The video game market was an area of interest for us when evaluating what types of data to analyze and scrape because we all grew up playing games. We decided to analyze the market and take a data-oriented deep dive into consumer satisfaction, related to a game's cost. We found four different data plots from prior classes and utilized them in this. Those subplots include a histogram, a Scatterplot, a Heatmap, and a boxplot. Knowing that we had used these in prior classes, we were able to utilize some of the prior code and substitute the variables to match what we are trying to analyze in this data set. Once we completed the transformation, we added the final code needed and successfully analyzed the video game market using the different graphing strategies we have learned. After this, we began to wonder whether the market offered more and better options for consumers willing to spend more money on a video game, compared to those willing to spend less.

To answer this, we first asked whether the video game market offered more options for consumers who were willing to spend more on video games. From figure one, the bar chart, we can see that game volume is evenly distributed across the different price ranges. In this, you can see that there is no true dominant price tier. The histogram shows that the bars representing the number of games in each price bin are all of similar height (generally around 2,225-2,500). This implies there is no specific price point publishers are trying to target. This goes against our original hypothesis that the number of games would be skewed towards the extremes of each price spectrum. This also means that for each consumer in the video game market, no matter how much money you are willing to spend on a video game, there are, on average, the same number of games that you can afford. Not exactly, because those willing to spend $60 would have access to all the games for less than that, while those willing to spend only $20 would be limited to a narrower range. The point here is that there is no correlation between the cost of a video game and the number of games available at that price. In terms of individual price points, they are equal. After realizing this, we wondered whether those willing to spend more on a video game were predisposed to a better experience (i.e., a game with a higher user rating than those willing to spend much less).

This was nicely addressed by the second part of the dataset we chose to graph—the price of a game versus its user rating. We did this using Matplotlib and Seaborn.. As shown in the graph, there is a direct correlation between a game's price and the range of its user ratings: the more expensive a game is, the higher, on average, its ceiling and floor are. A game that costs 20 dollars has an average user rating ceiling of 30/50 and an average floor of 10/50. A game that costs 60 dollars has an average user rating ceiling of 50/50 and an average floor of 30/50. This, on its own, would not be anything special. One would assume this to be true except for certain outliers: A more expensive game presumably has a larger budget, studio, and development team behind it, which explains the higher cost. To recoup the investment in creating a game with all those features, they must raise the price. The opposite is true of a cheaper game. There is a reason game publishers can sell certain games at lower prices: they cost less to produce. There is less money behind their development, which creates both a cheaper user experience and, on average, a worse one. This all makes sense. From this graph, we learned there is a clear correlation between the cost of a game and its user rating; we assumed this was because there was more money in game development, and therefore, the end product would be better. However, after looking at the other data points, we learned it was far more complicated than that.

If we look at Figure three—the heatmap—we can see that it aims to show the correlations between user rating, graphics rank, soundtrack rank, and story rank. As the graph shows, there was no correlation between user ratings and either a game's soundtrack rank or story rank. Now this is interesting.

The reason we thought that more expensive games got better user ratings was that a higher price tag implied a larger budget, which in turn meant a better user experience due to more resources poured into the game. We expected to see a direct correlation between a game's user rating and the quality or rank of features like its soundtrack and story. We were instead shown that there is no such correlation between those things, which means there must be a different reason why more expensive games tend to get higher user ratings on average. To try to re-answer that question, we looked at user ratings broken down by platform.

Figure four, the boxplot, does just that. In Figure four, the boxes show the middle 50% of ratings, while the whiskers show the highest and lowest rating a game of each category received, all based on the platform the games are on. Across the five platforms – PC, mobile, PlayStation, Xbox, and the Nintendo Switch – there is little to no difference between their average user ratings. Each platform's median is around 30/50, while its whiskers extend to 50 and 10. This means that the platform where the game is played holds no bearing on the average user rating. From all of this, we have learned that while there is a correlation between price and consumer satisfaction, there is no correlation between actual quality or console and satisfaction. So then why do more expensive games get better ratings?

More expensive games get better ratings because consumers subconsciously think they deserve them. This phenomenon is known as the price-quality heuristic. It is a human bias in which a higher value is attached to the more expensive item, even if the two items' measurable qualities – like story, platform, and soundtrack – are the same. The higher the price of a game, the higher the player's expectations for its quality. That expectation alone is enough to shape how a player rates a game completely. The user's rating becomes far more about the perceived value of a game, based on its cost, rather than its actual quality and measurable qualities. This is interesting because it explains a broader trend in the video game industry over recent years.

The cost of a game keeps rising, with some AAA games selling for $80, up from the previous high of $60. We always thought this had more to do with general cost increases on the production side of video games: Inflation is making everything more expensive than it used to be. This may be true, but we now also see that it has far more to do with the fact that companies have been proven to charge more for a game, and that game will get higher ratings just because it costs more. If a company sells a game for $40, it gets lower reviews and less revenue. If they sell that same game for $60, they get higher reviews and more revenue on average because the price is higher. There is no reason for a company to charge less for a game.