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Task 1-

The first visualization focuses on effectiveness meanwhile the second one focuses on expressiveness. There can be an alternative representation for the first visualization. The second representation is communicating the information and only the information.

Marks are points, lines, and areas. In the first image, points with different sizes that are on different positions are used to convey the main parts of the body. The lines that are attached to the rectangles are used to explain more specific parts of the main body parts that got injured. This can be also considered as classification/explanation. The points on the soccer player of the visualization help the analyzer/visualizer/person to easily understand the position of the body parts. The header and the explanation under it make the visualization more understandable. In the first image, visual variables such as position and size of points convey the first main information. Then rectangles with different colors than the main information points with red color (color visual variable) conveyed the information of the parts that can be examined under the main parts. For example, head is the main body part which represented by a circle and the rectangles specify the injuries that happened in the head such as jaw, concussion etc. In the second representation, different length and same rectangular shape as visual variables are used. The visualization uses various position to convey information about which body parts got injured. For example, the first position of the bar represents the knee.

First representation is more effective on specifying the body parts that got injuries. This detailed portrayal provides more accurate information and help people who need a very specific information for example, the number of jaw injuries. Extra information/classification regarding the main parts of the body, help people to visualize the position of the body parts. Bigger circles represent the bigger number of injuries so people can easily check the parts that had the more injuries. The second representation is more suitable to compare the injury values between each other. Also, it takes less time to say which parts have the highest number of injuries and the lowest number of injuries. As there is no color difference between the bars it is easy to understand those values are related with the same topic. While the first image can be on the posters, the second more is more suitable for an article which will contain information regarding the graph.

Task 2d-

Equal distances on the axis of a linear scale indicate equal gaps in the data. For instance, if the data is between 0 and 10, then a difference of 1 in the data is represented by each unit on the scale. (for instance, temp data)

Equal distances on the axis indicate multiplicative factors rather than additive ones in a logarithmic scale. For instance, every step on a base-10 logarithmic scale corresponds to a multiplication by 10. This indicates that the distance between values grows exponentially as values increase.

Wide Range of Values: When you have a dataset with a wide range of values, a logarithmic scale can compress this range and make the data more visually understandable. When plotting data that has a range from 1 to 1,000,000, a linear scale would make it difficult to distinguish between smaller values due to their compression at the bottom of the scale, meanwhile a logarithmic scale would spread them out more evenly.

Exponential Growth or Decay: Logarithmic scales are useful for visualizing data that shows exponential growth or decay. For instance, in financial data or population growth data, where values increase or decrease exponentially over time, a logarithmic scale can provide an image of the trend.

Comparing Change Rates: Logarithmic scales are useful for comparing change rates among various dataset parts. For example, when comparing the growth rates of various diseases across time in epidemiological data, a logarithmic scale may be used, as linear scales can hide differences in rates because of the large differences in absolute numbers.