

NAME: Gavin McRoy

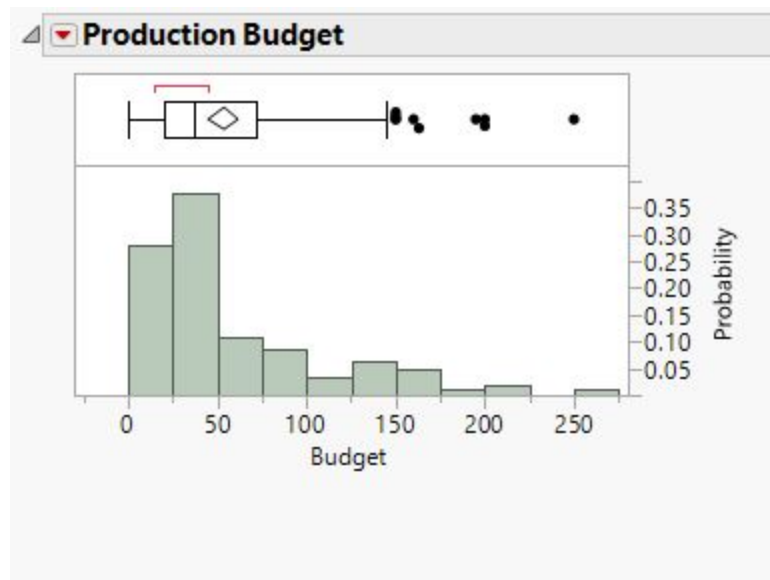
**OBJECTIVES:** The purpose of this activity is to introduce the statistical software JMP. Upon successful completion of this activity, you will be able to...

- Identify the type of variable in the context of a problem
- Create histograms, stem and leaf plots, and dot plots for quantitative variables
- Use the output provided by JMP to answer relevant questions

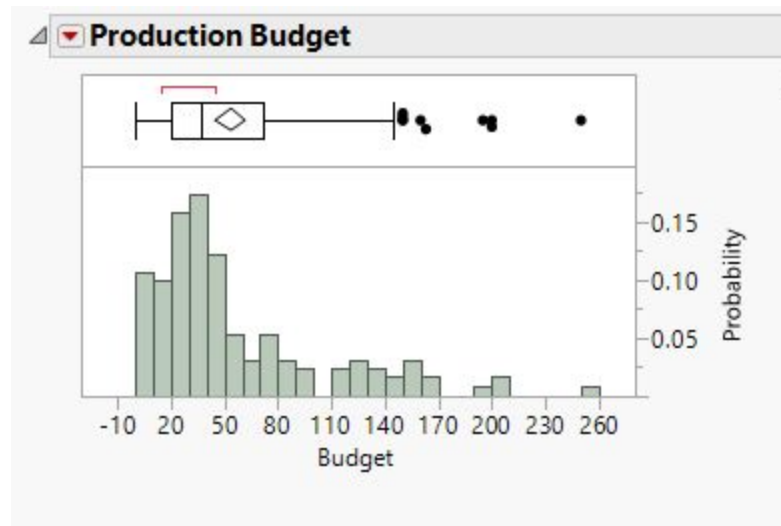
Delectable Delights is a large consumer food manufacturer selling its products in retail stores nationwide. You have landed your first job after graduation from Clemson in their advertising division. Since you took statistics as a part of your coursework, you are often called upon to perform data analysis for the advertising division, as well as other divisions of the company.

**DIRECTIONS:** Answer the following questions using complete sentences as though you were presenting your analysis to the employees of Delectable Delights. Please provide any appropriate output and/or screenshots from JMP. Instructions for creating several types of graphs or tables and statistics can be found on Canvas in the file **JMP\_Instructions.pdf**. Paste your answers and any output into this document.

1. Joan Shilling, who is Ray's supervisor at Delectable Delights, would like a graph of the **movie production budgets**. Ray asks you to consider the **Hollywood\_Movies.jmp** data set again and to create a histogram using JMP that highlights the **shape** of the distribution of the production budgets. The production budgets are in Millions of Dollars.
  - (a) What **type** of variable is the movie production budget, and what is **its level of measurement**?  
Quantitative, Interval
  - (b) Use JMP to make a **histogram** of the movie production budgets in the Hollywood Movie data set. Use the default bin width. Add either the frequency (count) or relative frequency (prob) vertical axis on the left by clicking the red triangle next to "Production Budget" and using "Histogram Options." Include labels, a title, units and other useful information in your graph. The instructions for making a histogram are in the JMP Instructions on page 8. **Copy and paste** the histogram below.



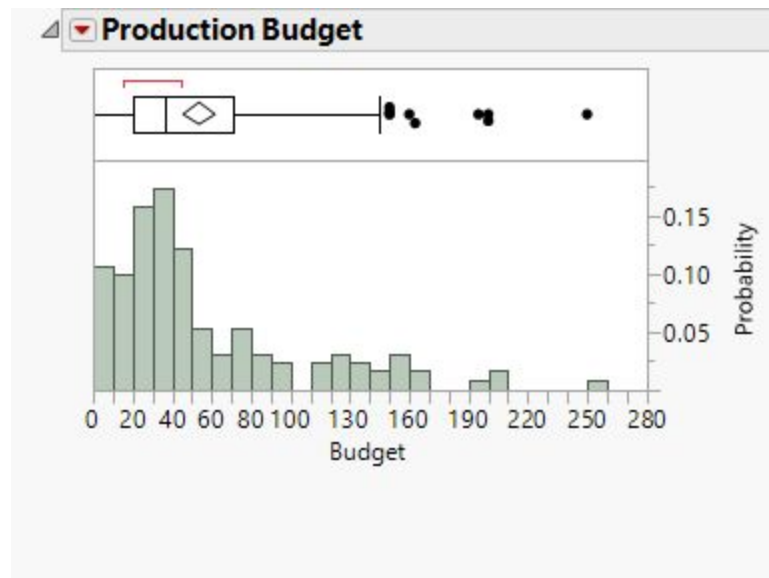
- (c) Using the histogram as in Part (b), **change the bin width to 10** (see the JMP Instructions). Paste the resulting histogram below.



- (d) Which of these two histograms do you prefer for showing the shape of the distribution of the production budgets **and why**? If you like them both equally as well you may state that. This question is asking for your personal preference. There is more than one correct answer. As you can see, with the histogram you can change

how it looks by changing the bin or class widths. In your future jobs you can adjust the bin width of histograms to best display the information to your readers.

-I would probably choose the second one because it adds more information about the budget. But I'd remove the negative value on the end as that doesn't really make much sense and makes it hard to determine where 0 is located



- (e) Use the graph in either Part (b) or (c) to describe the shape of the distribution of the production budgets (see pp. 31 and 32 in the Lecture Guide) for Joan.

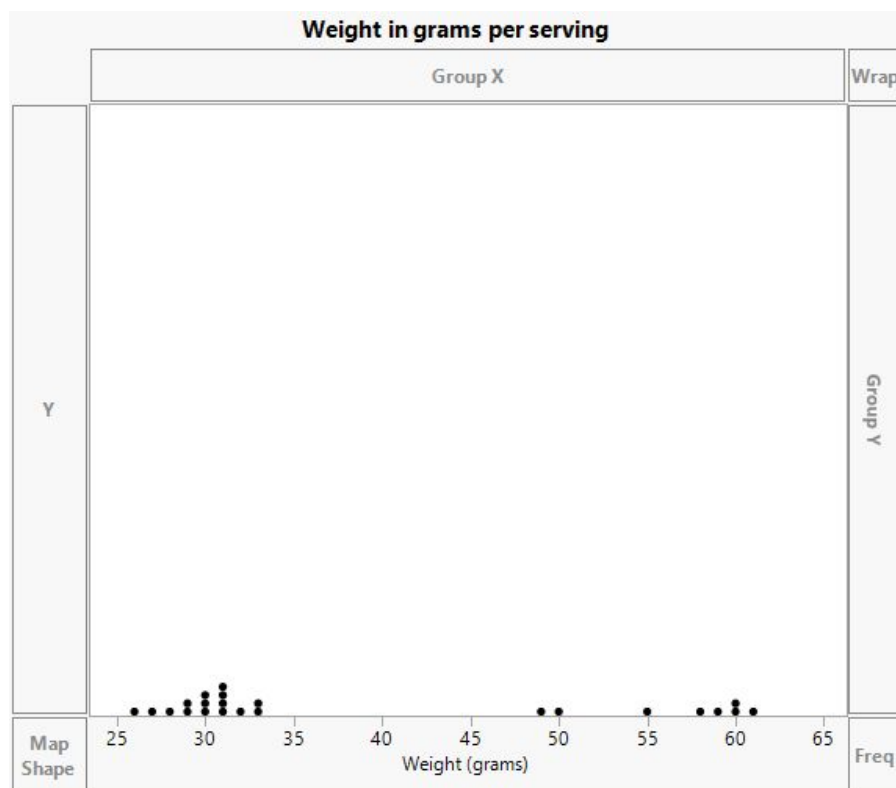
The data is definitely skewed to the right

2. Delectable Delights carries several brands of cereal, many of which are manufactured by Kellogg's. You can find information about the cereals in the file **Kelloggs\_Cereal.jmp** on canvas. Constance Stulz from the Shipping Department wants you to make a graph that shows the shape of the distribution of the weight in grams per serving of the cereals.
  - (a) Use JMP to make a **stem and leaf plot** for the variable Weight/Serving. The instructions for creating a stem and leaf plot are on page 12 of the JMP Instructions. Double click on the title **Stem and Leaf** to change it to **Weight in Grams per Serving**. **Copy and paste** the plot in the space below. Notice that JMP does the Stem and Leaf plot upside down with the largest values on the top.

Weight in Grams per Serving		
Stem	Leaf	Count
6	001	3
5	589	3
5	0	1
4	9	1
4		
3		
3	0001111233	10
2	67899	5

2|6 represents 26

- (b) Use JMP to make a **dot plot** for the variable Weight/Serving. The instructions for creating a dot plot are on page 9 of the JMP Instructions. Double click on the axis title for Weight/Serving and add the units. Also, hover the mouse over the horizontal axis until you see the hand change from vertical to horizontal. You can then drag the right and left sides of the axis a little bit towards the center so that the endpoints of the number line show up better. **Copy and paste** the dot plot below.



- (c) Which of these two plots do you prefer for showing the shape of the distribution of the Weight in grams per serving in the cereals and why? If you like them both equally as well you may state that. This question is asking for your personal preference. There is more than one correct answer.

The dot plot is easier to read and displays the information in a much easier to visualize manner but I'm not sure what the units on the horizontal axis are

- (d) Describe the **shape of the distribution** of the Weight in grams per serving in the Kellogg's cereals that Delectable Delights carries for Candace.

I would say the shape is as well right winged