Quiz 1

You may use the textbook and online resources to answer the quiz questions

1) Describe expressiveness principle for visualization? Then use an example visualization idiom to explain its expressiveness.

The expressiveness principle means the visual encoding need express the all and only the information in the dataset attributes. In another word, ideal visual encoding should tell the same information as the data attributes, it shouldn't miss any information and shouldn't indicate extra information that can't be inferred from the original data.

An example of viz idiom is using bar chart to represent the absolute value of some numeric data attribute in categories. The vertical spatial position channel of the bar express the value of the quantitative attribute, and horizontal spatial position channel for the categorical attribute.

2) Describe effectiveness principle for visualization? Then use an example visualization idiom to explain its effectiveness. (One page max)

The effectiveness principle is saying that more effective or noticeable channels should be used to express more important attributes and less effective channels should be used for less important attributes. The magnitude of the channel's expressiveness should match the importance of the attribute.

An example idiom is scatter plot that each data point's position represents the values of X and Y axis which can be used to encoding important data attributes because position is very strong channel, and the point's size can be used to express another attribute of the data which is less important than X/Y attributes.

3) Separate the following channels as magnitude and identify channels in their effectiveness order from most at top to least at bottom

Magnitude channels:

1. Position
2. Length
3. Tilt
4. Area
5. Color luminance
6. Color saturation

Identity channels:

1. Spatial region
2. Color hue
3. Shape