PROJECT 7

IMPACT OF CAR FEATURES

Overview of Car Features Affecting Price and Profitability

Luxury Interior Features

High-end interior features, such as premium upholstery and advanced infotainment systems, significantly impact a car's price and desirability, affecting profitability.

Fuel Efficiency Technology

Cars with advanced fuel-efficient technology command higher prices and contribute positively to the overall profitability of manufacturers.

Sleek and Innovative Design

Innovative and sleek car design elements can influence both the price and profitability, attracting a wider customer base.

PROJECT DESCRIPTION

- This project aims to analyze the impact of car features on both the price and profitability of vehicles. The analysis will help in understanding the factors influencing car pricing and how they affect the overall profitability in the automotive industry.
  - Data source – Dataset via TRAINITY (project 7 dataset)
  - Handled missing values , handled duplicates for making the results more accurate.

APPROACH

Data Gathering and Cleaning

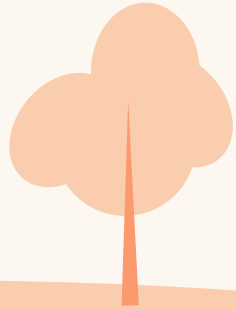
- Source of the data – dataset of project 7 of trainity
- Handling of the data is a crucial part of the data analysis (handled missing values , duplicates etc)

Statistical Analysis

- Utilizing regression analysis to identify correlations between specific features and their effect on price and profitability.
- Utilizing visualizing techniques for better representation.

Challenges faced

Faced issue in the dashboard task 5 – visualizing the relation of horse power , fuel efficiency , price and brand through a bubble chart



TECH STACK USED

Microsoft Excel
• Versatile tool for collecting and organising data.
• Used for data analysis including sorting, filtering and statistical calculations.
• Used for creating visualizations

➢Microsoft Powerpoint
Finalized report is visualized in the form of presentation.

EXCEL LINK -
https://docs.google.com/file/d/1w6Uun7yq9NGzzJWSKfYIhrSMjxxqK7Hr/edit?usp=docslist_api&filetype=msexcel

TASKS: ANALYSIS

Insight Required: How does the popularity of a car model vary across different market categories?

Task 1.A: Create a pivot table that shows the number of car models in each market category and their corresponding popularity scores.

Row Labels	Average of Popularity	Count of Model
Crossover	1529.030825	1103
Crossover,Diesel	873	7
Crossover,Exotic,Luxury,High-Performance	238	1
Crossover,Exotic,Luxury,Performance	238	1
Crossover,Factory Tuner,Luxury,High-Performance	1823.461538	26
Crossover,Factory Tuner,Luxury,Performance	2607.4	5
Crossover,Factory Tuner,Performance	210	4
Crossover,Flex Fuel	2073.75	64
Crossover,Flex Fuel,Luxury	1173.2	10
Crossover,Flex Fuel,Luxury,Performance	1624	6
Crossover,Flex Fuel,Performance	5657	6
Crossover,Hatchback	1675.694444	72
Crossover,Hatchback,Factory Tuner,Performance	2009	6
Crossover,Hatchback,Luxury	204	7
Crossover,Hatchback,Performance	2009	6
Crossover,Hybrid	2563.380952	42
Crossover,Luxury	884.5487805	410
Crossover,Luxury,Diesel	2195.848485	33
Crossover,Luxury,High-Performance	1037.222222	9
Crossover,Luxury,Hybrid	630.9166667	24
Crossover,Luxury,Performance	1344.849558	113
Crossover,Luxury,Performance,Hybrid	3916	2
Crossover,Performance	2585.956522	69
Diesel	1730.904762	84
Diesel,Luxury	2275	51
Exotic,Factory Tuner,High-Performance	1046.380952	21
Exotic,Factory Tuner,Luxury,High-Performance	517.5384615	52
Exotic,Factory Tuner,Luxury,Performance	520	3
Exotic,Flex Fuel,Factory Tuner,Luxury,High-Performance	520	13
Exotic,Flex Fuel,Luxury,High-Performance	520	11
Exotic,High-Performance	1261.571429	252
Exotic,Luxury	112.6666667	12
Exotic,Luxury,High-Performance	467.0759494	79
Exotic,Luxury,High-Performance,Hybrid	204	1
Exotic,Luxury,Performance	217.0277778	36
Factory Tuner,High-Performance	1941.415094	106
Factory Tuner,Luxury	617	2
Factory Tuner,Luxury,High-Performance	2133.367442	215
Factory Tuner,Luxury,Performance	1413.419355	31
Factory Tuner,Performance	1733.101124	89
Flex Fuel	2217.302752	872
Flex Fuel,Diesel	5657	16
Flex Fuel,Factory Tuner,Luxury,High-Performance	258	1
Flex Fuel,Hybrid	155	2
Flex Fuel,Luxury	746.5384615	39
Flex Fuel,Luxury,High-Performance	878.9090909	33
Flex Fuel,Luxury,Performance	1380.071429	28
Flex Fuel,Performance	1702.358025	81
Flex Fuel,Performance,Hybrid	155	2
Hatchback	1292.998371	614
Hatchback,Diesel	873	14
Hatchback,Factory Tuner,High-Performance	1205.153846	13
Hatchback,Factory Tuner,Luxury,Performance	886.8888889	9
Hatchback,Factory Tuner,Performance	2159.045455	22
Hatchback,Flex Fuel	5657	7
Hatchback,Hybrid	2121.25	72
Hatchback,Luxury	1379.5	46
Hatchback,Luxury,Hybrid	454	3
Hatchback,Luxury,Performance	1566.131579	38
Hatchback,Performance	1039.646825	252
High-Performance	1821.447236	199
Hybrid	2105.569106	123
Luxury	1107.553467	851
Luxury,High-Performance	1668.017964	334
Luxury,High-Performance,Hybrid	568.8333333	12
Luxury,Hybrid	724.6875	48
Luxury,Performance	1292.615156	673
Luxury,Performance,Hybrid	2333.181818	11
N/A	1671.388144	3728
Performance	1371.080479	584
Performance,Hybrid	155	1
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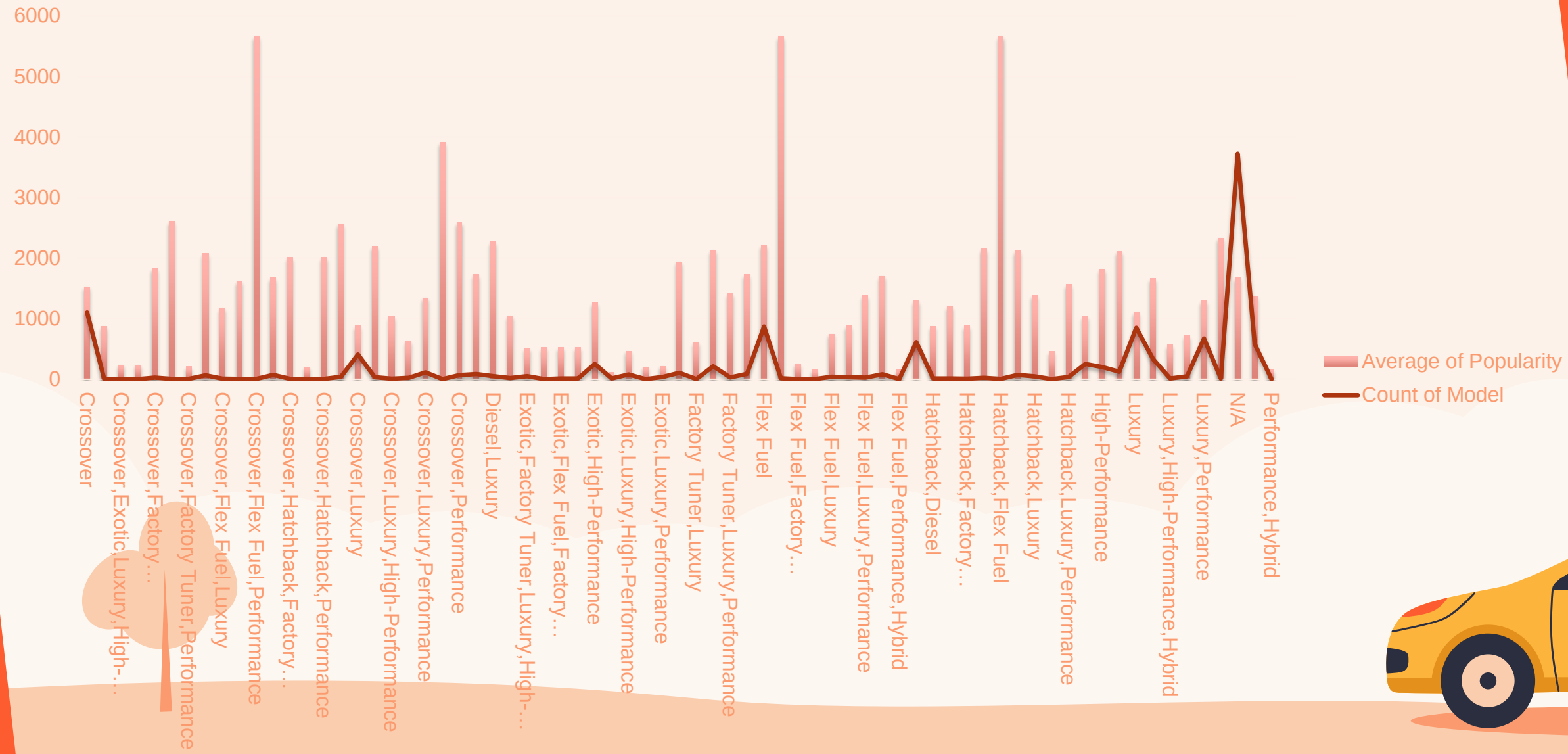
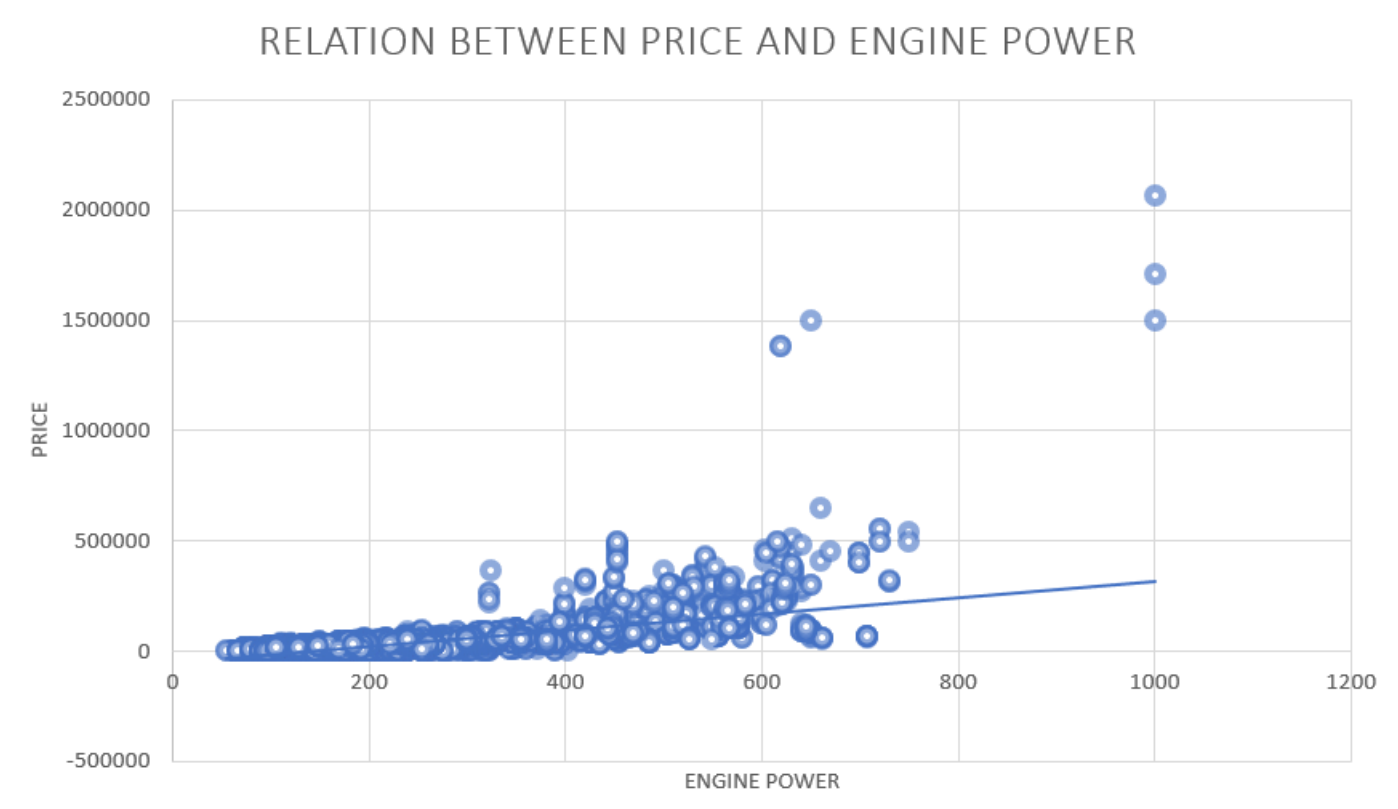
Grand Total	**1553.679902**	**11812**

Task 1.B: Create a combo chart that visualizes the relationship between market category and popularity.



Insight Required: What is the relationship between a car's engine power and its price?

Task 2: Create a scatter chart that plots engine power on the x-axis and price on the y-axis. Add a trendline to the chart to visualize the relationship between these variables..



Insight Required: Which car features are most important in determining a car's price?
Task 3: Use regression analysis to identify the variables that have the strongest relationship with a car's price. Then create a bar chart that shows the coefficient values for each variable to visualize their relative importance.

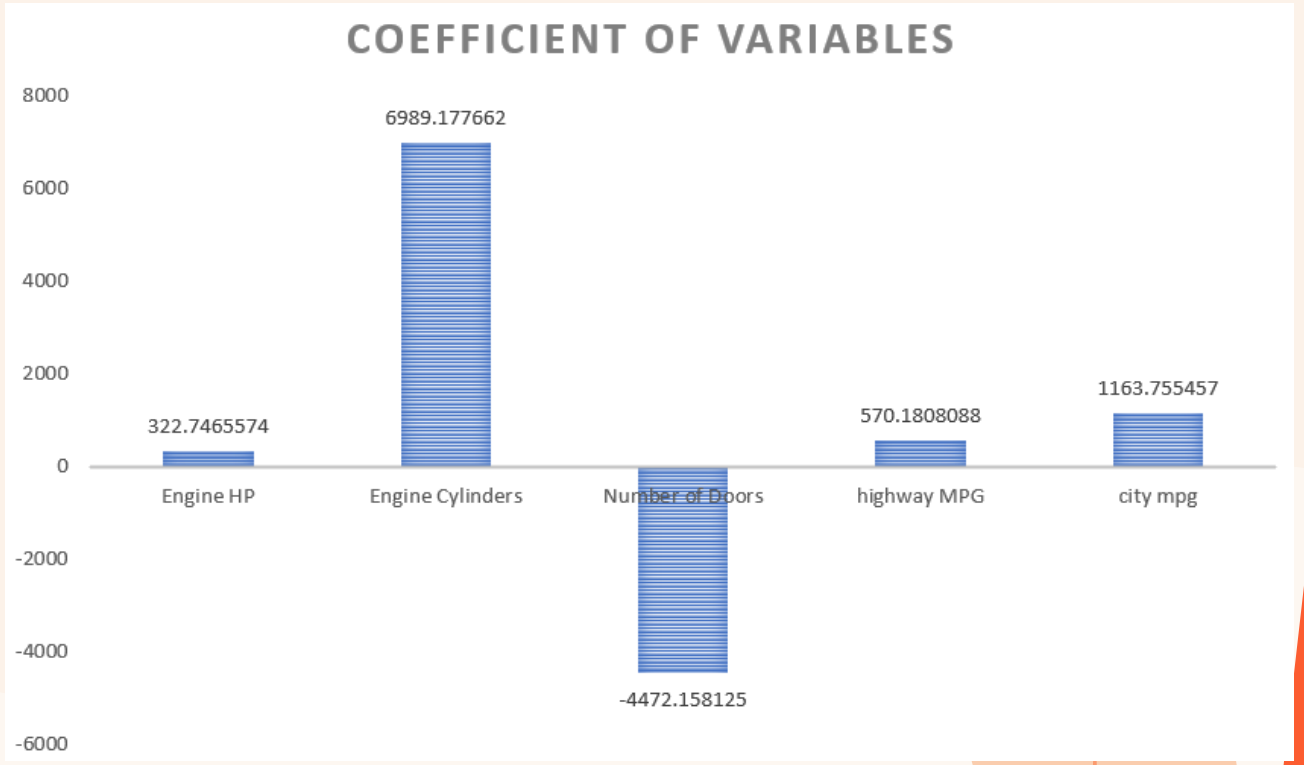
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.680708
R Square	0.463364
Adjusted R	0.463136
Standard E	44170.78
Observatio	11812

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	5	1.99E+13	3.98E+12	2038.799	0
Residual	11806	2.3E+13	1.95E+09		
Total	11811	4.29E+13			

	Coefficients	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-101602	3684.352	-27.5766	2.8E-162	-108824	-94379.8	-108824	-94379.8
Engine HP	322.7466	6.017674	53.63311	0	310.9509	334.5422	310.9509	334.5422
Engine Cyli	6989.178	439.645	15.89732	2.54E-56	6127.401	7850.954	6127.401	7850.954
Number of	-4472.16	465.7181	-9.60272	9.35E-22	-5385.04	-3559.27	-5385.04	-3559.27
highway M	570.1808	105.784	5.390049	7.18E-08	362.8268	777.5349	362.8268	777.5349
city mpg	1163.755	121.9978	9.53915	1.72E-21	924.6196	1402.891	924.6196	1402.891



- Used regression analysis from “analysis toolpak”
- From the regression analysis , used the coefficients of all the variables and visualized them via a bar chart.

Insight Required: How does the average price of a car vary across different manufacturers?
Task 4.A: Create a pivot table that shows the average price of cars for each manufacturer.

Used the columns “make” and “msrp” to make the pivot table

Highest average of MSRP = “1757223.66” OF “BUGGATI”

Manufacturer	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	28273.35695
Chrysler	26722.96257
Dodge	22390.05911
Ferrari	237383.8235
FIAT	22206.01695
Ford	27393.42051
Genesis	46616.66667
GMC	30493.29903
Honda	26629.81879
HUMMER	36464.41176
Hyundai	24597.0363
Infiniti	42394.21212
Kia	25112.38938
Lamborghini	331567.3077
Land Rover	67823.21678
Lexus	47549.06931
Lincoln	42494.37179
Lotus	69188.27586
Maserati	114207.7069
Maybach	546221.875
Mazda	19719.05707
McLaren	239805
Mercedes-Benz	71537.80966
Mitsubishi	21215.47143
Nissan	28513.36679
Oldsmobile	11542.54
Plymouth	3122.902439
Pontiac	19321.54839
Porsche	101622.3971
Rolls-Royce	351130.6452
Saab	27413.5045
Scion	19932.5
Spyker	213323.3333
Subaru	24827.50391
Suzuki	17900.9569
Toyota	28946.15343
Volkswagen	28076.2
Volvo	28541.16014
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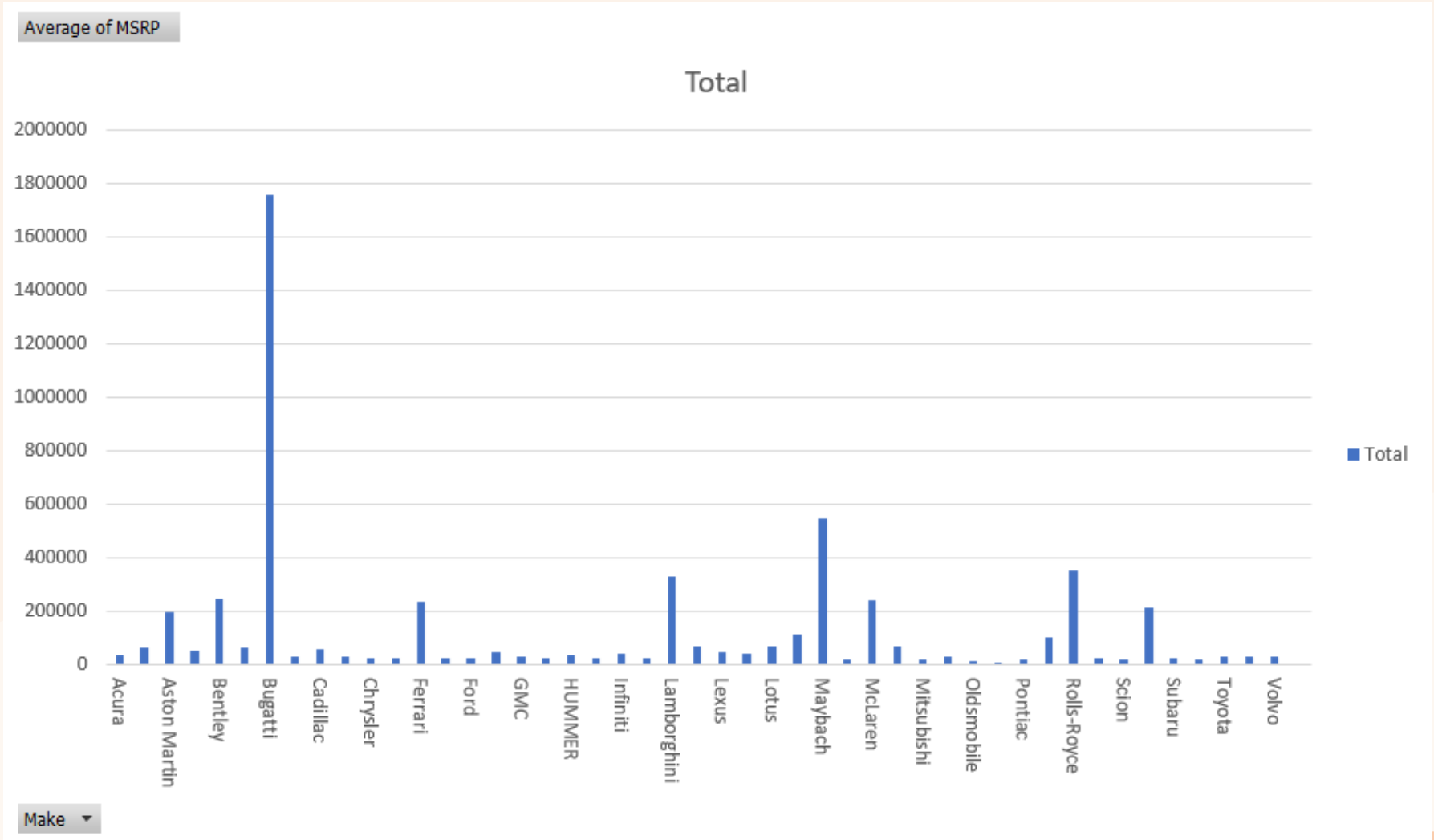
Grand Total	**40559.93532**

Lowest average of MSRP = “3122.902439” OF “PLYMOUTH”

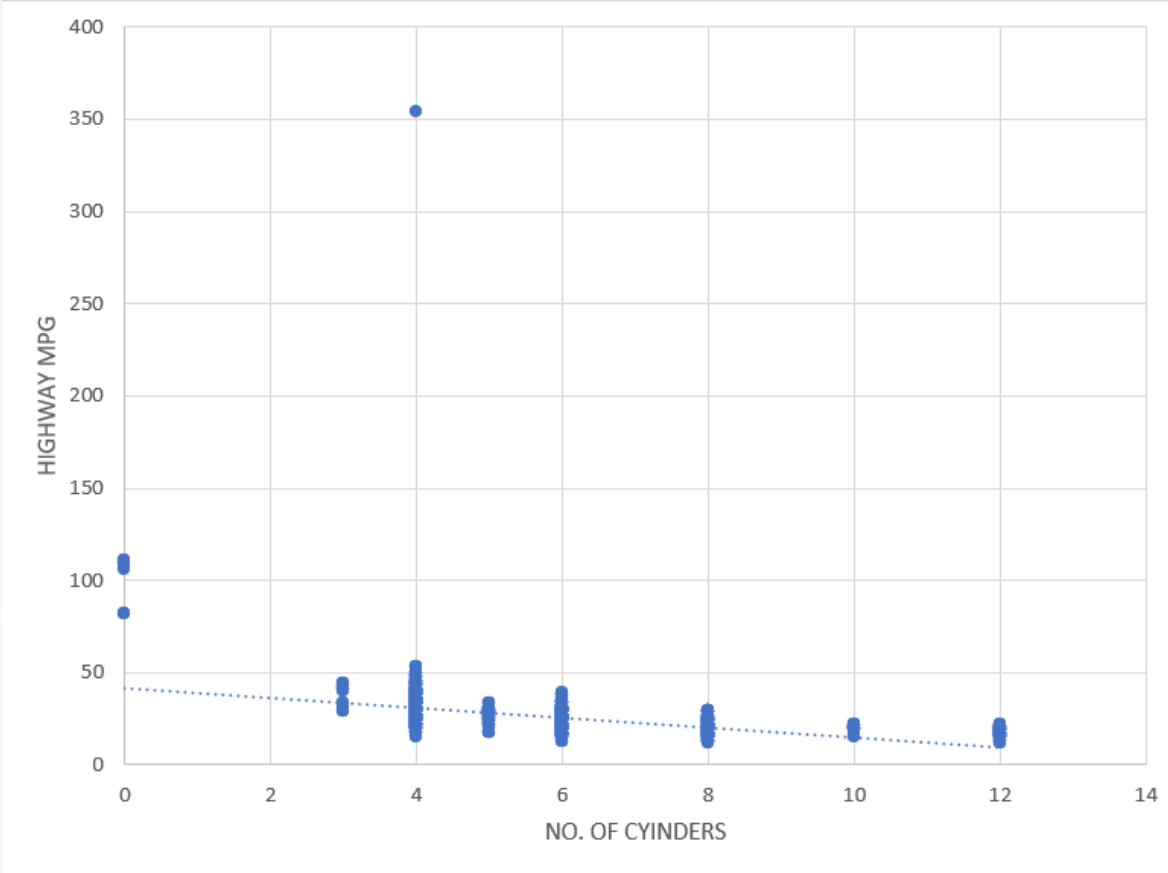
Task 4.B: Create a bar chart or a horizontal stacked bar chart that visualizes the relationship between manufacturer and average price.



Insight Required: What is the relationship between fuel efficiency and the number of cylinders in a car's engine?

Task 5.A: Create a scatter plot with the number of cylinders on the x-axis and highway MPG on the y-axis. Then create a trendline on the scatter plot to visually estimate the slope of the relationship and assess its significance.

- Using columns “highway mpg” and “no. of cylinders” and inserting a scatter plot.



Outlier can be seen at (4,350) easily.

Task 5.B: Calculate the correlation coefficient between the number of cylinders and highway MPG to quantify the strength and direction of the relationship.

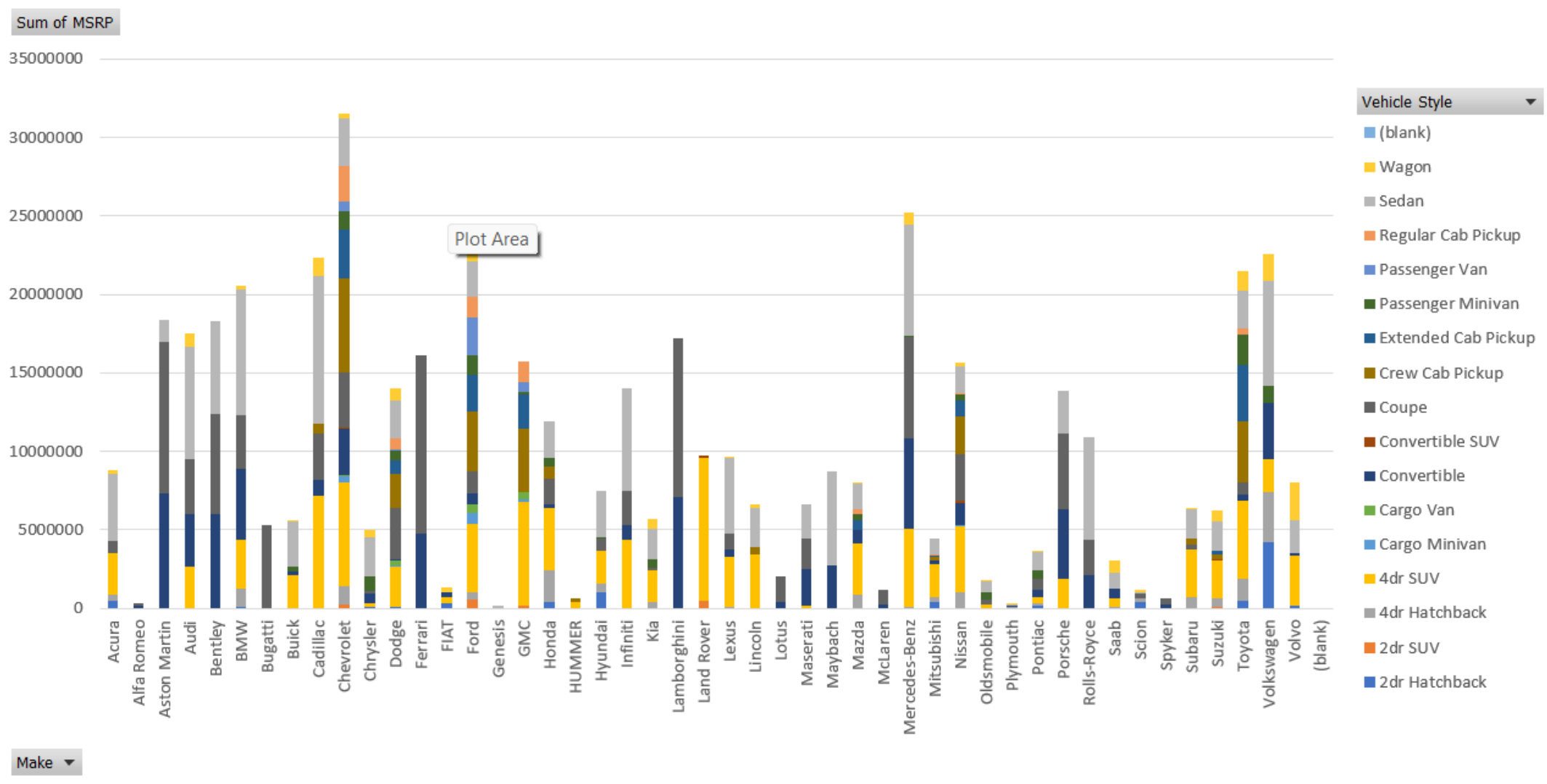
- Correlation refers to a statistical measure that describes the extent to which two variables change together. In other words, it quantifies the degree to which a change in one variable is associated with a change in another variable. Correlation does not imply causation; it simply indicates that there is a relationship between the variables.

- Using the formula =CORREL(A:A,B:B) ,
  where A:A indicates the number of cylinders
  and
  B:B indicates the highway mpg

CORRELATION
-0.620312551

DASHBOARD

Task 1: How does the distribution of car prices vary by brand and body style?

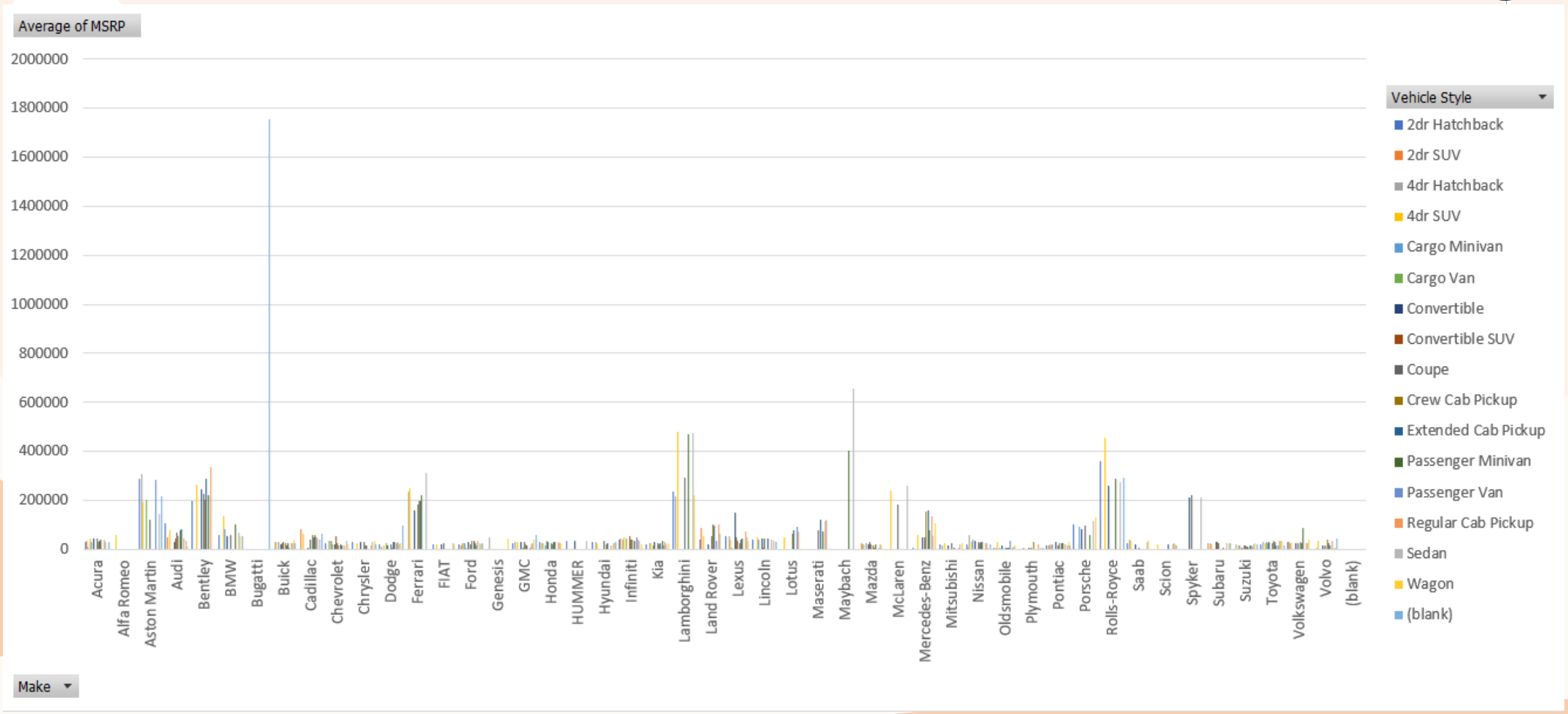


Task 1: How does the distribution of car prices vary by brand and body style?

- Using columns “make” , “vehicle style” , “msrp” and creating a pivot table
- Taking make in rows , vehicle style in columns , msrp in value

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 Van	Regular Cab Pickup	Sedan	Wagon	(blank)	Grand Total
Acura	480917		357440	2663505					793748						4294702	201360		8791672
Alfa Romeo							129800		178200									308000
Aston Martin							7321655		9635275						1448735			18405665
Audi	4000			2674900			3291405		3556290						7158348	847350		17532293
Bentley							6012870		6356760						5920900			18290530
BMW	80097		1144950	3160950			4502671		3419051						7989300	259600		20556619
Bugatti									5271671									5271671
Buick				2141770			179325		18534			330065			2850590	8212		5528496
Cadillac				7182555			985607		2953574	599150					9418847	1184100		22323833
Chevrolet	8000	213310	1209735	6569568	420150	78688	2953245	106300	3504525	5927617	3117951	1178515	607670	2260032	3068812	300675		31524793
Chrysler	98805			250545			630105		114510			922295			2479859	501075		4997194
Dodge	48000	44000	18000	2572405	60520	338497	12000		3264627	2235775	864172	557425	70708	719408	2417585	793055		14016177
Ferrari							4723811		11418289									16142100
FIAT	325315			369305			327965									287570		1310155
Ford	36000	479873	480155	4370871	680770	566351	730007		1398144	3812353	2285584	1271330	2431898	1299240	2299348	1635565		23777489
Genesis															139850			139850
GMC		144319		6641919	142750	468085				4062482	2183866	150630	603670	1306328				15704049
Honda	413200		2015270	3953209			252135		1588705	787720		553185			2340105			11903529
HUMMER				377490						242405								619895
Hyundai	1038050		528880	2128890					724070			133075			2899937			7452902
Infiniti				4340200			980050		2175750						6494090			13990090
Kia			406960	2049645					142630			494650			1980360	601155		5675400
Lamborghini							7064450		10177050									17241500
Land Rover		476394		9076595				145731										9698720
Lexus			94700	3152974			472065		1016472						4837596	31105		9604912
Lincoln				3422570					25342	453260					2458245	269705		6629122
Lotus							413260		1593200									2006460
Maserati				155000			2342963		1972284						2153800			6624047
Maybach							2762750								5976800			8739550
Mazda	22000	24000	853180	3222525			870505		14000		580033	443130		265486	1618571	33350		7946780
McLaren							280225		918800									1199025
Mercedes-Benz			122800	4924810	28950		5753964		6473107			32500			7080243	764935		25181309
Mitsubishi	394868		338850	2066505	2000		209893			240210	134360	2000		8000	1058563			4455249

Task 2: Which car brands have the highest and lowest average MSRPs, and how does this vary by body style?

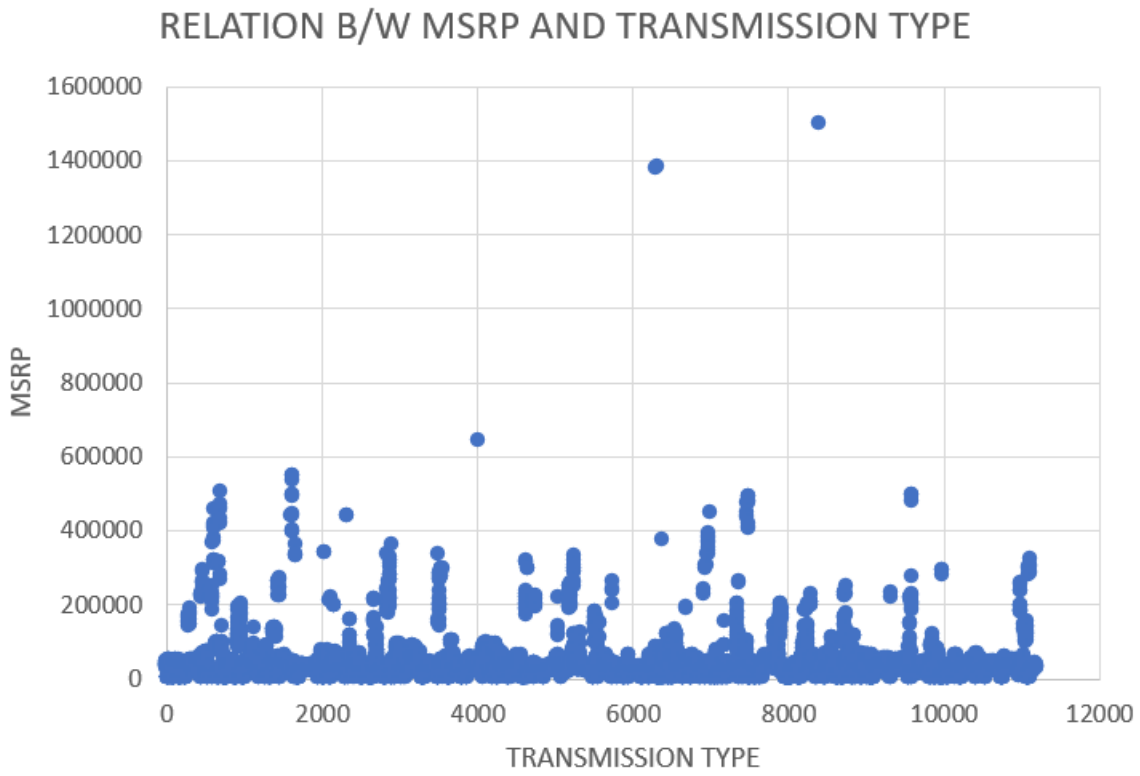


Task 2: Which car brands have the highest and lowest average MSRPs, and how does this vary by body style?

- Highest average of MSRP = “1757223.66” OF “BUGGATI
- Lowest average of MSRP = “3122.902439” OF “PLYMOUTH”

Average of MSRP	Column Labels																
Brand	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	(blank)	Grand Total
Acura	31990.33333	35816.25	11615.06667	47181.4	31797.5		45859.03333		46447.67857	31849.1	37221.31818	40222.5		42027.5	31271.86885		28418.46154	34887.5873
Alfa Romeo				61600														61600
Aston Martin	290317		308361.6667	192518.4375		203277.0556			122397.5				282412.9231		145351.7647		215795	197910.3763
Audi	108900	48580		76558.60204			31291.17647	46400	68452.14286	53098.07692	79811.11111	82050		44459.375	36693.79167	12025		53452.1128
Bentley	197100			265047.4074			246443.6364		225604.5833	203800	289256	221990		334990				247169.3243
BMW	59907.14286			136900	84300		56551.08696		60161.19048			102875			68090.50926	53202.25926	56140.62338	61546.76347
Bugatti																	1757223.667	1757223.667
Buick			32945.83333	32541.64474	31060		18913.81818	25190	31120.83333	27037.08333	18708	27515	2106.8	28110	27346.5	38765	24694.64286	28206.61224
Cadillac		81243.05556		62048.46154			2000		41739.44444	59494.4127	50162.64706	61707.5	49150	45187	42077.91		64731.81818	56231.31738
Chevrolet	27249.12308		37602.94643	33143.51869	34815	19346.4	23526.11111	55420	26759.50955	14468.35714	20609.07018	15835.50667		18047.16667	33214.37908	19699.75862		28273.35695
Chrysler	32340			24253.7			28564.28571		30312.11538	16313.07692	15151.92308			18559.7	31195.07143	35130.88235	20951.42857	26722.96257
Dodge	23146.70588		13871.89189	17103.7381		26257.77778	14062.85714		20622.29167	6661.923077	28691.28571	28602.7027	27295	32838.18182	22293.28671	25196.875	99709.28571	22390.05911
Ferrari			235164.75	249368.375			160992.6		185882.7333	197667.6667	198190	223114.5			312127.0625			237383.8235
FIAT	21789.16667			21529.33333			20961.42857		25011.5						24984.375	19981.53846		22206.01695
Ford	20167.03846	15360	27722.7625	26326.808	24336.66667	5926.666667	33102.85714		21078.96825	34175.46753	35426.5679	26317.82609	14810	35428.95	25593.97159	22189.35922	27326.90476	27393.42051
Genesis			47975													43900		46616.66667
GMC	25863.15789		31095.41667	29021.53846			28567.5	2790	28591.1	20213.85714	17335.73529		5667	21594.31034	27693.14286	39860.44118	58082.53061	30493.29903
Honda	29180.25		26221.47059	28095.53571	16450	34382.5	32001.11111		25883.88889	20512.85714	28670	32687.94118		32348.33333	25814.43919	24535.75		26629.81879
HUMMER	36768.75						35905								36510.5			36464.41176
Hyundai	30750		29474.23077	24103.91509					35801.25	22392.02703	23560.71429			15497.5	24306.47727	24033.33333	28676.29412	24597.0363
Infiniti	39615.38462	43940	37996.875	48379.96377		42733.33333		53400	40837.5	40331.25	35908.33333		47630	39628.125	37357.36923	23034		42394.21212
Kia	20764		28081.15385	26777.03704		16127.5	30580.8		26821.13636	22002.2973	25361	33553.63636	17230.38462	31294	20960.25	27257		25112.38938
Lamborghini	235140		217353.8462	479943.3333					294900			471937.5			475233.3333	221154.5455		331567.3077
Land Rover	39558.46154	89943		52472.21053			19455.5		55240	104481.6667	97068.94737		33761.25	103816.4706	65998.21429			67823.21678
Lexus	53875		56358.33333	40813.56604	4556		149348.3333	47658.33333	36321.36364	24805	40753	43921.4		75567.5	50602.18947	37388.33333		47549.06931
Lincoln	41291.11111			47695.17241	41651.66667		44890.35714	2359.666667	42733.33333		42780.71429			41988.33333	37354.13514		28995	42494.37179
Lotus				48371.25						65957.08333	76921.66667		91291.66667	71521.25				69188.27586
Maserati									77500		119833.3333	75175		118475	123292.7714			114207.7069
Maybach												401357.1429			658894.4444			546221.875
Mazda		27747.5	19890.5	22135.33929	26175		21290.78125	28877.5	20869.02439	17219.375	2939.0625	23385.9375		5746.176471	20504.58156	15560		19719.05707
McLaren				239400					184900						258241.6667			239805
Mercedes-Benz	2956.75			58739.10145			50627.01923		49219.5082	156521.5854	157791.1765	77110		137880	55217.39726	106850.375		71537.80966
Mitsubishi	22145		17359.46667	23716.44828			18315.6875		25996.33333		2000			2000	22047.94366	26740.33333		21215.47143
Nissan	20326.375	2576	59366.6875	30188.33333	39768.88889		33478.56818		28416.50549	26422.75862	30650	30504.44444		24386.92308	25966.21429	4008.25	20198.30189	28513.36679
Oldsmobile	2012.4		2441	32383.88889	2000		17696.33333		2074	2017.5	2027.631579	2016.8	34487.5	2000	13148.58929	17032.27273		11542.54
Plymouth			2193	2467.782609			2000		2000	32365				20901	2013.695652		2075.125	3122.902439

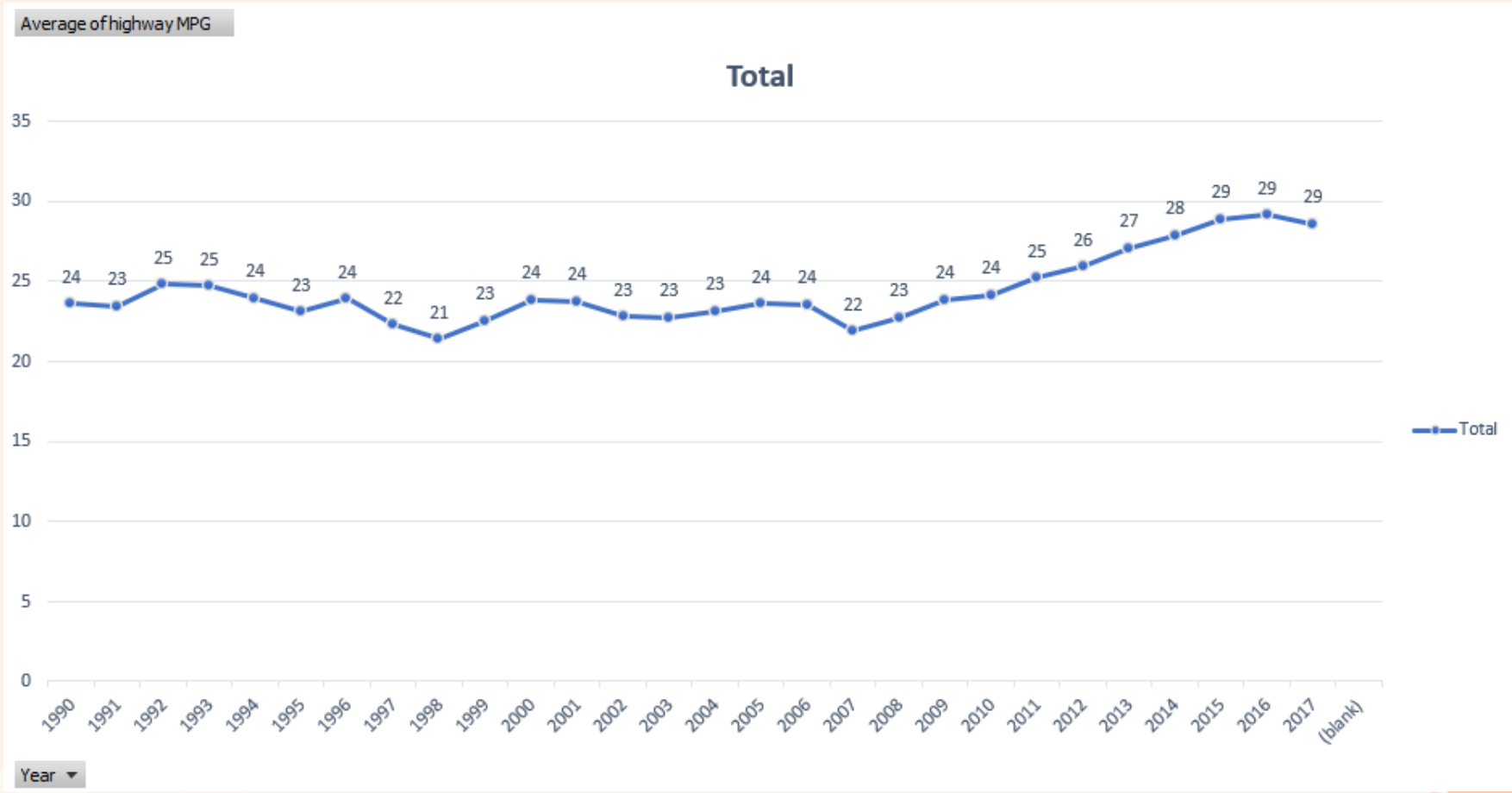
Task 3: How do the different feature such as transmission type affect the MSRP, and how does this vary by body style?



Average of MSRP	Transmission type				
Vehicle Type	AUTOMATED_MANUAL	AUTOMATIC	DIRECT_DRIVE	MANUAL	UNKNOWN
2dr Hatchback	27180.96	20926.46		13353.66	7361.50
2dr SUV		18615.20		6303.81	2371.00
4dr Hatchback	29249.07	23833.68	34511.92	17594.41	
4dr SUV	40451.15	41555.19		15426.46	
Cargo Minivan		20910.86			
Cargo Van		15280.22			
Convertible	121256.64	90637.39		62357.76	5783.50
Convertible SUV		38925.50		9233.14	
Coupe	245588.36	63852.01		51070.48	2000.00
Crew Cab Pickup		37744.07		28360.53	
Extended Cab Pickup		30637.35		10884.19	
Passenger Minivan		26392.00		4405.33	
Passenger Van		29015.20			
Regular Cab Pickup		28536.82		7557.77	2000.00
Sedan	47498.71	43794.39	27822.50	17119.23	2000.00
Wagon	31985.28	27613.19		17844.14	
Grand Total	**99195.58**	**41137.26**	**33620.00**	**26671.40**	**3040.74**

Task 4: How does the fuel efficiency of cars vary across different body styles and model years?

Row Labels	Average of highway MPG
1990	24
1991	23
1992	25
1993	25
1994	24
1995	23
1996	24
1997	22
1998	21
1999	23
2000	24
2001	24
2002	23
2003	23
2004	23
2005	24
2006	24
2007	22
2008	23
2009	24
2010	24
2011	25
2012	26
2013	27
2014	28
2015	29
2016	29
2017	29
(blank)	
Grand Total	27



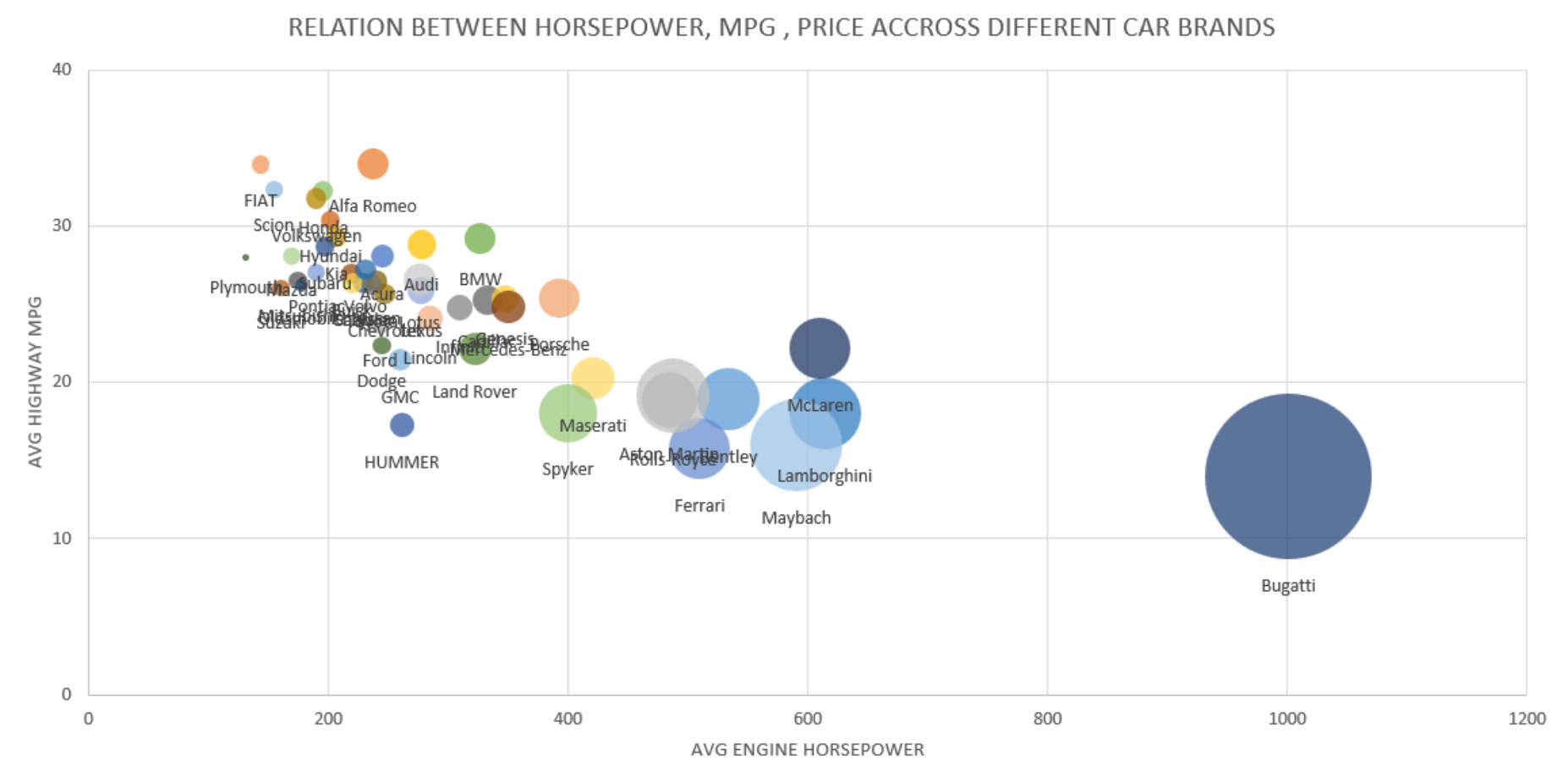
- Used columns “years” and “highway mpg” to create the pivot table
- Changing the field settings of highway mpg from default i.e. “sum of highway mpg” to “average of highway mpg”
- Inserting a line chart using the pivot table

Task 4: How does the fuel efficiency of cars vary across different body styles and model years?

Average of highway MPG	Vehicle style															
Model Years	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
1990	30	20	31		20		24		25		22	19		22	24	24
1991	30	16		19			23		26		16	18		17	24	23
1992	30	17	28	21			26		27		16			18	25	24
1993	29	18	27	21			24	26	28		17			18	25	24
1994	27	18	27	20	21	19	26	26	27		20	21	16	22	25	24
1995	30	16	28		22	19	25	26	26		20	20	15	21	24	24
1996	29	20	26	22	23	15	24	24	27		20	21	15	22	26	25
1997	26	22	27	20	21	17	25	21	27		18	21	17	19	25	24
1998	23	26	25	22		17	24	24	26		19	23	17	19	27	23
1999	30	19		18		17	22		28		18	22		18	27	
2000	30	19		18		16	25		24		21	23	15	21	27	31
2001	29	19		19	22	16	23		20		19	21	15	23	27	31
2002	25	19		20	21	15	24	23	24	17	20	22	15	22	26	29
2003	30	19		19	21	15	20	23	24	18	21	22		24	27	24
2004	30	19	34	19	20		20		25	22	18	22		18	26	23
2005	30	19	31	19	21		21		26	23		22		18	26	24
2006	27		29	20	23		23		24	19		23		18	25	25
2007	26		28	21	23		23		25	18	18	23		20	25	25
2008	27		29	21	23		24		25	18	19	23		18	27	25
2009	29		31	23			24		24	19	20			22	27	27
2010	28		30	23			25		24	19	21	24		21	26	28
2011	28		29	24			24		23	21	22	25		27	27	29
2012	31		33	23		17	24	22	22	21	23	25	15	24	28	31
2013	32		32	24		17	23	22	25	21		28	15		30	30
2014	35		39	24		17	27	22	23	19	17	26	16		30	29
2015	34	30	38	26	28	17	28		26	22	22	26	18	23	32	31
2016	34	30	39	26	28	16	28		27	22	22	26	18	23	32	30
2017	33	29	38	26	27		28	28	28	22	21	26	19	23	33	31

Creating a pivot table using columns “years” as rows , “vehicle style” as columns , “highway mpg” as average of highway mpg

Task 5: How does the car's horsepower, MPG, and price vary across different Brands?



Task 5: How does the car's horsepower, MPG, and price vary across different Brands?

Highest average of MSRP = “1757223.66” OF “BUGGATI”

Brand	Average of Engine HP	Average of highway MPG	Average of MSRP
Acura	245	28	34887.59
Alfa Romeo	237	34	61600.00
Aston Martin	484	19	197910.38
Audi	278	29	53452.11
Bentley	534	19	247169.32
BMW	327	29	61546.76
Bugatti	1001	14	1757223.67
Buick	219	27	28206.61
Cadillac	332	25	56231.32
Chevrolet	247	26	28273.36
Chrysler	229	26	26722.96
Dodge	244	22	22390.06
Ferrari	510	16	237383.82
FIAT	144	34	22206.02
Ford	243	24	27393.42
Genesis	347	25	46616.67
GMC	260	21	30493.30
Honda	196	32	26629.82
HUMMER	261	17	36464.41
Hyundai	202	30	24597.04
Infiniti	310	25	42394.21
Kia	207	29	25112.39
Lamborghini	614	18	331567.31
Land Rover	322	22	67823.22
Lexus	277	26	47549.07
Lincoln	285	24	42494.37
Lotus	276	27	69188.28
Maserati	421	20	114207.71
Maybach	591	16	546221.88
Mazda	169	28	19719.06
McLaren	610	22	239805.00
Mercedes-Benz	350	25	71537.81
Mitsubishi	174	27	21215.47
Nissan	240	26	28513.37
Oldsmobile	177	26	11542.54
Plymouth	132	28	3122.90
Pontiac	190	27	19321.55
Porsche	393	25	101622.40
Rolls-Royce	488	19	351130.65
Saab	221	26	27413.50
Scion	154	32	19932.50
Spyker	400	18	213323.33
Subaru	197	29	24827.50
Suzuki	160	26	17900.96
Toyota	236	26	28946.15
Volkswagen	190	32	28076.20
Volvo	231	27	28541.16
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Lowest average of MSRP = “3122.902439” OF “PLYMOUTH”

BUGGATI has the highest avg engine horsepower of 1001 while PLYMOUTH has the lowest avg engine horsepower of 132

ALFA ROMEO and FIAT have the highest avg highway mpg of 34 while BUGGATI has the lowest avg highway mpg of 14.

RESULT

- The visualized reports of the analysis consists of interactive dashboards ,informative pivot tables , informative charts and graphs providing a view of how car features impact price and profitability.

- The analysis revealed a direct correlation between specific car features and their influence on price and profitability in the automotive market.
  - Higher engine horsepower correlates with increased car price – customers seeking performance are attracted.
  - Fuel efficiency has a positive impact on profitability – eco conscious customers are attracted

- The findings in the project will help the manufacturers to make strategic decisions and optimizing pricing strategies.

- Limitations-
  - Potential factors influencing profitability not considered. (Color of the car – high demand of colors like white and black)
  - Potential factors influencing pricing not considered. (dashcam, infotainment, speakers, alloy wheels)

- The project's innovative approach holds the key to unlocking valuable opportunities for manufacturers, ensuring their competitiveness in the dynamic and vast automobile industry