In Class Activity – A primitive model in Excel

In this activity we will continue to work with the data we cleansed in the prior activity.

The survey data is real. It was collected over three semesters here at Temple. The survey was constructed to investigate student attitudes towards "flipped classroom" instruction of a STEM topic, post COVID.

Ultimately, we want to use appropriate models and techniques to determine answers to the following questions:

A. Is student receptiveness to flipped classroom instruction increasing or decreasing?

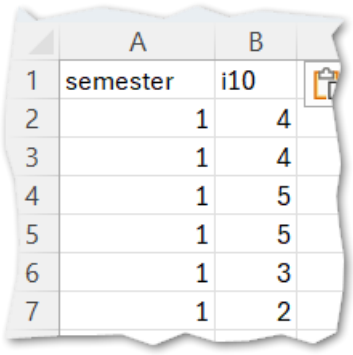
B. What characteristics best describe the students who do not want flipped classroom instruction?

C. What groupings of student responses naturally exist in the data?

In this activity we are focusing on question A. To answer this question, we will use excel to create a bar chart with a trend line. (The trendline is our rough approximation of a linear regression line. Sadly, our data does not lend itself to a proper regression analysis.)

Instructions

1. Continue using the flipped classroom survey data that you cleaned last class.
2. Next, create a new sheet in your workbook containing the two columns you are interested in: semester and i10.

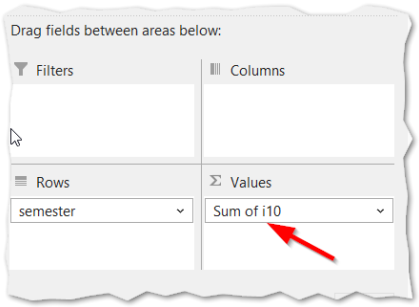


	A	B
1	semester	i10
2	1	4
3	1	4
4	1	5
5	1	5
6	1	3
7	1	2

3. Select those columns and use the "Recommend Pivot Tables" feature under the "Insert" option on the Ribbon Bar.

Row Labels	Sum of i10
1	114
2	138
3	145
Grand Total	397

4. Change the “Sum” to an “Average”. Also, format the numbers to present with 2 decimal places.



Row Labels	Average of i10
1	3.68
2	3.83
3	4.03
Grand Total	3.85

5. Now, use “Recommend Pivot Charts” feature to create a bar chart.
    a Your chart should have a Y axis that starts a zero.
    b Your chart should have a trend line - that’s the whole point of what we are doing here.
    c Your chart should label the data points.
    d Your chart should have “junk” elements removed.
    e If your numbers are different, it probably means you didn’t clean the data fully last class.

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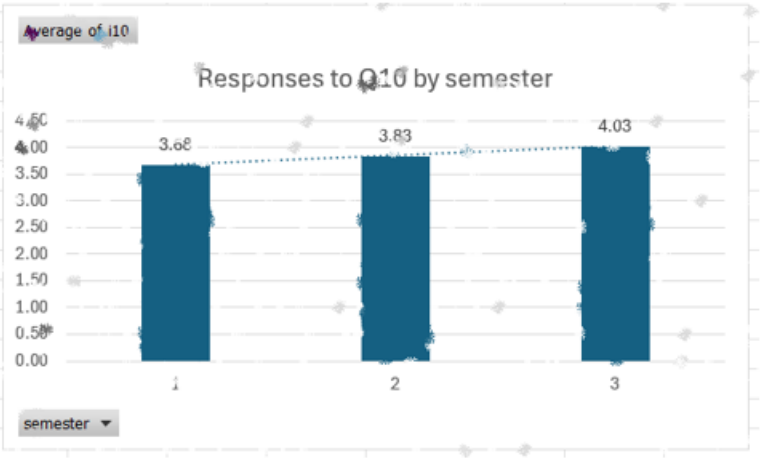
6. Here's a rough sample of what the finished product should look like:



7. DISCUSS: What is the ML model that we are illustrating here? Is it "Supervised" or "Unsupervised"… What would this model predict for semester 4? Would you be confident in that prediction?

8. To document your participation in this activity, your instructor will ask you to upload your spreadsheet to a corresponding activity on canvas.

   As stated in the syllabus: Deliverables from in-class activities will be graded as success (100), some problems (80), unacceptable (50) or failure (0) .

   The late penalty, also described in the syllabus, applies to this activity.