

Assignment 2 Task 2

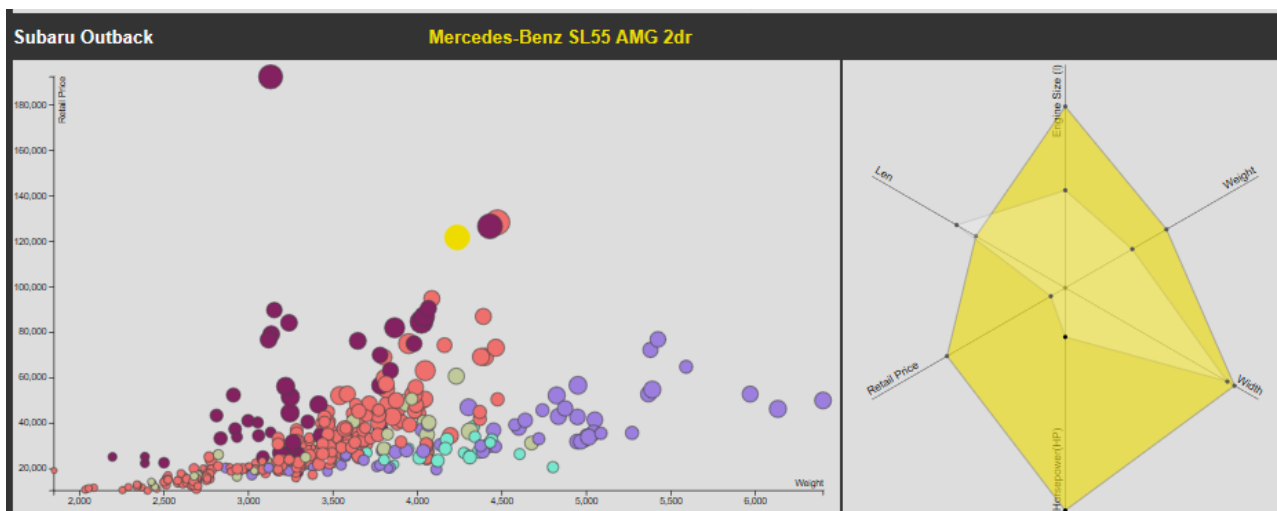
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Graph	Advantages	Disadvantages	Information transported
Linegraph	<ul style="list-style-type: none"> • comparison of all attributes is possible • if axes are swappable, it is easy to find relations between attributes • Immediately recognizable between neighbour axes 	<ul style="list-style-type: none"> • Comparison of 2 Attributes which are not next to each other is without axis-swapping impossible • With big data the occlusion is very high, so a single car is hard to track • Order of attribute axes plays significant role 	<ul style="list-style-type: none"> • Overview information • Mainly attribute comparison • Show trend
Scatterplot	<ul style="list-style-type: none"> • With just a few attributes (3-4) you can find easily relation between these att. (for example SUV have a higher weight, then sportcars) • Colouring makes it easy to separate different values of one attribute (car type) • Good tool for comparing attribute relationships of objects 	<ul style="list-style-type: none"> • Occlusion is also a big problem here • Size is a good property for small data but on such a big set the occlusion problem is intensified 	<ul style="list-style-type: none"> • quantitative value attributes (here 4 attributes) • attribute + object comparison • Find trends, outliers, distribution, correlation; locate clusters
Star plot	<ul style="list-style-type: none"> • You can find out the “strong” and “weak” attributes of the selected object • Multiple relations are good visualized (for example high price implied more or less high horsepower) • If attributes are right chosen, the size of the area shows the positive aspects of the object • Good tool for compare objects 	<ul style="list-style-type: none"> • The definition of weak and strong attributes is not clear (a low retail is good as well as a high Horsepower) • A big area is normally good for this graph, but with our chosen attributes it could be confusing • You need to take just negative attribute (less value is better, weight, price) or positive ones (higher value is better, HP, Miles per Gallon) 	<ul style="list-style-type: none"> • Mainly object comparison

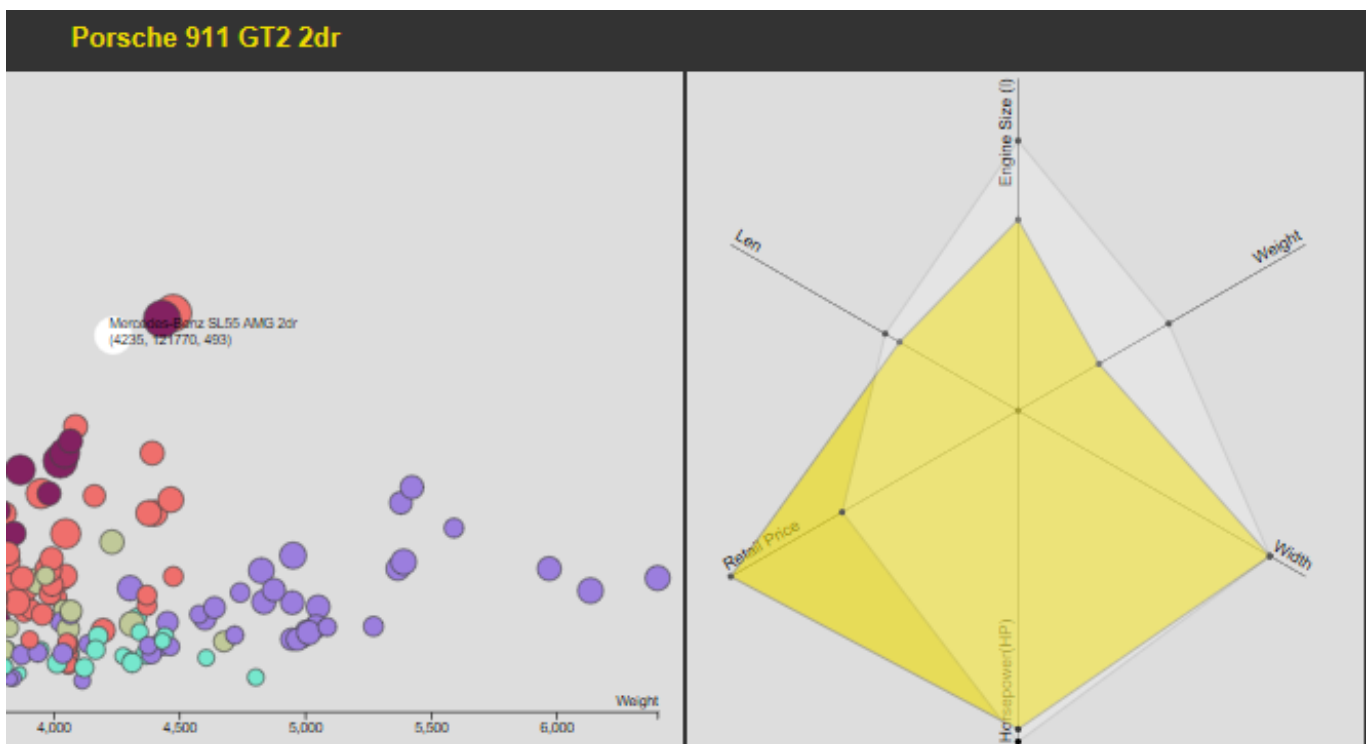
Object visibility:

Fast comparison of objects rather than attributes. Objects become visualized for example as an area so that qualitative or even quantitative statements can be made.

With right chosen attributes a big/small area can be positive and easy comparable. On our example a small area on "Retail Price" and a big area on "Horsepower (HP)" is positive. So, a Starplot visualization for one car, where the Retail price area is small and HP area is big, is better than any other combination. But not only one attribute comparison is the key of object visibility, it is more the overall view we can get from the visualized area.



Comparison of Mercedes-Benz SL55 AMG (yellow) and Volvo C70 HPT...(white) (Mercedes > Volvo)



Comparison of Porsche 911 GT2 (yellow) and Mercedes-Benz SL55 AMG(white) (Mercedes > Porsche)

Attribute visibility, also dimensional visibility:

Comparison of one single attribute and it is a way to find correlation between attributes. Attribute distribution of an object clear for each dimension.

We can compare one axis with their neighbour and may see correlation, for example if we compare the "Cyl" axis with "Engine size"(EZ) and "Horsepower"(HP), we can see that a high Cyl value goes and in hand with higher "Engine size" and "Horsepower" values. (Cyl: 8 -> EZ: ~4-6 and HP: ~250-400, Cyl: 6 -> EZ~2.5-4.5 and HP: ~150-350)

