PSY30100-03 -- Assignment 1

Chapter 1: Describing Distributions with Tables and Graphs

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Assignment 1.17 (p.23)

a) Add the counts and compute the percents for each age group.

Ans: 10+97+70+36+14+5=232

1-18	19-24	25-35	36-50	51-69	≥70
10/232 ≈4.31%	97/232 ≈41.48%	70/232 ≈30.17%	36/232 ≈15.52%	14/232 ≈6.03%	5/232 ≈2.16%

Assignment 1.17 (p.23)

b) make a bar graph of the percent.

Labels!

Assignment 1.17 (p.23)

c) Describe the distribution.

Ans: 1. right skewed (positive skewed)

2. Unimodal

Assignment 1.17 (p.23)

d) Explain why your bar graph is not a histogram.

Ans: The age group classes do not have equal width.

Assignment 1.30 (p.26)

a) Why do you think we choose to measure emissions per person rather than total CO_2 emissions for each country?

Ans: Totals emissions would almost certainly be higher for very large countries. For example, we would expect that even with great attempts to control emissions, China would have higher total emissions than the smallest countries in the data set.

Assignment 1.30 (p.26)

b) Display the data of Table 1.6 in a graph.

Ans: many ways.

1. histogram
2. stemplot

Histogram (p.12)

3 Steps:

- 1. Divide the range of the table into classes of equal width.
- 2. Make a frequency table.
- 3. Draw a histogram.

Assignment 1.30 (p.26)

b) Display the data of Table 1.6 in a histogram

- 1. Divide the range of the table into classes of equal width.

$$width \geq \frac{19.9 - 0.0}{10} = 1.99$$

Assignment 1.30 (p.26)

- 2. Make a frequency table.

interval	count	interval	count
[0, 2)	20	[10, 12)	3
[2, 4)	9	[12, 14)	0
[4, 6)	3	[14, 16)	0
[6, 8)	4	[16, 18)	2
[8, 10)	6	[18, 20)	1

Assignment 1.30 (p.26)

- 3. Draw a histogram.

Labels!

Assignment 1.30 (p.26)

- b) shape: right skewed

  bimodal: [0,2), [8, 10)

  potential outliers: United States, Australia, Canada, or just United States

  spread: 0-19.9 (range=19.9, may not be the best measure of spread)

  or 0-11 (apart from 3 outliers)

Stemplot (p.9)

3 Steps:

- 1. Separate each observation into a stem consisting of all but the final (rightmost) digit and a leaf, the final digit. Stem may have as many digits as needed, but each leaf contains only a single digit.
- 2. Write the stem in a vertical column with the smallest at the top, and draw a vertical line at the right of this column.
- 3. Write each leaf in the row to the right of its stem, in increasing order out from the stem.

Stemplot_ cont.

2 modifications (p.11):

- 1. Split each stem (when fewer than 5 stems).
- 2. Trim (when too many stems).

Assignment 1.30 (p.26)

b) Display the data of Table 1.6 in a stemplot

- 1. original stemplot (20 stems)
- 2. too many stems: trim (→ 2 stems)
- 3. too few stems: split (→ 10 stems)

Assignment 1.30 (p.26)

b) Display the data of Table 1.6 in a stemplot

0	000000000000000011111
0	222233333
0	445
0	6677
0	888999
1	001
1	
1	
1	67
1	9

Assignment 1.37 (p.27)

- 1. gender in a large college class: c

  Usually we assume it is a normal class.

  But you could also choose (b) as an answer for an unusual class.

Assignment 1.37 (p.27)

- 2. handedness: b

  Because we would expect that right-handed students should outnumber lefties substantially. (Round 10 to 15% of the population as a whole is left-handed)

  But you could also choose (c) as an answer for an unusual class.

Assignment 1.37 (p.27)

- 3. height: d

  Because one would expect a fair amount of variation but no particular skewness to such a distribution.

Assignment 1.37 (p.27)

- 4. study length: a

  Because it is reasonable to expect this to be right-skewed (many students study little or not at all; a few study longer)