

Warm - Up

Using the four types of variables (**nominal**, **ordinal**, **discrete**, and **continuous**) classify each of the following

- 1) Recording genders in a classroom
- 2) Recording the heights of everyone on a basketball team
- 3) Timing a 50m dash
- 4) Taking a survey of where people like to eat lunch
- 5) Answering a yes or no questionnaire



SWBAT identify and explore different types of categorical variables

Agenda:

Warm - Up

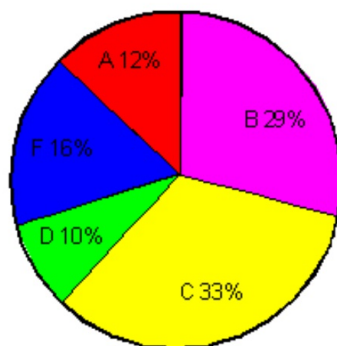
HW Questions

Displaying different types of data

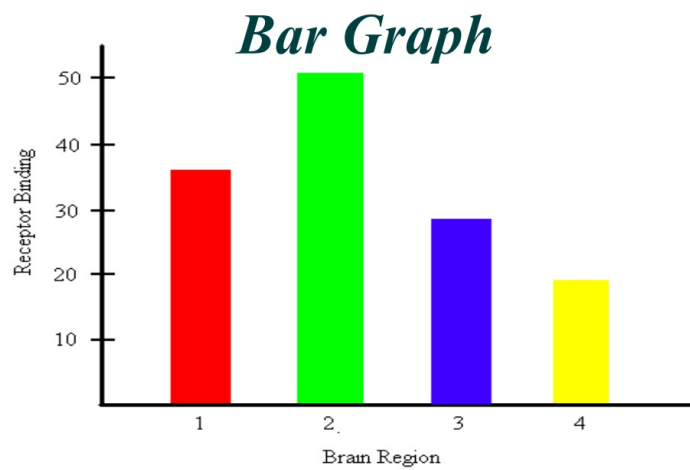
Exit card

The **distribution** of a variable describes what values the variable takes and how often it takes them.

Pie Graph



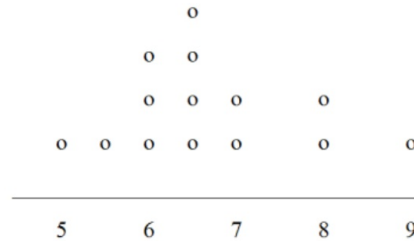
- * Shows each **categorical** variable proportionally to the whole
- * Most commonly used by newspapers
- * Use only when you want to emphasize each category's relation to the whole
- * Not a good type to be used for many variables



- * Shows each **categorical** variable compared to each other
- * Must count consistently on the y-axis
- * Axis must be labeled
- * Graph must have a title
- * Bars must be labeled or a key given



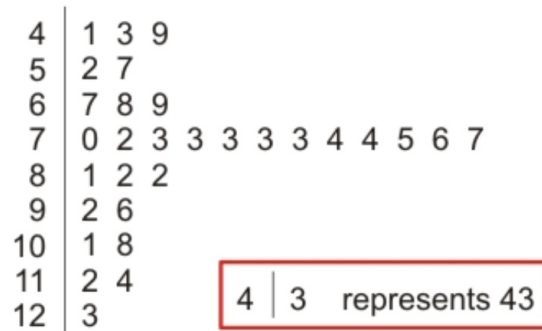
Dot Plot



Each dot represents a **quantitative** response

- * Easy to make
- * Shows spread and center easily
- * Can be compared to similar dot plots
- * Must have x-axis labeled and a title
- * Numbers should be evenly spaced
- * Anything can be used for the dot as long as it is consistent for the entire plot

Stem and Leaf



Each number represents a **quantitative** value

Repeats need to be shown

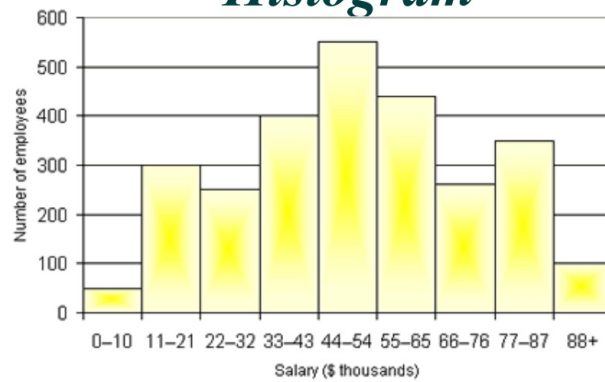
Must be in numerical order

Needs to have a key and title

Easy to show back to back to compare data

Can see shape, center, and spread by turning on side

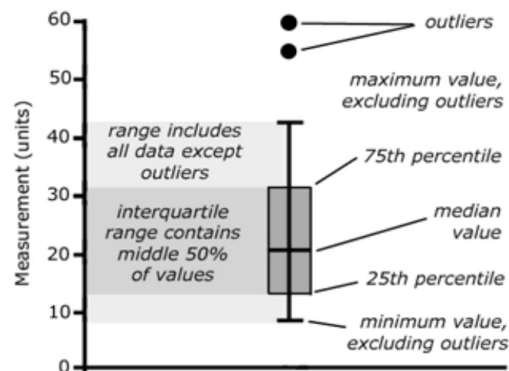
Histogram



- * Bar graph for **quantitative** data
- * Bars must be equal width, touching, and encompass equal distance known as class width
- * Frequency table can be used to easily create these (round .4 down and .5 up)
- * Compare with different colors on top of each other shows shape, center, and spread well but actual values unknown

Box Plots aka box and whisker

Example box plot



Quantitative data display

Does not show frequency of the data, only basic shape center and spread

Created by a 5 number summary: Minimum(Min), Quartile 1(Q1), Median(Med), Quartile 3(Q3), And Maximum(Max)

Also requires a test for outliers: $Q3 + 1.5(Q3 - Q1)$ and $Q1 - 1.5(Q3 - Q1)$

Very easy to compare to each other

Each portion represents 25% of the data no matter the size(length) of the box or whisker

Exit Card

Using the four types of variables (**nominal**, **ordinal**, **discrete**, and **continuous**) classify each of the following

- 1) Asking people their favorite colors
- 2) Weighing newborn babies
- 3) Counting the number of songs that fit on a CD
- 4) Finding out what kind of soda the senior class likes
- 5) Asking people what their favorite book is

What are the two differences between a bar graph and a histogram?