More Linear Models using Movie Data

Unit 2 - Lab 12

Directions: Follow along with the slides and answer the questions in **BOLDED** font in your journal.

A lab for exploring!

- In this lab, you will use techniques from the last two labs to explore other possible linear relationships between variables in the `movie` data set.
- Recall:
- Lab 2.10 focused on correlation coefficients and their interpretations.
- Lab 2.11 focused on finding the line of best fit and using the equation to make predictions.

Let's set it up

- The y-variable we will be examining is `domest_gross`, which is the amount of money the movie earned domestically (in the United States).
- Your goal is to determine which variable in the `movie` data set is the best predictor of domestic gross. In other words, find the best x-variable that's linearly related to domestic gross.

How can we do this?

- **What are the numerical variables that can be used as potential predictors?**
- First, calculate correlation coefficients between `domest_gross` and the numerical variables you listed above.
- **Record each pair's correlation coefficient and describe what it means. Is the trend positive/negative? Is the relationship weak, moderate, or strong?**
- **Which variable has the strongest correlation? What does this mean?**

Next steps

- Now, we should create scatter plots of the relationships between domestic gross and the variables you chose on the previous slide.
- **Which plot looks the most linear?**
- **What does this plot tell us about the ability to predict domestic gross profits based on your x-variable?**
- **How does this plot relate to the correlation coefficient you found for it? Does it make sense?**

Finally

- Find the line of best fit for the plot that you said was most linear on the previous slide.
- **Record the equation using the variable names.**
- **Using your equation, calculate a prediction for domestic gross based on your x-variable.**

-For example, if `year` and `domest_gross` showed the best linear relationship, then we can predict what the domestic gross profit is expected to be for a movie created in 2015.

- **Does your prediction make sense? Give a statement describing what the result means.**

Wrapping up

- **How were you able to find the best predictor of domestic gross? What three things did you need to explore?**