```sql
Select *
From  EVDatabase..ElectricVehiclePopulationData


-- autojen määrä vuoteen nähden
```

150 % ▾ ◂

⊞ Results ▤ Messages

	VIN	County	City	State	PostalCode	ModelYear	Make	Model	ElectricVehicleType	CAFV	ElectricRange	BaseMSRP	LegislativeDistrict	DOLVehicleID	VehicleLocation
1	KNDCR3LF5R	King	Covington	WA	98042	2024	KIA	NIRO	Plug-in Hybrid Electric Vehicle (PHEV)	Eligible	33	0	47	257749012	POINT (-122.111625 47.36078)
2	7SAYGDEE6P	King	Covington	WA	98042	2023	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	47	230309516	POINT (-122.111625 47.36078)
3	3C3CFFGE7G	King	Seattle	WA	98144	2016	FIAT	500	Battery Electric Vehicle (BEV)	Eligible	84	0	37	476890816	POINT (-122.30823 47.581975)
4	YV4H60CV2P	King	Sammamish	WA	98074	2023	VOLVO	XC90	Plug-in Hybrid Electric Vehicle (PHEV)	Eligible	32	0	45	224213664	POINT (-122.0313266 47.6285782)
5	7SAXCDE56P	Clark	Vancouver	WA	98660	2023	TESLA	MODEL X	Battery Electric Vehicle (BEV)	Unknown	0	0	49	225997789	POINT (-122.675975 45.630465)
6	JN1BF0AA3P	King	Seattle	WA	98144	2023	NISSAN	ARIYA	Battery Electric Vehicle (BEV)	Unknown	0	0	37	253688872	POINT (-122.30823 47.581975)
7	5YJSA1E22G	King	Kirkland	WA	98034	2016	TESLA	MODEL S	Battery Electric Vehicle (BEV)	Eligible	210	0	1	146338930	POINT (-122.209285 47.71124)
8	5YJ3E1EAXK	King	Issaquah	WA	98027	2019	TESLA	MODEL 3	Battery Electric Vehicle (BEV)	Eligible	220	0	5	474306633	POINT (-122.03646 47.534065)
9	7SAYGDEE3P	King	Seattle	WA	98125	2023	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	46	251349976	POINT (-122.296385 47.71558)
10	7SAYGDEF5N	Clark	Vancouver	WA	98684	2022	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	17	231074826	POINT (-122.51692 45.6228)
11	7SAYGDEEXP	King	Seattle	WA	98112	2023	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	43	236670465	POINT (-122.30764 47.62523)
12	WB523CF06R	King	Sammamish	WA	98074	2024	BMW	IX	Battery Electric Vehicle (BEV)	Unknown	0	0	41	256378090	POINT (-122.0313266 47.6285782)
13	5YJ3E1EB8K	King	Seattle	WA	98121	2019	TESLA	MODEL 3	Battery Electric Vehicle (BEV)	Eligible	220	0	36	219218352	POINT (-122.344125 47.61546)
14	1N4BZ1CP2K	King	Woodinville	WA	98072	2019	NISSAN	LEAF	Battery Electric Vehicle (BEV)	Eligible	150	0	45	104728767	POINT (-122.151665 47.75855)
15	5YJYGDEF4M	King	Bellevue	WA	98006	2021	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	41	170756778	POINT (-122.16937 47.571015)
16	7SAYGDEEXP	King	Redmond	WA	98052	2023	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	48	245704532	POINT (-122.12302 47.67668)
17	7PDSGABA0P	King	Seattle	WA	98144	2023	RIVIAN	R1S	Battery Electric Vehicle (BEV)	Unknown	0	0	37	240801123	POINT (-122.30823 47.581975)
18	7SAXCDE55P	Kitsap	Kingston	WA	98346	2023	TESLA	MODEL X	Battery Electric Vehicle (BEV)	Unknown	0	0	23	238866568	POINT (-122.50156 47.8019)
19	WMW13DJ0...	King	Bothell	WA	98011	2022	MINI	HARDT...	Battery Electric Vehicle (BEV)	Unknown	0	0	1	157777672	POINT (-122.20578 47.762405)
20	7SAYGDEE7P	King	Seattle	WA	98122	2023	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	43	258156769	POINT (-122.30839 47.610365)
21	5UXTA6C02N	King	Seattle	WA	98144	2022	BMW	X5	Plug-in Hybrid Electric Vehicle (PHEV)	Eligible	30	0	37	206935172	POINT (-122.30823 47.581975)
22	5YJYGDEE3M	King	Des Moines	WA	98198	2021	TESLA	MODEL Y	Battery Electric Vehicle (BEV)	Unknown	0	0	33	138989980	POINT (-122.3219166 47.4013890)
23	5YJ3E1EA6P	King	Sammamish	WA	98075	2023	TESLA	MODEL 3	Battery Electric Vehicle (BEV)	Unknown	0	0	41	237908359	POINT (-122.03309 47.58153)

```sql
-- Millä automerkillä on pisin ajomatka

Select Distinct Make, Round(AVG(ElectricRange), 0) as AVGRangeMiles
from EVDatabase..ElectricVehiclePopulationData
Where ElectricRange > 1
Group by Make
Order by AVGRangeMiles Desc
```

150 %

Results | Messages

	Make	AVGRangeMiles
1	TESLA	241
2	JAGUAR	234
3	POLESTAR	233
4	CHEVROLET	135
5	VOLKSWAGEN	107
6	NISSAN	104
7	THINK	100
8	WHEEGO ELECTRIC CARS	100
9	HYUNDAI	96
10	KIA	88
11	FIAT	86
12	AUDI	85
13	PORSCHE	71
14	SMART	62
15	AZURE DYNAMICS	56
16	MINI	48
17	HONDA	47
18	BMW	47
19	CADILLAC	37
20	LEXUS	37
21	ALFA ROMEO	33
22	FISKER	33
23	DODGE	32
24	CHRYSLER	32
25	MERCEDES-BENZ	31
26	MITSUBISHI	30
27	TOYOTA	29
28	MAZDA	26
29	FORD	25
30	VOLVO	24
31	LAND ROVER	24
32	LINCOLN	24
33	JEEP	22
34	BENTLEY	20
35	SUBARU	17

```sql
-- Automerkittäin ajomatka eroteltuna BEV ja PHEV
-- En nyt osannut yhdistää ensimmäisiä kolumneja -- Sain sittenkin COALESCEllä:)

WITH CTE_RangePlugin as
    (Select Distinct Make, Round(AVG(ElectricRange), 0) as AVGRangeMilesPlugin
    from EVDatabase..ElectricVehiclePopulationData
    Where ElectricRange > 1 AND ElectricVehicleType Like 'Plug%'
    Group by Make
)
, CTE_RangeEV as
    (Select Distinct Make, Round(AVG(ElectricRange), 0) as AVGRangeMilesEV
    from EVDatabase..ElectricVehiclePopulationData
    Where ElectricRange > 1 AND ElectricVehicleType Like 'Bat%'
    Group by Make
)

Select COALESCE(EV.Make, plug.Make) as Make, plug.AVGRangeMilesPlugin, EV.AVGRangeMilesEV
From CTE_RangeEV as EV
Full join CTE_RangePlugin as plug
on EV.Make = plug.Make
Order by AVGRangeMilesplugin DESC
```

	Make	AVGRangeMilesPlugin	AVGRangeMilesEV
1	WHEEGO ELECTRIC CARS	100	NULL
2	HONDA	47	NULL
3	CHEVROLET	45	235
4	BMW	41	100
5	CADILLAC	37	NULL
6	LEXUS	37	NULL
7	ALFA ROMEO	33	NULL
8	FISKER	33	NULL
9	CHRYSLER	32	NULL
10	DODGE	32	NULL
11	KIA	31	178
12	HYUNDAI	30	227
13	MITSUBISHI	28	62
14	TOYOTA	28	103
15	MAZDA	26	NULL
16	LINCOLN	24	NULL
17	VOLVO	24	NULL
18	LAND ROVER	24	NULL
19	JEEP	22	NULL
20	FORD	22	78
21	BENTLEY	20	NULL
22	AUDI	19	209
23	SUBARU	17	NULL
24	PORSCHE	15	198
25	MINI	13	110
26	MERCEDES-BENZ	11	87
27	SMART	NULL	62
28	NISSAN	NULL	104
29	POLESTAR	NULL	233
30	TESLA	NULL	241

```sql
Select Distinct ModelYear, COUNT(VIN) as EVsPerYear
from EVDatabase..ElectricVehiclePopulationData
Group by ModelYear
Order by ModelYear DESC
```

150 %

Results | Messages

	ModelYear	EVsPerYear
1	2024	3309
2	2023	51351
3	2022	27592
4	2021	18774
5	2020	11425
6	2019	10860
7	2018	14151
8	2017	8523
9	2016	5518
10	2015	4833
11	2014	3539
12	2013	4455
13	2012	1630
14	2011	782
15	2010	23
16	2008	20
17	2003	1
18	2002	2
19	2000	7
20	1999	3
21	1998	1
22	1997	1

```sql
-- Missä kaupungissa eniten tesloja -- Datan mukaan Seattlessa

Select Distinct City, COUNT(Make) as NumberOfTeslas
From EVDatabase..ElectricVehiclePopulationData
Where Make = 'Tesla'
Group by City
Order by NumberOfTeslas DESC
```

150 %

Results | Messages

	City	NumberOfTeslas
1	Seattle	11163
2	Bellevue	5130
3	Redmond	3642
4	Bothell	3280
5	Sammamish	3090
6	Kirkland	2778
7	Vancouver	2306
8	Renton	2274
9	Issaquah	1519
10	Lynnwood	1500

```sql
-- mikä automerkki on yleisin osavaltioittain Keskeneräinen

WITH MakeCounts AS (
    SELECT State, Make, COUNT(Make) AS CountOfVehicles
    FROM EVDatabase..ElectricVehiclePopulationData
    GROUP BY State, Make
),
RankedMakes AS (
    SELECT State, Make, CountOfVehicles, ROW_NUMBER() OVER (PARTITION BY State ORDER BY CountOfVehicles DESC) AS RowNum
    FROM MakeCounts
)
SELECT State, Make
FROM RankedMakes
WHERE RowNum = 1;
```

	State	Make
1	AE	TESLA
2	AK	TESLA
3	AL	CHEVROLET
4	AP	NISSAN
5	AR	TESLA
6	AZ	TESLA
7	BC	TESLA
8	CA	TESLA
9	CO	TESLA
10	CT	CHEVROLET
11	DC	TESLA
12	DE	TESLA
13	FL	TESLA
14	GA	TESLA
15	HI	TESLA
16	IA	TESLA
17	ID	TESLA
18	IL	TESLA
19	IN	TESLA
20	KS	BMW
21	KY	CHRYSLER
22	LA	TESLA
23	MA	TESLA
24	MD	TESLA
25	MI	TOYOTA
26	MN	TESLA
27	MO	TESLA
28	NC	TESLA
29	NE	CHRYSLER
30	NH	TESLA

```sql
-- Paljonko Teslan eri mallit maksavat + LISÄKSI otetaan näiden perään range (EV_cars) ja akun koko
Select DISTINCT Make, price.Model, Cast(Price#DE# as DECIMAL(10)) as Price, Battery, Range
From EVDatabase..ElectricVehiclePopulationData as data
Full Join EVDatabase..EV_cars as price
    on data.Make = price.Brand
Where Make Like 'Tesla'
Order by Price DESC
```

150 %

Results | Messages

	Make	Model	Price	Battery	Range
1	TESLA	Model X Plaid	115970	95	455
2	TESLA	Model S Plaid	110970	95	560
3	TESLA	Model X Dual Motor	100970	95	475
4	TESLA	Model S Dual Motor	95970	95	575
5	TESLA	Model Y Performance	63667	75	415
6	TESLA	Model Y Long Range Dual Motor	59017	75	435
7	TESLA	Model 3 Long Range Dual Motor	55220	75	505
8	TESLA	Model Y	47567	57.5	350
9	TESLA	Model 3	46220	57.5	420

```sql
-- Millä automallilla on paras hinta-range-suhde (pienempi luku on parempi)
-- jostain syystä osa automerkeistä on kadonnut kuten Citroen e-C3
-- syyselvisi ja tässä ei ollut järkeä käyttää Joinia ollenkaan

Select DISTINCT price.Brand, price.Model, Cast(Price#DE# as DECIMAL(10)) as Price, Battery, Range, (Price#DE# / Range)
,(Range / Price#DE#)*1000 as MilesPer1000Dollar
From EVDatabase..ElectricVehiclePopulationData as data
Full Join EVDatabase..EV_cars as price
on data.Make = price.Brand
Where TRY_CAST(Price#DE# AS DECIMAL(10)) IS NOT NULL
Order by PricePerRange ASC
```

	Brand	Model	Price	Battery	Range	PricePerRange	MilesPer1000Dollar
1	Citroen	e-C3	23300	44	250	93.2	10.7296137339056
2	BYD	SEAL 82.5 kWh RWD Design	47578	82.5	500	95.156	10.5090588086931
3	MG	ZS EV Long Range	37990	68.3	370	102.675675675676	9.739405106607
4	CUPRA	Born 170 kW - 77 kWh	46450	77	450	103.222222222222	9.68783638320775
5	Volkswagen	ID.3 Pro S - 4 Seats	47595	77	455	104.604395604396	9.55982771299506
6	Skoda	Enyaq Coupe 85	51150	77	485	105.463917525773	9.48191593352884
7	BYD	DOLPHIN 60.4 kWh	35990	60.5	340	105.852941176471	9.44706863017505
8	Volkswagen	ID.4 Pro	46335	77	435	106.51724137931	9.38815150534153
9	Fisker	Ocean Ultra	57000	106.5	535	106.542056074766	9.3859649122807
10	Skoda	Enyaq 85	48900	77	455	107.472527472527	9.30470347648262
11	Volkswagen	ID.5 Pro	48970	77	455	107.626373626374	9.29140289973453
12	MG	MG4 Electric 77 kWh	45990	74.4	425	108.211764705882	9.24113937812568
13	Hyundai	IONIQ 6 Long Range 2WD	54000	74	495	109.090909090909	9.16666666666667
14	Tesla	Model 3 Long Range Dual Motor	55220	75	505	109.346534653465	9.14523723288664
15	Fisker	Ocean Sport	41560	75	380	109.368421052632	9.14340712223292
16	Hyundai	Kona Electric 64 kWh	42900	64	390	110	9.09090909090909
17	Tesla	Model 3	46220	57.5	420	110.047619047619	9.08697533535266
18	BYD	SEAL 82.5 kWh AWD Excellence	53668	82.5	485	110.655670103093	9.03704255794887

```sql
--Mikä on halvin ja kallein auto Fairfax Countyssä, ja mihin löytyy hinta toisesta taulukosta
Select County, Make, data.Model, AVG(Cast(EV.Price#DE# as DECIMAL(10))) as AVGPrice, ModelYear
From EVDatabase..ElectricVehiclePopulationData as data
Join EVDatabase..EV_cars as EV
    ON data.Model = EV.Model
Where county LIKE 'Fair%'
    AND TRY_CAST(Price#DE# AS DECIMAL(10)) IS NOT NULL
Group by County, Make, ModelYear, data.Model
Order by AVGPrice ASC
```

	County	Make	Model	AVGPrice	ModelYear
1	Fairfax	TESLA	MODEL 3	46220.000000	2019
2	Fairfax	TESLA	MODEL 3	46220.000000	2023
3	Fairfax	TESLA	MODEL Y	47567.000000	2023
4	Fairfax	TESLA	MODEL Y	47567.000000	2021

```sql
-- Taulukoiden yhteisissä datoissa on puutteita, joten löytyi vain Tesla mallit
-- Voisimme yrittää katsoa merkkikohtaisesti keskihinnat, mutta se ei ole fiksuimmasta päästä

Select County, Make,  AVG(Cast(EV.Price#DE# as DECIMAL(10))) as AVGPrice, ModelYear
From EVDatabase..ElectricVehiclePopulationData as data
Join EVDatabase..EV_cars as EV
    ON data.Make = EV.Brand
Where county LIKE 'Fair%'
    AND TRY_CAST(Price#DE# AS DECIMAL(10)) IS NOT NULL
Group by County, Make, ModelYear
Order by AVGPrice ASC
```

	County	Make	AVGPrice	ModelYear
1	Fairfax	JEEP	37000.000000	2022
2	Fairfax	HYUNDAI	47848.000000	2023
3	Fairfax	TOYOTA	52124.166666	2017
4	Fairfax	TOYOTA	52124.166666	2022
5	Fairfax	FORD	64375.000000	2020
6	Fairfax	TESLA	74313.800000	2015
7	Fairfax	TESLA	74313.800000	2019
8	Fairfax	TESLA	74313.800000	2021
9	Fairfax	TESLA	74313.800000	2023
10	Fairfax	BMW	88920.000000	2021