1) The dataset we will both use in our analyses can be found on kaggle: https://www.kaggle.com/datasets/mayuriawati/amazon-advertising-performance-metrics

2) Business question: Does the advertising technique of repetition have an impact on purchase behavior on amazon?

Every year businesses shell out millions of dollars for advertising campaigns. This is a strategic and obvious action driven by the immense influence of advertising on sales and, consequently, the overall success of the business. Given this, understanding the effectiveness of these advertisements is crucial considering the significant financial investment companies make in these campaigns. Furthermore, with the increasing production quality, complexity and massive competition of ads in this digital era, specifically how the advertising budget is allocated becomes an important question.

Repetition is a very common technique used in advertising and as the name implies it involves repeating the same advertisement multiple times throughout a magazine, an online search engine, tv program, social media site, etc. This technique is often used due to its inherent ability to overcome cognitive biases all people have, such as selective exposure effect and as well as to artificially stimulate the availability heuristic. Although, this method can be a risky and considerably expensive endeavor considering the company would be putting the whole budget for a single campaign on multiple runs of a single ad.

Considering these factors, knowing in quantitative terms the impact of repetition on consumer purchases on a platform like Amazon is vital. This analysis can provide valuable insights into the efficacy of this advertising technique and help businesses make better decisions about their advertising strategies.

3) To conduct this analysis I will be utilizing a Bayesian statistical model as it allows me to incorporate prior knowledge (previous week's amazon data) into my analysis. I also chose this model because it provides distributions of parameters, which allows for the quantification of uncertainty that is critual in dynamic marketing situations.
4) The Target variable I will predict is purchase rate (column called pur_purchase_rate) quantified as the percentage of times the advertisement resulted in a customer making a purchase. To predict purchase rate I will use the column clk_click_rate (The percentage of times the advertisement was clicked on relative to the number of times it was shown) as my independent variable.
5) Mae Bryant and Alanna Sayer