Week 8. Communicating Analysis Results

SOLUTIONS TO PREPARATORY QUESTIONS.

Q1. Which of the statements below is false?

A. Correlation is not always causation.
B. Correlation is a pre-condition for causation.
C. Causation is directional but directionality is not clear in correlation.
D. Correlation refers to a cause-and-effect relationship. **[Correct]**

Q2. In a survey conducted by a famous internet company, data was collected across numerous variables. Next, the correlation analysis revealed that *"People who owned a smartphone expressed cruel attitude towards pets"*. Please indicate which of the statement below is false.

A. This is an example of p-hacking.
B. This is an example of spurious correlation.
C. This is an example of causality. **[Correct]**
D. This is an example of coincidental correlation.

Q3. Of the charts shown below, what is the most appropriate chart to use when you want to show the distances achieved by different athletes in a javelin throw competition (each athlete throws once)?

A. Bar chart **[Correct]**
B. Line chart
C. Box plot
D. Violin plot

Q4. If "marks" are what you display on a paper or a screen to show visual information, and "channels" are the visual attributes of marks (e.g. length, shape, position etc.), then which of the following channels would be most suitable to display categorical data?

A. Color luminance
B. Color saturation
C. Color hue **[Correct]**
D. Opacity

Q5. Which of the statements below is false?

A. Visualization is often used to turn tasks requiring perception into tasks requiring cognition. **[Correct]**
B. Visualizations can be used to communicate quantitative data clearly.
C. Visualizations can be used to help humans process more information without having to use more of their memory.
D. Visualizations can be used to show patterns that may not be evident from summary statistics.