Excel Plotting

Data Boot Camp

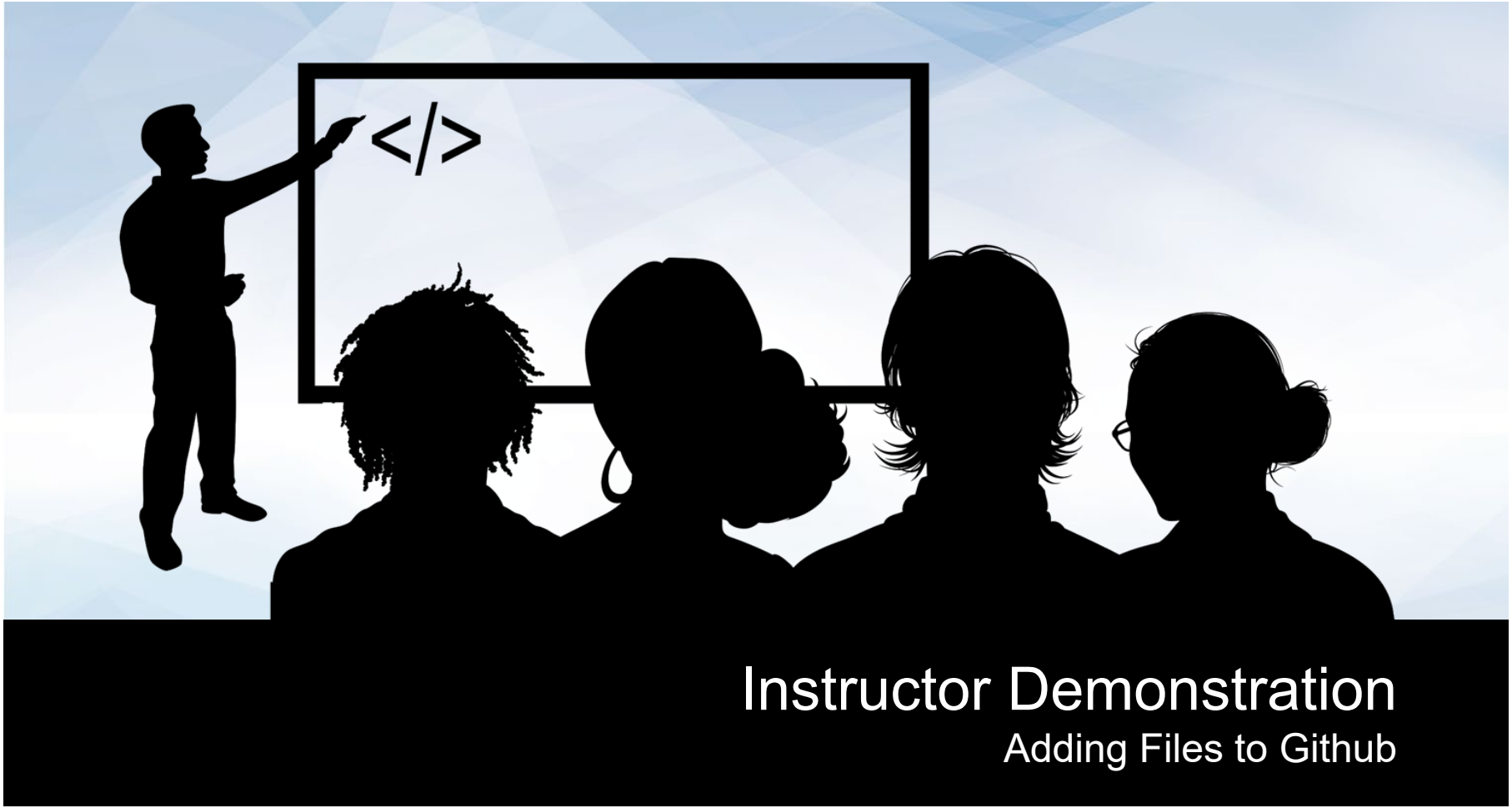
Lesson 1.3


WELCOME

We are off to the races!


This will be you
at the end of class.

Let’s introduce our teaching staff to the expanded class!


Instructor Demonstration
Adding Files to Github

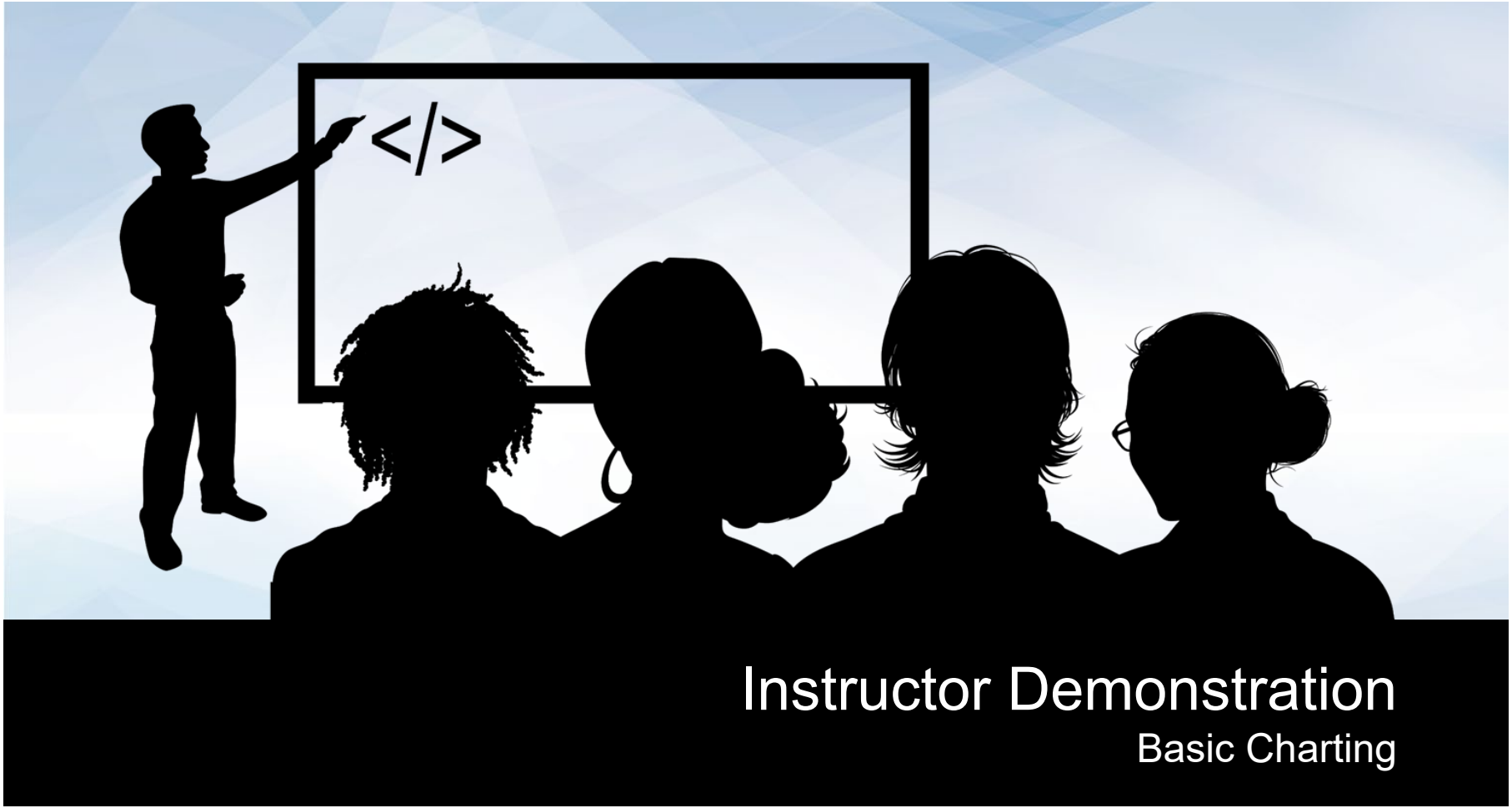
Github is a hosting service for source code

- Web interface for **Git**
- **Git** is version control software
  - Tracks source code history
  - Allows for collaboration on the same code files across a team or organization
  - Easily update and rollback software versions
- Since 2019, Github is used by over 2.1 million companies
- Proficiency in Git and Github is highly desirable skills in many industries

We will use Git and Github throughout the curriculum

- You will submit your homework assignments using Github
- Your individual project work will be version controlled using Git
- You will be collaborating with teammates using Github
- By the end of the curriculum, you should be proficient with the basic Git and Github functionality.

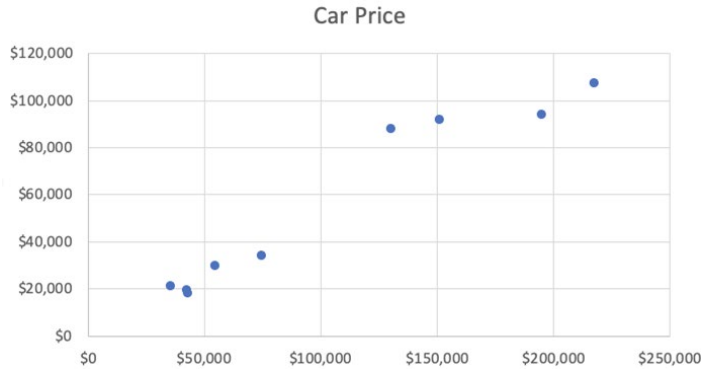
< Demo Time >

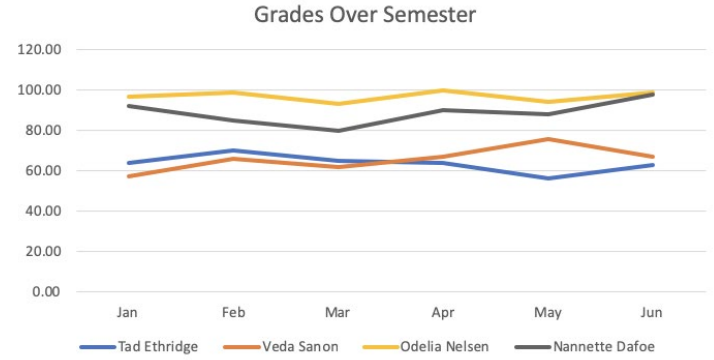


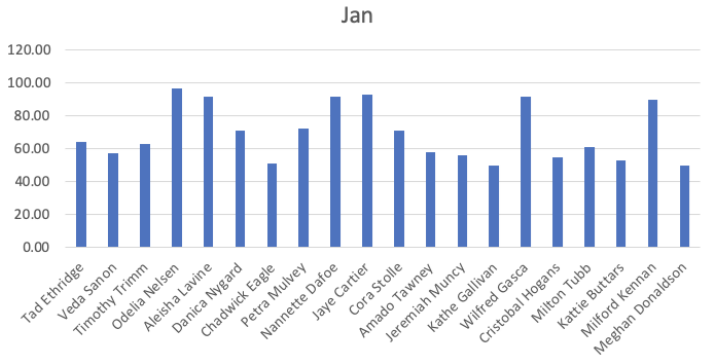
Instructor Demonstration

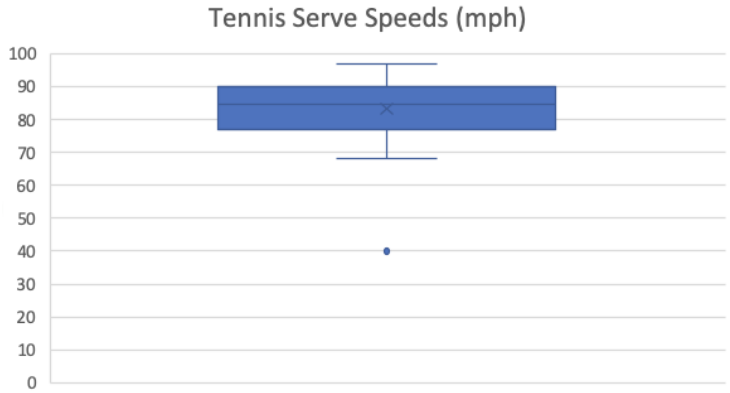
Basic Charting

It is time to learn Excel visualizations!



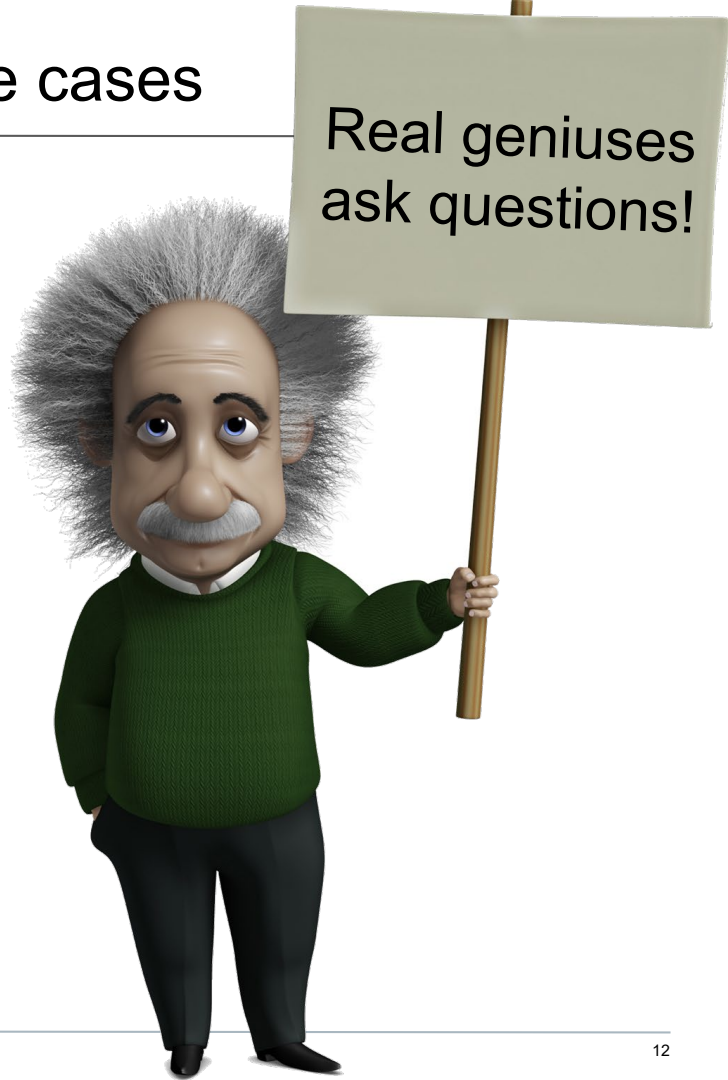






We will look at a few examples and use cases

- Try and follow along!
- In this activity we will
  - Look at an example data set
  - Select data of interest
  - Visualize selected data
  - Add labels and titles to our visualization
- Do not hesitate to ask questions
- Our TAs will slack out images for each operating system



< Demo Time >

Activity: The Line and Bar Grades

Suggested Time:
15 Minutes

Activity: Line and Bar Grades

You are going to take the role of a teacher upon yourself for this activity as you create a series of bar and line graphs that visualize the grades of your class over the course of a semester.

Instructions:

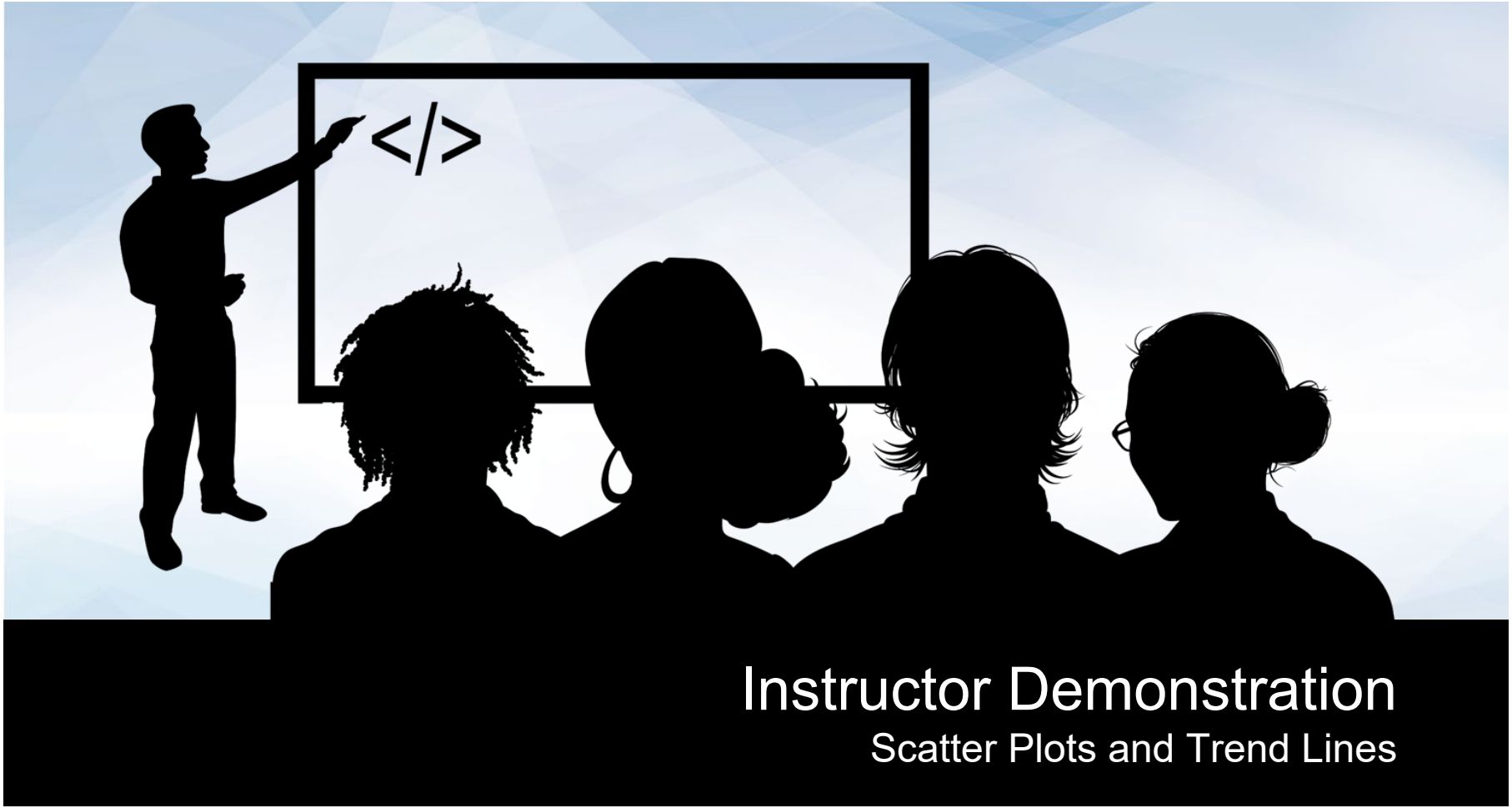
- Create a series of bar graphs that visualize the grades of all students in the class, one graph for every month.
- Create a line graph using all of the data that can be used to compare students' grades across the semester.
    - Use filtering in the line graph to allow you to drill down to a specific student's progress throughout the semester.

Hint:

- When duplicating bar graphs, it pays to get the formatting and look of the chart where you want it for the first graph (e.g. for January), and to then copy that chart and re-select the data for the subsequent copies (keeping the style and format, but just changing the data).

Suggested Time: 15 minutes

Time’s Up! Let’s Review.



Instructor Demonstration

Scatter Plots and Trend Lines

Scatter plots are a powerful visualization tool!

- Visualizes the comparison between two variables
  - One variable is located on the x-axis
  - Another variable is plotted on the y-axis
  - Each data point represents a pair of measurements
- Measurements on a scatter plot are **independent**
- Scatter plots can help to identify positive or negative relationships between two variables
  - Adding a trend line to a scatterplot can visualize this relationship even easier!

< Demo Time >

Partner Activity: Video Game Sales

Suggested Time:
15 Minutes

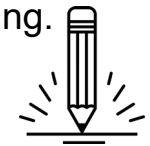
Partner Activity: Video Game Sales

In this activity, you will pair up with one of your classmates in order to create a series of scatter plots which will compare video game sales across regions.

Instructions:

- Create a scatter plot that compares the NA (North American) sales of games versus the global sales of games. Make sure to add in axis titles, a chart title, and a trend line.
- Create a scatter plot that compares the EU (European) sales of games versus the global sales of games. Make sure to add in axis titles, a chart title, and a trend line
- Create a scatter plot that compares the JP (Japanese) sales of games versus the global sales of games. Make sure to add in axis titles, a chart title, and a trend line.
- Create a scatter plot that compares other sales of games versus the global sales of games. Make sure to add in axis titles, a chart title, and a trend line.
- Go back into each of your charts and modify the axes so that they are consistent for each chart.
    - Without consistency of margins between your charts they could be considered misleading.

Suggested Time: 15 minutes



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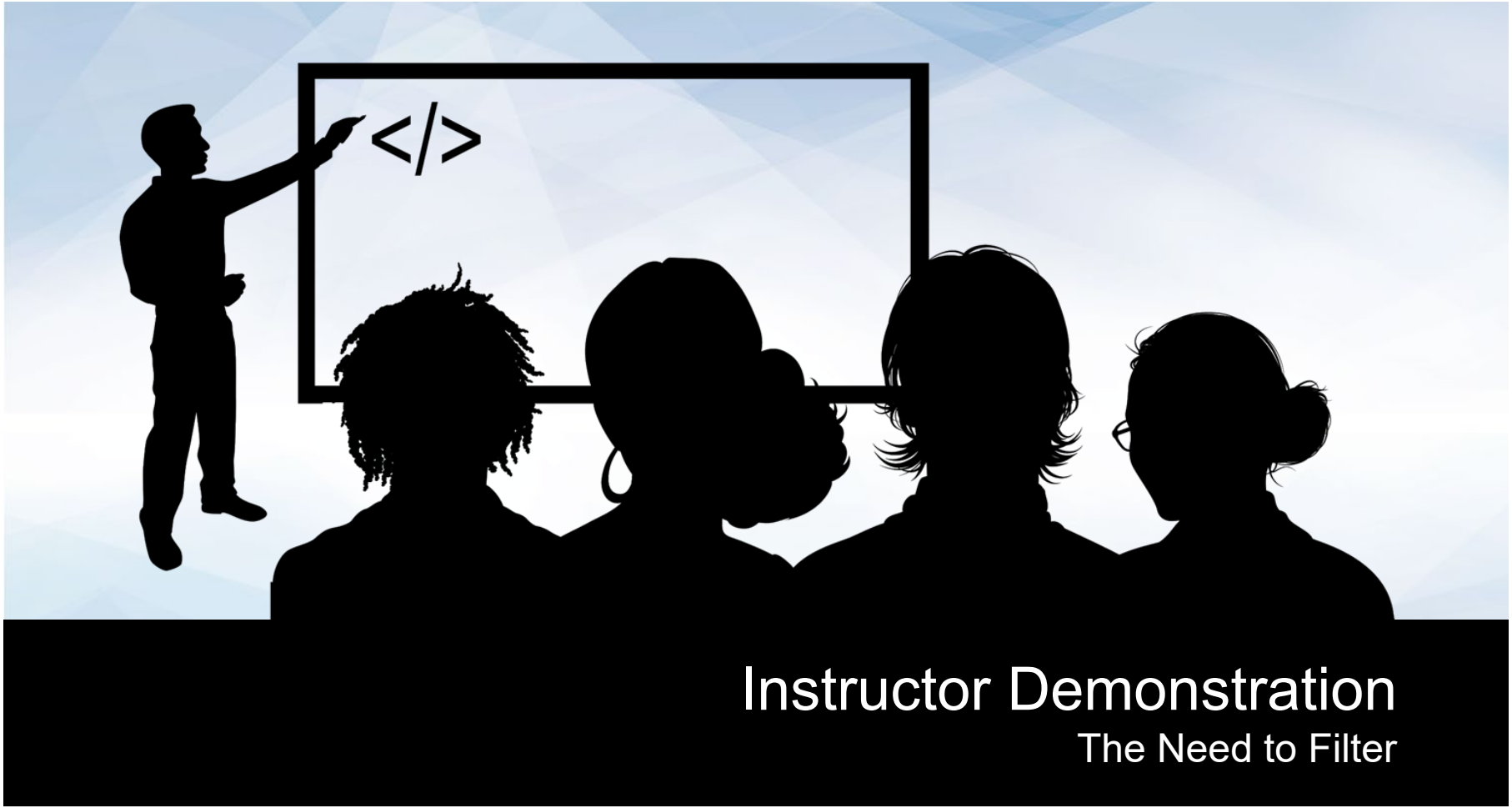

Instructor Demonstration

The Need to Filter

Did you notice anything about the data from the last activity?

Name	Platform	Year_of_Release	Genre	Publisher	Critic_Score	Critic_Count	User_Score	User_Count	Global_Sales	NA_Sales	EU_Sales	JP_Sales	Other_Sales	Developer	Rating
Wii Sports	Wii	2006	Sports	Nintendo	76	51	8	322	82.53	41.36	28.96	3.77	8.45	Nintendo	E
Super Mario Bros.	NES	1985	Platform	Nintendo					40.24	29.08	3.58	6.81	0.77		
Mario Kart Wii	Wii	2008	Racing	Nintendo	82	73	8.3	709	35.52	15.68	12.76	3.79	3.29	Nintendo	E
Wii Sports Resort	Wii	2009	Sports	Nintendo	80	73	8	192	32.77	15.61	10.93	3.28	2.95	Nintendo	E
Pokemon Red/Pokemon Blue	GB	1996	Role-Playing	Nintendo					31.37	11.27	8.89	10.22	1		

There was a **LOT** of unused data

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- Most data sets contain multiple variables and factors
- It can be difficult to determine what data is useful when exploring a data set
- It can be hard to locate data of interest
- We need to filter our data

< Demo Time >

Partner Activity: Video Game Sales

Suggested Time:
15 Minutes

Partner Activity: Video Game Sales

Instructions:

- Create a scatter plot which graphs the critical response (Critic Score) of games published by Nintendo as compared to their global sales.
- Create a scatter plot which graphs the critical response of games published by Electronic Arts as compared to their global sales.
    - Only chart those games that have been reviewed. Games without any reviews should be ignored.
    - Add a chart title, axis titles, and a trend line to the graph that is created.
- Select all of the data on the worksheet and create a line chart which can be filtered by publisher, whose rows are set by a game's year of release, and whose values are the sum of global sales for that year.
    - Create a 2D line graph that charts this data.

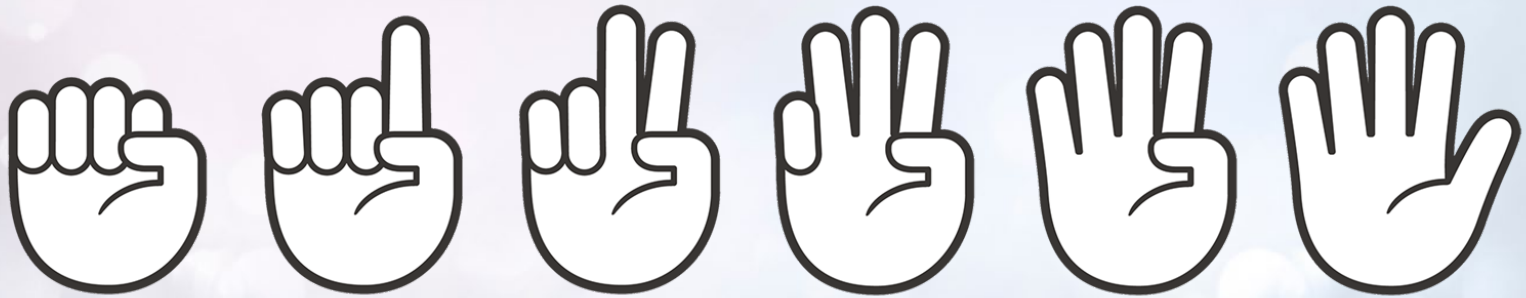
Notes:

- Only chart those games that have been reviewed. Games without any reviews should be ignored.
- Add a chart title, axis titles, and a trend line to the graph that is created.

Suggested Time: 15 minutes

Time’s Up! Let’s Review.

Take a Break!



FIST TO FIVE:

Who feels comfortable
with plotting figures in Excel?