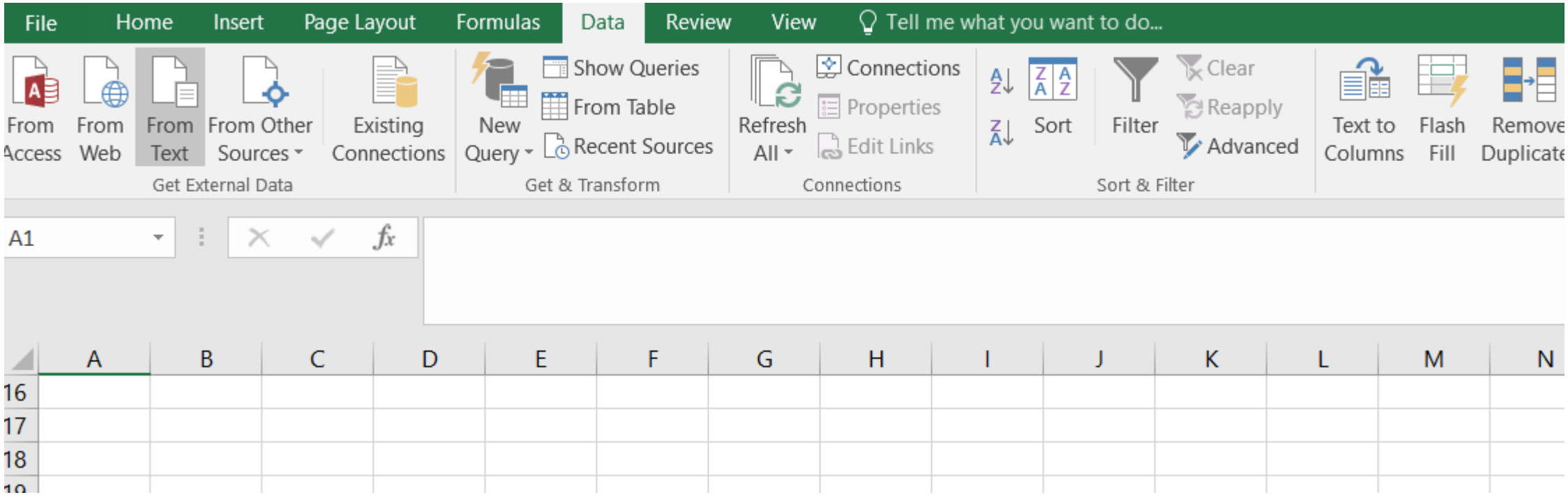
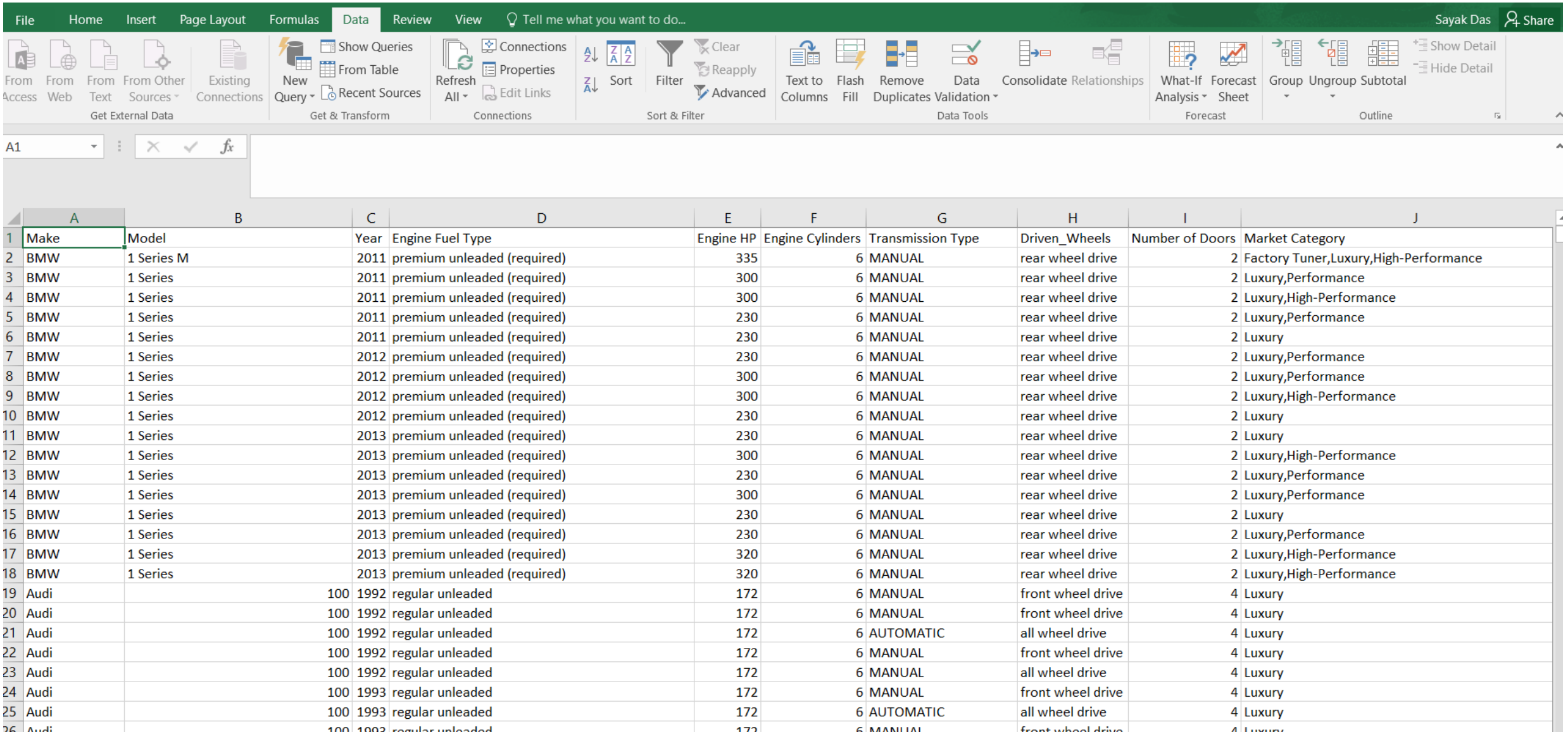
CARS DATASET ANALYSIS(EXCEL)
Name- SAYAK

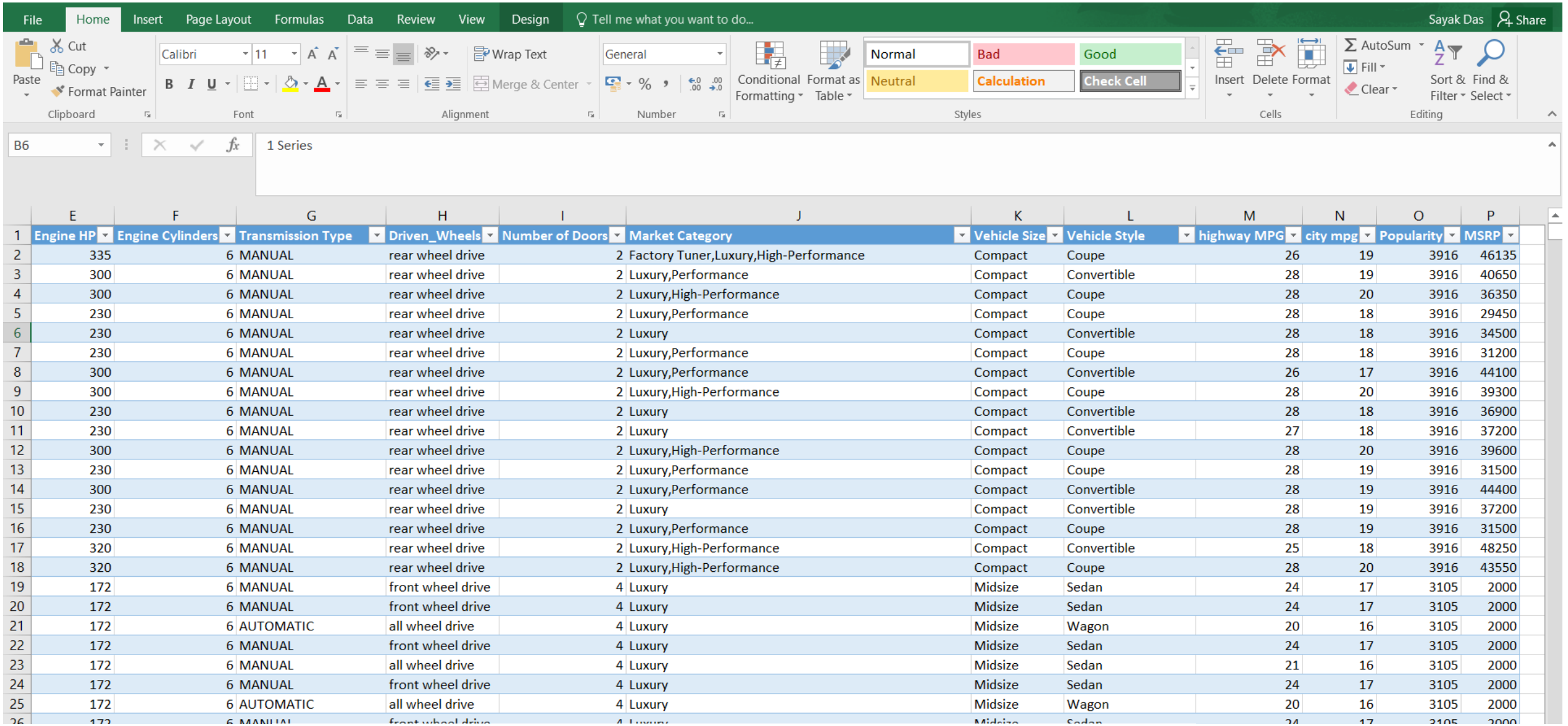


LOADING THE CSV FILE



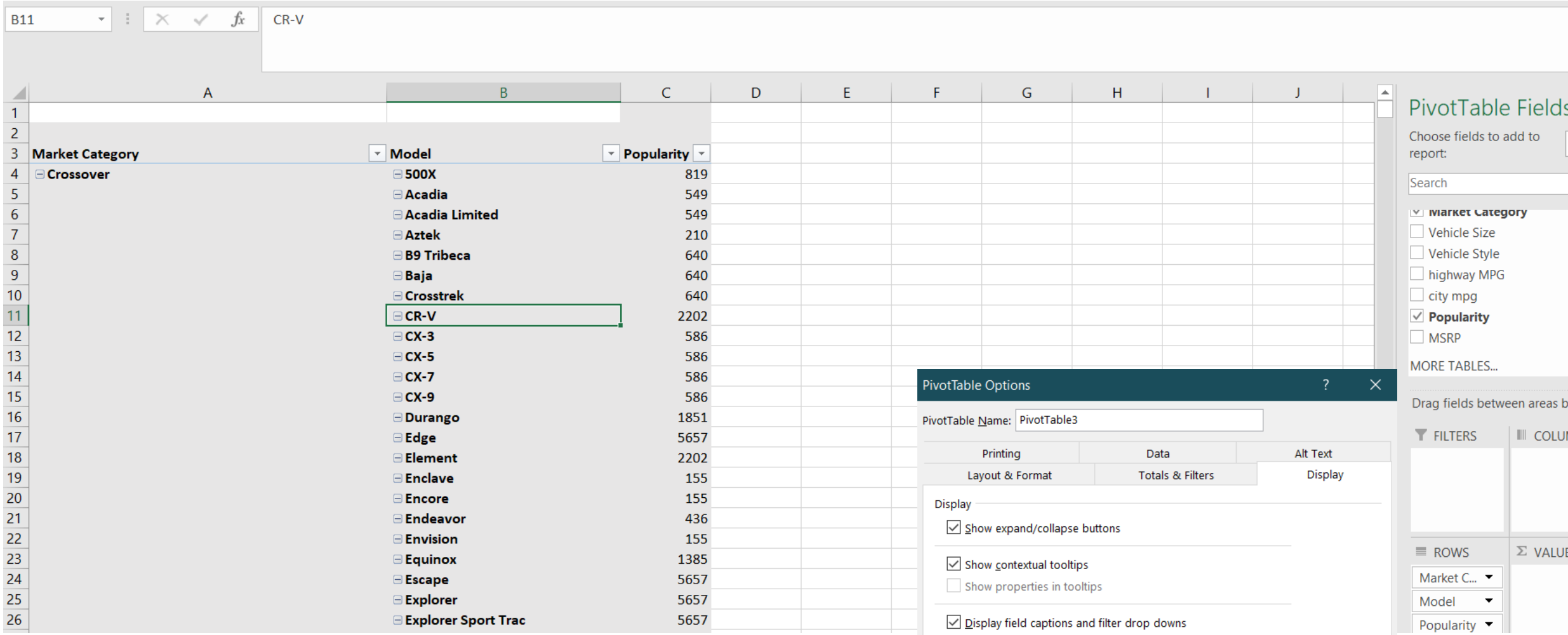
	A	B	C	D	E	F	G	H	I	J
1	Make	Model	Year	Engine Fuel Type	Engine HP	Engine Cylinders	Transmission Type	Driven_Wheels	Number of Doors	Market Category
2	BMW	1 Series M	2011	premium unleaded (required)	335	6	MANUAL	rear wheel drive	2	Factory Tuner,Luxury,High-Performance
3	BMW	1 Series	2011	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,Performance
4	BMW	1 Series	2011	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance
5	BMW	1 Series	2011	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury,Performance
6	BMW	1 Series	2011	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury
7	BMW	1 Series	2012	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury,Performance
8	BMW	1 Series	2012	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,Performance
9	BMW	1 Series	2012	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance
10	BMW	1 Series	2012	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury
11	BMW	1 Series	2013	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury
12	BMW	1 Series	2013	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance
13	BMW	1 Series	2013	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury,Performance
14	BMW	1 Series	2013	premium unleaded (required)	300	6	MANUAL	rear wheel drive	2	Luxury,Performance
15	BMW	1 Series	2013	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury
16	BMW	1 Series	2013	premium unleaded (required)	230	6	MANUAL	rear wheel drive	2	Luxury,Performance
17	BMW	1 Series	2013	premium unleaded (required)	320	6	MANUAL	rear wheel drive	2	Luxury,High-Performance
18	BMW	1 Series	2013	premium unleaded (required)	320	6	MANUAL	rear wheel drive	2	Luxury,High-Performance
19	Audi	100	1992	regular unleaded	172	6	MANUAL	front wheel drive	4	Luxury
20	Audi	100	1992	regular unleaded	172	6	MANUAL	front wheel drive	4	Luxury
21	Audi	100	1992	regular unleaded	172	6	AUTOMATIC	all wheel drive	4	Luxury
22	Audi	100	1992	regular unleaded	172	6	MANUAL	front wheel drive	4	Luxury
23	Audi	100	1992	regular unleaded	172	6	MANUAL	all wheel drive	4	Luxury
24	Audi	100	1993	regular unleaded	172	6	MANUAL	front wheel drive	4	Luxury
25	Audi	100	1993	regular unleaded	172	6	AUTOMATIC	all wheel drive	4	Luxury

CARS CSV FILE IS LOADED



	E	F	G	H	I	J	K	L	M	N	O	P
1	Engine HP	Engine Cylinders	Transmission Type	Driven_Wheels	Number of Doors	Market Category	Vehicle Size	Vehicle Style	highway MPG	city mpg	Popularity	MSRP
2	335	6	MANUAL	rear wheel drive	2	Factory Tuner,Luxury,High-Performance	Compact	Coupe	26	19	3916	46135
3	300	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Convertible	28	19	3916	40650
4	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance	Compact	Coupe	28	20	3916	36350
5	230	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Coupe	28	18	3916	29450
6	230	6	MANUAL	rear wheel drive	2	Luxury	Compact	Convertible	28	18	3916	34500
7	230	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Coupe	28	18	3916	31200
8	300	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Convertible	26	17	3916	44100
9	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance	Compact	Coupe	28	20	3916	39300
10	230	6	MANUAL	rear wheel drive	2	Luxury	Compact	Convertible	28	18	3916	36900
11	230	6	MANUAL	rear wheel drive	2	Luxury	Compact	Convertible	27	18	3916	37200
12	300	6	MANUAL	rear wheel drive	2	Luxury,High-Performance	Compact	Coupe	28	20	3916	39600
13	230	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Coupe	28	19	3916	31500
14	300	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Convertible	28	19	3916	44400
15	230	6	MANUAL	rear wheel drive	2	Luxury	Compact	Convertible	28	19	3916	37200
16	230	6	MANUAL	rear wheel drive	2	Luxury,Performance	Compact	Coupe	28	19	3916	31500
17	320	6	MANUAL	rear wheel drive	2	Luxury,High-Performance	Compact	Convertible	25	18	3916	48250
18	320	6	MANUAL	rear wheel drive	2	Luxury,High-Performance	Compact	Coupe	28	20	3916	43550
19	172	6	MANUAL	front wheel drive	4	Luxury	Midsize	Sedan	24	17	3105	2000
20	172	6	MANUAL	front wheel drive	4	Luxury	Midsize	Sedan	24	17	3105	2000
21	172	6	AUTOMATIC	all wheel drive	4	Luxury	Midsize	Wagon	20	16	3105	2000
22	172	6	MANUAL	front wheel drive	4	Luxury	Midsize	Sedan	24	17	3105	2000
23	172	6	MANUAL	all wheel drive	4	Luxury	Midsize	Sedan	21	16	3105	2000
24	172	6	MANUAL	front wheel drive	4	Luxury	Midsize	Sedan	24	17	3105	2000
25	172	6	AUTOMATIC	all wheel drive	4	Luxury	Midsize	Wagon	20	16	3105	2000

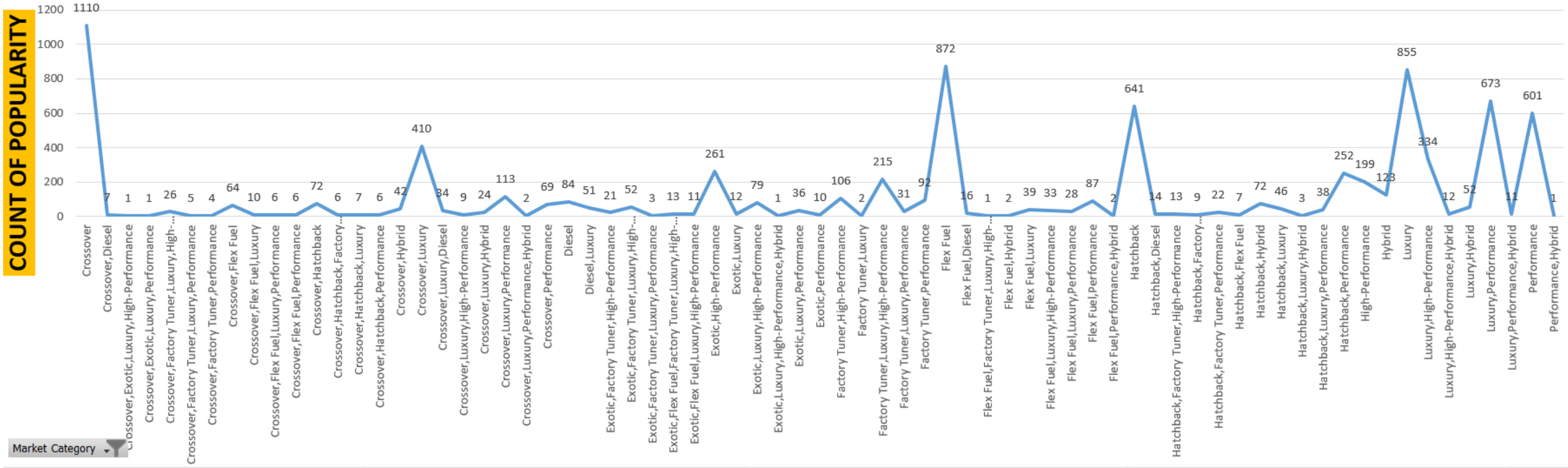
CONVERTED THE CSV FILE INTO TABLE SO THAT THE PIVOT TABLE CAN BECOME DYNAMIC



Pivot table that shows the number of car models in each market category and their corresponding popularity scores.

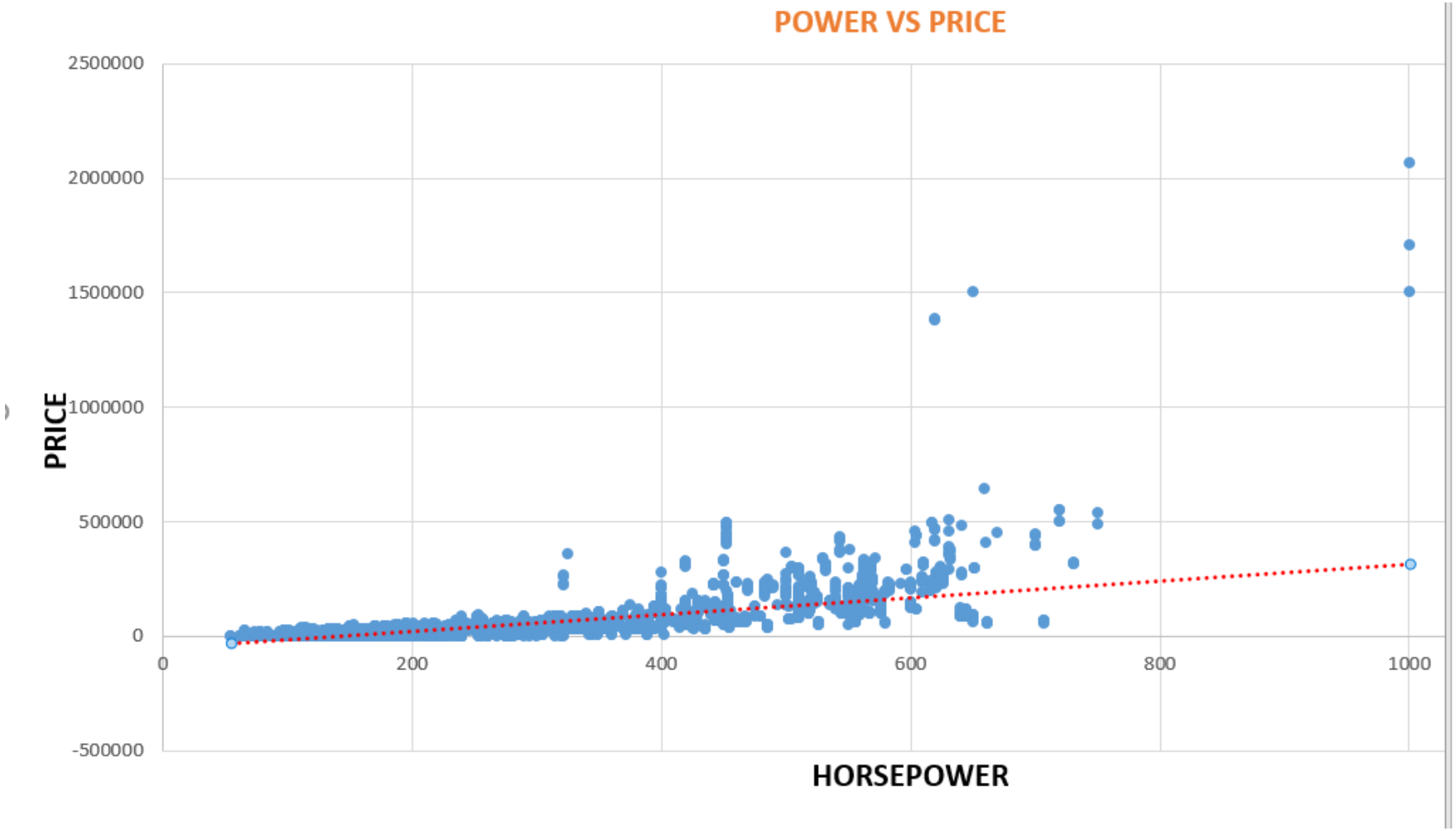
IN THE PIVOT TABLE I HAVE CHANGED THE DISPLAY FOR DRAGGING THE 3 VARIABLES IN ROW

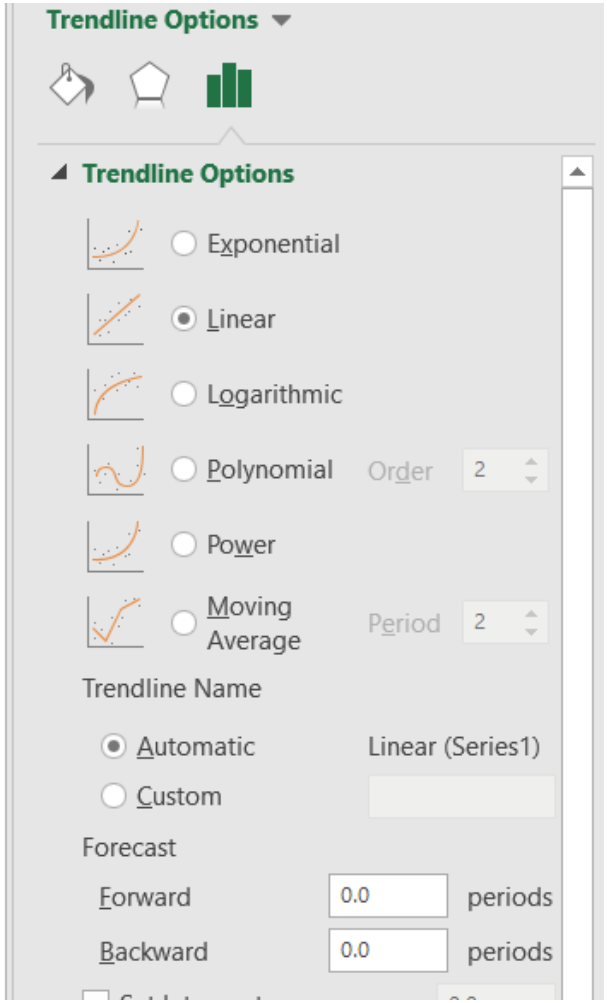
MARKET CAPTURE CATEGORYWISE



Crossover has been the most viewed market category cars. It has been viewed 1110 times.

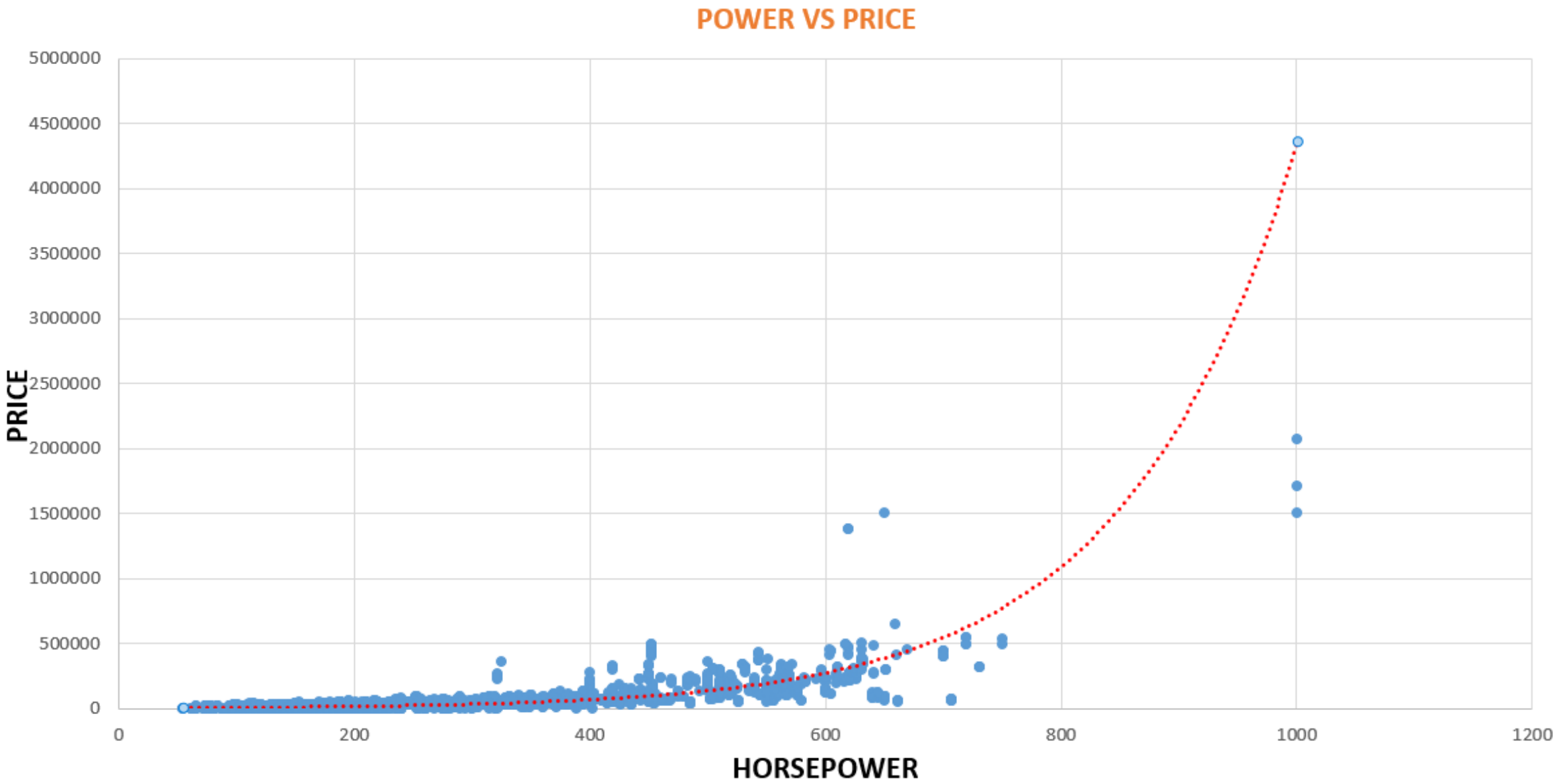
I HAVE FILTERED OUT THE NA VALUES





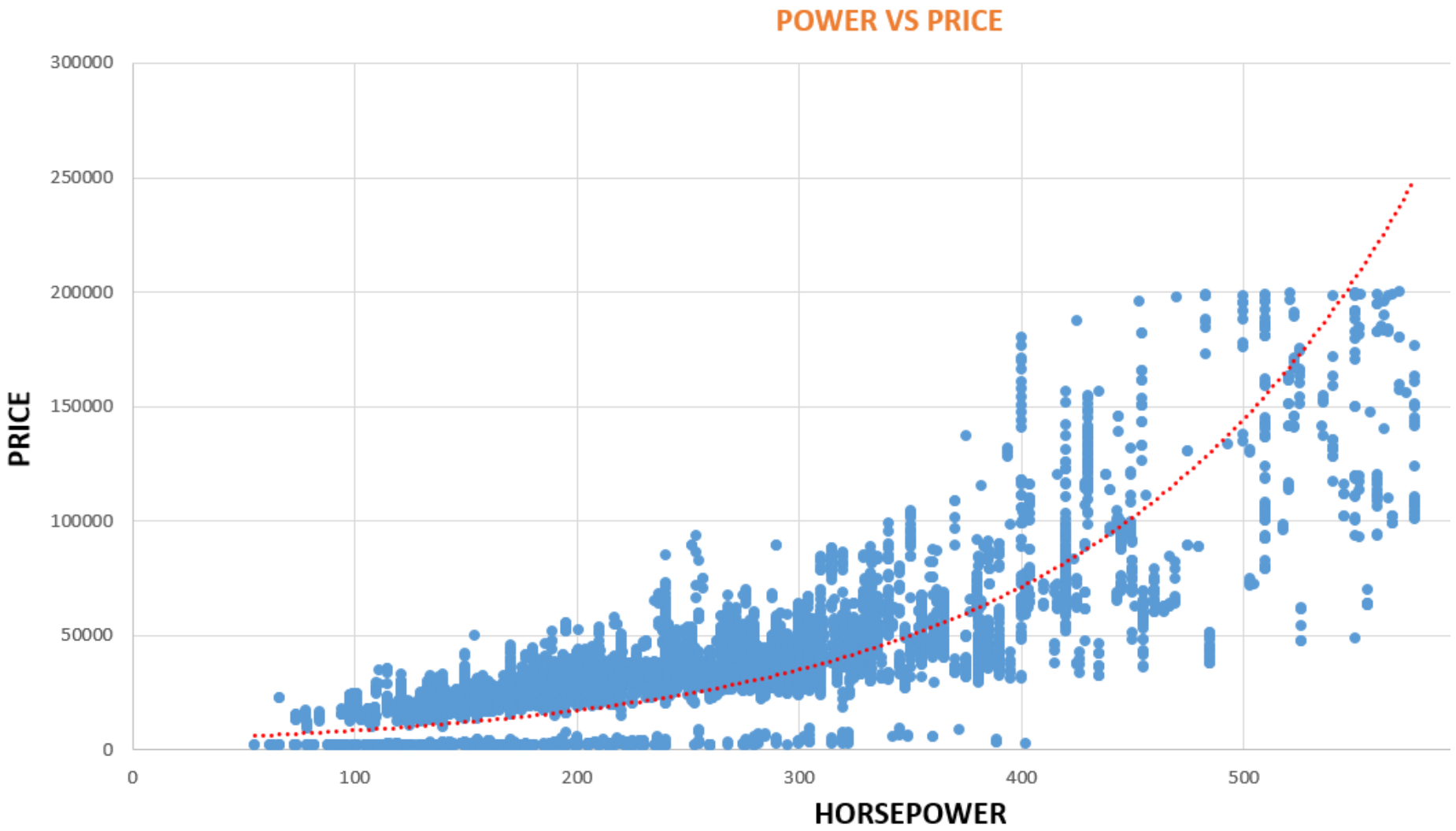
WE CAN DEPICT A OUTLIER IF WE PUT A LINEAR TRENDLINE

I HAVE FILTERED OUT THE NA VALUES



AN EXPONENTIAL OUTLIER GIVES A BETTER FIT IN THIS CASE AND SHOWS THE OUTLIERS

SINCE WE HAVE CHECKED THE TREND AND SEEN THE OUTLIERS WE CAN FILTER OUT THE RANGE AND DO GENERAL ANALYSIS



GENERAL TREND SAYS AS HORSEPOWER INCREASES PRICE ALSO INCREASES

```
df_cleaned.isnull().sum()
```

```
Make                0
Model               0
Year                0
Engine Fuel Type    0
Engine HP           0
Engine Cylinders    0
Transmission Type   0
Driven_Wheels       0
Number of Doors     0
Market Category     0
Vehicle Size        0
Vehicle Style       0
highway MPG         0
city mpg            0
Popularity          0
MSRP                0
dtype: int64
```

```
df_cleaned.to_csv('cleaned_data.csv', index=False)
```

I HAVE CLEANED THE DATA IN PYTHON AND SAVED IT AS CSV FOR REGRESSION ANALYSIS

```
df_cleaned=pd.get_dummies(df_cleaned)
```

```
# making train_dataset
train=df_cleaned[0:8000]
```

```
# making test dataset
test=df_cleaned[8000:]
```

```
x_train=train.drop('MSRP',axis=1)
```

```
y_train=train['MSRP']
```

```
x_test=test.drop('MSRP',axis=1)
```

```
final_pred=test['MSRP']
```

```
x_train=pd.get_dummies(x_train)
```

```
x_train.shape
```

```
(8000, 1079)
```

```
x_test=pd.get_dummies(x_test)
```

```
x_test.shape
```

```
(3894, 1079)
```

performing linear regression

```
from sklearn.linear_model import LinearRegression
lreg=LinearRegression()
lreg.fit(x_train,y_train)
```

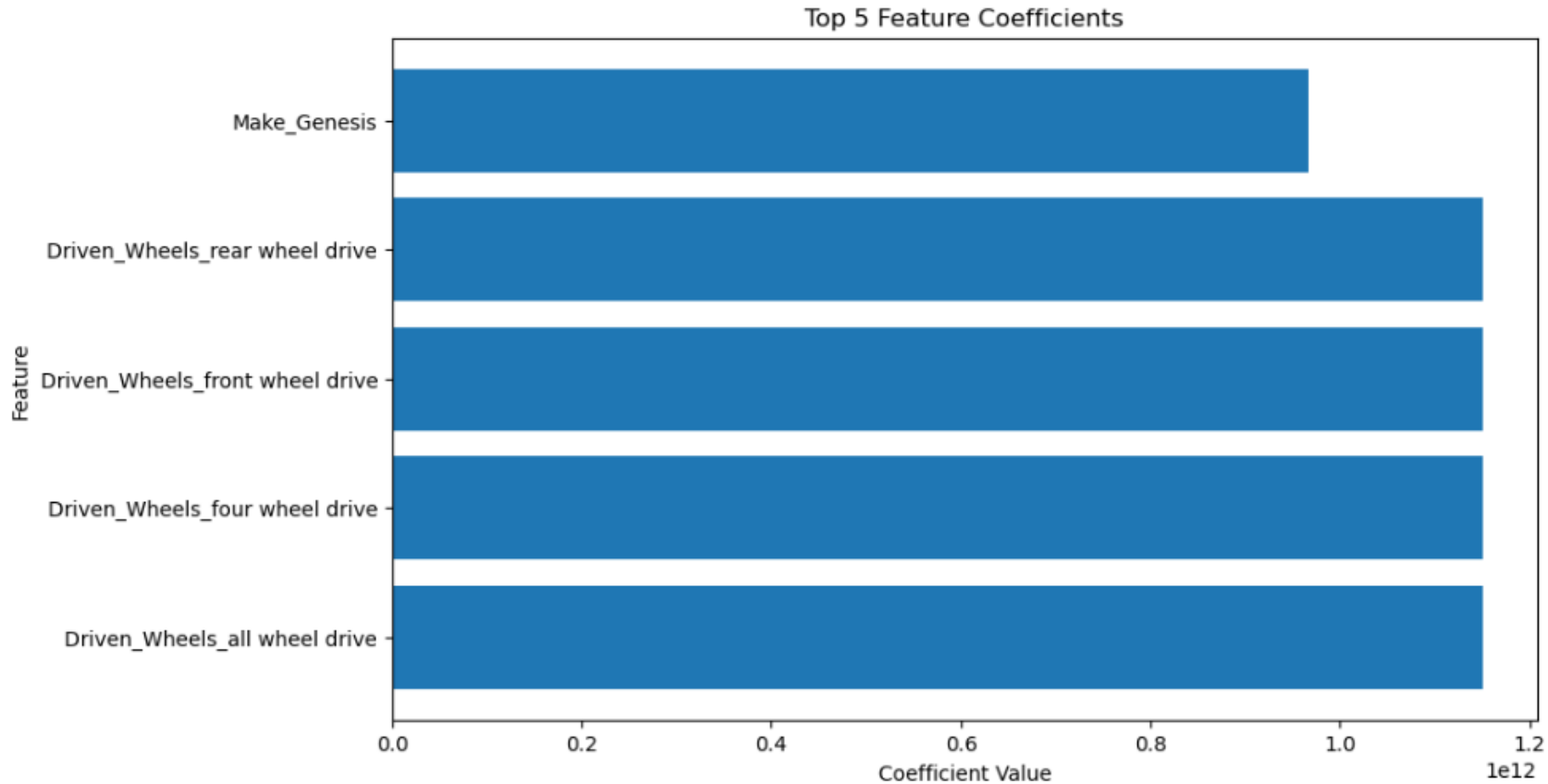
```
LinearRegression()
```

```
lreg.predict(x_test)
```

```
array([ 1.97331597e+04,  1.94012847e+04,  1.94012847e+04, ...,
       -1.97198802e+11, -1.97198803e+11,  4.91043623e+10])
```

coefficient value for top 5 features

```
import matplotlib.pyplot as plt

# Select the top 5 feature coefficients
top_5_features = feature_coefficients.head(5)

# Create a bar chart for the top 5 feature coefficients
plt.figure(figsize=(10, 6))
plt.barh(top_5_features['Feature'], top_5_features['Coefficient'])
plt.xlabel('Coefficient Value')
plt.ylabel('Feature')
plt.title('Top 5 Feature Coefficients')
plt.show()
```

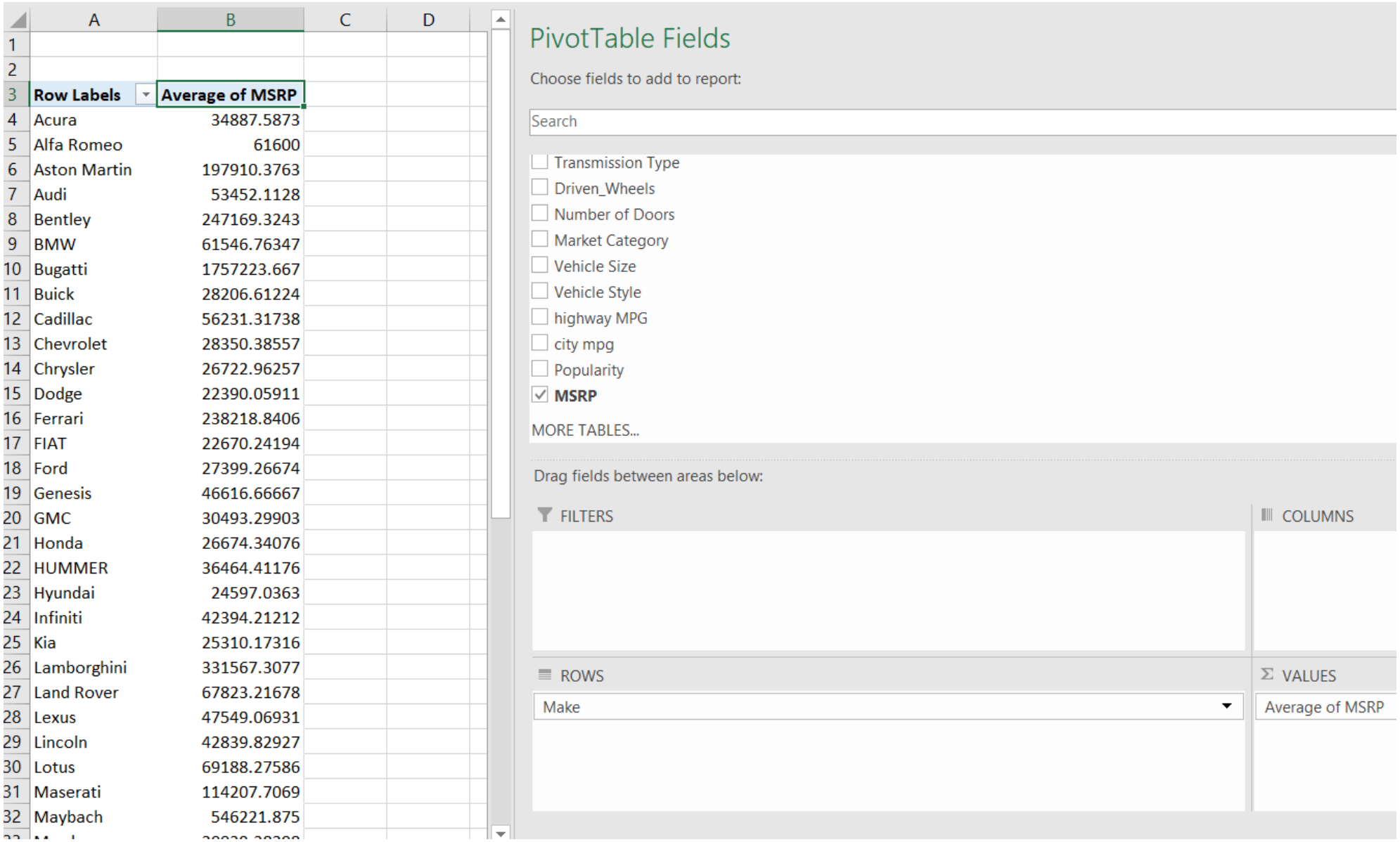


```python
# Create a dataframe with the selected numeric features and the target variable
numeric_features = df_cleaned[['Engine HP', 'Engine Cylinders','highway MPG', 'city mpg', 'Popularity', 'MSRP']]

# Calculate the correlation matrix
correlation_matrix = numeric_features.corr()

# Extract the correlation values of the numeric features with the target variable
correlation_with_msrp = correlation_matrix['MSRP'].drop('MSRP')

# Sort the correlation values in descending order
correlation_with_msrp_sorted = correlation_with_msrp.abs().sort_values(ascending=False)

# Print the sorted correlation values
print(correlation_with_msrp_sorted)
```

```
Engine HP           0.661752
Engine Cylinders    0.529566
city mpg            0.167916
highway MPG         0.167470
Popularity          0.048312
Name: MSRP, dtype: float64
```

Among the numeric features engine HP has the highest correlation

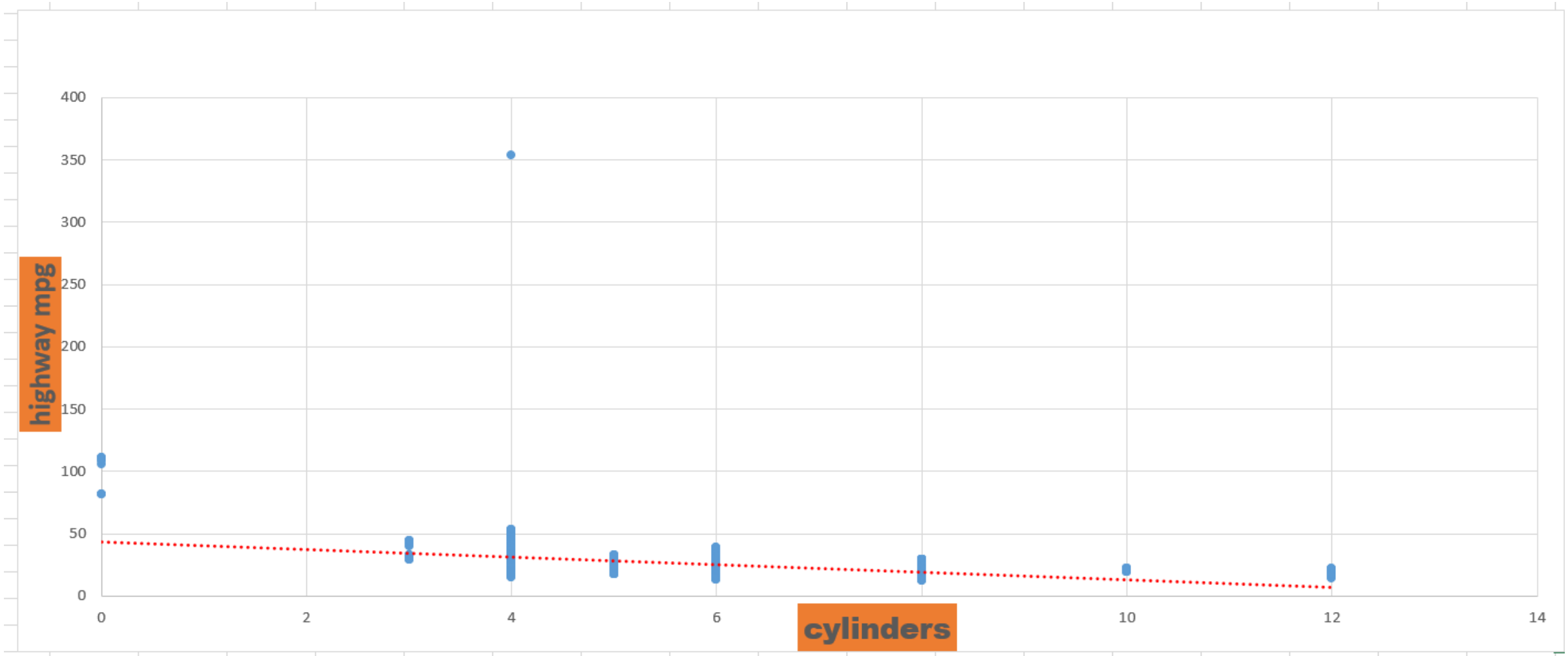
Row Labels	Average of MSRP
Acura	34887.5873
Alfa Romeo	61600
Aston Martin	197910.3763
Audi	53452.1128
Bentley	247169.3243
BMW	61546.76347
Bugatti	1757223.667
Buick	28206.61224
Cadillac	56231.31738
Chevrolet	28350.38557
Chrysler	26722.96257
Dodge	22390.05911
Ferrari	238218.8406
FIAT	22670.24194
Ford	27399.26674
Genesis	46616.66667
GMC	30493.29903
Honda	26674.34076
HUMMER	36464.41176
Hyundai	24597.0363
Infiniti	42394.21212
Kia	25310.17316
Lamborghini	331567.3077
Land Rover	67823.21678
Lexus	47549.06931
Lincoln	42839.82927
Lotus	69188.27586
Maserati	114207.7069
Maybach	546221.875



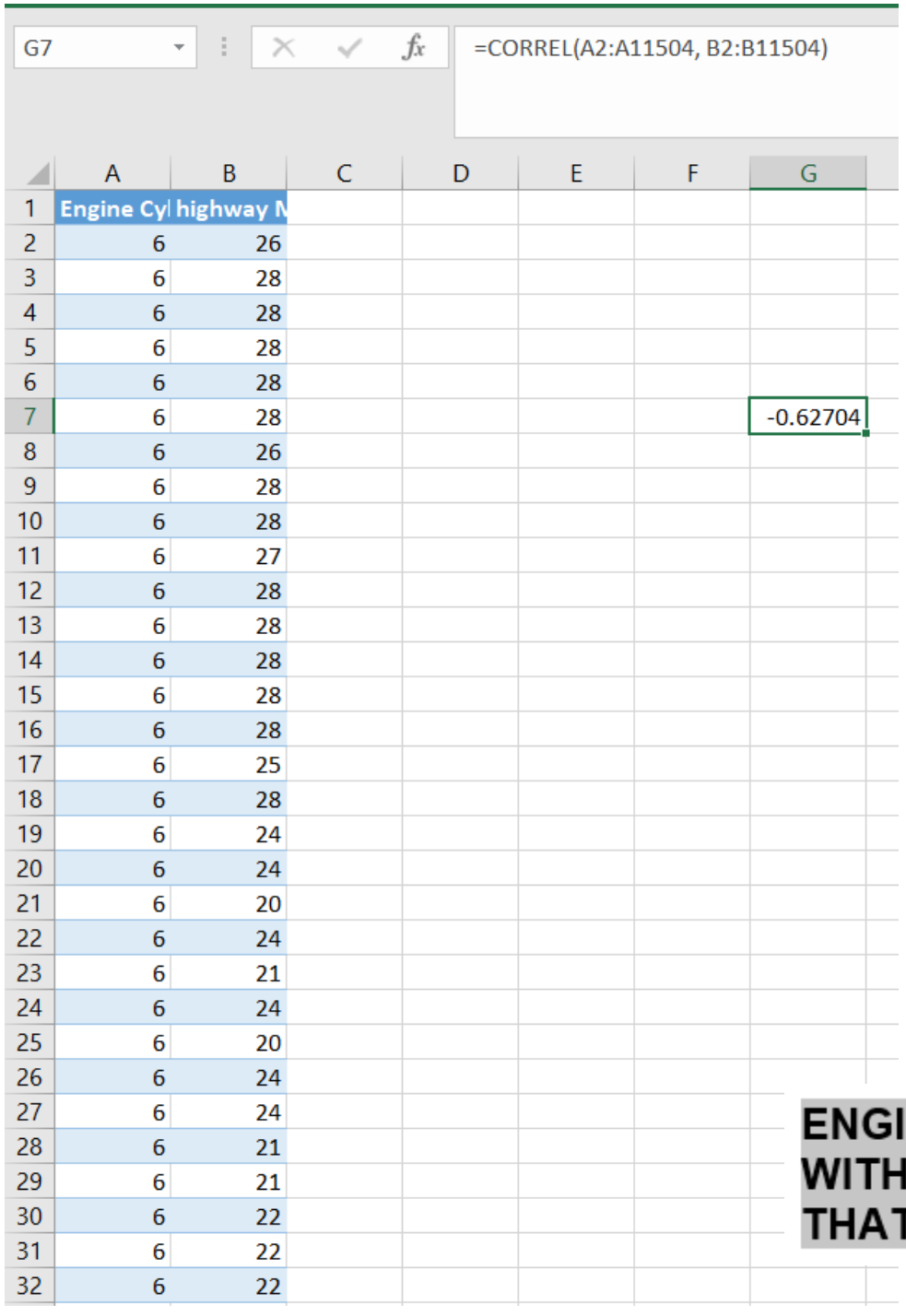
Creating a pivot table that shows the average price of cars for each manufacturer.

Bugatti has the highest average price

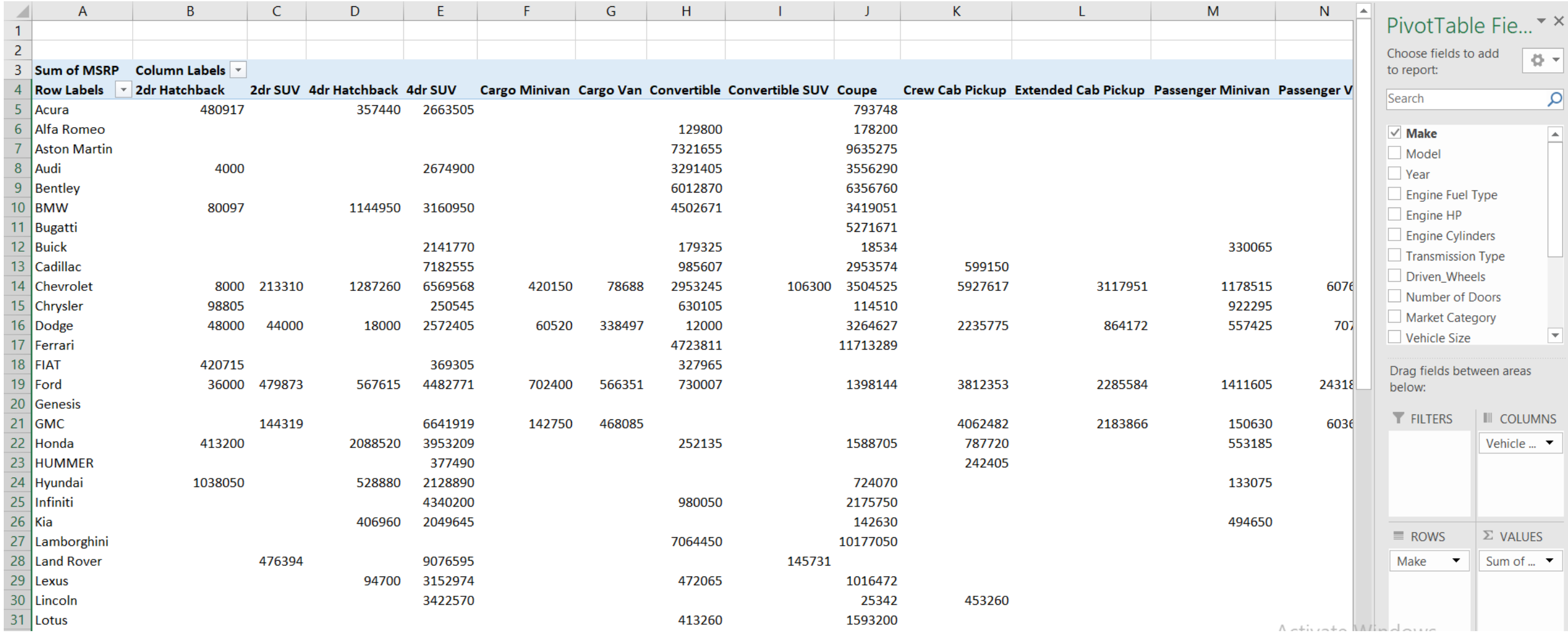
horizontal stacked bar chart that visualizes the relationship between manufacturer and average price.



The general trend says as the cylinder increases mileage decreases

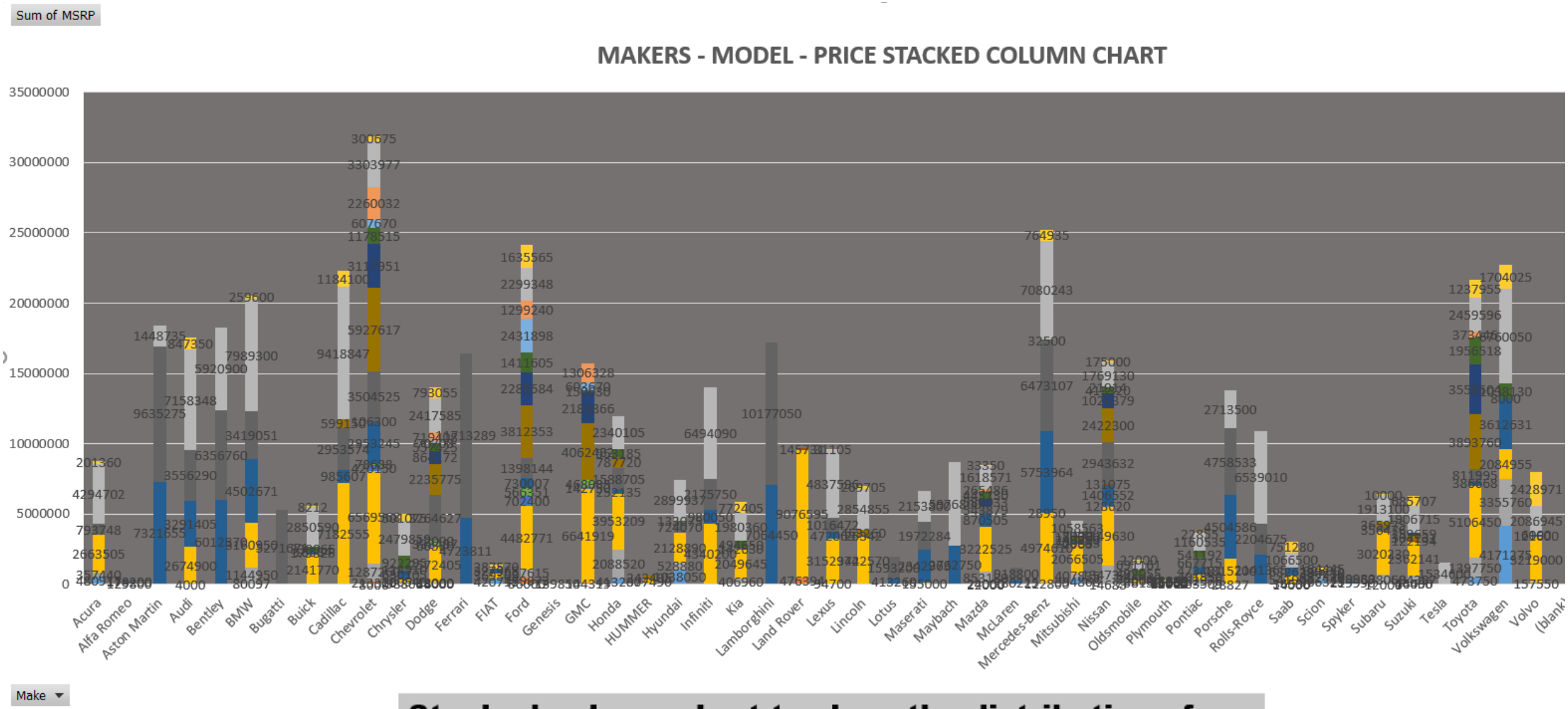


ENGINE AND HIGHWAY MILEAGE HAS NEGATIVE CORRELATION WITH EACH OTHER INDICATED BY NEGATIVE SIGN .IT INDICATES THAT IF ONE INCREASES OTHER DECREASES.



Sum of MSRP	Column Labels												
Row Labels	2dr Hatchback	2dr SUV	4dr Hatchback	4dr SUV	Cargo Minivan	Cargo Van	Convertible	Convertible SUV	Coupe	Crew Cab Pickup	Extended Cab Pickup	Passenger Minivan	Passenger V
Acura	480917		357440	2663505					793748				
Alfa Romeo							129800		178200				
Aston Martin							7321655		9635275				
Audi	4000			2674900			3291405		3556290				
Bentley							6012870		6356760				
BMW	80097		1144950	3160950			4502671		3419051				
Bugatti									5271671				
Buick				2141770			179325		18534			330065	
Cadillac				7182555			985607		2953574	599150			
Chevrolet	8000	213310	1287260	6569568	420150	78688	2953245	106300	3504525	5927617	3117951	1178515	6076
Chrysler	98805			250545			630105		114510			922295	
Dodge	48000	44000	18000	2572405	60520	338497	12000		3264627	2235775	864172	557425	707
Ferrari							4723811		11713289				
FIAT	420715			369305			327965						
Ford	36000	479873	567615	4482771	702400	566351	730007		1398144	3812353	2285584	1411605	24318
Genesis													
GMC		144319		6641919	142750	468085				4062482	2183866	150630	6036
Honda	413200		2088520	3953209			252135		1588705	787720		553185	
HUMMER				377490						242405			
Hyundai	1038050		528880	2128890					724070			133075	
Infiniti				4340200			980050		2175750				
Kia			406960	2049645					142630			494650	
Lamborghini							7064450		10177050				
Land Rover		476394		9076595				145731					
Lexus			94700	3152974			472065		1016472				
Lincoln				3422570					25342	453260			
Lotus							413260		1593200				

PIVOT to show the distribution of SUMMATION OF car prices by brand and body style.



Stacked column chart to show the distribution of car prices by brand and body style.

BRANDS	Total MSRP for each brand
Acura	34887.5873
Alfa Romeo	61600
Aston Martin	197910.3763
Audi	53452.1128
Bentley	247169.3243
BMW	61546.76347
Bugatti	1757223.667
Buick	28206.61224
Cadillac	56231.31738
Chevrolet	28350.38557
Chrysler	26722.96257
Dodge	22390.05911
Ferrari	238218.8406
FIAT	22670.24194
Ford	27399.26674
Genesis	46616.66667
GMC	30493.29903
Honda	26674.34076
HUMMER	36464.41176
Hyundai	24597.0363
Infiniti	42394.21212
Kia	25310.17316
Lamborghini	331567.3077
Land Rover	67823.21678
Lexus	47549.06931
Lincoln	42839.82927
Lotus	69188.27586
Maserati	114207.7069
Maybach	546221.875
Mazda	20039.38298

=INDEX(O4:O11505, MATCH(MAX(P4:P11505), P4:P11505, 0))

BRANDS	Total MSRP for each brand
Acura	34887.5873
Alfa Romeo	61600
Aston Martin	197910.3763
Audi	53452.1128
Bentley	247169.3243
BMW	61546.76347
Bugatti	1757223.667

Bugatti HIGHEST MSRP

=INDEX(O4:O11505, MATCH(MIN(P4:P11505), P4:P11505, 0))

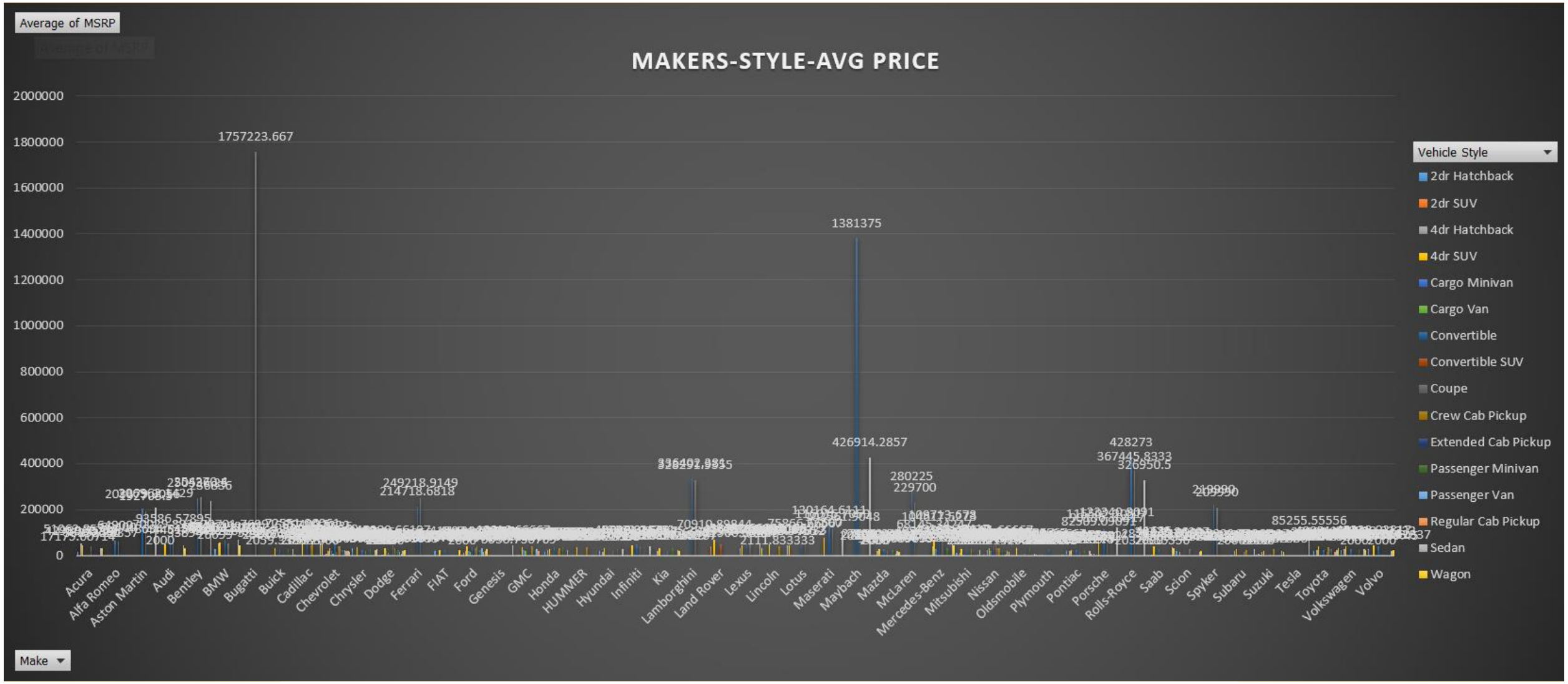
BRANDS	Total MSRP for each brand
Acura	34887.5873
Alfa Romeo	61600
Aston Martin	197910.3763
Audi	53452.1128
Bentley	247169.3243
BMW	61546.76347
Bugatti	1757223.667
Buick	28206.61224
Cadillac	56231.31738

Bugatti HIGHEST MSRP

Plymouth LOWEST MSRP

Average of MSRP	Column Labels															
BRANDS	2dr Hatchback	2dr SUV	4dr Hatchback	4dr SUV	Cargo Minivan	Cargo Van	Convertible	Convertible SUV	Coupe	Crew Cab Pickup	Extended Cab Pickup	Passenger Minivan	Passenger Van	Regular Cab Pickup	Sedan	Wagon	Grand Total
Acura	17175.60714		51062.85714	42959.75806					39687.4						33292.26357	33560	34887.5873
Alfa Romeo							64900		59400								61600
Aston Martin							203379.3056		192705.5						206962.1429		197910.3763
Audi	2000			48634.54545			70029.89362		93586.57895						44461.78882	33894	53452.1128
Bentley							250536.25		254270.4						236836		247169.3243
BMW	26699		54521.42857	58536.11111			63417.90141		51803.80303						70701.76991	43266.66667	61546.76347
Bugatti									1757223.667								1757223.667
Buick				33996.34921			25617.85714		2059.333333			30005.90909			27946.96078	2053	28206.61224
Cadillac				72551.06061			70400.5		45439.6	66572.22222					50912.68649	47364	56231.31738
Chevrolet	2000	8887.916667	18930.29412	32046.67317	20007.14286	7153.454545	62835	17716.66667	38939.16667	39255.74172	24170.16279	24552.39583	24306.8	19824.84211	20521.59627	15825	28350.38557
Chrysler	32935			35792.14286			24234.80769		19085			29751.45161			26103.77895	26372.36842	26722.96257
Dodge	2000	2000	2000	30992.83133	20173.33333	12536.92593	2000		45980.66197	31052.43056	13938.25806	25337.5	14141.6	9342.961039	21780.04505	24782.96875	22390.05911
Ferrari							214718.6818		249218.9149								238218.8406
FIAT	21035.75			24620.33333			23426.07143									22120.76923	22670.24194
Ford	2000	13710.65714	19572.93103	41507.13889	21284.84848	17698.46875	34762.2381		34101.07317	41438.61957	23808.16667	23526.75	32425.30667	17797.80822	21290.25926	27259.41667	27399.26674
Genesis															46616.66667		46616.66667
GMC		5550.730769		36695.68508	23791.66667	18723.4				39062.32692	26632.5122	25105	26246.52174	21069.80645			30493.29903
Honda	17216.66667		26106.5	28855.54015			36019.28571		21763.08219	34248.69565		36879			26001.16667		26674.34076
HUMMER				37749						34629.28571							36464.41176
Hyundai	18536.60714		17629.33333	30412.71429					20687.71429			26615			27102.21495		24597.0363
Infiniti				45686.31579			46669.04762		40291.66667						40588.0625		42394.21212
Kia			19379.04762	31533					20375.71429			32976.66667			23298.35294	20326.44737	25310.17316
Lamborghini							336402.381		328291.9355								331567.3077
Land Rover		39699.5		70910.89844				48577									67823.21678
Lexus			31566.66667	45042.48571			52451.66667		50823.6						48864.60606	31105	47549.06931
Lincoln				50331.91176					2111.833333	41205.45455					42609.77612	44950.83333	42839.82927
Lotus							51657.5		75866.66667								69188.27586
Maserati				77500			130164.6111		116016.7059						102561.9048		114207.7069
Maybach							1381375								426914.2857		546221.875
Mazda	2000	2000	20809.26829	27080.04202			28080.80645		20143.66667		11600.66	23322.63158		9154.689655	19738.67073	16675	20039.38298
McLaren							280225		229700								239805
Mercedes-Benz			40933.33333	68145.34247	28950		104617.5273		109713.678			32500			49168.35417	44996.17647	71476.22946
Mitsubishi	13162.26667		13155.96774	26158.29114	2000		29984.71429			26690	19194.28571	2000		2000	24058.25		21240.53521
Nissan	2097.571429		24059.28571	34294.46281	21436.66667		39070.88889	43691.66667	34228.27907	32733.78378	20527.58	22962.22222		2191.4	21841.11111	17500	28583.4319
Oldsmobile				34021.42857			2000		9226.290323			32803.66667			8131.305882	2000	11542.54
Plymouth	2000		2000				28543.66667		2000			2105.5			2597.722222	2000	3122.902439
Pontiac	18167.22222		18108.33333	25096.875			22546.71429		15528.25581			20815.07692			20009.22414	5713.75	19321.54839

PIVOT to show the distribution of AVERAGE car prices by brand and body style.



BUGATTI COUPE HAS THE HIGHEST AVERAGE PRICE

MAYBACH CONVERTIBLE ALSO HAS THE HIGH AVERAGE PRICE

Average of MSRP		
Transmission Type	Vehicle Style	Total
AUTOMATED_MANUAL	2dr Hatchback	27180.96491
	4dr Hatchback	29249.07407
	4dr SUV	40451.15385
	Convertible	121256.6444
	Coupe	245977.4252
	Sedan	47498.70813
	Wagon	31985.27778
AUTOMATED_MANUAL Total		**99508.37061**
AUTOMATIC	2dr Hatchback	20926.464
	2dr SUV	18615.20455
	4dr Hatchback	23833.67898
	4dr SUV	41535.60646
	Cargo Minivan	20920.98592
	Cargo Van	15280.22105
	Convertible	90637.3869
	Convertible SUV	38925.5
	Coupe	63371.81076
	Crew Cab Pickup	37744.07154
	Extended Cab Pickup	30637.34973
	Passenger Minivan	26412.68159
	Passenger Van	29015.20313
	Regular Cab Pickup	28536.8239
	Sedan	43769.1165
	Wagon	27613.19169
AUTOMATIC Total		**41110.33172**
DIRECT_DRIVE	2dr Hatchback	31800
	4dr Hatchback	32799.72973
	4dr SUV	40800

Choose fields to add to report:

Search

- [x] **Transmission Type**
- [ ] Driven_Wheels
- [ ] Number of Doors
- [ ] Market Category
- [ ] Vehicle Size
- [x] **Vehicle Style**
- [ ] highway MPG
- [ ] city mpg
- [ ] Popularity
- [x] **MSRP**

MORE TABLES...

Drag fields between areas below:

FILTERS

COLUMNS

ROWS

- Transmission Type
- Vehicle Style

VALUES

- Average of MSRP

The average MSRP for each combination of transmission type and body style

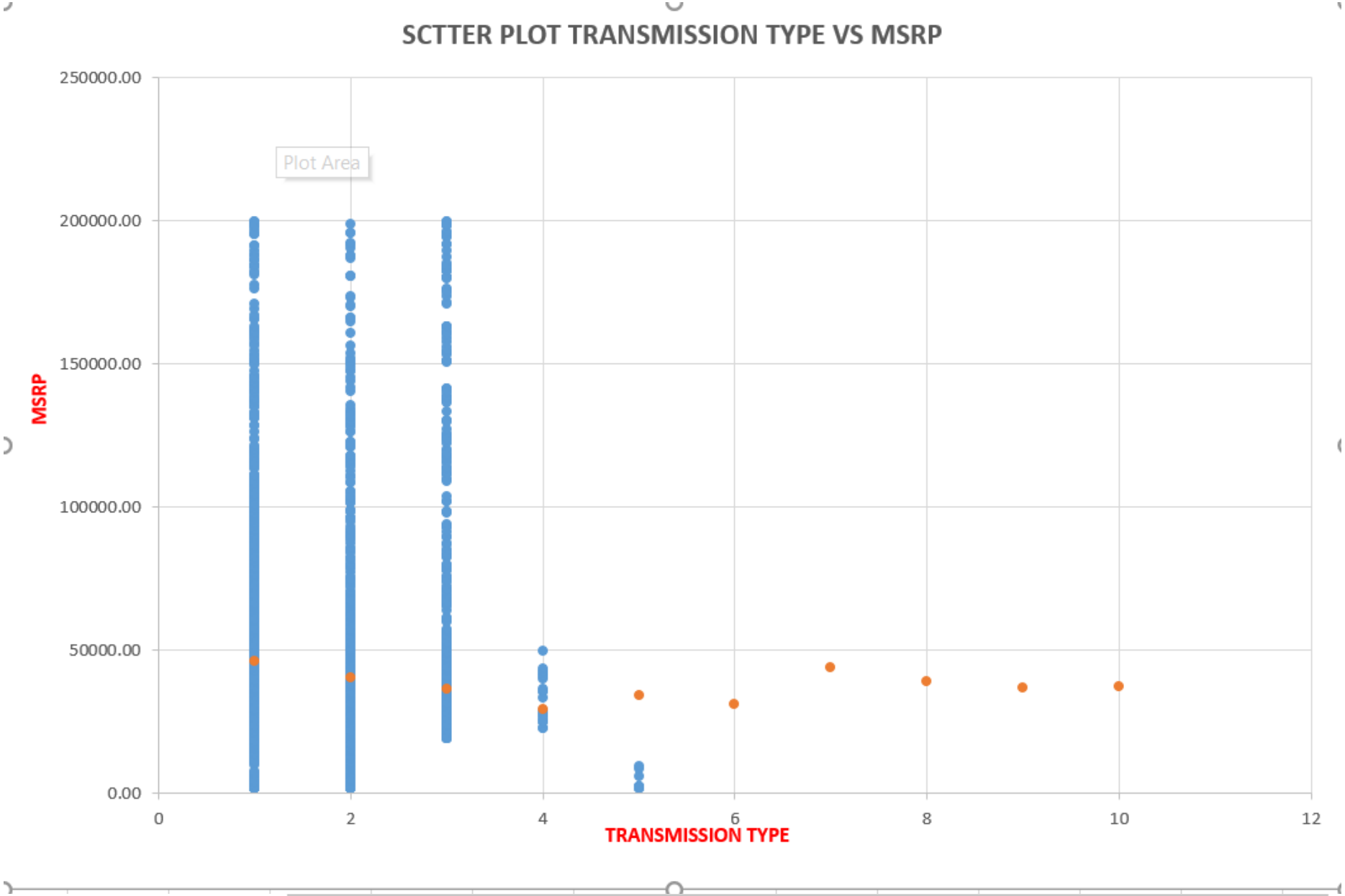
C2

```
=IF($A2="AUTOMATIC", 1, IF($A2="MANUAL", 2, IF($A2="DIRECT_DRIVE", 4, IF($A2="AUTOMATED_MANUAL", 3, IF($A2="UNKNOWN", 5, "")))))
```

	A	B	C
1	Transmissi	MSRP	DATALABEL
2	MANUAL	46135.00	2
3	MANUAL	40650.00	2
4	MANUAL	36350.00	2
5	MANUAL	29450.00	2
6	MANUAL	34500.00	2
7	MANUAL	31200.00	2
8	MANUAL	44100.00	2
9	MANUAL	39300.00	2
10	MANUAL	36900.00	2
11	MANUAL	37200.00	2
12	MANUAL	39600.00	2
13	MANUAL	31500.00	2
14	MANUAL	44400.00	2
15	MANUAL	37200.00	2
16	MANUAL	31500.00	2
17	MANUAL	48250.00	2
18	MANUAL	43550.00	2
19	MANUAL	2000.00	2
20	MANUAL	2000.00	2
21	AUTOMAT	2000.00	1
22	MANUAL	2000.00	2
23	MANUAL	2000.00	2
24	MANUAL	2000.00	2
25	AUTOMAT	2000.00	1
26	MANUAL	2000.00	2
27	MANUAL	2000.00	2
28	MANUAL	2000.00	2
29	AUTOMAT	2000.00	1
30	MANUAL	2000.00	2
31	MANUAL	2000.00	2
32	AUTOMAT	2000.00	1

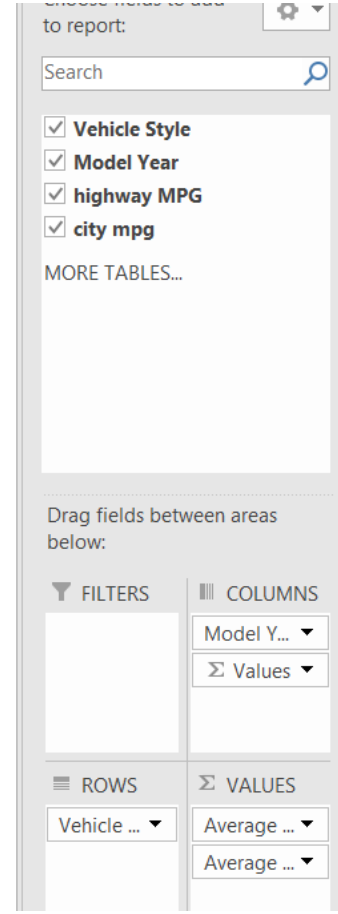
```
If the value in cell A1 is "AUTOMATIC", it assigns the index value 1.
If it is not "AUTOMATIC", it checks if it is "MANUAL". If it is, it assigns the index value 2.
If it is not "MANUAL", it checks if it is "DIRECT_DRIVE". If it is, it assigns the index value 5.
If it is not "DIRECT_DRIVE", it checks if it is "AUTOMATED_MANUAL". If it is, it assigns the index value 3.
If none of the above conditions are met, it checks if it is "UNKNOWN". If it is, it assigns the index value 4.
If none of the conditions are met, it leaves the cell blank.
```

I HAVE LABELLED THE DATA FOR PLOTTING THE CATEGORICAL SCATTER PLOT

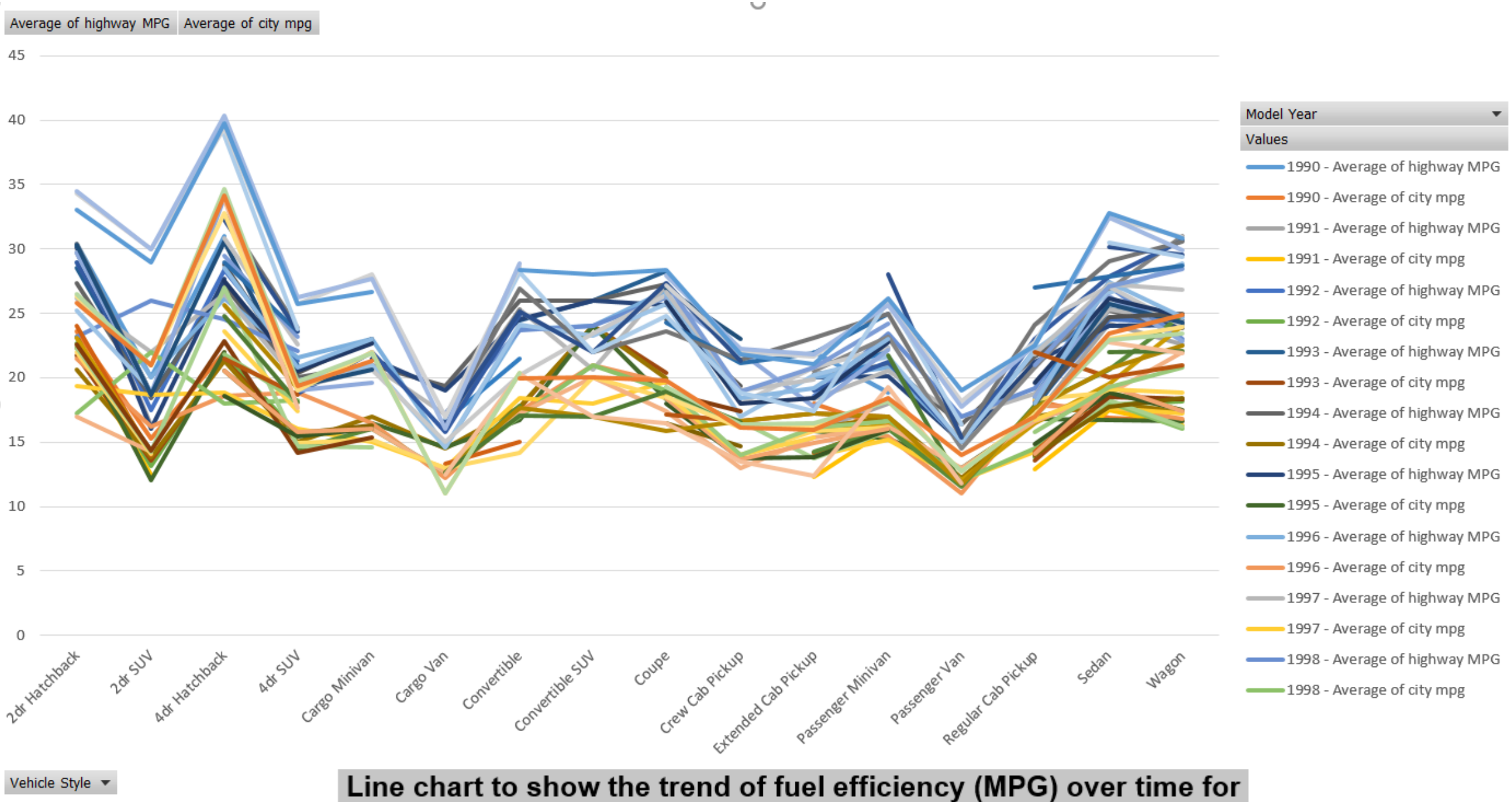


I have also added vehicle styles as the X values and the MSRP as the Y values.

	Column Labels							
	1990		1991		1992		1993	
Row Labels	Average of highway MPG	Average of city mpg	Average of highway MPG	Average of city mpg	Average of highway MPG	Average of city mpg	Average of highway MPG	Average of city mpg
2dr Hatchback	30.4	23.6	30.06666667	22.33333333	29.6969697	22.66666667	28.53333333	21.7333333
2dr SUV	20	15.28571429	16.25	12.5	17.47058824	13.17647059	18.47368421	13.5789473
4dr Hatchback	31	22			28.375	21.75	27.3	21.4
4dr SUV			19.33333333	14.33333333	21.33333333	15.66666667	21	15.5
Cargo Minivan	20	18						
Cargo Van								
Convertible	23.5	15.5	22.625	15.875	25.5	18.58333333	24.46153846	17.6153846
Convertible SUV							26	24
Coupe	24.5	17	26.15789474	18.36842105	27.28571429	19.07142857	28.25925926	20.3703703
Crew Cab Pickup								
Extended Cab Pickup	22	18	15.83333333	12.33333333	15.6	11.4	16.71428571	13.0714285
Passenger Minivan	18.85714286	16	18	16				
Passenger Van								
Regular Cab Pickup	22.23076923	18.23076923	16.95238095	12.85714286	17.88235294	13.82352941	17.64705882	13.5882352
Sedan	24	16.85714286	24.2195122	17.51219512	24.52083333	17.9375	25.32758621	18.6034482
Wagon	24.13333333	16.6	22.57142857	16.28571429	24.26666667	18.2	24.46153846	18.3076923
Grand Total	**23.07317073**	**17.08943089**	**22.15131579**	**16.28289474**	**24.05084746**	**17.88700565**	**24.21052632**	**18.0622009**

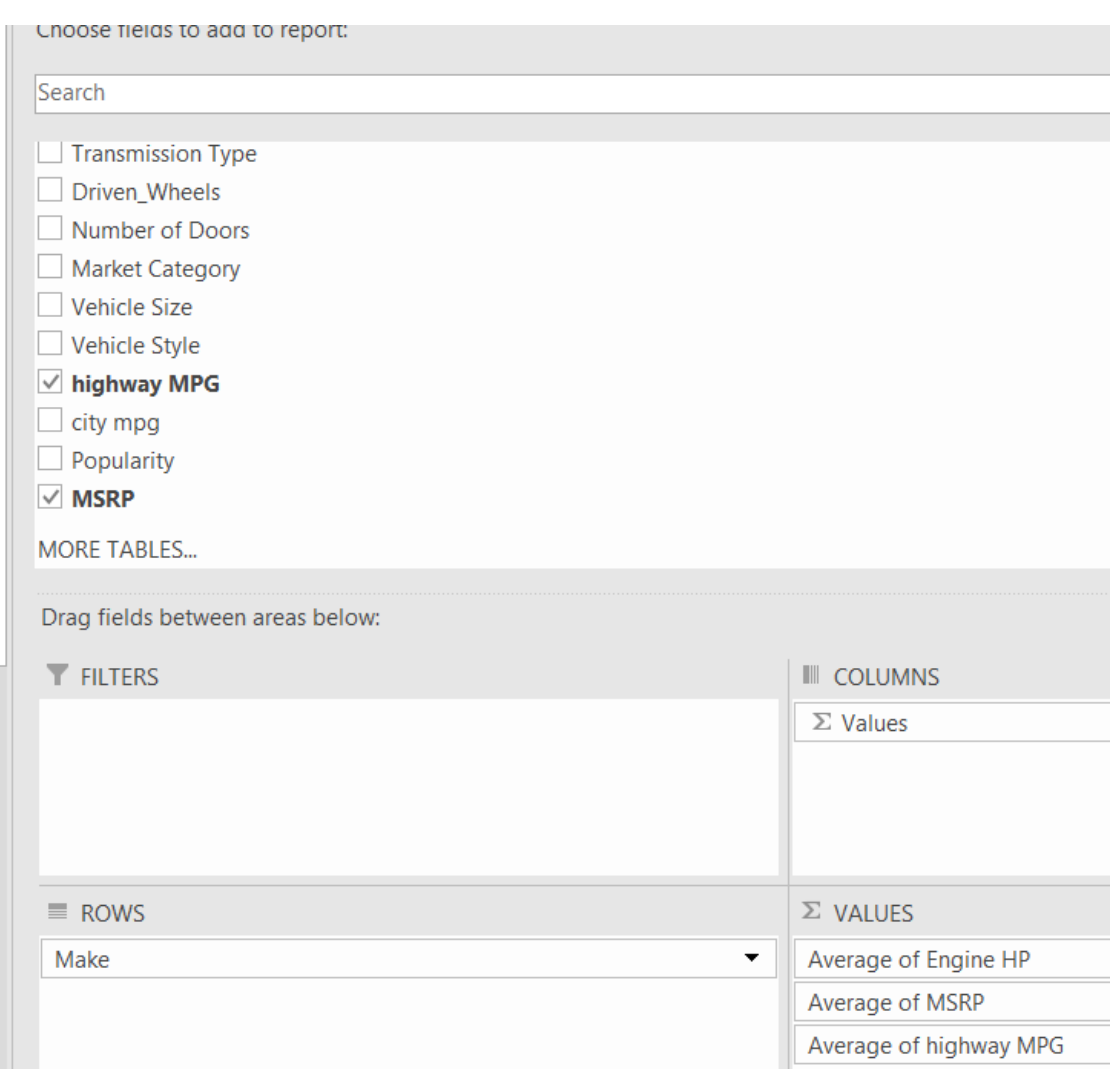


The fuel efficiency of cars varying across different body styles and model years

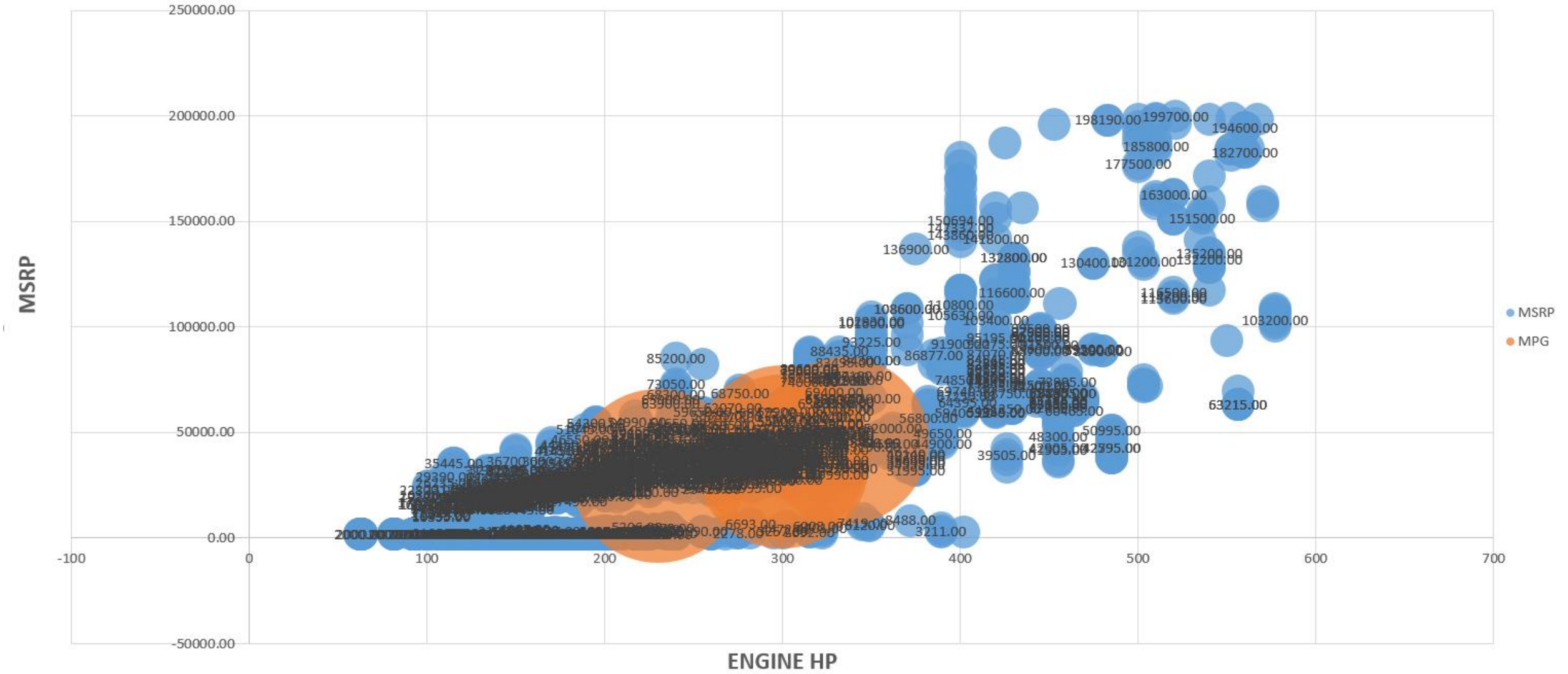


Line chart to show the trend of fuel efficiency (MPG) over time for each body style.

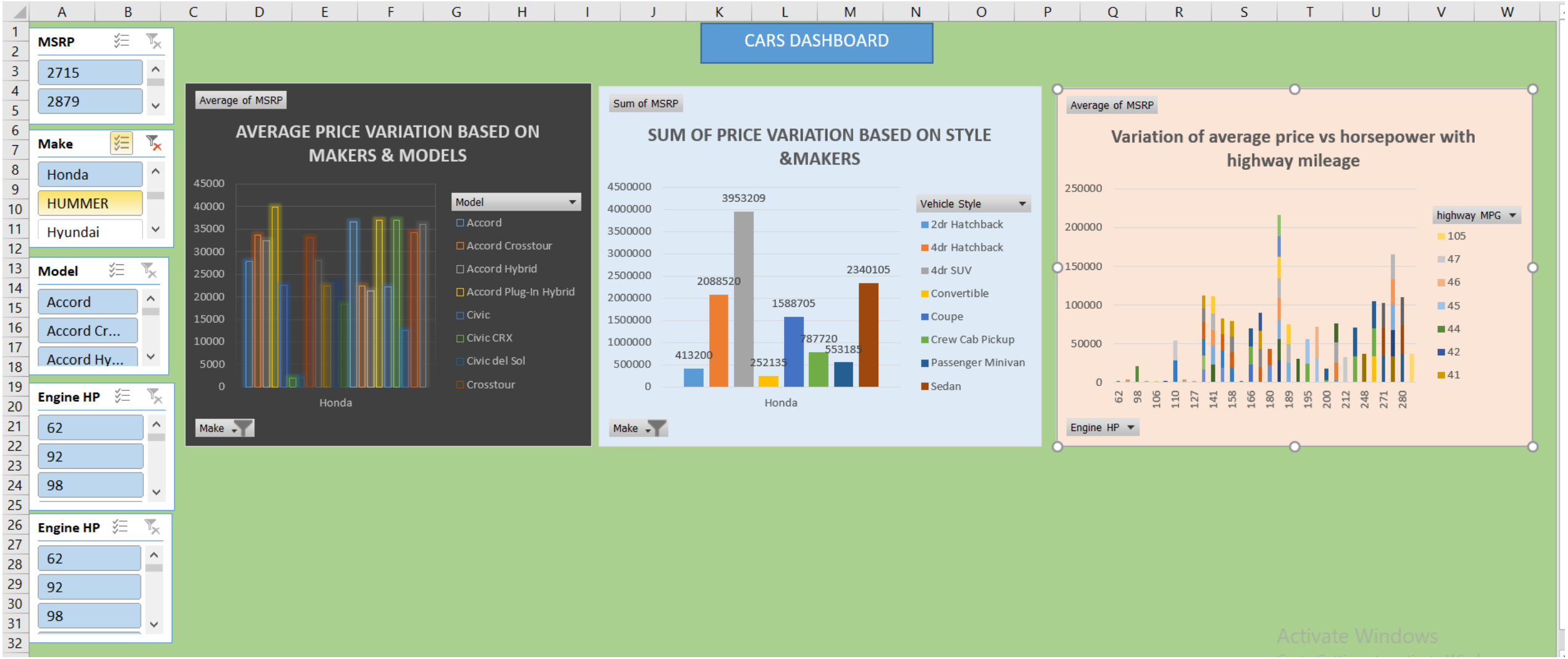
Row Labels	Average of Engine HP	Average of MSRP	Average of highway MPG
Acura	244.797619	34887.5873	28.11111111
Alfa Romeo	237	61600	34
Aston Martin	484.3225806	197910.3763	18.89247312
Audi	277.695122	53452.1128	28.82317073
Bentley	533.8513514	247169.3243	18.90540541
BMW	326.9071856	61546.76347	29.24550898
Bugatti	1001	1757223.667	14
Buick	219.244898	28206.61224	26.94897959
Cadillac	332.3098237	56231.31738	25.23677582
Chevrolet	246.9722471	28350.38557	25.81567231
Chrysler	229.1390374	26722.96257	26.36898396
Dodge	244.4153355	22390.05911	22.34504792
Ferrari	511.9565217	238218.8406	15.72463768
FIAT	143.559322	22670.24194	37.33870968
Ford	243.0979263	27399.26674	24.00681044
Genesis	347.3333333	46616.66667	25.33333333
GMC	259.8446602	30493.29903	21.4038835
Honda	195.7494407	26674.34076	32.57461024
HUMMER	261.2352941	36464.41176	17.29411765
Hyundai	201.9174917	24597.0363	30.39273927
Infiniti	310.0666667	42394.21212	24.77878788
Kia	206.8274336	25310.17316	30.65367965
Lamborghini	614.0769231	331567.3077	18.01923077
Land Rover	322.0979021	67823.21678	22.12587413
Lexus	277.4158416	47549.06931	25.87623762
Lincoln	284.9102564	42839.82927	24.48780488
Lotus	275.9655172	69188.27586	26.55172414



Car's horsepower, MPG, and price variation across different Brands



Bubble chart to visualize the relationship between horsepower, MPG, and price across different car brands.



Dashboard with slicers and filters