**Project Part 1**

1. *In your own words, explain three principles of effective data communication from the lecture material.*

The effectiveness of the data communication system depends on 3 fundamental characters: **Delivery: The system must deliver data to the correct destination.** **Accuracy: The system must deliver data accurately.** **Timeliness: The system must deliver data in a timely manner.**

1. In your own words, summarize the following concepts as they relate to visual perception:

* Order- The data should follow a logical order
* Hierarchy- The way data is arranged in a tree like structure or the way that things are organized
* Relationships- A set of related data fields
* Convention- Rules that are followed to identify and categorize info to make it easier to understand.

Answer the following: How will an understanding of these concepts help you create better data visualizations?

* Learning these concepts gives a foundation to build your data analysis project on and also teaches important rules. To follow when creating your presentation.

1. Given the scenarios below, write which graph would be best to use for the data and what makes it an effective choice:

* Comparison between values- Bar Graph
* Comparison to the whole- Pie Chart
* Change over time- Line Graph
* Ranking data- Bullet Chart
* Correlation- Heat Map
* Geographical charts- Heat Map
* Measuring a target- Bullet Chart
* Showing Outliers- Scatterplot

Answer the following:

How will an understanding of these concepts help you create better data visualizations?

* It will give you the info needed to create graphs that align with the info you are trying to present

1. Provide three examples of misleading graphs. Explain what is misleading about the graph in your example and what should be changed to make the graph objective and accurate

Chart

Description automatically generated

an upside down y-axis made "Stand Your Ground" seem much more reasonable.

Graphical user interface, website

Description automatically generated

The time 7 million was 5x more than 6 million.

Chart, bar chart

Description automatically generated

The Govenor race where one guy's 37% was WAY more than just 37%

1. In your own words, answer the following questions:

* What is “visualization clutter?”
  + A cluster of visuals that take away from the point you are trying to make.
* What are the main components of a graph?
  + Title
  + Legend
  + Source
  + Data
  + Labels
  + Y & X Axis
* What are three techniques you learned to make data visualizations more clear?
  + Grouping similar objects
  + Having a purpose and questions surrounding that
  + Proximity
* How can the use of color affect the way your visualizations are understood?
  + Certain colors help show different types of data and can resonate with a audience. Warm colors, cool colors and so on can represent different data

**Project Part 2**

Step 1

How salary is affected by gender, age, & industry experience

Step 2

Outline

* How salary is impacted by gender

Chart, bar chart

Description automatically generated

* How salary is impacted by age

Chart, scatter chart

Description automatically generated

* How salary is impacted by industry experience

Chart, bar chart, histogram

Description automatically generated