

## SQL Questions

Question 1. List the top 10 states by total electric vehicle sales (descending order)

### SQL Query:

```
Select Top 10
    "State",
    ("Y2016_EV_Sales"+"Y2017_EV_Sales"+"Y2018_EV_Sales") AS "Total3YRSales"
FROM "GBI_814"."GBI_814::FPData.ElectricVehicleData"
ORDER by "Total3YRSales" DESC;
```

### Result:

	State	Total3YRSales
1	California	322169
2	New York	31885
3	Florida	26533
4	Washington	25081
5	Texas	21693
6	New Jersey	18243
7	Massachusetts	16527
8	Colorado	13918
9	Illinois	13857
10	Oregon	13450

Question 2. List the top 10 states by number of electric vehicle sales per capita (descending order)

### SQL Query:

```
Select Top 10
    "State",
    Round(("Y2016_EV_Sales"+"Y2017_EV_Sales"+"Y2018_EV_Sales")/("Population_in_2015"*3),5) AS "EVSalesPERCapita"
FROM "GBI_829"."GBI_829::FPData.ElectricVehicleData" AS T2
LEFT JOIN "GBI_829"."GBI_829::FPData.StatePopulationData" AS T3
ON T2."State" = T3."State_or_territory"
ORDER by "EVSalesPERCapita" DESC;
```

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### Result:

	State	EVSalesPERCapita
1	California	0.00274
2	Hawaii	0.00127
3	Vermont	0.00118
4	Washington	0.00117
5	Oregon	0.00111
6	Colorado	0.00085
7	Massachusetts	0.00081
8	District of Columbia	0.00074
9	New Jersey	0.00068
10	Connecticut	0.00067

Question 3. List for states beginning with 'A', the zip codes with total incomes greater than the average for the state

### SQL Query:

```
Create table T4 AS (
    Select "STATE", Avg("Total_Income") AS "StateAvgTotalIncome"
    From "GBI_814"."GBI_814::FPData.DemographicData" AS T1
    Group by "STATE");

Select "State_or_territory", "ZIPCODE", "Total_Income", "StateAvgTotalIncome"
FROM "GBI_814"."GBI_814::FPData.DemographicData" AS T1
LEFT JOIN "GBI_814"."GBI_814::FPData.StatePopulationData" AS T3 ON T1."STATE" = T3."Abbreviation"
LEFT JOIN T4 ON T1."STATE" = T4."STATE"
Where "Total_Income" > "StateAvgTotalIncome" AND "State_or_territory" LIKE 'A%';
```

### Result:

	State_or_territory	ZIPCODE	Total_Income	StateAvgTotalIncome
1	Alabama	35004	283221	194519.83
2	Alabama	35007	701514	194519.83
3	Alabama	35010	382646	194519.83
4	Alabama	35016	361470	194519.83
5	Alabama	35020	259289	194519.83
6	Alabama	35022	552470	194519.83
7	Alabama	35023	484788	194519.83
8	Alabama	35040	399598	194519.83

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9	Alabama	35043	390635	194519.83
10	Alabama	35045	256336	194519.83
11	Alabama	35051	204773	194519.83
12	Alabama	35055	413210	194519.83
13	Alabama	35057	273337	194519.83
14	Alabama	35058	216214	194519.83
15	Alabama	35071	456043	194519.83
16	Alabama	35077	220744	194519.83
17	Alabama	35080	548303	194519.83
18	Alabama	35094	344443	194519.83
19	Alabama	35111	441344	194519.83
20	Alabama	35115	233852	194519.83
21	Alabama	35120	314475	194519.83
22	Alabama	35121	300507	194519.83
23	Alabama	35124	915969	194519.83
24	Alabama	35126	513336	194519.83
25	Alabama	35127	225090	194519.83
26	Alabama	35128	243334	194519.83
27	Alabama	35146	277018	194519.83
28	Alabama	35150	301304	194519.83
29	Alabama	35160	387795	194519.83
30	Alabama	35173	1038614	194519.83
31	Alabama	35180	318723	194519.83
32	Alabama	35205	428236	194519.83
33	Alabama	35206	201104	194519.83
34	Alabama	35209	1134655	194519.83
35	Alabama	35210	396253	194519.83
36	Alabama	35211	341170	194519.83
37	Alabama	35213	1502478	194519.83
38	Alabama	35214	314661	194519.83
39	Alabama	35215	700467	194519.83
40	Alabama	35216	1479816	194519.83
41	Alabama	35222	314460	194519.83
42	Alabama	35223	1903031	194519.83
43	Alabama	35226	1619591	194519.83
44	Alabama	35235	400175	194519.83
45	Alabama	35242	3359972	194519.83

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46	Alabama	35243	1512470	194519.83
47	Alabama	35244	1546699	194519.83
48	Alabama	35401	331038	194519.83
49	Alabama	35404	333424	194519.83
50	Alabama	35405	875050	194519.83
51	Alabama	35406	858315	194519.83
52	Alabama	35453	236801	194519.83
53	Alabama	35473	401708	194519.83
54	Alabama	35475	513756	194519.83
55	Alabama	35504	313527	194519.83
56	Alabama	35565	203707	194519.83
57	Alabama	35601	630043	194519.83
58	Alabama	35603	878339	194519.83
59	Alabama	35611	474922	194519.83
60	Alabama	35613	678179	194519.83
61	Alabama	35630	557166	194519.83
62	Alabama	35633	441672	194519.83
63	Alabama	35634	348858	194519.83
64	Alabama	35640	575726	194519.83
65	Alabama	35645	368641	194519.83
66	Alabama	35650	250496	194519.83
67	Alabama	35653	196531	194519.83
68	Alabama	35661	466837	194519.83
69	Alabama	35674	395301	194519.83
70	Alabama	35748	239211	194519.83
71	Alabama	35749	741906	194519.83
72	Alabama	35750	295415	194519.83
73	Alabama	35756	559520	194519.83
74	Alabama	35757	533533	194519.83
75	Alabama	35758	1854632	194519.83
76	Alabama	35759	256482	194519.83
77	Alabama	35761	307410	194519.83
78	Alabama	35763	799052	194519.83
79	Alabama	35768	228044	194519.83
80	Alabama	35769	276406	194519.83
81	Alabama	35773	277516	194519.83
82	Alabama	35801	1184174	194519.83

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83	Alabama	35802	984398	194519.83
84	Alabama	35803	978788	194519.83
85	Alabama	35805	225437	194519.83
86	Alabama	35806	774520	194519.83
87	Alabama	35810	449348	194519.83
88	Alabama	35811	745655	194519.83
89	Alabama	35824	309713	194519.83
90	Alabama	35901	417728	194519.83
91	Alabama	35903	276596	194519.83
92	Alabama	35904	197007	194519.83
93	Alabama	35906	236741	194519.83
94	Alabama	35907	234116	194519.83
95	Alabama	35950	345183	194519.83
96	Alabama	35957	259544	194519.83
97	Alabama	35967	262865	194519.83
98	Alabama	35976	432165	194519.83
99	Alabama	36022	349667	194519.83
100	Alabama	36027	256462	194519.83
101	Alabama	36037	232381	194519.83
102	Alabama	36054	333267	194519.83
103	Alabama	36064	436157	194519.83
104	Alabama	36066	523472	194519.83
105	Alabama	36067	578753	194519.83
106	Alabama	36078	270889	194519.83
107	Alabama	36081	276096	194519.83
108	Alabama	36092	422507	194519.83
109	Alabama	36093	408767	194519.83
110	Alabama	36106	499677	194519.83
111	Alabama	36108	221565	194519.83
112	Alabama	36109	567459	194519.83
113	Alabama	36111	398490	194519.83
114	Alabama	36116	757627	194519.83
115	Alabama	36117	1614930	194519.83
116	Alabama	36203	419608	194519.83
117	Alabama	36207	501891	194519.83
118	Alabama	36265	362888	194519.83
119	Alabama	36301	663628	194519.83

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120	Alabama	36303	732394	194519.83
121	Alabama	36305	571890	194519.83
122	Alabama	36330	852250	194519.83
123	Alabama	36360	348456	194519.83
124	Alabama	36420	225707	194519.83
125	Alabama	36426	256086	194519.83
126	Alabama	36502	254207	194519.83
127	Alabama	36507	381199	194519.83
128	Alabama	36526	1050774	194519.83
129	Alabama	36527	564284	194519.83
130	Alabama	36530	200404	194519.83
131	Alabama	36532	1097184	194519.83
132	Alabama	36535	515821	194519.83
133	Alabama	36541	290989	194519.83
134	Alabama	36542	355890	194519.83
135	Alabama	36551	201253	194519.83
136	Alabama	36561	294102	194519.83
137	Alabama	36567	253917	194519.83
138	Alabama	36571	386731	194519.83
139	Alabama	36575	428166	194519.83
140	Alabama	36582	474690	194519.83
141	Alabama	36587	202475	194519.83
142	Alabama	36604	212018	194519.83
143	Alabama	36605	383288	194519.83
144	Alabama	36606	347575	194519.83
145	Alabama	36608	1189331	194519.83
146	Alabama	36609	499982	194519.83
147	Alabama	36618	302312	194519.83
148	Alabama	36619	354247	194519.83
149	Alabama	36693	530227	194519.83
150	Alabama	36695	1424343	194519.83
151	Alabama	36701	367300	194519.83
152	Alabama	36801	479467	194519.83
153	Alabama	36804	359039	194519.83
154	Alabama	36830	1254812	194519.83
155	Alabama	36832	346645	194519.83
156	Alabama	36853	195253	194519.83

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157	Alabama	36854	268022	194519.83
158	Alabama	36867	379361	194519.83
159	Alabama	36869	278859	194519.83
160	Alabama	36870	335612	194519.83
161	Alabama	36877	246388	194519.83
162	Arkansas	71601	160993	135790.69
163	Arkansas	71602	337766	135790.69
164	Arkansas	71603	575528	135790.69
165	Arkansas	71635	220217	135790.69
166	Arkansas	71655	265364	135790.69
167	Arkansas	71671	144129	135790.69
168	Arkansas	71701	326190	135790.69
169	Arkansas	71730	800310	135790.69
170	Arkansas	71753	293915	135790.69
171	Arkansas	71801	219904	135790.69
172	Arkansas	71822	151623	135790.69
173	Arkansas	71832	154226	135790.69
174	Arkansas	71852	169413	135790.69
175	Arkansas	71854	717738	135790.69
176	Arkansas	71901	593027	135790.69
177	Arkansas	71909	530039	135790.69
178	Arkansas	71913	1034535	135790.69
179	Arkansas	71923	290464	135790.69
180	Arkansas	71953	233320	135790.69
181	Arkansas	72002	401218	135790.69
182	Arkansas	72007	194082	135790.69
183	Arkansas	72012	278627	135790.69
184	Arkansas	72015	556988	135790.69
185	Arkansas	72019	755023	135790.69
186	Arkansas	72022	438548	135790.69
187	Arkansas	72023	902738	135790.69
188	Arkansas	72032	637320	135790.69
189	Arkansas	72034	1216425	135790.69
190	Arkansas	72058	394081	135790.69
191	Arkansas	72076	653162	135790.69
192	Arkansas	72086	213776	135790.69
193	Arkansas	72103	240148	135790.69

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194	Arkansas	72104	369475	135790.69
195	Arkansas	72110	234898	135790.69
196	Arkansas	72112	151340	135790.69
197	Arkansas	72113	899478	135790.69
198	Arkansas	72116	742401	135790.69
199	Arkansas	72117	194277	135790.69
200	Arkansas	72118	392295	135790.69
201	Arkansas	72120	945449	135790.69
202	Arkansas	72143	719777	135790.69
203	Arkansas	72150	279206	135790.69
204	Arkansas	72160	253084	135790.69
205	Arkansas	72173	214182	135790.69
206	Arkansas	72176	167276	135790.69
207	Arkansas	72202	274108	135790.69
208	Arkansas	72204	424688	135790.69
209	Arkansas	72205	682503	135790.69
210	Arkansas	72206	364088	135790.69
211	Arkansas	72207	924013	135790.69
212	Arkansas	72209	364589	135790.69
213	Arkansas	72210	404702	135790.69
214	Arkansas	72211	830077	135790.69
215	Arkansas	72212	806084	135790.69
216	Arkansas	72223	1633065	135790.69
217	Arkansas	72227	512846	135790.69
218	Arkansas	72301	356380	135790.69
219	Arkansas	72315	350462	135790.69
220	Arkansas	72335	175047	135790.69
221	Arkansas	72364	389425	135790.69
222	Arkansas	72396	254142	135790.69
223	Arkansas	72401	1039724	135790.69
224	Arkansas	72404	824426	135790.69
225	Arkansas	72450	709543	135790.69
226	Arkansas	72455	208530	135790.69
227	Arkansas	72501	470509	135790.69
228	Arkansas	72543	267035	135790.69
229	Arkansas	72560	136971	135790.69
230	Arkansas	72601	524624	135790.69



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231	Arkansas	72616	176503	135790.69
232	Arkansas	72653	589240	135790.69
233	Arkansas	72701	983373	135790.69
234	Arkansas	72703	1085754	135790.69
235	Arkansas	72704	773636	135790.69
236	Arkansas	72712	4948326	135790.69
237	Arkansas	72714	404210	135790.69
238	Arkansas	72715	509403	135790.69
239	Arkansas	72718	139384	135790.69
240	Arkansas	72719	330981	135790.69
241	Arkansas	72730	228966	135790.69
242	Arkansas	72734	141626	135790.69
243	Arkansas	72736	140422	135790.69
244	Arkansas	72740	163588	135790.69
245	Arkansas	72745	303484	135790.69
246	Arkansas	72751	150123	135790.69
247	Arkansas	72753	188371	135790.69
248	Arkansas	72756	942343	135790.69
249	Arkansas	72758	1601440	135790.69
250	Arkansas	72761	444801	135790.69
251	Arkansas	72762	1090600	135790.69
252	Arkansas	72764	997426	135790.69
253	Arkansas	72801	253587	135790.69
254	Arkansas	72802	548611	135790.69
255	Arkansas	72830	244584	135790.69
256	Arkansas	72834	170452	135790.69
257	Arkansas	72837	167197	135790.69
258	Arkansas	72901	324165	135790.69
259	Arkansas	72903	715547	135790.69
260	Arkansas	72904	237997	135790.69
261	Arkansas	72908	359883	135790.69
262	Arkansas	72916	350933	135790.69
263	Arkansas	72921	270414	135790.69
264	Arkansas	72936	366658	135790.69
265	Arkansas	72949	167048	135790.69
266	Arkansas	72956	610723	135790.69
267	Arizona	85008	801661	587192.91

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268	Arizona	85013	664538	587192.91
269	Arizona	85014	757118	587192.91
270	Arizona	85016	1675150	587192.91
271	Arizona	85018	2374087	587192.91
272	Arizona	85020	1153614	587192.91
273	Arizona	85021	1012065	587192.91
274	Arizona	85022	1384648	587192.91
275	Arizona	85023	888118	587192.91
276	Arizona	85024	791923	587192.91
277	Arizona	85027	863987	587192.91
278	Arizona	85028	1028811	587192.91
279	Arizona	85029	779911	587192.91
280	Arizona	85032	1608158	587192.91
281	Arizona	85033	611143	587192.91
282	Arizona	85037	715888	587192.91
283	Arizona	85041	906191	587192.91
284	Arizona	85042	827476	587192.91
285	Arizona	85044	1599615	587192.91
286	Arizona	85048	1715934	587192.91
287	Arizona	85050	1391893	587192.91
288	Arizona	85051	617914	587192.91
289	Arizona	85083	804055	587192.91
290	Arizona	85085	930133	587192.91
291	Arizona	85086	1464508	587192.91
292	Arizona	85122	881505	587192.91
293	Arizona	85138	767878	587192.91
294	Arizona	85140	731695	587192.91
295	Arizona	85142	1695634	587192.91
296	Arizona	85143	665221	587192.91
297	Arizona	85201	739064	587192.91
298	Arizona	85202	822604	587192.91
299	Arizona	85203	796974	587192.91
300	Arizona	85204	993013	587192.91
301	Arizona	85205	1037062	587192.91
302	Arizona	85206	761466	587192.91
303	Arizona	85207	1634986	587192.91
304	Arizona	85208	606996	587192.91

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305	Arizona	85209	975204	587192.91
306	Arizona	85210	626868	587192.91
307	Arizona	85212	886109	587192.91
308	Arizona	85213	1125944	587192.91
309	Arizona	85224	1386617	587192.91
310	Arizona	85225	1644789	587192.91
311	Arizona	85226	1482481	587192.91
312	Arizona	85233	1242299	587192.91
313	Arizona	85234	1815012	587192.91
314	Arizona	85248	1650814	587192.91
315	Arizona	85249	1981034	587192.91
316	Arizona	85250	807331	587192.91
317	Arizona	85251	1810698	587192.91
318	Arizona	85253	3560948	587192.91
319	Arizona	85254	2459698	587192.91
320	Arizona	85255	4531297	587192.91
321	Arizona	85257	785575	587192.91
322	Arizona	85258	1618341	587192.91
323	Arizona	85259	1889642	587192.91
324	Arizona	85260	2217921	587192.91
325	Arizona	85262	1515629	587192.91
326	Arizona	85266	975054	587192.91
327	Arizona	85268	1196095	587192.91
328	Arizona	85281	981467	587192.91
329	Arizona	85282	1246811	587192.91
330	Arizona	85283	1194111	587192.91
331	Arizona	85284	1261453	587192.91
332	Arizona	85286	1701255	587192.91
333	Arizona	85295	1476885	587192.91
334	Arizona	85296	1468146	587192.91
335	Arizona	85297	1142786	587192.91
336	Arizona	85298	1426868	587192.91
337	Arizona	85301	655169	587192.91
338	Arizona	85302	691209	587192.91
339	Arizona	85304	661882	587192.91
340	Arizona	85308	2049651	587192.91
341	Arizona	85310	789521	587192.91

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342	Arizona	85323	627620	587192.91
343	Arizona	85326	1001457	587192.91
344	Arizona	85331	1455589	587192.91
345	Arizona	85338	1270401	587192.91
346	Arizona	85339	905957	587192.91
347	Arizona	85340	1026591	587192.91
348	Arizona	85345	1060614	587192.91
349	Arizona	85351	595851	587192.91
350	Arizona	85353	623251	587192.91
351	Arizona	85364	1287414	587192.91
352	Arizona	85365	959879	587192.91
353	Arizona	85374	1009556	587192.91
354	Arizona	85375	840894	587192.91
355	Arizona	85379	1021894	587192.91
356	Arizona	85381	763026	587192.91
357	Arizona	85382	1296690	587192.91
358	Arizona	85383	2148172	587192.91
359	Arizona	85388	627849	587192.91
360	Arizona	85392	860956	587192.91
361	Arizona	85395	1055071	587192.91
362	Arizona	85614	661981	587192.91
363	Arizona	85629	676569	587192.91
364	Arizona	85635	765986	587192.91
365	Arizona	85641	805670	587192.91
366	Arizona	85704	1035837	587192.91
367	Arizona	85705	603071	587192.91
368	Arizona	85710	1093883	587192.91
369	Arizona	85711	722139	587192.91
370	Arizona	85712	626944	587192.91
371	Arizona	85715	655074	587192.91
372	Arizona	85716	670221	587192.91
373	Arizona	85718	2011831	587192.91
374	Arizona	85719	627581	587192.91
375	Arizona	85730	740142	587192.91
376	Arizona	85737	977010	587192.91
377	Arizona	85739	628489	587192.91
378	Arizona	85741	762252	587192.91

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379	Arizona	85742	797406	587192.91
380	Arizona	85743	851808	587192.91
381	Arizona	85745	939484	587192.91
382	Arizona	85746	623407	587192.91
383	Arizona	85747	732397	587192.91
384	Arizona	85748	676572	587192.91
385	Arizona	85749	967117	587192.91
386	Arizona	85750	1473384	587192.91
387	Arizona	85755	790376	587192.91
388	Arizona	86001	784390	587192.91
389	Arizona	86004	969727	587192.91
390	Arizona	86301	641829	587192.91
391	Arizona	86305	725866	587192.91
392	Arizona	86314	640960	587192.91
393	Alaska	99501	640556	389999
394	Alaska	99502	1086686	389999
395	Alaska	99503	517361	389999
396	Alaska	99504	1186170	389999
397	Alaska	99507	1587097	389999
398	Alaska	99508	942822	389999
399	Alaska	99515	1068994	389999
400	Alaska	99516	1488457	389999
401	Alaska	99517	682670	389999
402	Alaska	99577	1194184	389999
403	Alaska	99611	488077	389999
404	Alaska	99615	417500	389999
405	Alaska	99645	994409	389999
406	Alaska	99654	1034440	389999
407	Alaska	99669	612816	389999
408	Alaska	99701	493105	389999
409	Alaska	99705	618593	389999
410	Alaska	99709	841897	389999
411	Alaska	99801	882488	389999
412	Alaska	99901	419627	389999

Question 4. List for each state, the top zip code by AGI

**SQL Query:**

```
Select "STATE", "ZIPCODE", "AGI"
FROM "GBI_814"."GBI_814::FPData.DemographicData"
Where ("AGI", "STATE") IN (
    Select Max("AGI"), "STATE"
    FROM "GBI_814"."GBI_814::FPData.DemographicData"
    Group By "STATE")
Order By "AGI" DESC;
```

**Result:**

	STATE	ZIPCODE	AGI
1	NY	10021	13597373
2	CA	94301	10296266
3	TX	77024	8684531
4	IL	60611	7952291
5	CT	6830	7242398
6	FL	33480	6887326
7	MD	20854	6370883
8	MA	2116	5563788
9	VA	22101	5032226
10	GA	30327	4953938
11	AR	72712	4928494
12	TN	37027	4658577
13	NJ	7030	4657261
14	WA	98004	4469557
15	AZ	85255	4451010
16	OR	97229	3952039
17	NC	28277	3909028
18	DC	20016	3882614
19	PA	19087	3483611
20	NV	89052	3417061
21	IN	46032	3392527

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22	AL	35242	3300440
23	CO	80134	3227230
24	WI	53217	2909176
25	MO	63017	2833698
26	OK	73013	2761652
27	MI	48103	2756404
28	MN	55391	2723441
29	KS	66062	2717450
30	OH	45040	2707826
31	SC	29464	2680516
32	KY	41017	2404558
33	NM	87111	2248500
34	MS	39110	2175211
35	LA	70810	2092957
36	HI	96816	2070480
37	UT	84020	2015237
38	NE	68516	1881267
39	DE	19711	1785082
40	IA	52722	1778811
41	ND	58104	1630855
42	ID	83646	1618072
43	SD	57108	1590154
44	AK	99507	1564350
45	NH	3110	1531391
46	RI	2906	1509876
47	MT	59102	1478630
48	WV	26508	1363247
49	WY	82009	1343206
50	ME	4401	1075069
51	VT	5403	826051

Question 5. List the top 5 states by number of returns per capita (descending order)

**SQL Query:**

```
Select Top 5
    "STATE",
    Round(sum("Number_of_Returns")/avg("Population_in_2015"),3) AS "PerCapitaNumberofReturns"
FROM "GBI_814"."GBI_814::FPData.DemographicData" AS T1
LEFT JOIN "GBI_814"."GBI_814::FPData.StatePopulationData" AS T3
ON T1."STATE" = T3."Abbreviation"
Group By "STATE"
Order By "PerCapitaNumberofReturns" DESC;
```

**Result:**

	STATE	PerCapitaNumberofReturns
1	NH	0.508
2	DC	0.503
3	VT	0.497
4	RI	0.49
5	MA	0.489



## Tableau Questions

Question 1. Which states have the most electric vehicle sales (total and over time)?

California state has the highest electric vehicle sales (total)- 322169 followed by New York and Florida.

2016-

1. California
2. Florida
3. New York

2017-

1. California
2. New York
3. Washington

2018-

1. California
2. New York
3. Florida

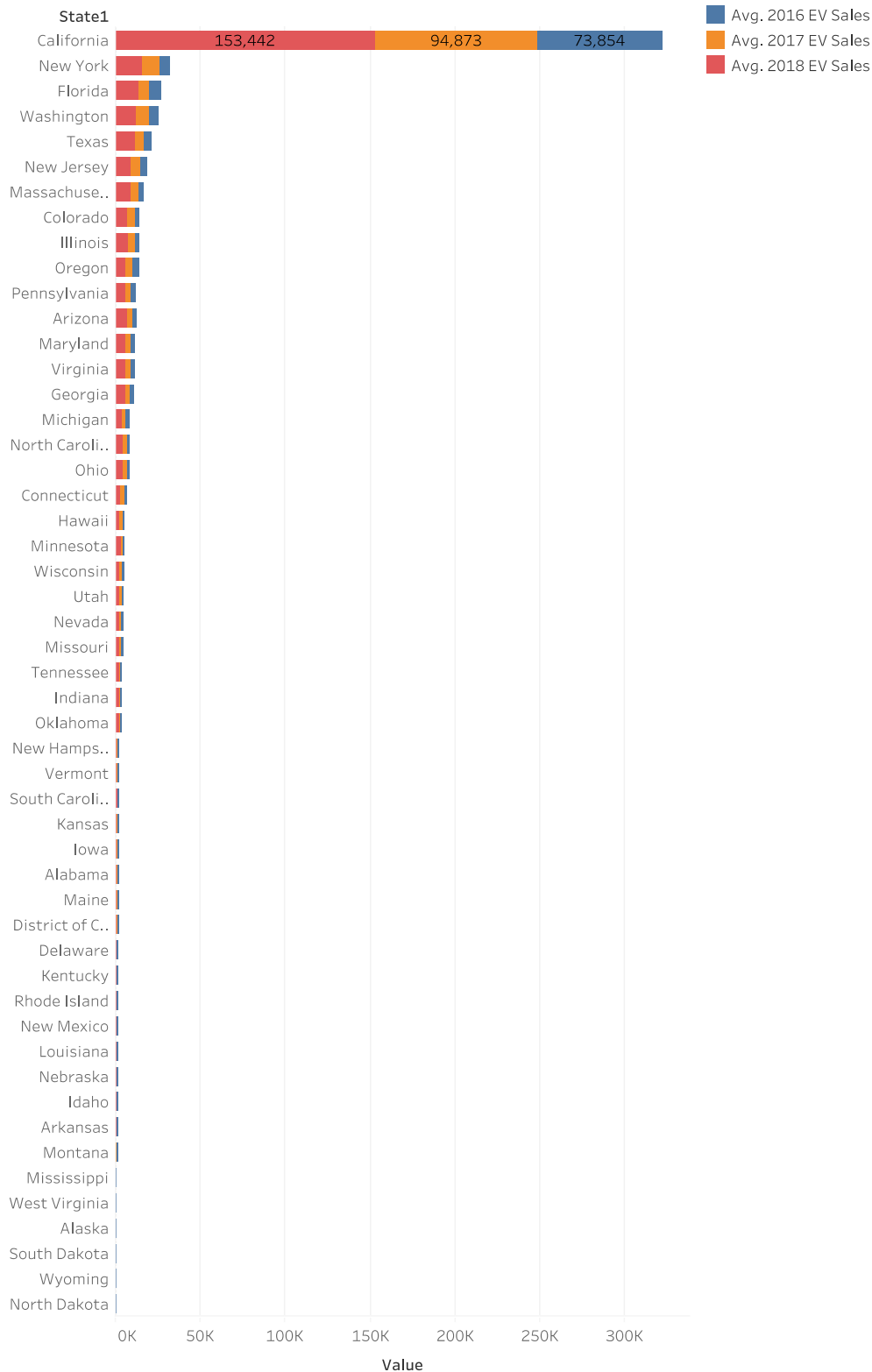
Answer Option 1:

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Question 1



Avg. 2016 EV Sales, Avg. 2017 EV Sales and Avg. 2018 EV Sales for each State1. Color shows details about Avg. 2016 EV Sales, Avg. 2017 EV Sales and Avg. 2018 EV Sales.

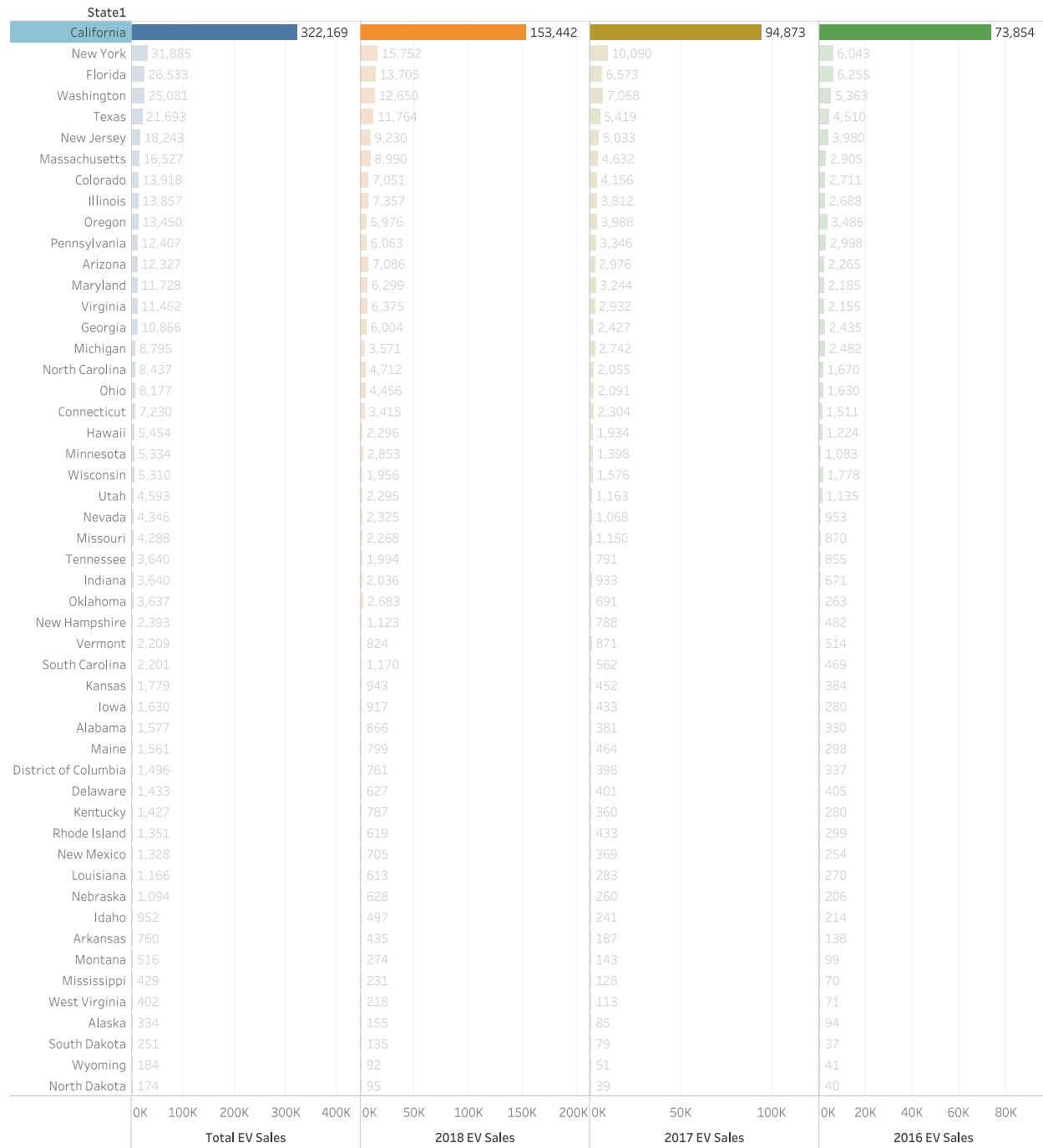
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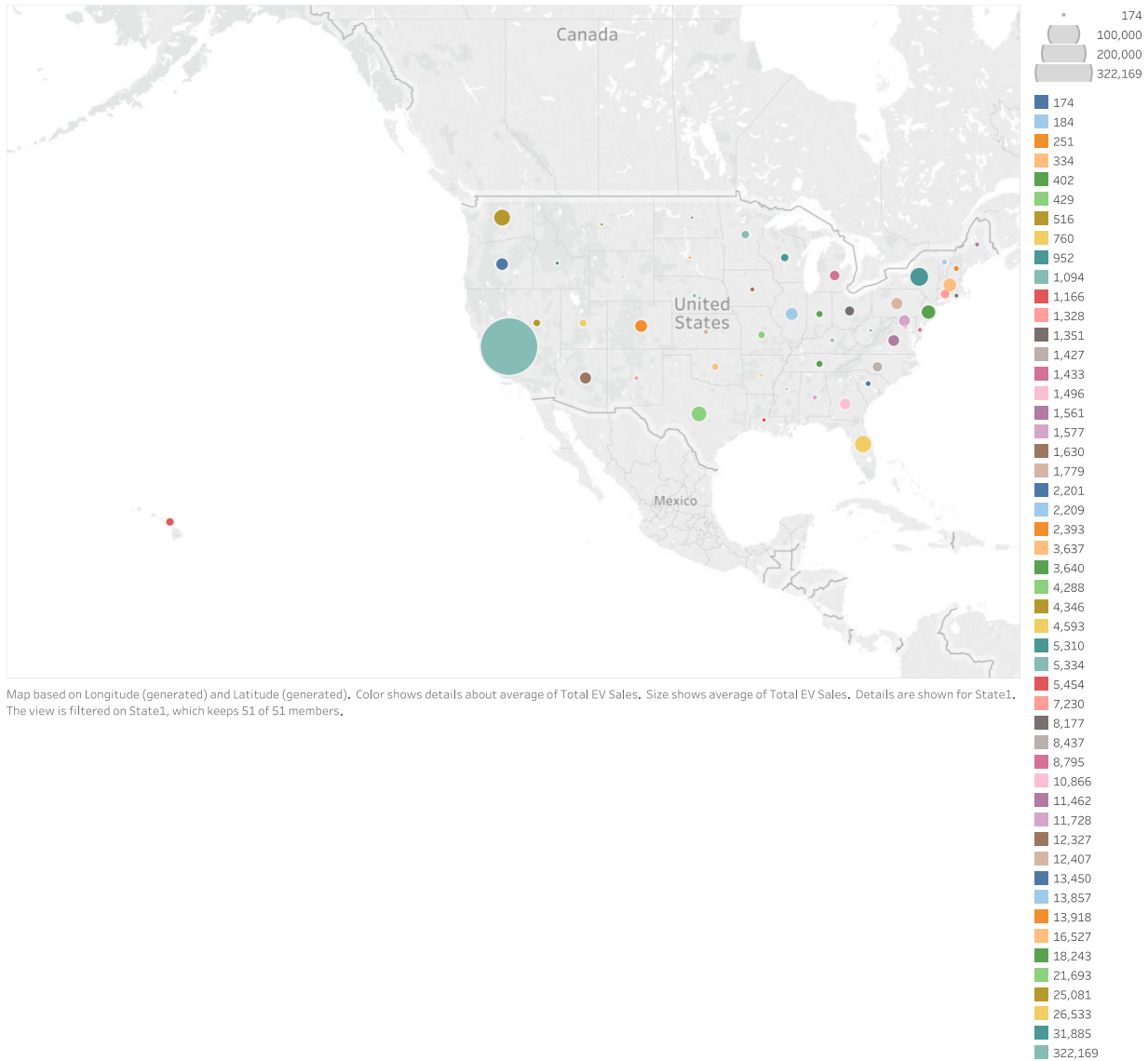
### Answer Option 2:

Question 1.2



## Question 2. How would electric vehicle sales totals look on a map of states?

Question 2



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### Question 3. Which states have the most electric vehicle sales per capita (total and over time)?

California state has the highest electric vehicle sales per capita (total)- 0.0027 followed by Hawaii and Vermont.

2016-

1. California
2. Washington
3. Hawaii

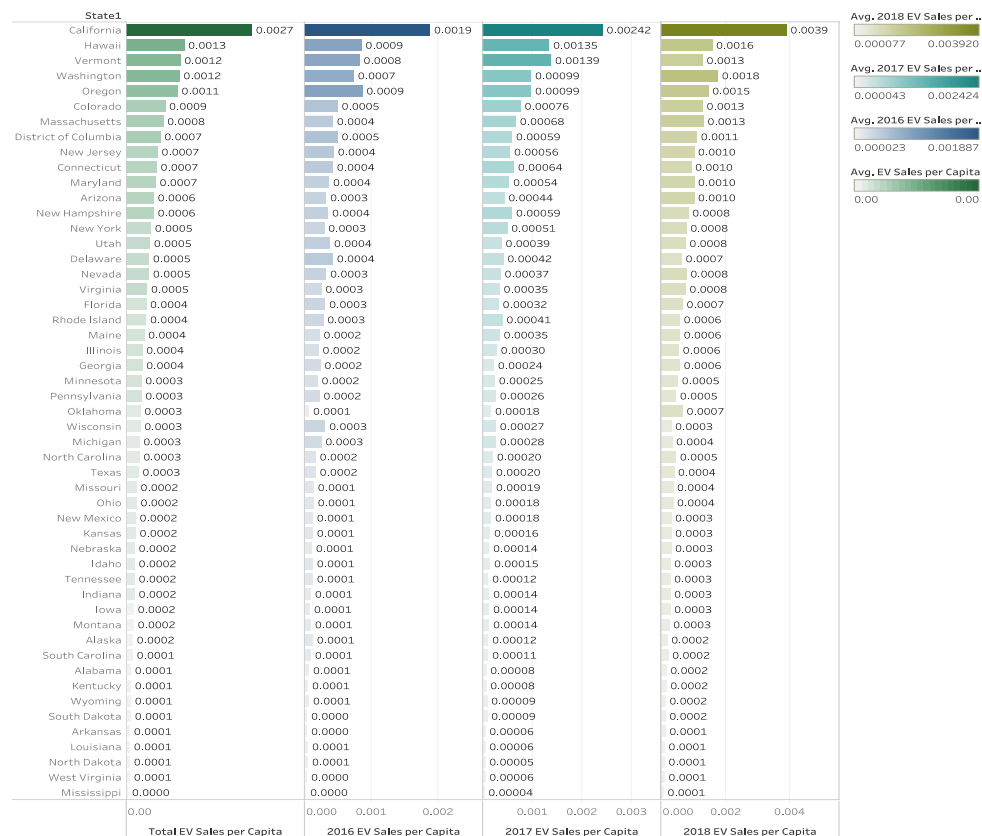
2017-

1. California
2. Vermont
3. Hawaii

2018-

1. California
2. Oregon
3. Hawaii

Question 3



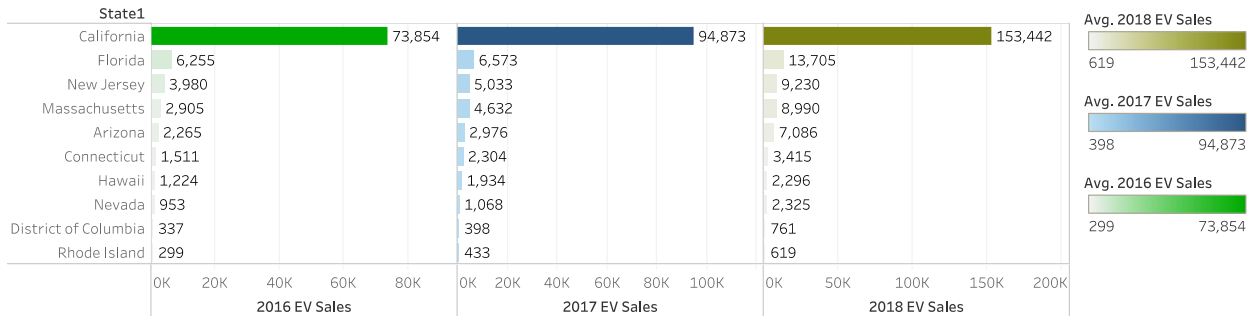
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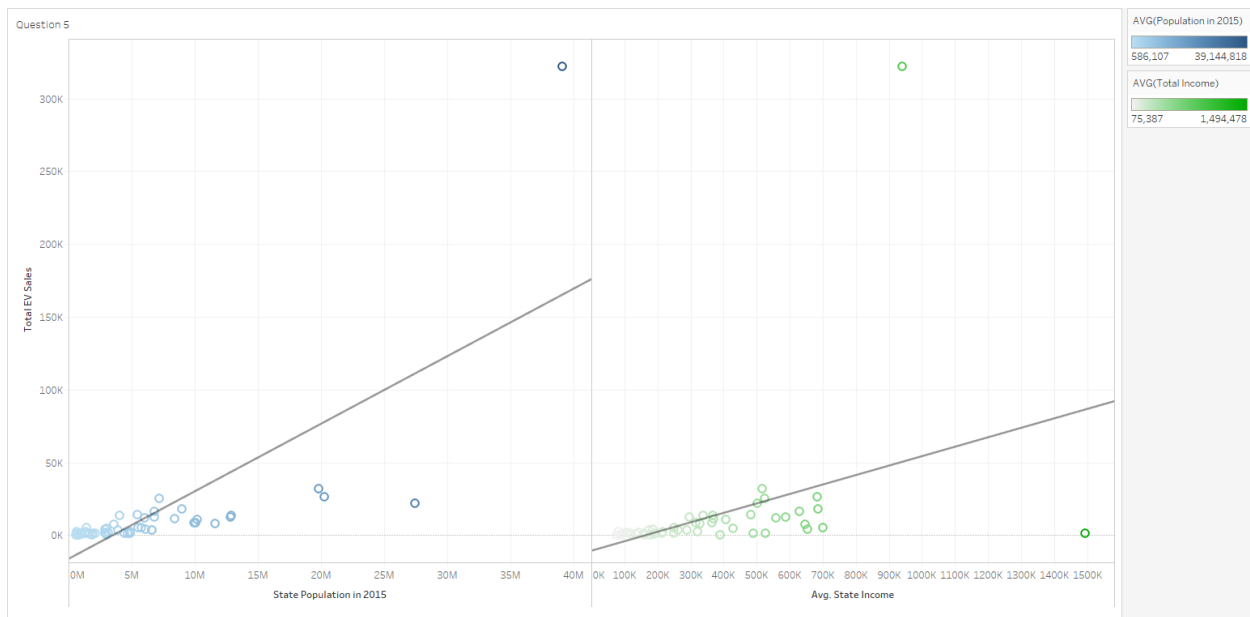
### Question 4. Show car sales over 3 years for 10 states that have the highest median AGI

Question 4



Average of 2016 EV Sales, average of 2017 EV Sales and average of 2018 EV Sales for each State1. For pane Average of 2016 EV Sales: Color shows average of 2016 EV Sales. For pane Average of 2017 EV Sales: Color shows average of 2017 EV Sales. For pane Average of 2018 EV Sales: Color shows average of 2018 EV Sales. The view is filtered on State1, which keeps 10 of 51 members.

### Question 5. Are there any significant relationships between state electric vehicle sales, state populations and average state incomes?



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As the state population increases the total EV sales also increases. A very low p-value indicates that the relationship is significant.

A linear trend model is computed for average of Total EV Sales given average of Population in 2015. The model may be significant at  $p \leq 0.05$ .

**Model formula:** ( Avg. Population in 2015 + intercept )  
**Number of modeled observations:** 51  
**Number of filtered observations:** 0  
**Model degrees of freedom:** 2  
**Residual degrees of freedom (DF):** 49  
**SSE (sum squared error):** 4.4582e+10  
**MSE (mean squared error):** 9.09836e+08  
**R-Squared:** 0.5559  
**Standard error:** 30163.5  
**p-value (significance):** < 0.0001

As the average state income increases the total EV sales also increases. A significant slope indicates that the relationship is significant. But the relationship is not as significant as the relationship between state population and the total EV sales as the p-value is slightly higher than the other.

A linear trend model is computed for average of Total EV Sales given average of Total Income. The model may be significant at  $p \leq 0.05$ .

**Model formula:** ( Avg. Total Income + intercept )  
**Number of modeled observations:** 51  
**Number of filtered observations:** 0  
**Model degrees of freedom:** 2  
**Residual degrees of freedom (DF):** 49  
**SSE (sum squared error):** 8.60008e+10  
**MSE (mean squared error):** 1.75512e+09  
**R-Squared:** 0.143309  
**Standard error:** 41894.1  
**p-value (significance):** 0.0061586

### Individual trend lines:

Panels		Line		Coefficients				
Row	Column	p-value	DF	Term	Value	StdErr	t-value	p-value
Total EV Sales	Population in 2015	< 0.0001	49	Avg. Population in 2015	0.0046393	0.0005924	7.8317	< 0.0001
				intercept	-16264.5	5637.18	-2.88521	0.0058
Total EV Sales	Total Income	0.0061586	49	Avg. Total Income	0.0649478	0.0226851	2.86301	0.0061586
				intercept	-10675.8	10131.6	-1.05372	0.297182