Econ 3040 - Assignment 1: Sales from different video game consoles

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In this assignment, you will explore the relationships between the global sales and critic ratings of video games, for Xbox One and Playstation 4 (these are two different video game consoles, or "platforms"). The data for your assignment is the same as from Computer Lab 1. The data was scraped by Abdulshaheed Alqunber.

Due date: September 19th, 2022. Worth 3% of your final grade.

Instructions:

- Submit your assignment in the "Assignment 1" drop box on UM Learn. Include your name and student number.
- **You must complete your assignment individually**.
- Your assignment must have two parts: "Answers" and "R Code".
- For "Answers", include a sentence, table, or scatterplot. Q.1 and Q.2 will be blank for this section. **Do not copy and paste output from `RStudio`. Format or type your results nicely.** Make sure all graphs and tables are appropriately labelled.
- For "`R` code", include the lines of R code that you used to get your answer.
- For example, for question 4, the "Answers" part should include a picture, and the "R Code" the code used to get that picture.

Now, here is the assignment for you to work through.

1. Load the data using:

   ```
   mydata <- read.csv("https://rtgodwin.com/data/vidsales.csv")
   ```

2. Make a sub-sample that contains only `XOne` and `PS4` games. Use this sub-sample for the remainder of the assignment.
3. Calculate and report the summary statistics for each "platform" in a table (mean, standard deviation, minimum, and maximum). Also include in the table, the number of video games (n) in the sample, for each platform. For example, the table should look something like Table 1.
4. What is the correlation between `Sales` and `Scores`?

Table 1: *Sales* and *critic scores* summary statistics, for Xbox One ($n = ?$) and Playstation 4 ($n = ?$) video games.

		sample mean	sample variance	min	max
Sales	Xbox One				
	Playstation 4				
Score	Xbox One				
	Playstation 4				

5. Draw a scatterplot of `Score` (on the x-axis) vs. `Sales` (on the y-axis), using one colour for Xbox One games and another colour for Playstation 4 games. Make sure the plot includes a *legend*, that describes what the colours mean. (You will need a sub-sample that contains both Xbox One and PS4 games. There are several ways to do this. You could use `&` in the `subset` function, or use `rbind(sample1, sample2)`).
6. How much does it pay to make a *good* game? Try to figure out how much more a video game sells on average, when it has a higher critic score rating. Use the sub-sample that contains both Xbox One and PS4 games.