

Selecting top 10 most popular car brands and their best selling models

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[49]: %%sql
CREATE TEMP TABLE model_sales AS
SELECT
    make,
    model,
    COUNT(*) AS model_sales
FROM vehicle_sales
GROUP BY make, model;

CREATE TEMP TABLE brand_sales AS
SELECT
    make,
    COUNT(*) AS total_sales
FROM vehicle_sales
GROUP BY make;

CREATE TEMP TABLE best_model AS
SELECT
    make,
    MAX(model_sales) AS best_model_sales
FROM model_sales
GROUP BY make;

SELECT
    b.make,
    bs.total_sales,
    m.model AS best_model,
    b.best_model_sales
FROM best_model b
JOIN model_sales m ON b.make = m.make AND b.best_model_sales = m.model_sales
JOIN brand_sales bs ON b.make = bs.make
ORDER BY bs.total_sales DESC
LIMIT 10;
```

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	make	total_sales	best_model	best_model_sales
0	Ford	94000	f-150	14479
1	Chevrolet	60587	impala	7957
2	Nissan	54017	altima	19349
3	Toyota	39966	camry	12549
4	Dodge	30954	grand caravan	7941
5	Honda	27351	accord	9155
6	Hyundai	21832	sonata	6912
7	BMW	20793	3 series	8204
8	Kia	18082	optima	4389
9	Chrysler	17483	town and country	5994

Selecting the number of cars sold in each months

```
[52]: %%sql
SELECT
    SUBSTR(saledate, 4, 2) AS Month,
    SUBSTR(saledate, 7, 4) AS Year,
    SUM(CASE WHEN make='Ford' THEN 1 ELSE 0 END) AS Ford,
    SUM(CASE WHEN make='Chevrolet' THEN 1 ELSE 0 END) AS Chevrolet,
    SUM(CASE WHEN make='Nissan' THEN 1 ELSE 0 END) AS Nissan,
    SUM(CASE WHEN make='Toyota' THEN 1 ELSE 0 END) AS Toyota,
    SUM(CASE WHEN make='Dodge' THEN 1 ELSE 0 END) AS Dodge,
    SUM(CASE WHEN make='Honda' THEN 1 ELSE 0 END) AS Honda,
    SUM(CASE WHEN make='Hyundai' THEN 1 ELSE 0 END) AS Hyundai,
    SUM(CASE WHEN make='BMW' THEN 1 ELSE 0 END) AS BMW,
    SUM(CASE WHEN make='Kia' THEN 1 ELSE 0 END) AS Kia
FROM vehicle_sales
WHERE SUBSTR(saledate, 7, 4)='2015'
GROUP BY month
ORDER BY month;
```

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* sqlite:///vehicle_sales.sqlite
Done.
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	Month	Year	Ford	Chevrolet	Nissan	Toyota	Dodge	Honda	Hyundai	BMW	Kia
0	01	2015	24081	14789	12905	9779	7970	7805	5336	5191	4470
1	02	2015	28057	18259	15209	11084	9272	7843	6159	5822	5557
2	03	2015	8413	5471	4974	3388	2614	1807	1901	1264	1450
3	04	2015	271	176	196	90	74	73	48	61	28
4	05	2015	9181	5716	5487	3692	2815	2216	2051	2104	1478
5	06	2015	15962	9817	10437	7759	5124	4059	4221	4134	3598
6	07	2015	277	101	102	81	75	46	30	89	24

Top 10 brands in 2014

```
[58]: %%sql
SELECT
    make,
    COUNT(*) AS total_sales
FROM vehicle_sales
WHERE SUBSTR(saledate, 7, 4) = '2014'
GROUP BY make
ORDER BY total_sales DESC
LIMIT 10;
```

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sqlite://
* sqlite:///vehicle_sales.sqlite
Done.
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	make	total_sales
0	Ford	7758
1	Chevrolet	6258
2	Nissan	4707
3	Toyota	4093
4	Honda	3502
5	Dodge	3010
6	BMW	2128
7	Hyundai	2086
8	Mercedes-Benz	1834
9	Chrysler	1694

Top 10 brands in 2015

```
[61]: %%sql
SELECT
    make,
    COUNT(*) AS total_sales
FROM vehicle_sales
WHERE SUBSTR(saledate, 7, 4) = '2015'
GROUP BY make
ORDER BY total_sales DESC
LIMIT 10;
```

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sqlite://
* sqlite:///vehicle_sales.sqlite
Done.
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	make	total_sales
0	Ford	86242
1	Chevrolet	54329
2	Nissan	49310
3	Toyota	35873
4	Dodge	27944
5	Honda	23849
6	Hyundai	19746
7	BMW	18665
8	Kia	16605
9	Chrysler	15789

Most expensive brands and models

```
[64]: %%sql
SELECT
    make,
    model,
    ROUND(AVG(sellingprice), 0) AS avg_price,
    ROUND(AVG(mmr), 0) AS avg_market_value,
    ROUND(AVG(sellingprice - mmr), 0) AS avg_margin
FROM vehicle_sales
GROUP BY make
ORDER BY avg_price DESC
LIMIT 20;
```

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sqlite://
* sqlite:///vehicle_sales.sqlite
Done.
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	make	model	avg_price	avg_market_value	avg_margin
0	Rolls-Royce	ghost	153488.0	154294.0	-806.0
1	Ferrari	california	127211.0	129211.0	-2000.0
2	Lamborghini	gallardo	112625.0	111500.0	1125.0
3	Bentley	continental gt speed	74368.0	75928.0	-1561.0
4	airstream	interstate	71000.0	29500.0	41500.0
5	Tesla	model s	67054.0	67813.0	-759.0
6	Aston Martin	v8 vantage	54812.0	53560.0	1252.0
7	fisker	karma	46461.0	49100.0	-2639.0
8	Maserati	granturismo	44947.0	45680.0	-733.0
9	Lotus	exige	40800.0	40300.0	500.0
10	Porsche	cayenne	39843.0	40108.0	-265.0
11	Land Rover	lr4	31331.0	31626.0	-295.0
12	Ram	1500	25300.0	25528.0	-228.0
13	Mercedes-Benz	s-class	21532.0	21881.0	-349.0
14	BMW	3 series	21474.0	21608.0	-134.0
15	Infiniti	g coupe	20417.0	20505.0	-88.0
16	Lexus	rx 350	20214.0	20298.0	-84.0
17	Audi	a4	19911.0	20075.0	-165.0
18	Jaguar	xf	19783.0	20136.0	-353.0
19	GMC	terrain	16913.0	17018.0	-105.0

Biggest price difference between mmr and selling price

```
[67]: %%sql
SELECT
    make,
    model,
    sellingprice,
    mmr,
    (sellingprice - mmr) AS price_difference
FROM vehicle_sales
ORDER BY price_difference DESC
LIMIT 10;
```

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sqlite://
* sqlite:///vehicle_sales.sqlite
Done.
```

	make	model	sellingprice	mmr	price_difference
0	Ford	escape	230000.0	22800.0	207200.0
1	Ford	escape	108200.0	8250.0	99950.0
2	Nissan	versa	67500.0	10350.0	57150.0
3	Toyota	corolla	68900.0	15250.0	53650.0
4	Mercedes-Benz	sprinter	84000.0	31900.0	52100.0
5	BMW	4 series	84500.0	42500.0	42000.0
6	airstream	interstate	71000.0	29500.0	41500.0
7	Chevrolet	suburban	55000.0	15300.0	39700.0
8	BMW	None	88500.0	51000.0	37500.0
9	Chevrolet	suburban	46400.0	11100.0	35300.0

Most popular color for each brand

```
[70]: %%sql
WITH color_rank AS (
    SELECT
        make,
        color,
        COUNT(*) AS color_sales,
        RANK() OVER (PARTITION BY make ORDER BY COUNT(*) DESC) AS rnk
    FROM vehicle_sales
    GROUP BY make, color
)
SELECT make, color, color_sales
FROM color_rank
WHERE rnk = 1
ORDER BY color_sales DESC;
```

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sqlite://
* sqlite:///vehicle_sales.sqlite
Done.
```

	make	color	color_sales
0	Ford	white	22172
1	Chevrolet	white	13445
2	Nissan	black	11392
3	Toyota	silver	7677
4	BMW	black	6454
5	Honda	gray	6007
6	Dodge	white	5917
7	Mercedes-Benz	black	5753
8	Infiniti	black	4243
9	Hyundai	silver	4146
10	Jeep	black	3570