Last Class

- Measures of centrality
  - Mode – most frequent
  - Mean – expected value
  - Median – middle value (50% above, 50% below)

Iowa Community Colleges
-> Avg. age = 24 years-old
-> Median age = 21 years-old
-> Mode age = 18 years-old

Measures of variation

- Range
- Quantiles (Quartiles, Quintiles, Deciles)
- Standard Deviation
- Variance
- Inter-quantile range

Standard Deviation

$$\sqrt{\frac{\sum (x_i - \bar{x})^2}{N}} = \sqrt{\text{Variance}}$$

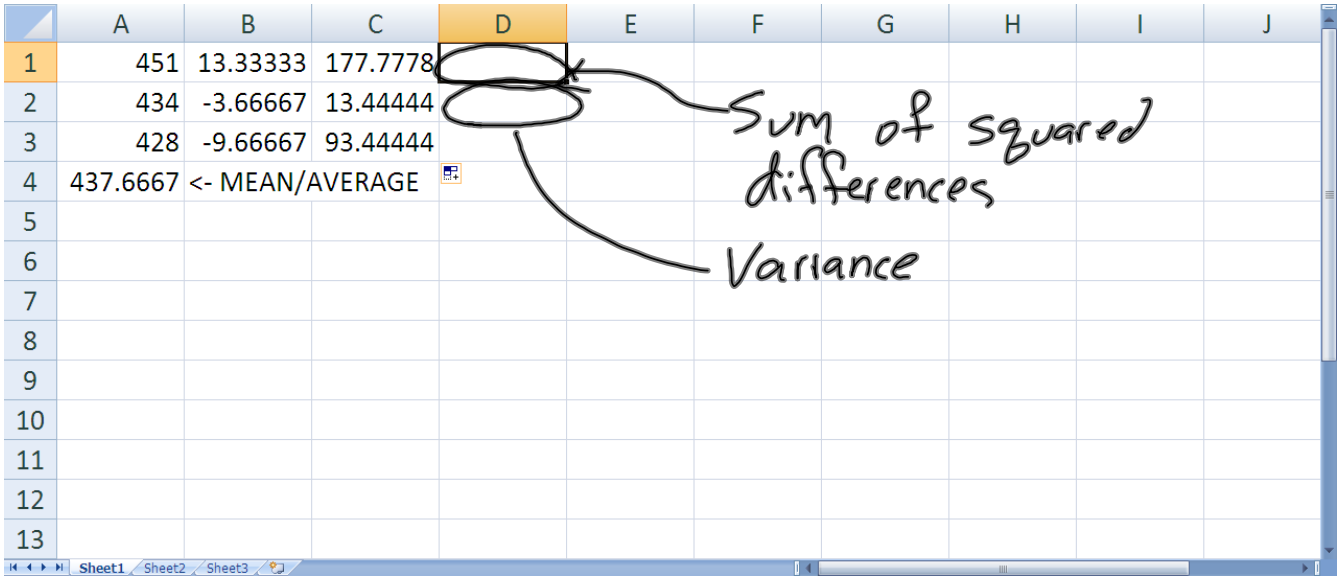
Ex: 451
434
428

$\bar{x} = 437.6$

434
428 437 451

$(451-437)^2$
$(434-437)^2$
$(428-437)^2$

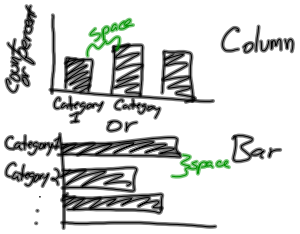
As N ↑, the standard deviation (σ) will get smaller.


A
B
C
D
E
F
G
H
I
J
1 451 13.33333 177.7778
2 434 -3.66667 13.44444
3 428 -9.66667 93.44444
4 437.6667 <- MEAN/AVERAGE
5
6
7
8
9
10
11
12
13
Sheet1
Sheet2
Sheet3
Sum of squared differences
Variance

Graphing

- So far we've explored data numerically
  - Measures of centrality
  - Measures of variation.
- Histogram
- Pie graph
- Bar/Column Graph
- Line graph

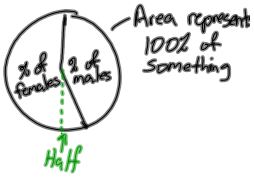
→ Bar/Column Graph



→ Best for categorical data.

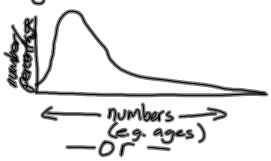
→ Based on recognizing distance/height w/ a common base.

Pie Chart



Histogram

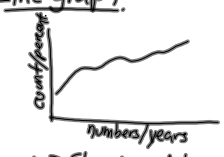
- Similar to bar/column chart, but no spaces between groups.



—or—

- Useful for continuous data.

Line graph



→ Showing data over time.

→ Can show rates of change.

Annual Condition of Iowa's Community Colleges 2010[1].pdf - Adobe Reader

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  - Section 6 - Credit Student Awards
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  - Section 8 - Non-Credit Enrollment and Programs
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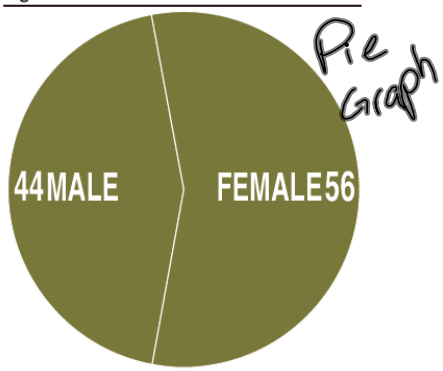
university. For instance, the average age for students attending an Iowa public university was slightly over 21 years-old (Iowa State Board of Regents, 2009).

Although community colleges serve an older population, most are traditional-age students who are under 25 years-old. The median student age was 21 years-old, which means half of the student population were under that age. Seventy-one percent of community college students were under 25 years-old (Figure 3-5).

Community colleges have become increasingly diverse. In 2006, 10 percent of students were racial or ethnic minorities. This proportion grew to 12 percent in 2009 and 14 percent in 2010.

In 2010, the Iowa Department of Education changed its reporting methods for race. Students were allowed to identify themselves under multiple racial or ethnic categories. Eight-hundred thirty-five students, or 0.6 percent, claimed themselves as multi-racial.

Figure 3-4: Credit Student Gender



SOURCE: Iowa Department of Education, Division of Community Colleges and Workforce Preparation, Community College MIS, see Table 3-18.

Figure 3-5: Credit Student Age: 2010