Project 1: Game Developer

 A popular video game company, Verse, is giving you a $10,000,000 budget to design a video game. They have two primary goals for you:

A.) To design a memorable game that will be enjoyed by a large subset of the gaming population.

B.) To maximize sales of this video game

General:

You will work through the project at your own pace. The project will often ask you to do things that you do not know how to do. Do not worry, this is intentional. Any time you feel stuck, ask a TA or the instructor for help. Alternatively, use Google/YouTube/Canvas to find resources to help you.

Instructions:

1.) All of the projects in this course will use Office 365 to make online documents. Use the embedded link to go sign in to Office 365 and create a new document where you will record answers to this project. In the top left corner, click **File -> Save as -> Save a copy online.** Name the file "P1WriteUp_FirstName_LastName", and then click **Save.**

2.) What is the first thing you would do to meet the goals given to you by Verse? (Respond in the document you just made)

3.) Watch this video! Instead of designing a game that you like to play, why do you think data analysis might be a better tool for informing your decision on what type of game to make? (Respond in your P1 Word Document)

4.) It's time to gather data on your classmates so that you can make an objective and informed decision on what type of game to design. Please complete this survey. For this project we are going to assume that all students in this class represent the entire population of video game consumers. Why might this be an incorrect assumption? (Respond in your P1 Word Document)

5.) Open an Excel sheet in Office 365. In the top left corner, click **File -> Save as -> Save a copy online.** Name the file "P1Sheet_FirstName_LastName", and then click **Save.** Look around your Excel sheet. What might be a good way to store data using this document? (Respond in your P1 Word Document)
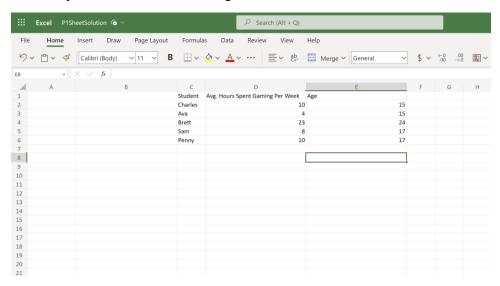
STOP: Check in with TA or instructor before continuing
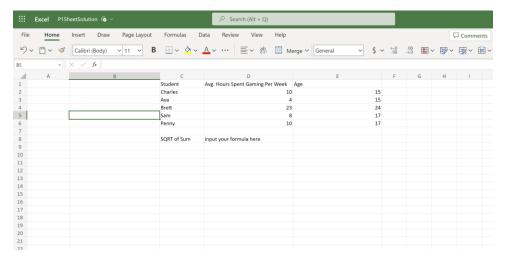
6.) Enter the following data into your spreadsheet

Student	Avg. Hours Spent Gaming Per Week	Age
Charles	10	15
Ava	4	15
Brett	23	24
Sam	8	17
Penny	10	17

Using the provided table, complete the following: (you should complete each of these tasks in your Excel sheet as well as giving a brief summary of how you completed the task in your P1 Word Document). You will likely have to use Google to research how to complete these tasks.
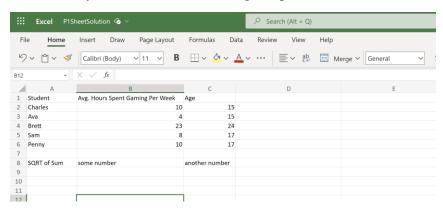
a.) Shift your entire table to the right so that it looks like this

b.) Compute the square root of the sum of the numeric values in column D. You will be able to do this with a single formula. (Suggested resource: Excel Formulas).
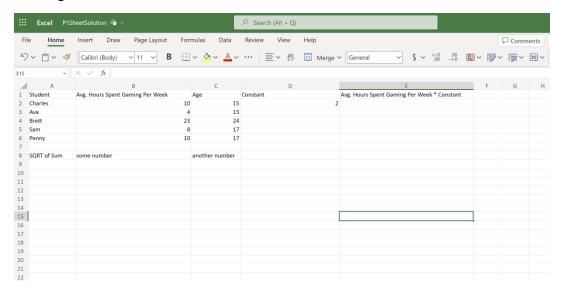

c.) Compute the square root of the sum of the numeric values in column E. You should be able to do this without typing anything (Suggested resource: Copy Formula)

d.) Shift all your work back to its original position, left two columns. It should look like this:

Notice how the two calculated values didn't change, even though we changed the location of the numbers. If you click on either of the cells B8 or B9 you will see that the cells referenced by the formula have changed automatically!

c.) Add two new columns to the table, one called "Constant" and one called "Avg. Hours Spent Gaming Per Week * Constant". Under "Constant" add 2 to the cell D2.

Write a single formula in the E2 cell to compute the product of Avg. Hours Spent Gaming Per Week times the Constant. (Suggested resource: Excel References). Then without typing any more, copy the formula so that the product is also computed in E3, E4, E5, and E6 (this can be written also as E3:E6). Now, try changing the constant to different numbers. What happens?

d.) In your words, what does the dollar sign do in Excel?

STOP: Check-in with instructor or TA before continuing.

7. Go to Canvas -> Files -> Projects -> Project 1 -> StudentSurveyResults and access the results of the survey you took earlier. Open the Excel file inside Office 365. This is your dataset that you will analyze and use to determine what type of game to design to meet the goals given to you by Verse.

8. Go to Canvas -> Modules -> Data Cleaning. Read the notes provided there. Which of the four data quality issues (data inconsistency, duplicate data, outliers, missing values) do you see in your dataset? (Respond in your P1 Word Document)

9. It is time to clean your data. Look through the dataset and decide how you want to deal with data quality issues. If you are unsure, ask a TA or instructor.

10. Watch this video on Data Visualization. Why do you think it is a good idea to use data visualization techniques on your dataset? (Respond in your P1 Word Document)

11. Categorize the data in each column as either discrete/continuous AND either numerical/categorical. (Suggested resource: data classification)

12. Your last task is to make three separate data visualizations. You will make one bar graph, one pie chart, and one scatter plot. (Suggested resources: Bar Graph, Pie Chart, Scatter Plot). You get to choose the columns you want to graph. Record what data you are going to visualize in each of your graphs, but don't make the graphs quite yet (Respond in your P1 Word Document)

STOP: Check-in with TA or instructor before continuing.

13. Make your graphs in Excel. Using your graphs as evidence, decide what kind of video game you would design (Respond in your P1 Word Document).

14. Watch this video about the data life cycle

STOP: Check-in with TA or instructor before continuing.

Congratulations, you have complete Project 1! Submit your work on Canvas -> Assignments -> Project 1. You should turn in your P1 Word Document, your P1 Sheet, and your Excel document with your cleaned survey data and graphs.