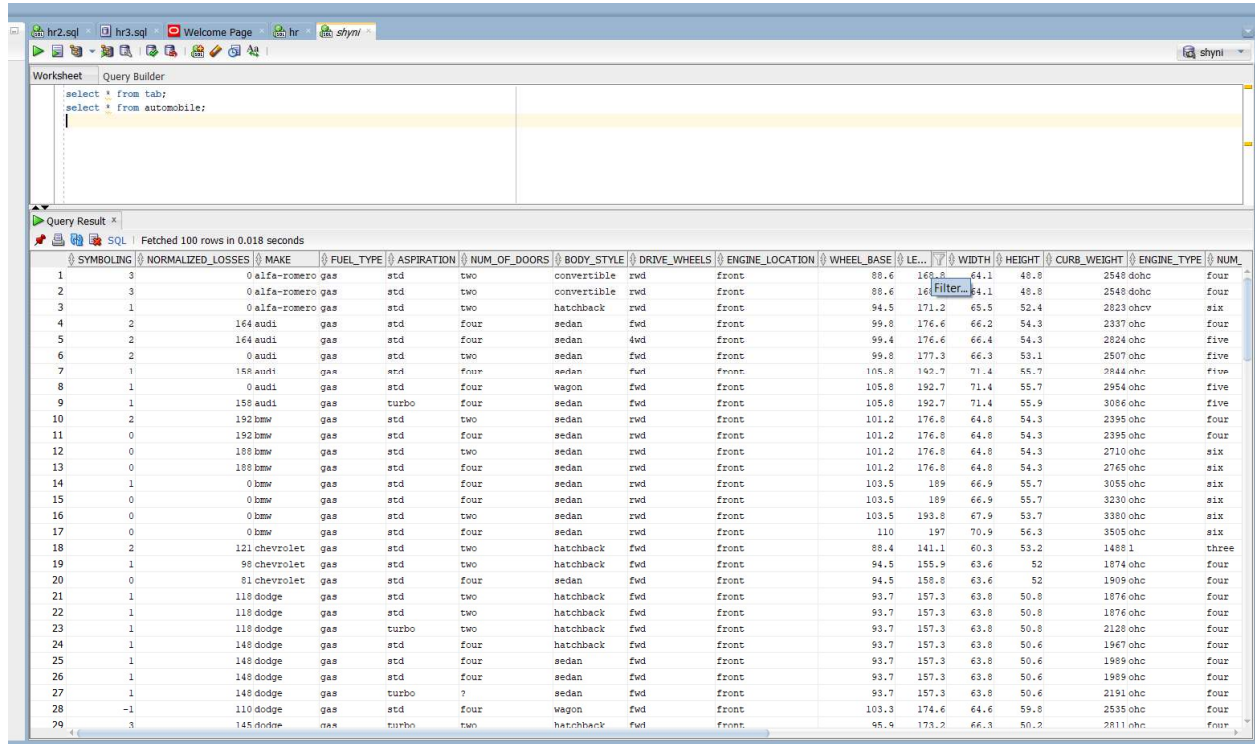


# ORACLE SQL CAPSTONE

1.

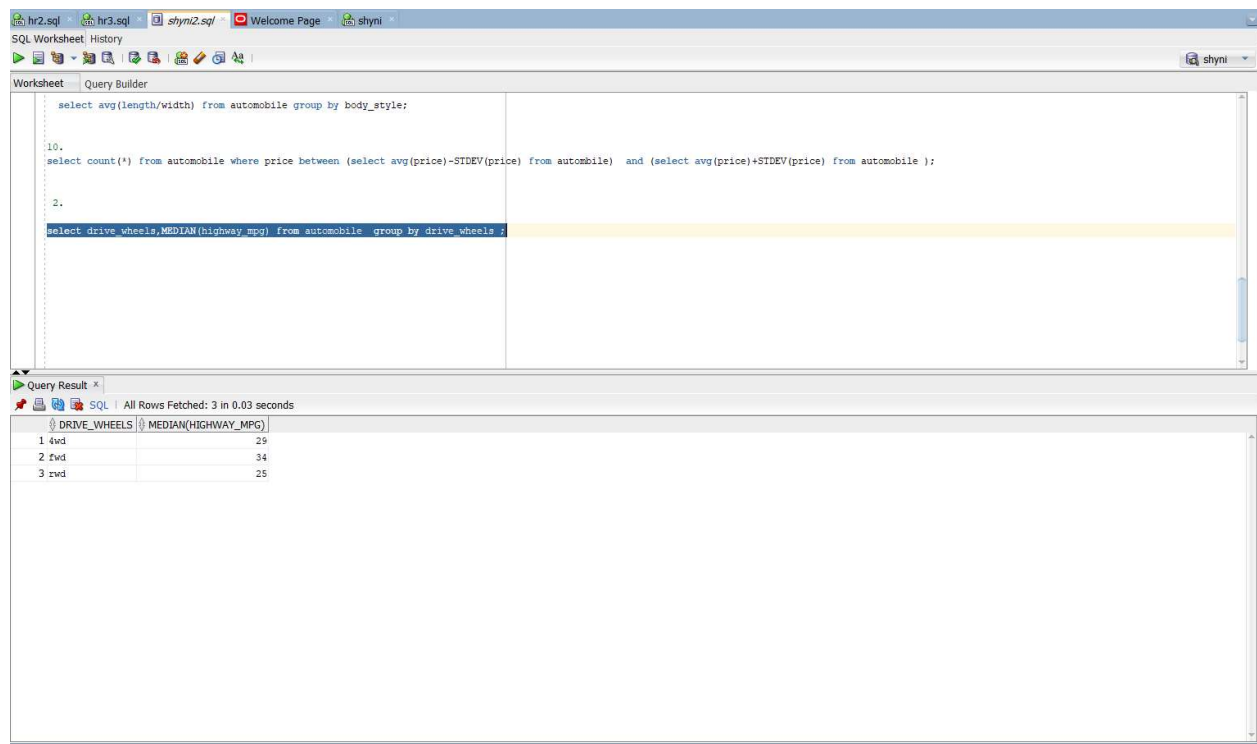


The screenshot shows the Oracle SQL Developer interface. The 'Query Builder' tab is active, displaying a query: `select * from tab;` and `select * from automobile;`. The 'Query Result' tab shows the results of the query, which is a table with 16 columns and 29 rows. The columns are: SYMBOLING, NORMALIZED\_LOSSES, MAKE, FUEL\_TYPE, ASPIRATION, NUM\_OF\_DOORS, BODY\_STYLE, DRIVE\_WHEELS, ENGINE\_LOCATION, WHEEL\_BASE, LEAN, WIDTH, HEIGHT, CURB\_WEIGHT, ENGINE\_TYPE, and NUM. The rows contain data for various car models, including Alfa Romeo, Audi, BMW, Chevrolet, and Dodge.

	SYMBOLING	NORMALIZED_LOSSES	MAKE	FUEL_TYPE	ASPIRATION	NUM_OF_DOORS	BODY_STYLE	DRIVE_WHEELS	ENGINE_LOCATION	WHEEL_BASE	LEAN	WIDTH	HEIGHT	CURB_WEIGHT	ENGINE_TYPE	NUM
1	3	0	alfa-romero	gas	std	two	convertible	rwd	front	88.6	160.9	64.1	46.8	2548	ohc	four
2	3	0	alfa-romero	gas	std	two	convertible	rwd	front	88.6	160.9	64.1	46.8	2548	ohc	four
3	1	0	alfa-romero	gas	std	two	hatchback	rwd	front	94.5	171.2	65.5	52.4	2823	ohc	six
4	2	164	audi	gas	std	four	sedan	fwd	front	99.8	176.6	66.2	54.3	2337	ohc	four
5	2	164	audi	gas	std	four	sedan	4wd	front	99.4	176.6	66.4	54.3	2824	ohc	five
6	2	0	audi	gas	std	two	sedan	fwd	front	99.8	177.3	66.3	53.1	2507	ohc	five
7	1	188	audi	gas	std	four	sedan	fwd	front	100.8	182.7	71.4	55.7	3044	ohc	five
8	1	0	audi	gas	std	four	wagon	fwd	front	105.8	192.7	71.4	55.7	2954	ohc	five
9	1	158	audi	gas	turbo	four	sedan	fwd	front	105.8	192.7	71.4	55.9	3096	ohc	five
10	2	192	bmw	gas	std	two	sedan	rwd	front	101.2	176.8	64.8	54.3	2395	ohc	four
11	0	192	bmw	gas	std	four	sedan	rwd	front	101.2	176.8	64.8	54.3	2395	ohc	four
12	0	198	bmw	gas	std	two	sedan	rwd	front	101.2	176.8	64.8	54.3	2710	ohc	six
13	0	198	bmw	gas	std	four	sedan	rwd	front	101.2	176.8	64.8	54.3	2769	ohc	six
14	1	0	bmw	gas	std	four	sedan	rwd	front	103.5	189	66.9	55.7	3055	ohc	six
15	0	0	bmw	gas	std	four	sedan	rwd	front	103.5	189	66.9	55.7	3230	ohc	six
16	0	0	bmw	gas	std	two	sedan	rwd	front	103.5	193.8	67.9	53.7	3380	ohc	six
17	0	0	bmw	gas	std	four	sedan	rwd	front	110	197	70.9	56.3	3505	ohc	six
18	2	121	chevrolet	gas	std	two	hatchback	fwd	front	88.4	141.1	60.3	53.2	1489	1	three
19	1	98	chevrolet	gas	std	two	hatchback	fwd	front	94.5	155.9	63.6	52	1874	ohc	four
20	0	81	chevrolet	gas	std	four	sedan	fwd	front	94.5	158.8	63.6	52	1909	ohc	four
21	1	118	dodge	gas	std	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	1876	ohc	four
22	1	118	dodge	gas	std	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	1876	ohc	four
23	1	118	dodge	gas	turbo	two	hatchback	fwd	front	93.7	157.3	63.8	50.8	2128	ohc	four
24	1	148	dodge	gas	std	four	hatchback	fwd	front	93.7	157.3	63.8	50.6	1967	ohc	four
25	1	148	dodge	gas	std	four	sedan	fwd	front	93.7	157.3	63.8	50.6	1989	ohc	four
26	1	148	dodge	gas	std	four	sedan	fwd	front	93.7	157.3	63.8	50.6	1989	ohc	four
27	1	148	dodge	gas	turbo	?	sedan	fwd	front	93.7	157.3	63.8	50.6	2191	ohc	four
28	-1	110	dodge	gas	std	four	wagon	fwd	front	103.3	174.6	64.6	59.8	2535	ohc	four
29	3	145	dodge	gas	turbo	two	hatchback	fwd	front	95.9	173.2	66.3	50.2	2811	ohc	four

- The above query gives the the total number of rows and columns of automobile dataset.
- This automobile dataset gives the summary of how the different types of companies and organizations will design, development, manufacturing, marketing ,pricing, selling and modification of motor vehicles all these are discussed here .
- The Indian automobile industry has historically been a good indicator of how well the economy is doing.

2.



- The above query gives the median highway mpg of car that means how much distance a vehicle will go in miles for a gallon of fuel .
- That means the fuel economy of vehicle will be revealed .
- This is how many litres of fuel the car needs in order to travel 100km.
- 1 gallon = 3.78 litres in India and us and 1mile= 1.6 km based on this we will calculate the median highway mpg.
- From the above Top 2 median highway \_mpg are 1. Fwd (34)  
2.4wd (29)

3.

The screenshot shows a SQL query editor with three queries. The third query is highlighted:

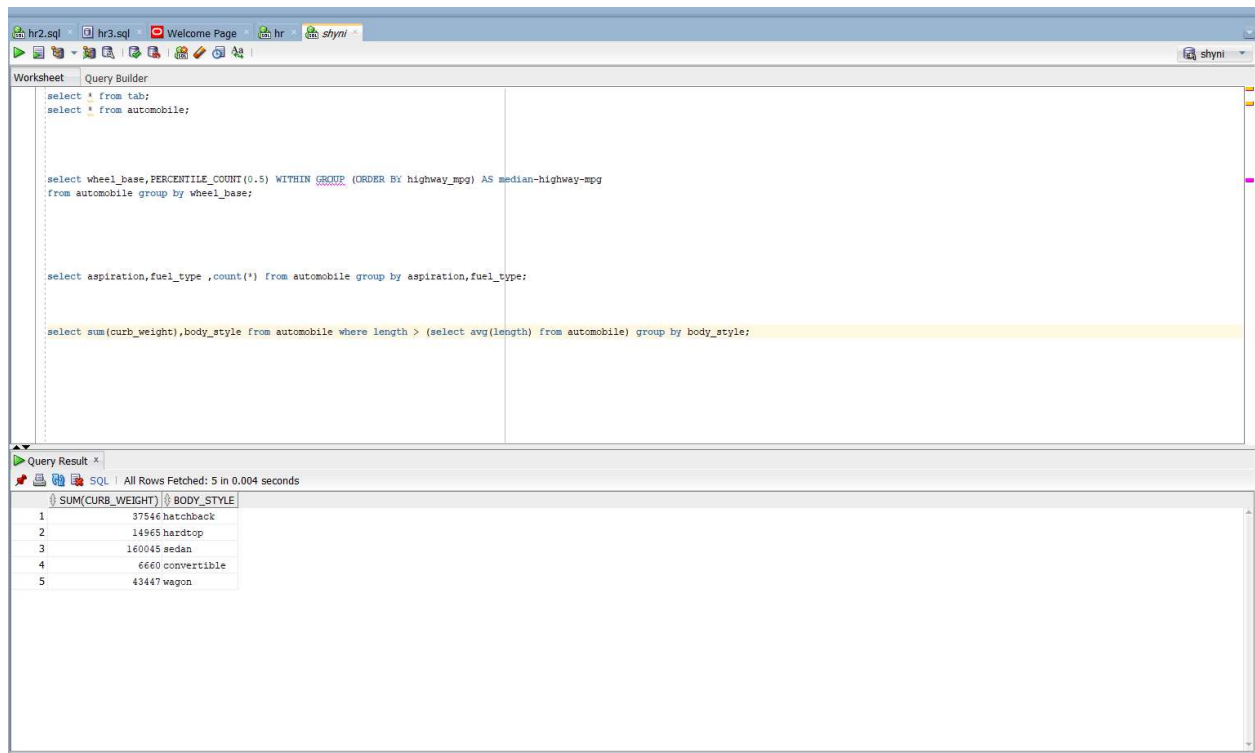
```
select aspiration,fuel_type ,count(*) from automobile group by aspiration,fuel_type;
```

The query result is displayed below:

	ASPIRATION	FUEL_TYPE	COUNT(*)
1	turbo	gas	23
2	std	diesel	7
3	turbo	diesel	13
4	std	gas	152

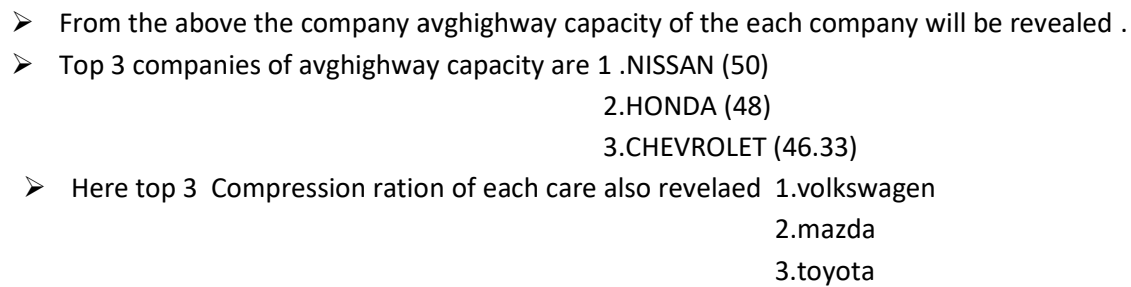
- The cars will have the two types of fuel type 1.gas 2.petrol based on this fuel will be filled to run the vehicle smoothly.
- cars aspiration means is the engine type which means to give better fuel efficiency .
- Top 2 aspirations are
  - 1.Std (152)
  - 2.Turbo(23)
- Top 2 fuel \_type vehicles are 1.Gas (152)
  - 2.Diesel (13)

4.

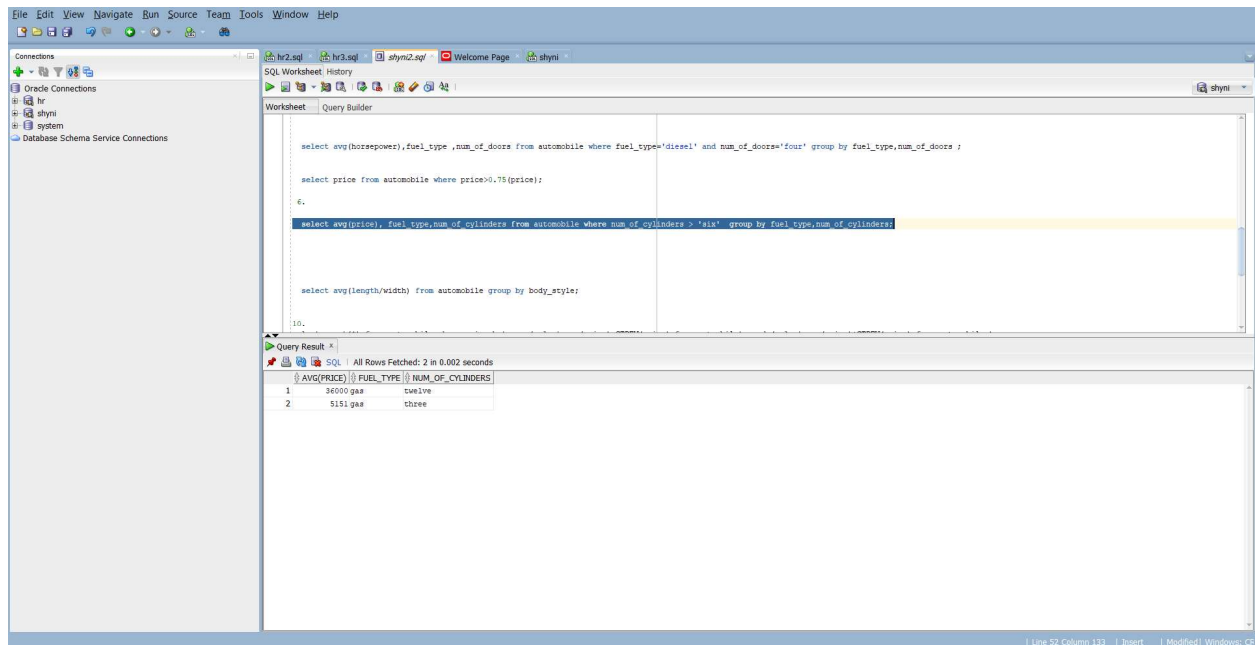


- Curb weight is the weight of the vehicle including the full tank of fuel and all standard equipment ,and it doesnot count the other weights like passenger weight .
- Here the curb weight is gretear than the average length of all the vehicle is revealed
- Here body style means design ,shape,space of the car is revelaed .
- The best body\_style is sedan .
- From the above Top 2 Curb-weight are
  1. Sedan (160045)
  - 2.wagon (43447)

5.



6.



- From the above average price of the each fuel type where the number of cylinders is greater than 6 will be revealed here.
- Here the highest number of cylinders used cars is revealed here .
- Here the gas fuel type max average price is 36000.

7.

The screenshot shows a SQL query editor with the following queries:

```

select * from tab;
select * from automobile;

select wheel_base,PERCENTILE_COUNT(0.5) WITHIN GROUP (ORDER BY highway_mpg) AS median-highway-mpg
from automobile group by wheel_base;

select aspiration,fuel_type ,count(*) from automobile group by aspiration,fuel_type;

select sum(curb_weight),body_style from automobile where length > (select avg(length) from automobile) group by body_style;

select make,avg(highway_mpg) AS AVCHIGHWAY,compression_ratio from automobile where compression_ratio >9 group by make,compression_ratio order by AVCHIGHWAY DESC;

select avg(price),fuel_type,cylinder from automobile where num_of_cylinders >6 group by fuel_type,num_of_cylinders ;

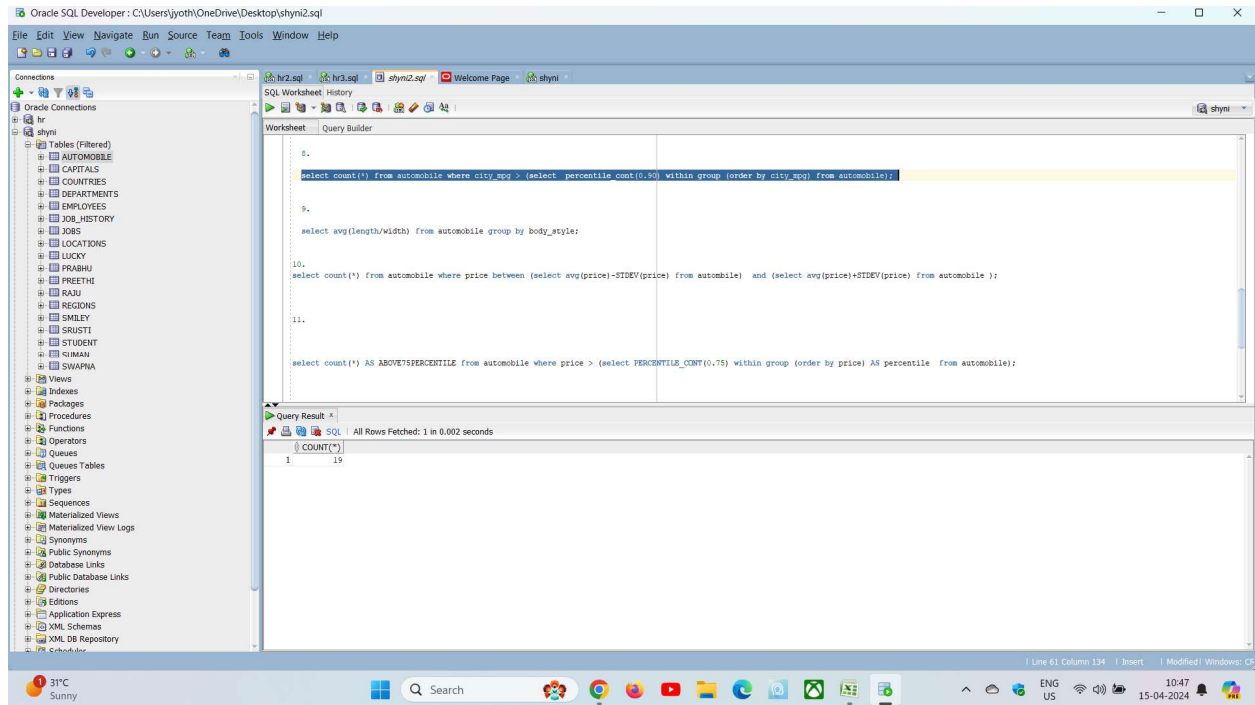
select round(avg(price)),(rownum) automobile group by make;
  
```

The results of the last query are shown below:

ROWNUM	AVG(PRICE)	MAKE
1	7875	
2	16503	
3	15223	
4	33647	
5	7963	
6	10078	
7	15498	
8	8917	
9	15489	
10	9925	
11	31401	
12	17859	
13	9240	

- From the above average price of each company will be revealed here .
- There are totally 21 companies are there from the above dataset .

8.



- From the above we will find out the city\_mpg greater than the 90% of city\_mpg .
- City\_mpg means within the city how much fuel the vehicle will consume by starting and stopping all these are revealed .
- Total 19 cars have good city\_mpg .

9.



The screenshot shows an SQL Worksheet interface with a query editor and a results pane. The query editor contains the following SQL code:

```
select avg(horsepower),fuel_type from automobile where fuel_type='diesel' group by fuel_type ;

select avg(horsepower),fuel_type ,num_of_doors from automobile where fuel_type='diesel' and num_of_doors='four' group by fuel_type,num_of_doors ;

select price from automobile where price>0.75(price);

select avg(price), num_of_cylinders ,fuel_type from automobile where num_of_cylinders >6 group by num_of_cylinders,fuel_type;

select round(avg(length/width)) from automobile group by body_style;
```

The results pane shows the output of the last query, which is a table with 5 rows and 2 columns. The first column is labeled 'ROUND(AVG(LENGTH/WIDTH))' and the second column is labeled '3'.

ROUND(AVG(LENGTH/WIDTH))	3
1	3
2	3
3	3
4	3
5	3

- From the above average of length to width ratio for each body\_style will be revealed.
- From this the avg ratio is almost same for all 5 body\_styles .
- Length to width means the dimesions are same for all cars .

10.

The screenshot shows a database query editor with a 'Worksheet' and 'Query Builder' tab. The SQL code in the editor is as follows:

```
10.
select count(*) from automobile where price between (select avg(price)-STDEV(price) from automobile) and (select avg(price)+STDEV(price) from automobile);

select count(*) from automobile where ABS(price -(select avg(price) from automobile)) <= (select STDEV_POP(price) from automobile);
select * from automobile;

10.
select count(*) from automobile where ABS(price -(select AVG(price) from automobile)) <= (select STDEV_POP(price) from automobile);

6.

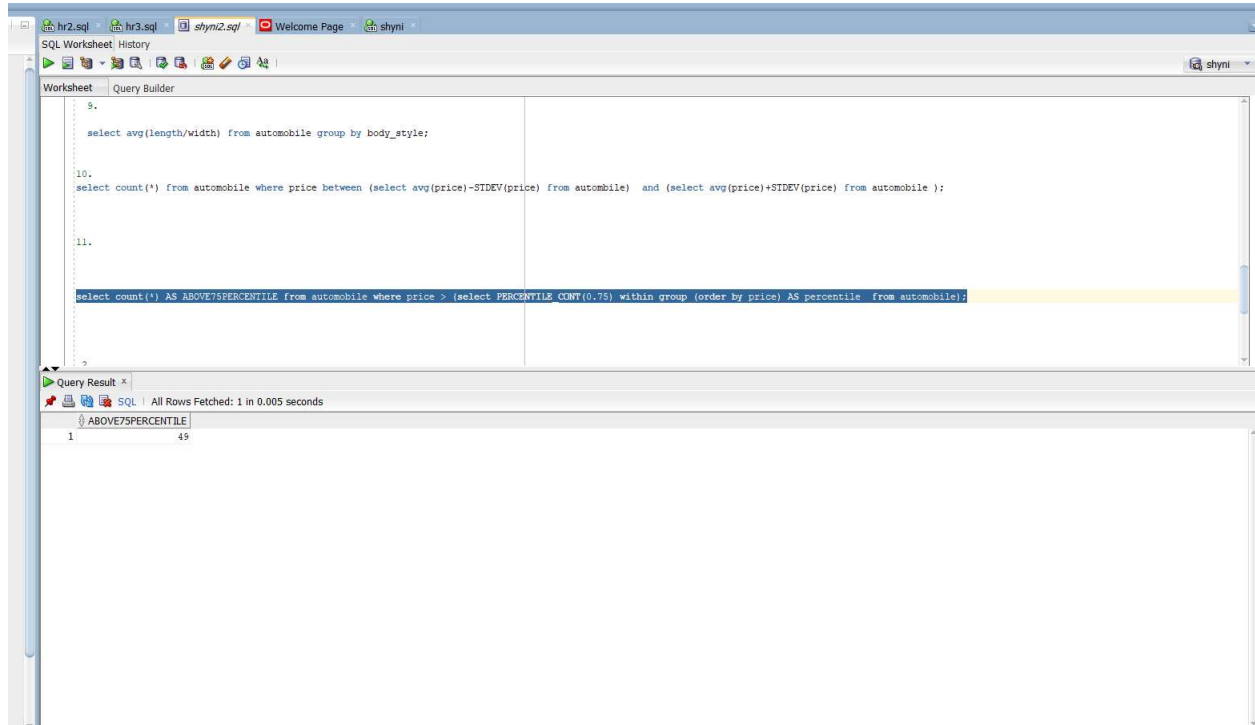
select avg(price), fuel_type,num_of_cylinders from automobile where num_of_cylinders > 'six' group by fuel_type,num_of_cylinders;
```

Below the editor, the 'Query Result' pane shows the execution status: 'All Rows Fetched: 1 in 0.032 seconds'. The results table has one column, 'COUNT(\*)', and one row with the value 169.

COUNT(*)
169

- From the above we can find the number of cars with the standard deviation of price will be found.
- Means the 68 % of the cars will fall under one standard deviation of the average price.
- Here the number of cars of within one standard deviation is 169 .

11.



- From the above we can find the price is greater than the 75% of the price of the car.
- The cost of the cars that are above 75% of price that means costly cars are revealed.
- Total 49 cars are the costly cars indicated here.

12.

Worksheet    Query Builder

11.

```

select count(*) AS ABOVE75PERCENTILE from automobile where price > (select PERCENTILE_COUNT(0.75) within group (order by price) AS percentile from automobile);

select make,price,count(symboling) from automobile where symboling=3 group by make,price,symboling ;

select make,price,symboling from automobile where symboling=3 group by make,price,symboling order by price desc ;

select make from automobile where drive_wheels='4wd' and num_of_doors='two' ;

```

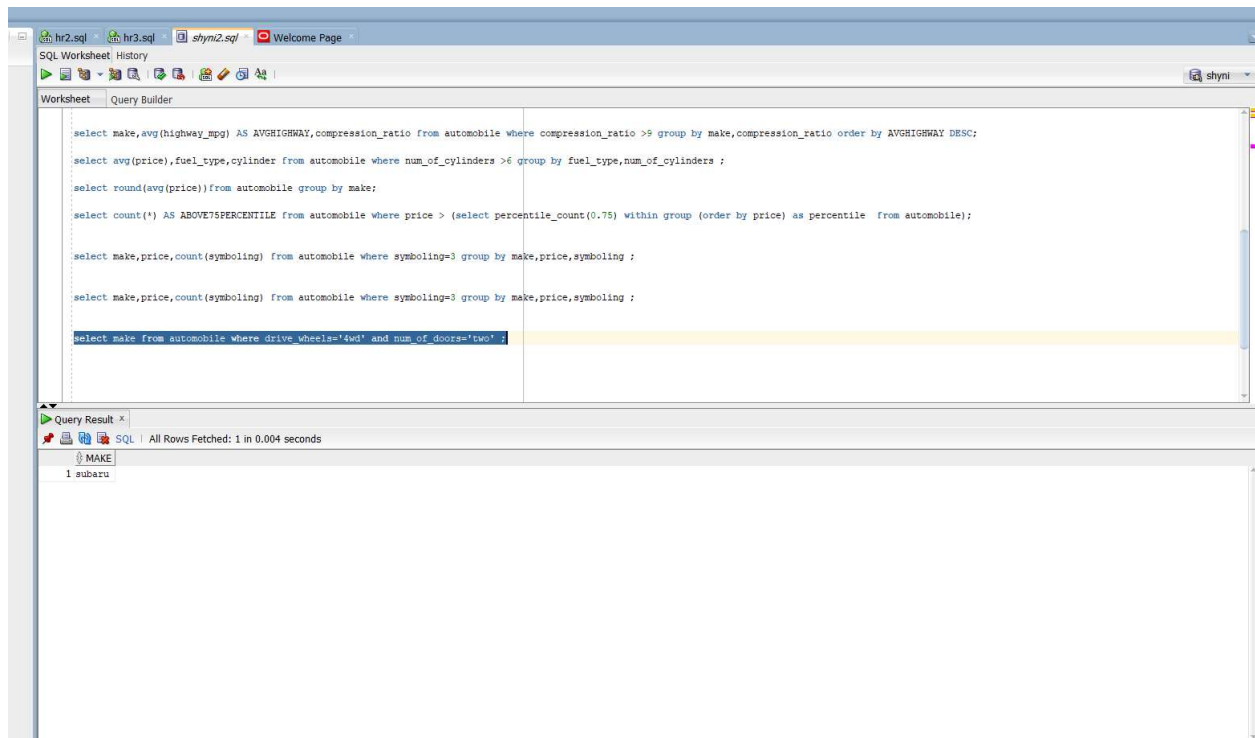
Query Result x

SQL | All Rows Fetched: 23 in 0.005 seconds

	MAKE	PRICE	SYMBOLING
1	porsche	37028	3
2	mercedes-benz	35056	3
3	porsche	34028	3
4	porsche	32528	3
5	porsche	22018	3
6	nissan	19699	3
7	saab	18150	3
8	nissan	17199	3
9	toyota	16558	3
10	alfa-romero	16500	3
11	toyota	15998	3
12	saab	15040	3
13	mitsubishi	14869	3
14	mitsubishi	14499	3
15	alfa-romero	13495	3
16	dodge	12964	3
17	plymouth	12764	3
18	mitsubishi	12629	3
19	saab	11850	3
20	volkswagen	11595	3
21	volkswagen	9980	3
22	mitsubishi	9959	3
23	mitsubishi	8499	3

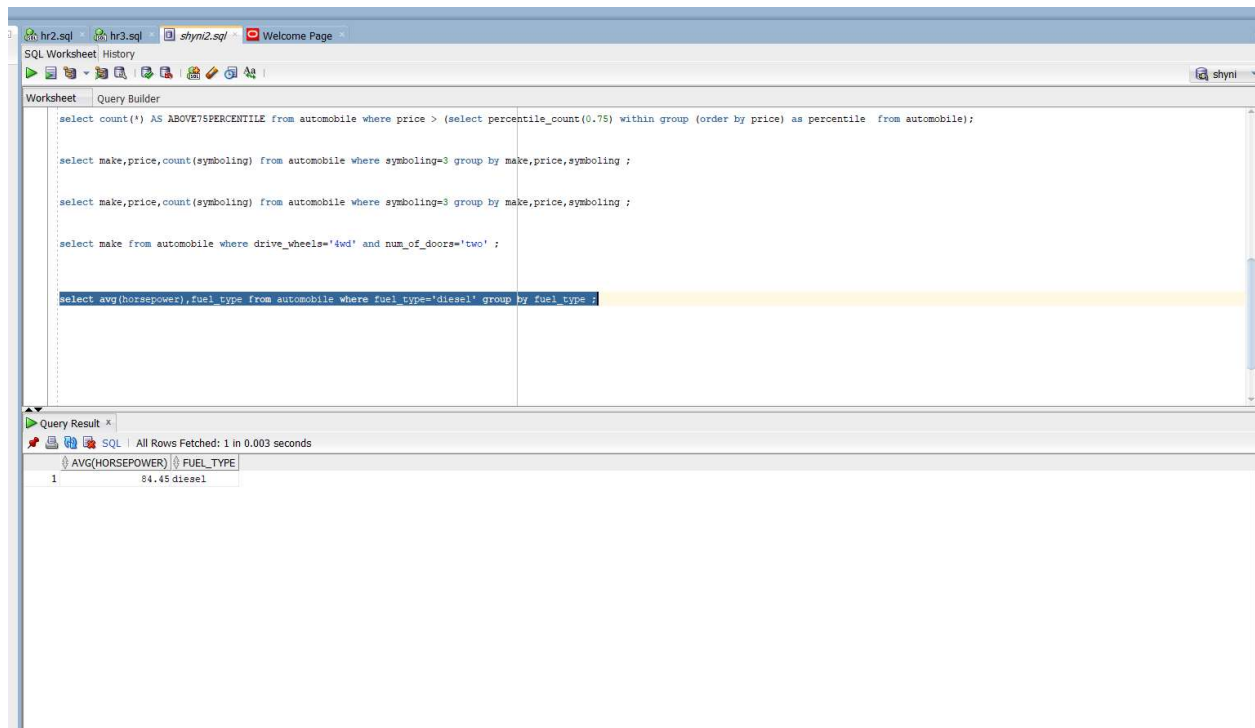
- From the above the each company price is revealed and safest cars of each company is revealed .
- From this the high price of top 3 companies that are safest are
  - 1 .porsche (37028)
  - 2.mercedes\_benz(35056)
  - 3.nissan (19699)
- There are total 12 companies provides the safest cars among all the companies .

13.



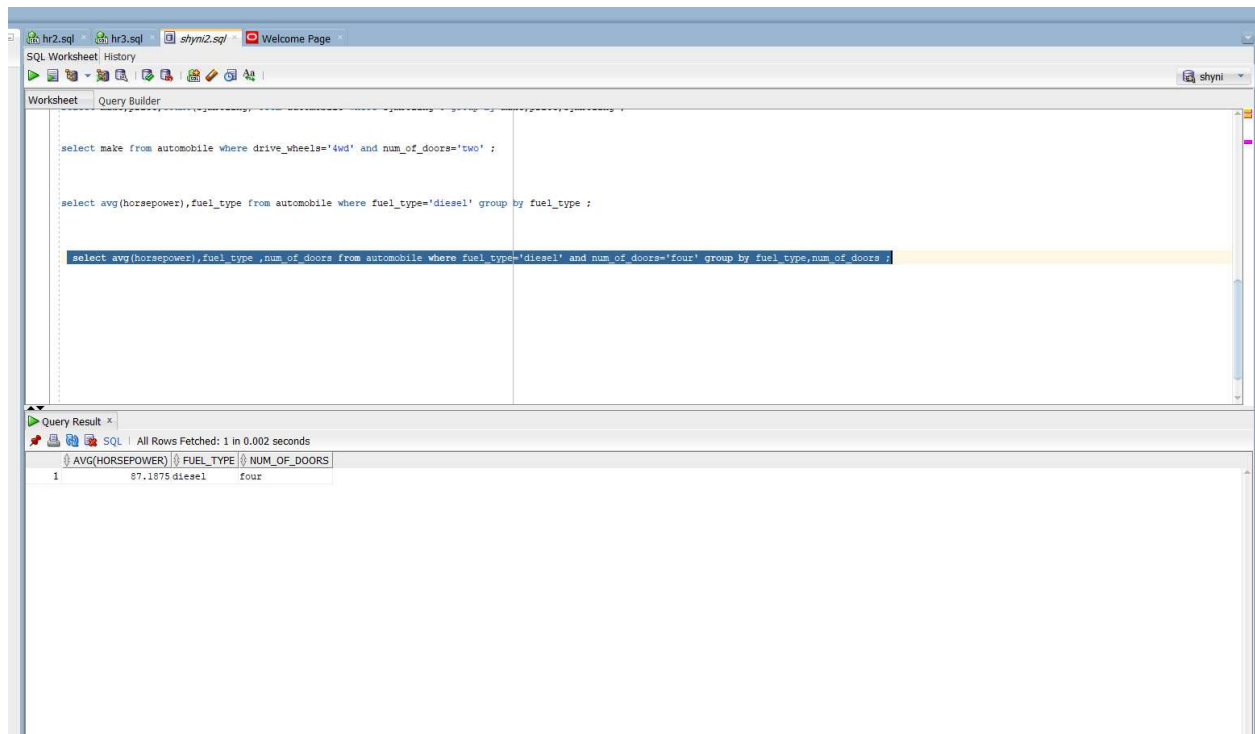
- From the above the company which has the both drive\_wheel= 4wd and num\_of\_doors=two means particular type will be revealed.
- There are 3 types of drive\_wheels there and num\_of\_doors are also 3.

14.



- From the above average horsepower of vehicle will be revealed for a particular fuel type of diesel .
- Average diesel horsepower of all the companies is 84.45
- Horse power means it's how much work the engine is capable of.

15.



- From the above avg horse power of cars with fuel\_type is diesel and num\_of\_doors is 87.187.
- Large engines produce the high horse power and small engines can produce low horse power .
- Horse power means rate of work that how much fuel that engine can burn in a given time will be revealed here.