

Automobile Dealership Database Management System

Database Base Query List

The Automobile Dealership Management System currently runs 11 base queries on the database. These are:

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```
SELECT ModelYear, Manufacturer, Name, TrimLevel, BodyType, Color, Mileage FROM Vehicle WHERE BodyType = 'Sedan';=
```

The above query will display vehicles by body type (sedan/SUV/truck). In the case of the above query, I used Sedan. However, if we use say, Truck, the query will return trucks only.

Output:

ModelYear	Manufacturer	Name	TrimLevel	BodyType	Color	Mileage
2006	Chevrolet	Cobalt	SS	Sedan	Black	100000
2012	Lexus	IS	350	Sedan	Wine Red	112000
2019	BMW	M6	xDrive	Sedan	Formula Blue	20000
2008	Ford	Fusion	SEL	Sedan	Black	220000
2023	Lexus	LS 500	F Sport	Sedan	White	100

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```
SELECT Manufacturer, COUNT(*) AS "Number" FROM Vehicle GROUP BY Manufacturer;
```

This query displays the number of cars of a certain manufacturer that are in the inventory. For example, if there are 5 Ford cars in the inventory, it'll show Ford: 5.

Output:

Manufacturer	Number
BMW	1
Chevrolet	1
Ford	1
Infinity	1
Lexus	2
Mercedes-Benz	1
Toyota	1

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```
SELECT ModelYear, Manufacturer, Name, WorkDetails FROM Vehicle, WorkOrder WHERE Vehicle.WorkOrderID = WorkOrder.WorkOrderID;
```

This query lists vehicles that need work and display the details of the work required. It selects *ModelYear* and *Manufacturer* from the *Vehicle* and *WorkOrder* tables.

Output:

ModelYear	Manufacturer	Name	WorkDetails
2006	Chevrolet	Cobalt	Rotate tires
2008	Ford	Fusion	Change oil
2002	Toyota	Tacoma	Replace transmission
2012	Infinity	G37x	Replace brakes

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```
SELECT MechanicName, WorkDetails FROM Mechanic, WorkOrder WHERE  
Mechanic.AssignedWork = WorkOrder.WorkOrderID;
```

This query shows the mechanics with assigned work and its details.

Output:

MechanicName	WorkDetails
Jenny Zhu	Rotate tires
Ken Pong	Change oil
Andrew Smith	Change oil

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```
SELECT MechanicName, ModelYear, Manufacturer, Name FROM Mechanic,  
Vehicle WHERE Mechanic.MechanicID = Vehicle.MechanicID;
```

This query lists cars that have been serviced by a specific mechanic. We can pass a mechanic name to this query later and it will return only the cars worked on by that specific mechanic. It works the same way as the 3rd query.

Output:

MechanicName	ModelYear	Manufacturer	Name
Jenny Zhu	2006	Chevrolet	Cobalt
Ken Pong	2008	Ford	Fusion
Andrew Smith	2012	Infinity	G37x

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```
SELECT SUM(NumVehicles) AS 'Total Vehicles in Inventory' FROM  
Inventory;
```

This query returns the total number of vehicles in the inventory, summed.

Output:

Total Vehicles in Inventory
20

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```
SELECT Customer.Name AS CustomerName, Vehicle.ModelYear,  
Vehicle.Manufacturer, Vehicle.Name AS VehicleName FROM Customer,  
Vehicle WHERE Customer.CustomerID = Vehicle.CustomerID;
```

The above query displays the customer and the details of their vehicle. It gathers data from the *Customer* and *Vehicle* tables.

Output:

CustomerName	ModelYear	Manufacturer	VehicleName
Jonathan	2006	Chevrolet	Cobalt
Constantine	2008	Ford	Fusion
Ali Spa	2002	Toyota	Tacoma
John Doe	2012	Infinity	G37x

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```
SELECT Customer.Name AS CustomerName, Vehicle.ModelYear,  
Vehicle.Manufacturer, Vehicle.Name AS VehicleName, WorkDetails,  
PriceQuote FROM Customer, Vehicle, WorkOrder WHERE Customer.CustomerID  
= Vehicle.CustomerID AND Vehicle.WorkOrderID = WorkOrder.WorkOrderID;
```

This query displays the customer, their car, and the work required. It also displays the price quoted to for the repair job. This query uses *Customer*, *Vehicle* and *WorkOrder* tables.

Output:

CustomerName	ModelYear	Manufacturer	VehicleName	WorkDetails	PriceQuote
Jonathan	2006	Chevrolet	Cobalt	Rotate tires	500
Constantine	2008	Ford	Fusion	Change oil	100
Ali Spa	2002	Toyota	Tacoma	Replace transmission	3000
John Doe	2012	Infinity	G37x	Replace brakes	300

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```
SELECT AVG(Mileage) AS 'Average Mileage', COUNT(*) AS 'Total Vehicles in for Service', SUM(PriceQuote) AS 'Total PriceQuote ($)' FROM Vehicle, WorkOrder WHERE Vehicle.WorkOrderID = WorkOrder.WorkOrderID;
```

This query displays the average mileage of vehicles that are in for repairs along with the total number of vehicles and the total sum of the repair prices (revenue).

Output:

Average Mileage	Total Vehicles in for Service	Total PriceQuote (\$)
209500.0	4	3900

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```
SELECT COUNT(*) AS 'Total Vehicles in Shop' FROM Vehicle;
```

This query simply displays the total number of vehicles in the shop.

Output:

Total Vehicles in Shop
8

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```
SELECT COUNT(*) AS 'Total Vehicles in Shop' FROM Vehicle;
```

This query simply displays the total number of vehicles in the inventory.

Output:

Total Vehicles in Inventory
20

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```
SELECT ModelYear, Manufacturer, Name, WorkDetails, group_concat(MechanicName) AS FreeMechanics FROM Vehicle, WorkOrder, Mechanic WHERE Vehicle.WorkOrderID = WorkOrder.WorkOrderID AND Vehicle.MechanicID IS NULL AND Mechanic.AssignedWork IS NULL;
```

This query shows the vehicles that have work orders, but no mechanic assigned to them (vehicles on wait for repairs). It also shows free mechanics that have no work assigned to them. These mechanics may be assigned to work on these vehicles.

This query uses the `group_concat()` function to display the free mechanics in a single row. The query uses data from the *Vehicle*, *WorkOrder* and *Mechanic* tables.

Output:

ModelYear	Manufacturer	Name	WorkDetails	FreeMechanics
2002	Toyota	Tacoma	Replace transmission	Kenny Chen,Zhujing Wang