)) as rank from master\_table1

where year >2016 and car\_name =@car\_name

group by year,model\_name,car\_name

end;

exec avg\_mileage merc;



--avg engine size

create proc engine\_size @car\_name varchar(50) as begin

select top 5 year,model\_name,car\_name,avg(enginesize)as engine\_size ,DENSE\_RANK()over(order by avg(enginesize) desc) as rank

from master\_table1

where year >2016 and car\_name =@car\_name

group by year,model\_name,car\_name

end;

exec engine\_size merc;

