Step 1.

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

Show the data Avoiding distorting what the data has to say Present many numbers in a small space Make large data sets coherent

Step 2.

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

Order: No agreed standard by which we follow. Each person will read in a different order and pace and come to an understanding about what it means.

Hierarchy: All well designed data visualizations make deliberate color choices to draw the audience's attention to what the author intends. You want to draw their attention to the focus of the visualization, to guide their understanding and not distract from it.

Relationships: Data visualizations must be focused, what's presented is crucial to the clarity and impact of the chart. Therefore if you present something there should be a relationship between what's being presented.

Convention: Follow expected rules,set. expected way things are to be presented.standard composition of data to be followed,embraced and conformed to have well understood visualized data.

Step 3.

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 chart: It's very easy to see the difference between values.

Comparison to the whole Stacked column: You want to make sure no segment is too small to be seen and that there also aren't many segments.

Change over time Time Series/Line Graph: I feel that the line graph is very effective for showing change over time, just make sure there aren't too many lines or it can look like spaghetti.

Ranking data- Bar Chart: By using a horizontal bar chart you can display your data in order of ranking very easily.

Correlation-Scatter Plot: If you want to show the relationship between two continuous variables this is the chart for you!

Geographical charts Not recommended when communicating with data, they are not effective at communicating data accurately.

Measuring a target Simple gauge: a simple and elegant way to communicate how far a single measure is to a target. It looks simple but contains a ton of information!

 Showing Outliers Table: really good if you have to communicate several varying pieces of data about a particular series.
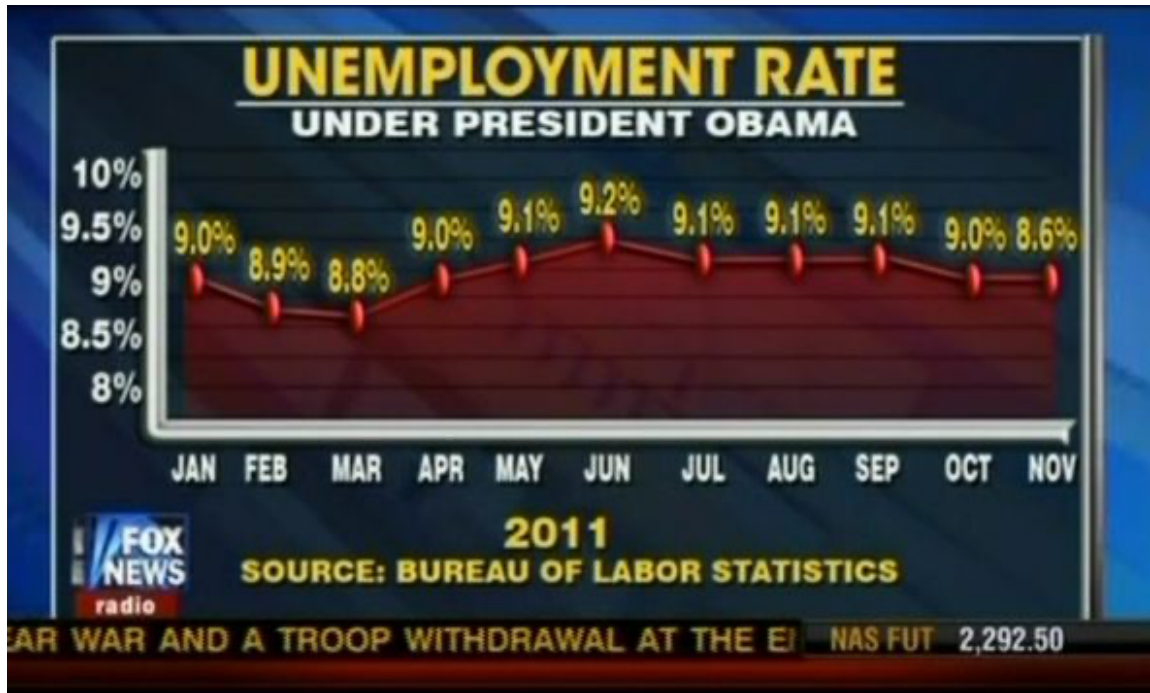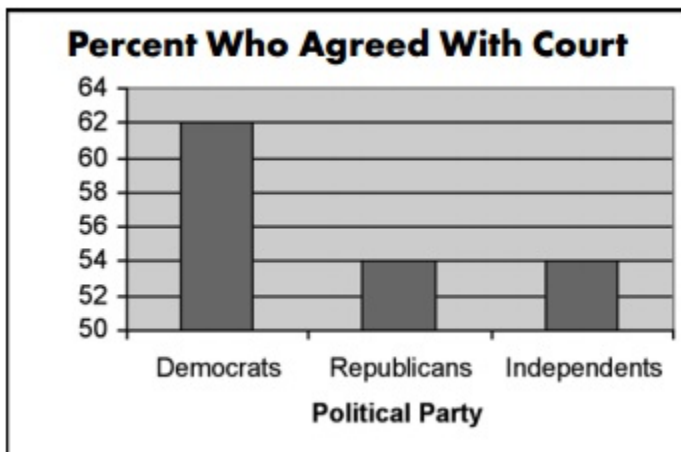
Step 4.

Consider the following quote:

"It is easy to lie with statistics. It is hard to tell the truth without it." - Andrejs Dunkels

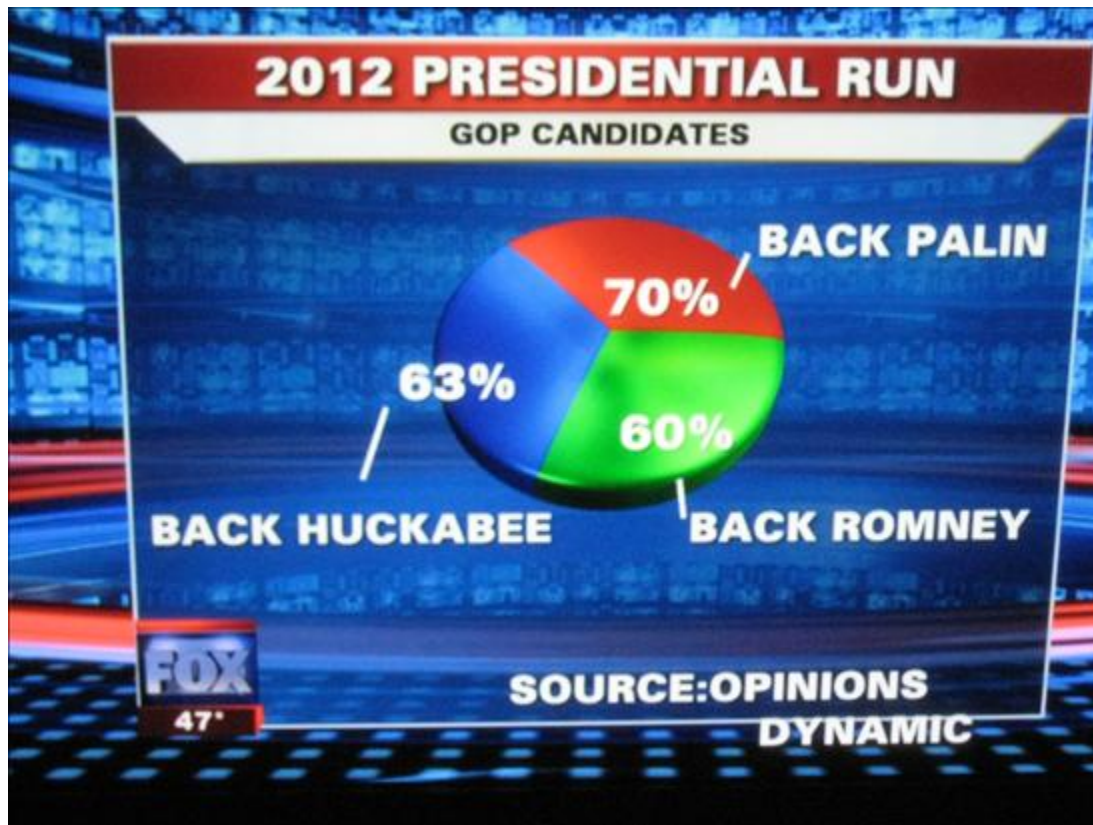**What do you think is meant by this statement?**

- Anyone can make up numbers and show you what they want you to believe, however, who is going to believe you if you don't have the numbers/facts to prove your point.

UNEMPLOYMENT RATE
UNDER PRESIDENT OBAMA

10%
9.5%   9.0%   9.0%   9.1% 9.2% 9.1% 9.1% 9.1%   9.0% 8.6%
9%   8.9% 8.8%
8.5%
8%

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV

2011
FOX NEWS radio   SOURCE: BUREAU OF LABOR STATISTICS

AR WAR AND A TROOP WITHDRAWAL AT THE E| NAS FUT 2,292.50

The numbers don't make sense because in February/March the 8.9 and 8.6 are lower than in November when we see an 8.6. I also see every month here except for December. I would fix it by including a baseline to align the data points better.

Percent Who Agreed With Court

64
62
60
58
56
54
52
50

Democrats   Republicans   Independents
Political Party

The y axis goes up by 2 every time so it makes the gap in democrats vs republicans/independents significantly more than what it is. Have the baseline start at 0 and increase the number it goes up by each time instead of having it go up by 2.

2012 PRESIDENTIAL RUN
GOP CANDIDATES

BACK PALIN
70%
63%
60%
BACK HUCKABEE
BACK ROMNEY
FOX
47°
SOURCE:OPINIONS
DYNAMIC

First of all the most popular way to measure percentage is by 100% being the max. This visualization sums up to about 193% which is unusual and makes no sense at all. I would fix this by creating an entirely new visualization to interpret the data.

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 your audience. Warm colors, cool colors and so on can represent different data.

Part 2.

Step 1

How Salary is affected by your gender, age & industry experience

Step 2. Outline:

- How salary is impacted by gender
- How salary is impacted by age
- How salary is impacted by industry experience
- What impacts salary the most?

- **Findings**:
  - The more experience you have, the higher your salary is. This was the case for every job field as well.
  - The same can be said for age, because the older you are the more raises you get, thus making your salary increase over time.
  - There is an equal amount of men/women that the data was pulled from and it showed that no matter if the experience/jobs were the same, men still were paid higher than women.