Last Class

- Measures of variation
  - └ Interpeting standard deviation.
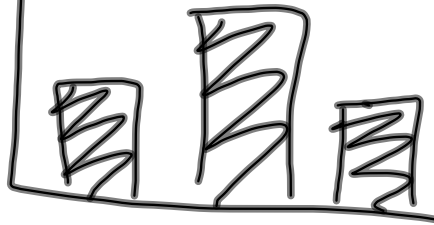- Overview of graphs
  - └ Line
  - └ Pie
  - └ Histogram
  - └ Bar/Column
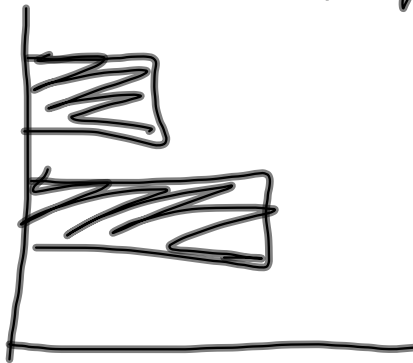
Today: More graphs, examples, + Sampling

−Bar/Column Graph

Column

−Categorical

− Height
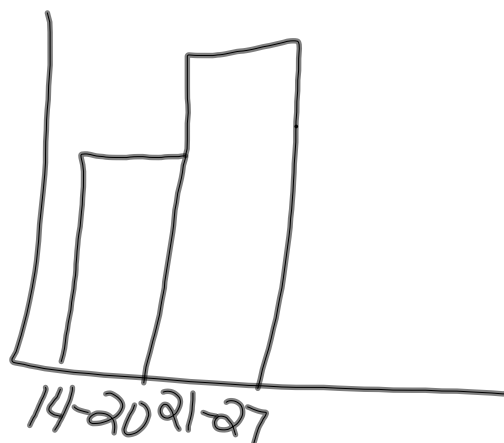
− Ex: Column chart of
number of males & females.

Histogram

No spaces — Continuous
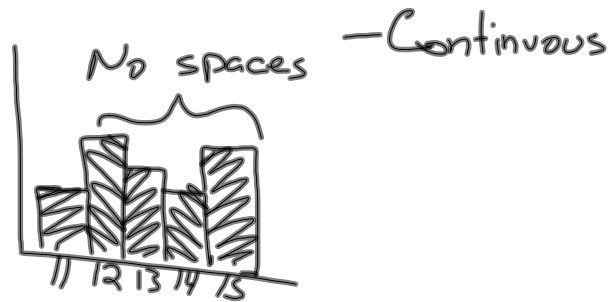
In Excel, Histograms are an optional add-in.

Ex: Histogram of age.

14 15 16

14-20 21-27

If data is randomly missing, then ignore the observation.

survey-of-basic-classroom-data-spring2011 [Read-Only] - Microsoft Excel

View   Oracle IRM

New

Recent Documents

1 survey-of-basic-classroom-data-spring2011

Open

Save

Save As

Print

Prepare

Send

Publish

Server

Close

Excel Options   Exit Excel

Wrap Text   General   Conditional Formatting   Format as Table   Cell Styles   Insert   Delete   Format   AutoSum   Fill   Clear   Sort & Filter   Find & Select

Merge & Center $ % ,   Styles   Cells   Editing

Alignment   Number

Indian

	C	D	E
		Gender	Major
		Female	Political Studies - Pre-Law or Public Administration
		Female	Business Adminstration
		Female	Psychology
		Male	Economics
		Male	Criminal Justice
		Female	Political Studies - Pre-Law or Public Administration
		Female	Criminal Justice, Human Services, Liberal Arts, Psychology, Visual Arts & A
		Female	Psychology
		Female	Psychology
		Male	Criminal Justice
	erican, American Indian/Native American, Other	Female	Criminal Justice, Human Services, Psychology
		Male	Criminal Justice
		Male	Business Adminstration
		Female	Human Services
		Female	Business Administration, Health Promotion
17	41	68 White/Caucasian	Female	Business Administration
18			
19			
20			
21			
22			
23			
24			
25			
26			

Sheet4   Sheet1   Sheet2   Sheet3

Ready   100%

start   BSAD/POLS/PSYC-23...   2011-09-08 Lecture ...   Microsoft Excel - surv...   8:34 PM

	A	B	C	D	E
1	Age	Height	Race	Gender	Major
2	32	66	Black/African Ameican	Female	Political Studies - Pre-Law or Public Administration
3	45	70	Other	Female	Business Adminstration
4	19	61	White/Caucasian	Female	Psychology
5	27	72	White/Caucasian, American Indian	Male	Economics
6	30	68	White/Caucasian	Male	Criminal Justice
7	21	66	White/Caucasian	Female	Political Studies - Pre-Law or Public Administration
8	48	73	White/Caucasian	Female	Criminal Justice, Human Services, Liberal Arts, Psychology, Visual Arts & A
9	20	65	White/Caucasian	Female	Psychology
10	70	73	White/Caucasian	Female	Psychology
11	47	58	White/Caucasian, Black/African American, American Indian/Native American, Other	Female	Criminal Justice, Human Services, Psychology
12	30	68	White/Caucasian	Male	Criminal Justice
13	25	65	White/Caucasian	Male	Business Adminstration
14	29	64	White/Caucasian	Female	Human Services
15	21	62	White/Caucasian	Female	Business Administration, Health Promotion
16	41	68	White/Caucasian	Female	Business Administration
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

Average = 33 (handwritten annotation)

Sheet4 | Sheet5 | **Sheet1** | Sheet2 | Sheet3

	A	B	C	D
19	30	<- MEDIAN		
20	30	<- MODE		
21	13.61208613			
22	36.33333333	<- Difference from 70 to mean		
23	2.669196549	<- 70 years old is 2.7 std. dev. away from mean		
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				

Standard deviations greater than 2 are "significant"

PivotTable | Histogram | Data | Sheet2 | Sheet3

Column/Bar ✓
Histogram ✓
Pie Chart

Ex: Pie chart of student
majors

Line Chart

Best:
— Continuous data over time

2001 2002 2003 2004

Could use column

2001 2002 2003 2004
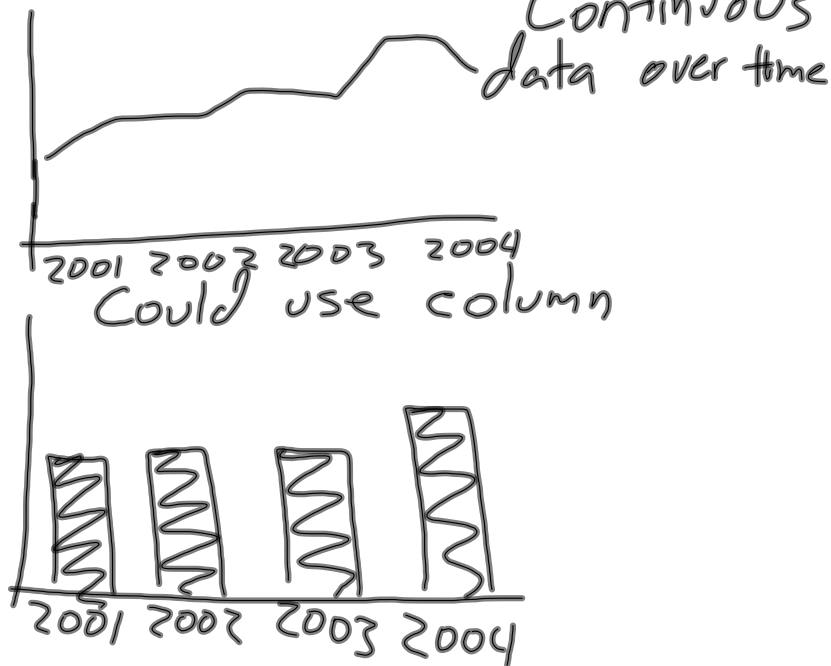
Ex: Land-Ocean Temperature from 1880 to 2010.

(Anomolies in temperature from the "average" temp.)

→ Each number is the difference of the year's avg. temp from the average between 1951 — 1980.

e.g. —0.576 in 1880 means 0.576°F below the '51-'80 avg.

Scatterplot

- Previously we've looked
  at plotting one variable
  (<u>uni</u>variate analysis)
    <u>one</u> <u>variable</u>

- We can also explore
  two variables at the same
  time. ↳ bivariate   (or more)
                          ↳ Multivariate

          Scatterplots   hard to
              ↓   graph.

        Best: when comparing
    → two continuous variables.
        ↳ Can be used w/
          categorical data, but
          more difficult.

Variable 2
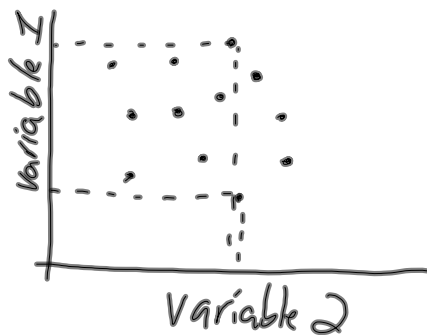
Ex: New data: Educational
      Spending
  - Create scatterplot of "Pay"
    & spend
        → Import data
            Web → Excel
        → Graph

Three notes:

- HW #2 to be returned Tuesday.
- HW #3 posted tomorrow (due Thursday)
- Tuesday's class will discuss normal distributions (aka. day behind))