Link: https://wpdatatables.com/misleading-data-visualization-examples/

It is usually frustrating when one had a lot to communicate to a non-technical audience within a limited time period. Though graphs serve an important purpose, sometimes, people make misleading statements using graphs. The attached graph represents a bad representation of graph. It shows the number and range of exam students over a long period. It showed that universities admitted students from minority groups and lower income families.

To start with, this graph failed the gestalt principle and visual structure. Some colors are similar. To be honest, one must also show clarity with graphs. Otherwise, it will be a cos 90 job since the message might not be understood. With regards to the Keep it simple criteria, this graph once again clearly fails it. There are too many variables, and this makes it difficult to differentiate between data points. When there is a lot of data, there is also a lot of interesting details, and this makes decision making harder. The best way is to know what data format is the most effective way of communicating a point clearly.

Another principle which has been failed is the Less is more principle. This is like the keep it simple criteria. This graph looks like a chart junk and it's very difficult to differentiate between data points. Also, a person with color issues might find it difficult to differentiate between them as there are so many confusing colors here. One must strain the eyes in order to see the labeling on the X and Y axis. This makes it hard to read.

Also, the graphical integrity and lie factor has been failed. One only wonders if too many data points and variables were used in order to obscure certain data points. Lastly, the annotation of the graph is difficult to read. The X and Y axis are so faint that one must strain the eyes just to see what is written there. Also, the annotation on top of the graph which shows which color represents which date has so many similar colors which makes it hard to distinguish. Stand-alone readability is impossible in this case as it so difficult to distinguish between data points. There are so many data points that makes it impossible to differentiate between them.

To conclude, this graph is a true definition of a bad graph as it has failed all the five criteria.

RELATIONSHIP BETWEEN MILES PER GALLON (MPG) AND HORSEPOWER.

I wanted to show the relationship between and the horsepower of a car. To do this, I facetted the cars by using the number of Cylinders. This resulted in 3 Facets (4,6 and 8 cylinders). Also, I also colored each data point using the qsec ¼ mile time.

Horsepower refers to the power an engine produces. There is a negative relationship between horsepower and miles per gallon. Cars with low miles per gallon have higher mpg has is shown in the graph. The data has been split by the number of cylinders. Cars with 6 cylinders have a higher horsepower than cars with 4 cylinders and cars with 8 cylinders also have a higher horsepower than cars with 6 cylinders. The higher the number of cylinders, the higher the horsepower. This is clearly depicted by the graph as each facet represents the number of cylinders.

Also, the data points are colored by the acceleration (qsec) which is ¼ mile time. Thus, the acceleration it takes to cover ¼ mile. As can be seen, cars with a higher horsepower usually accelerate faster and covers the distance easily. The darker the color, the faster the car. Cars with 8 cylinders have a darker color the cars with 6 and 4 cylinders. And cars with 6 cylinders also have darker colors than those with 4 cylinders. Thus, darker colors use an acceleration of 15.0 to cover a quarter mile. The lighter colors use an acceleration of 22.5 to cover a quarter mile.

The colors in my graph are bit similar and it might be difficult for someone to differentiate between them. Adding different colors might make it easier for people to understand. Also, there are too many variables, and this can make it difficult to interpret.

RELATIONSHIP BETWEEN MPG AND HORSEPOWER FACETED BY CYLINDER AND COLORED BY QSEC