

Case Study WARMUP - Individual Preparation:

Please read the case study in detail and take notes:

I read the entire case study (circle one) YES NO

This project will test your analysis ability on structured data with a few methods as well as your communication ability of the findings of your analysis. Now, go to blackboard or where you bought the case study to download the data set. Load it into R and you will notice there are 7 variables (ship features) in the data set.

- A) Which ship features are highly correlated and what implications does that have for Basil?
- B) Choose sale price and sale date (use 1 for Jan-07, 2 for Feb-07, etc.) and perform a Simple Linear Regression. Choose the y and x variable. Why did you make that choice? Interpret the values of the slope and intercept in a sentence each. Write out the hypothesis that you will want to test (is it different than 0?). Do you think they are significantly different than 0? Why?
- C) Use ANOVA to test whether the means are equal for sale price, deadweight tons, and Capesize Index. Please comment on your results and the usefulness of this analysis to solving the case study. Is it an appropriate application of ANOVA? What are the populations? If not, test whether the average sale price is different for ships sold in 2007 versus 2008. What the meaning of your ANOVA analysis is to the prospective client.
- D) Let's say I am interested in the proportion of ships that sold over \$100 million during the time period of the data set because I really love expensive ships. Assume the data set given is a random sample of all ships out there on the seas. Please provide a confidence interval your estimate so that I can think about ALL the ships out there on the sea if they were to sell very shortly. I used to not be very good at statistics, so please explain to me what this confidence interval means.
- E) Think hard about this one. Basil is interested in proposing a price to a client so that the client can buy the Bet Performer. You performed a few analyses in the previous steps, but what didn't we do? What kind of quantitative analyses should we do if we were to present our data-driven recommendations later for buying the Bet Performer? What holes or weaknesses were present in our current analyses? Try to be mutually exclusive and comprehensively exhaustive in your project.