

IE 5390 – Assignment - 05

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Lab 09

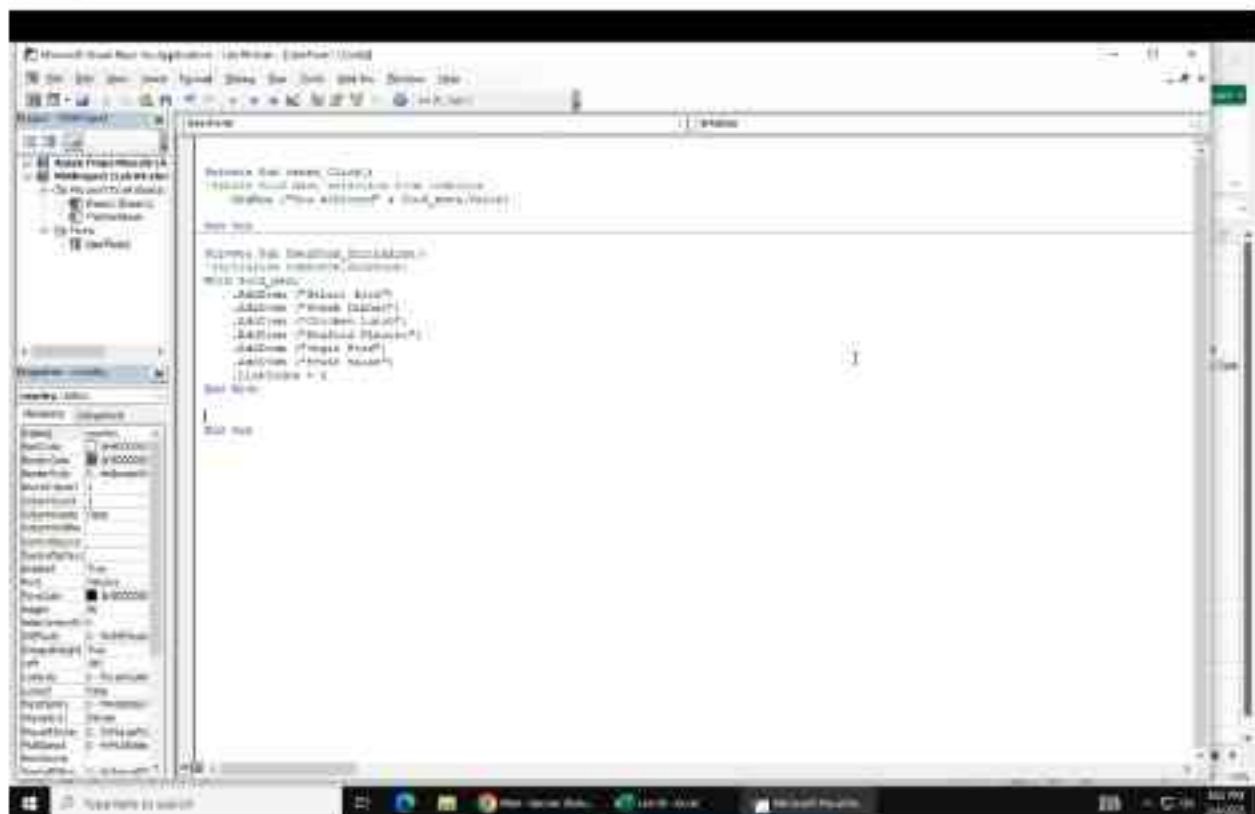
1 . Using Sheet1

A. Create VBA controls

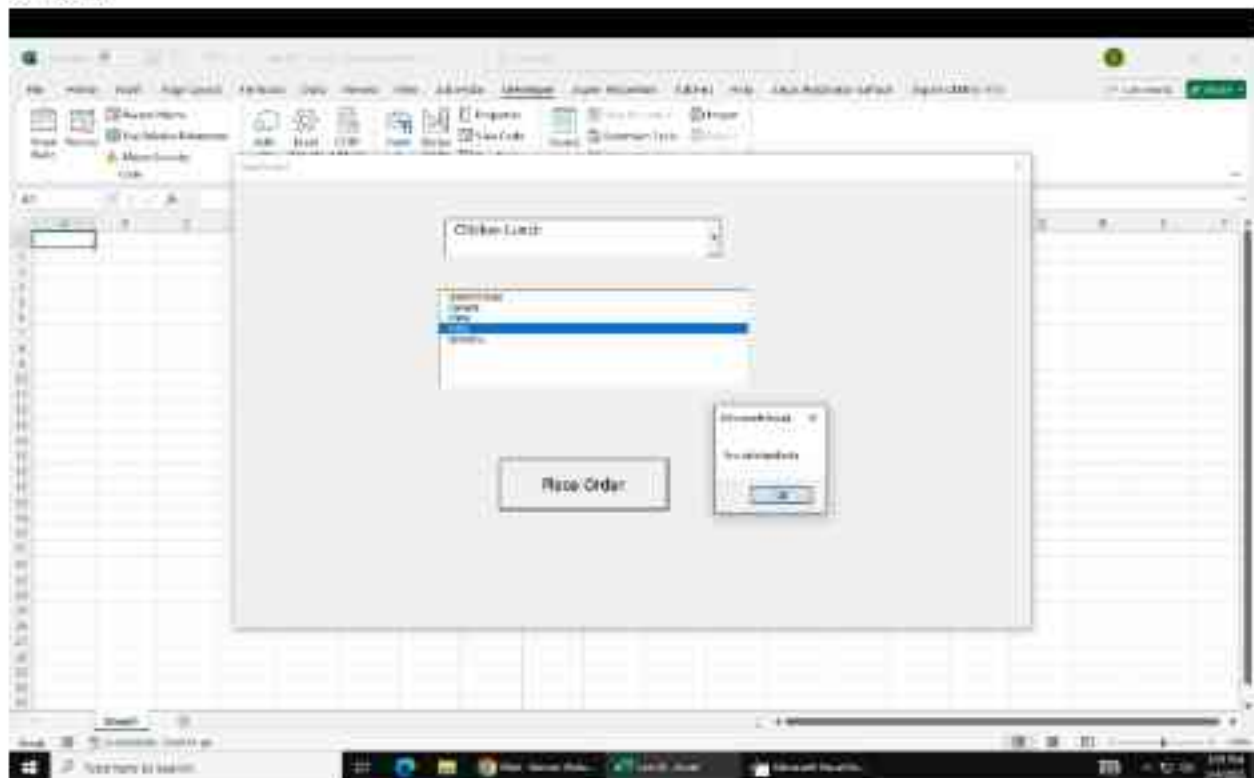
i. Controls of User form. Create these specific controls: combobox, listbox, frame, image, multipage user form

Combobox

Code:

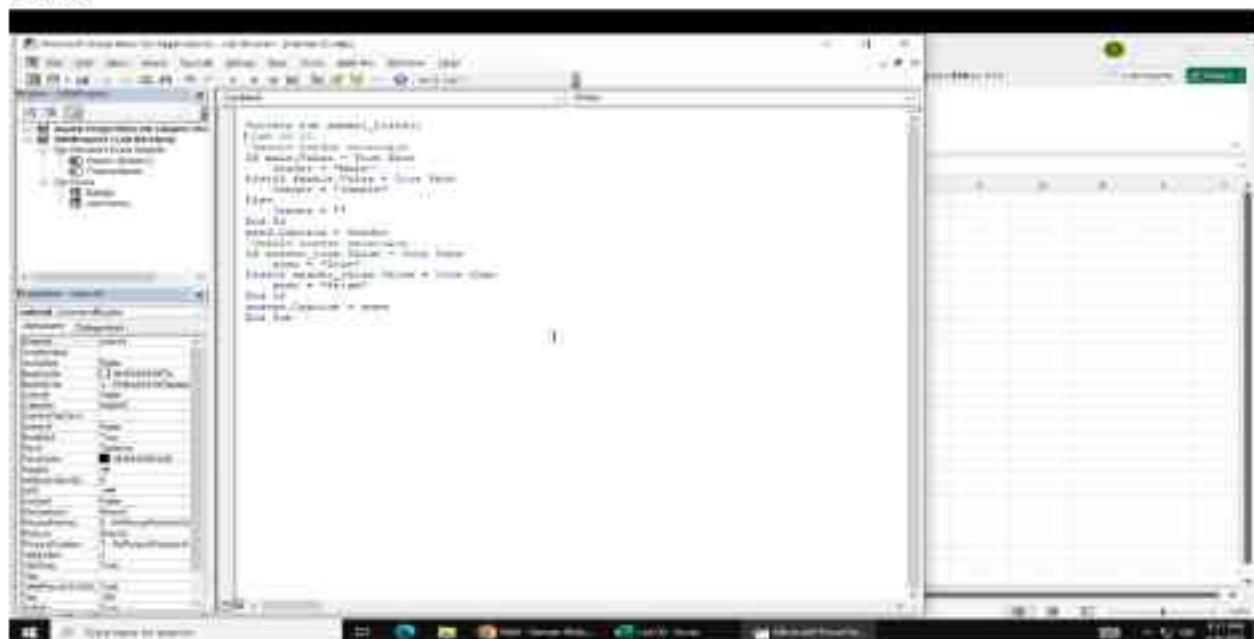


Output:

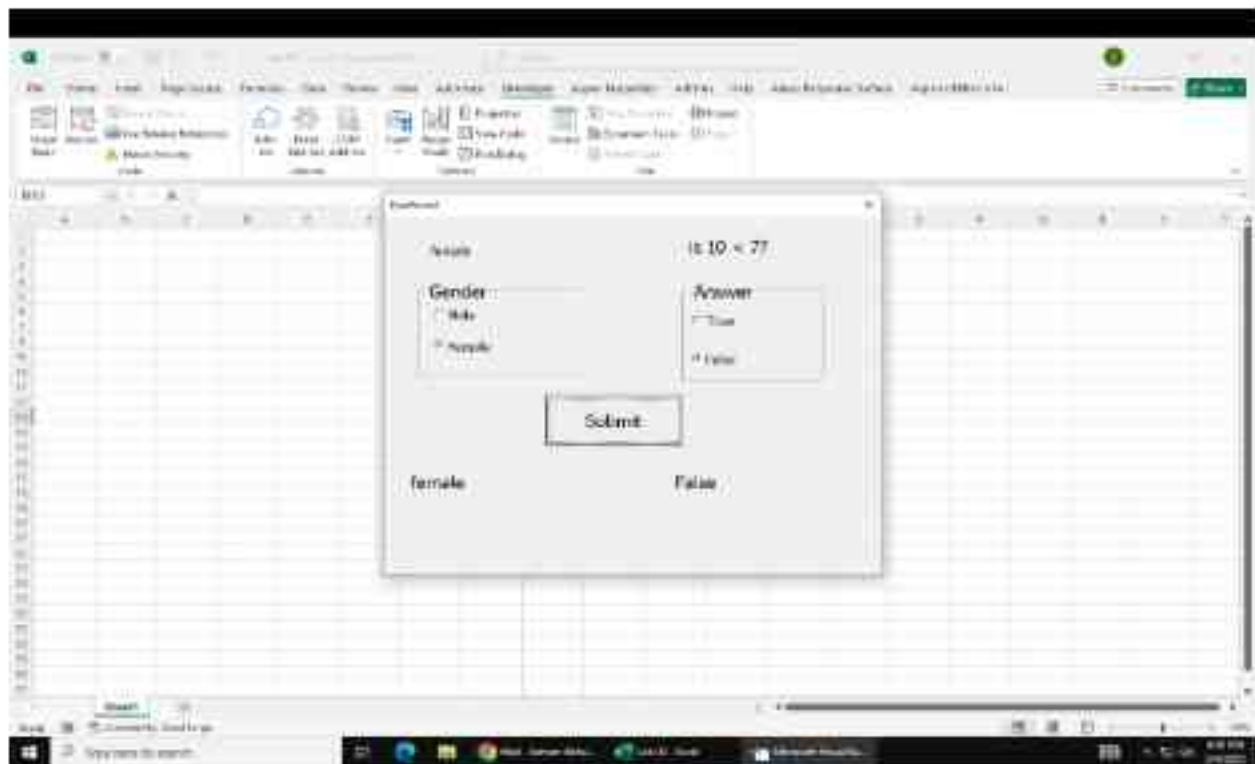


Frame

Code:



Output:

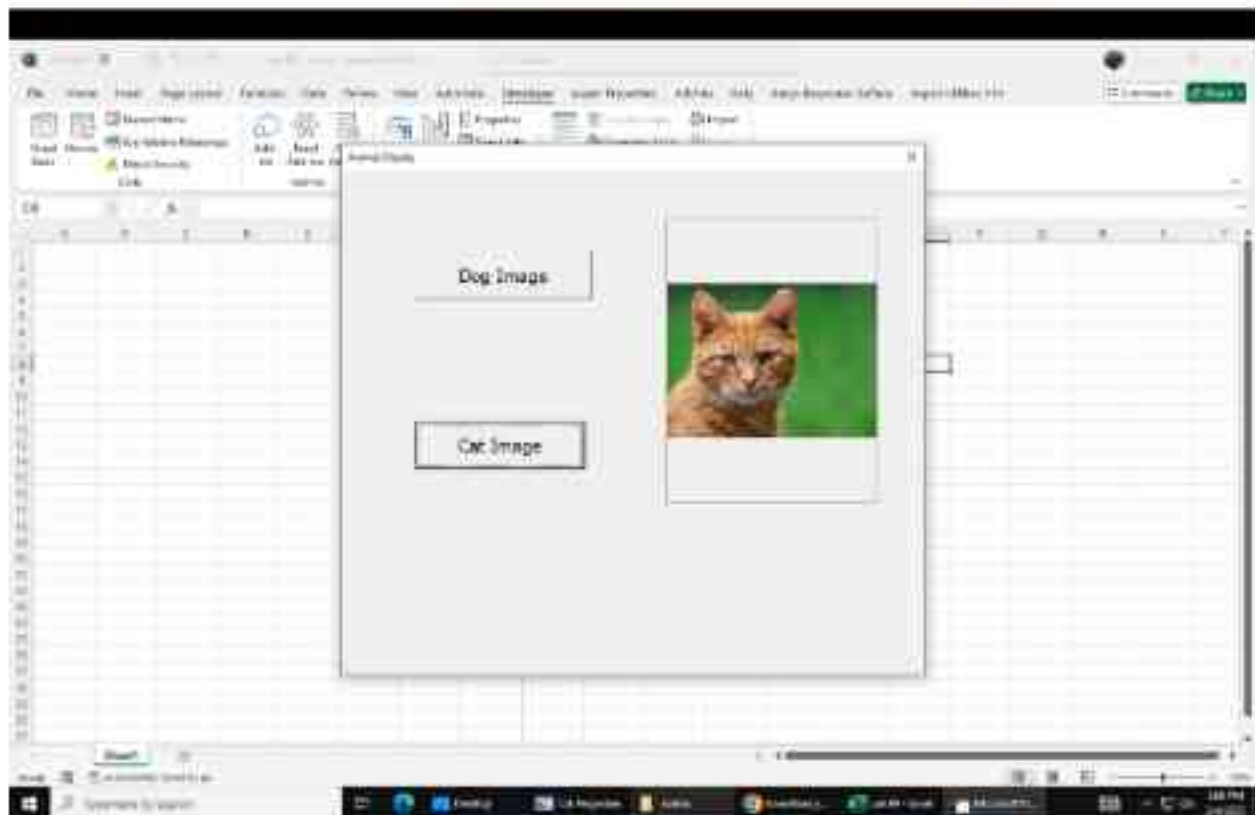
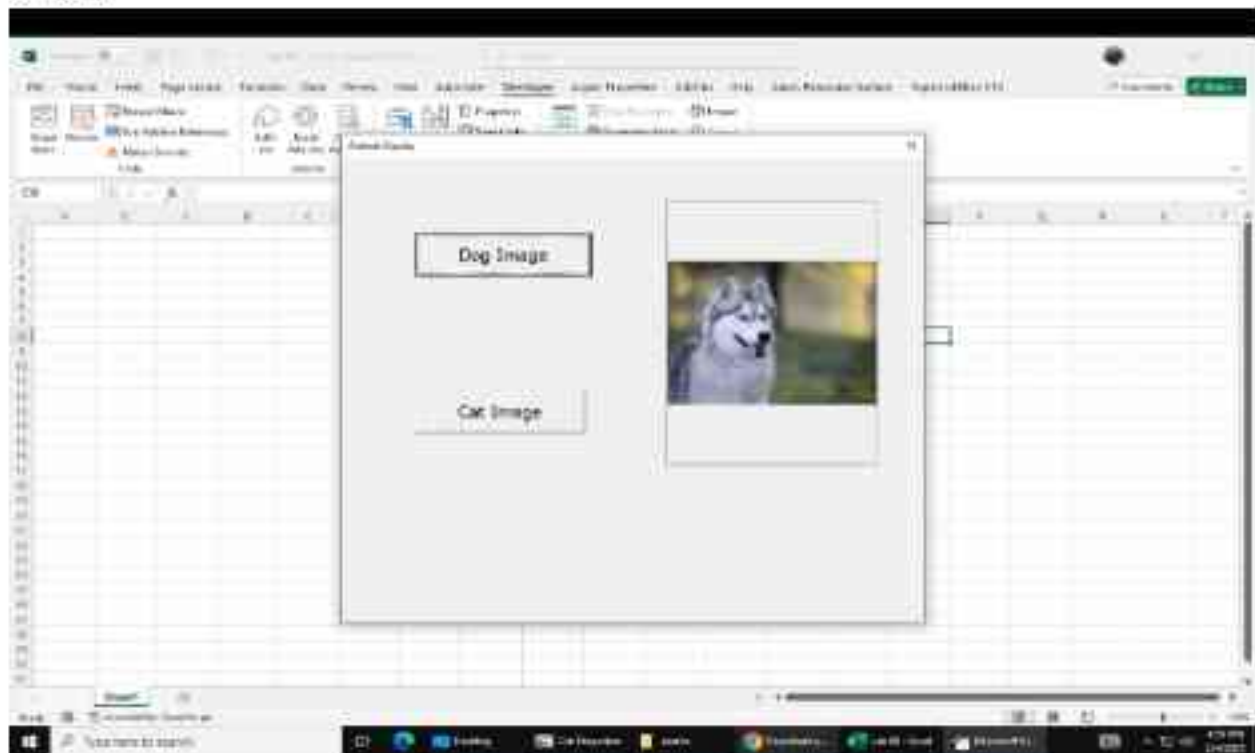


Image

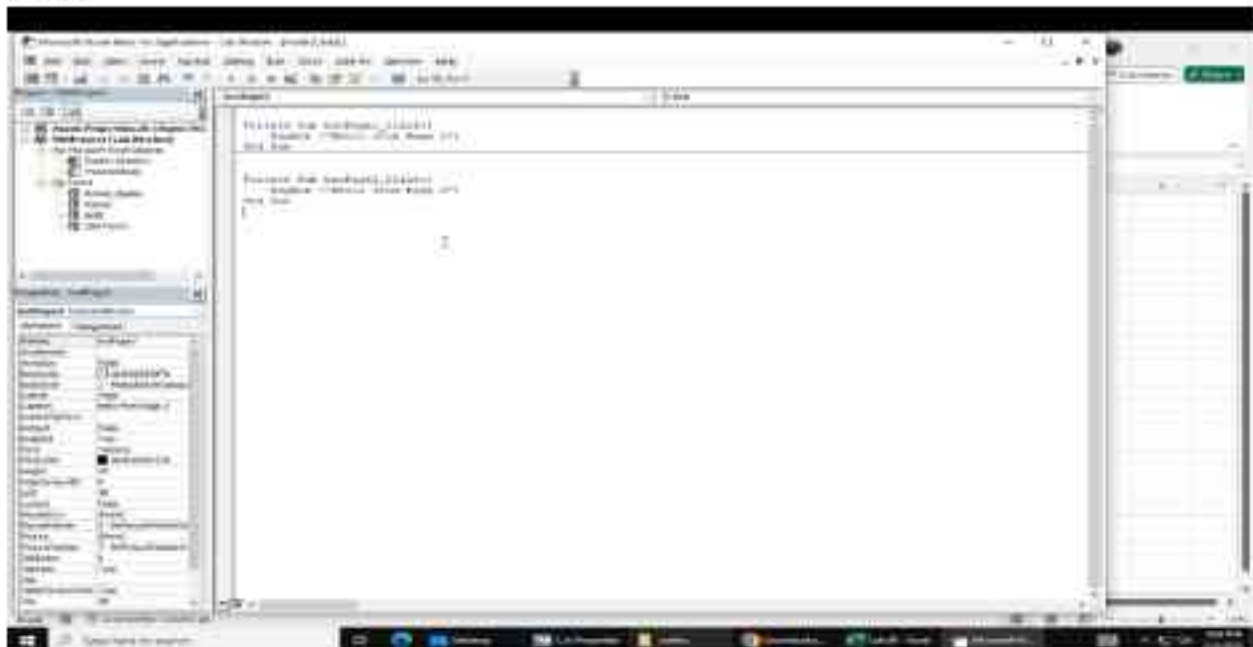
Code:



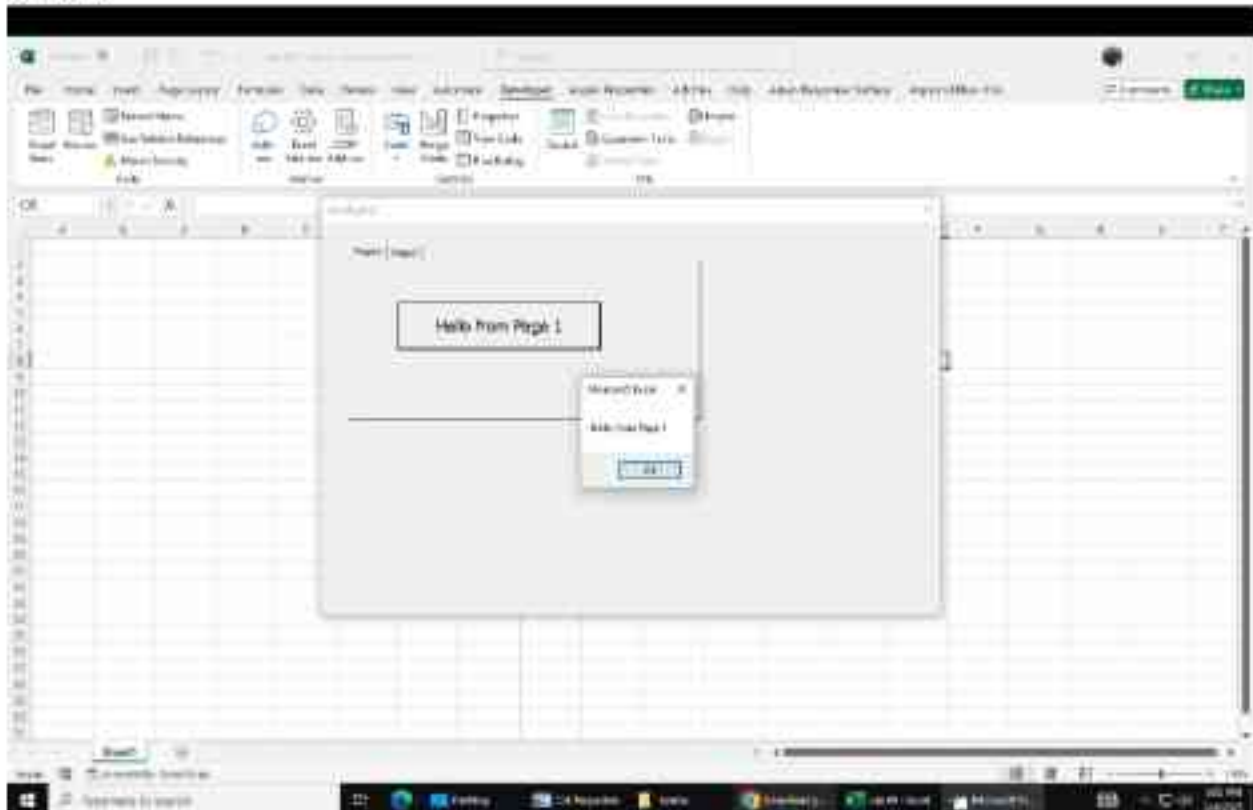
Output:

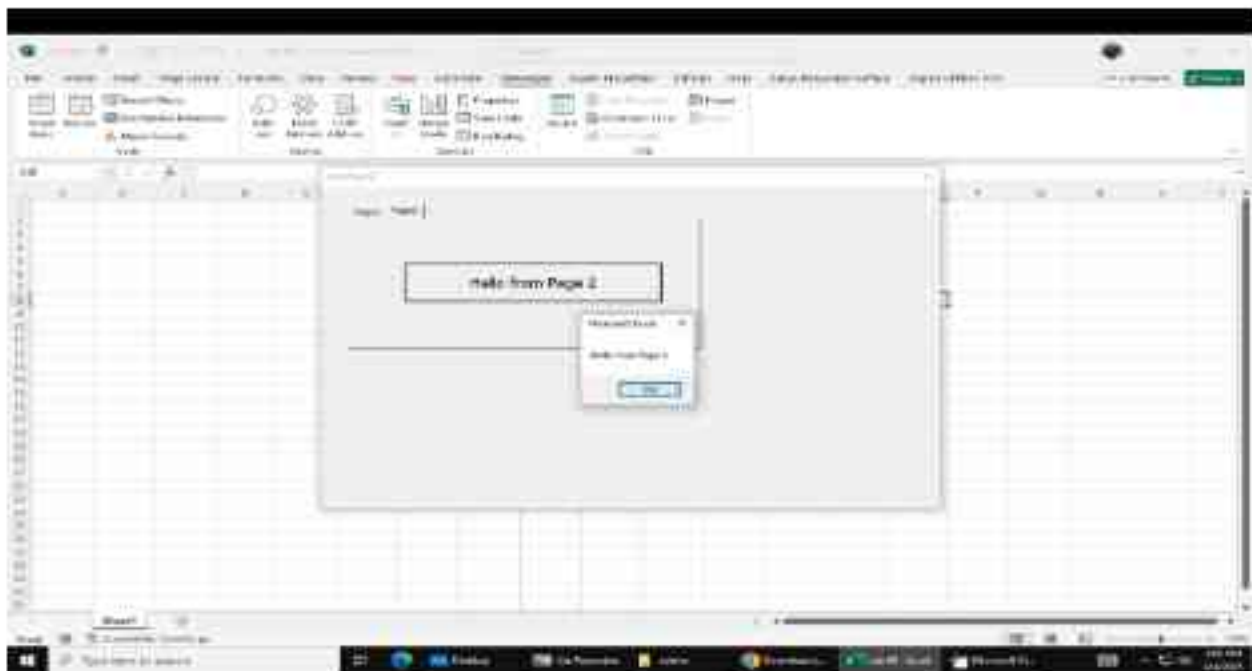


Multipage
Code:



Output:

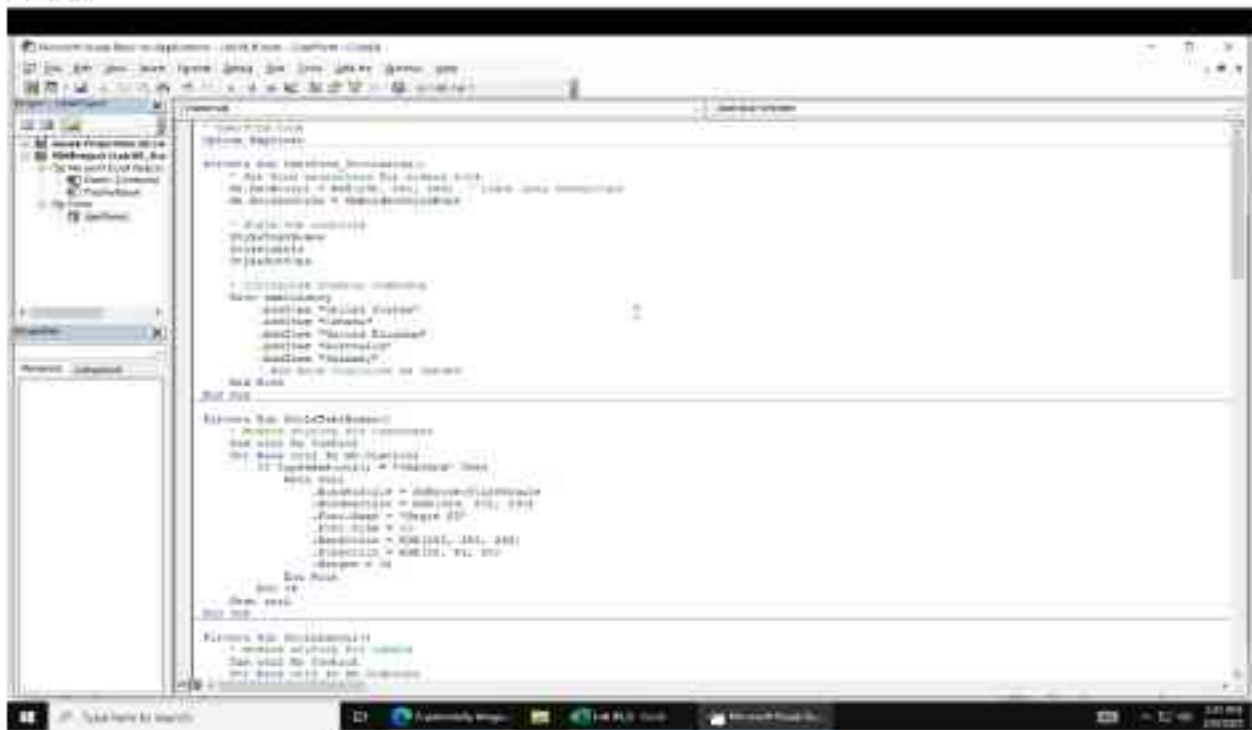




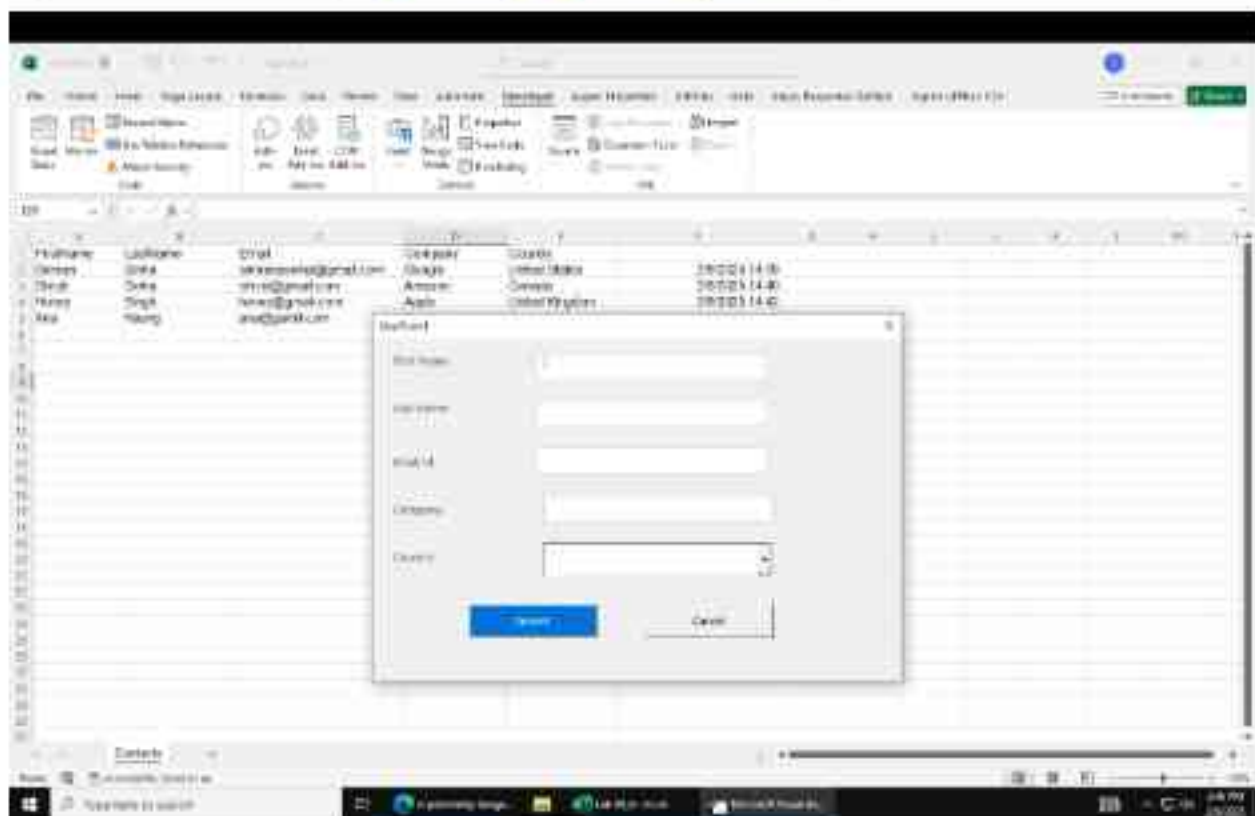
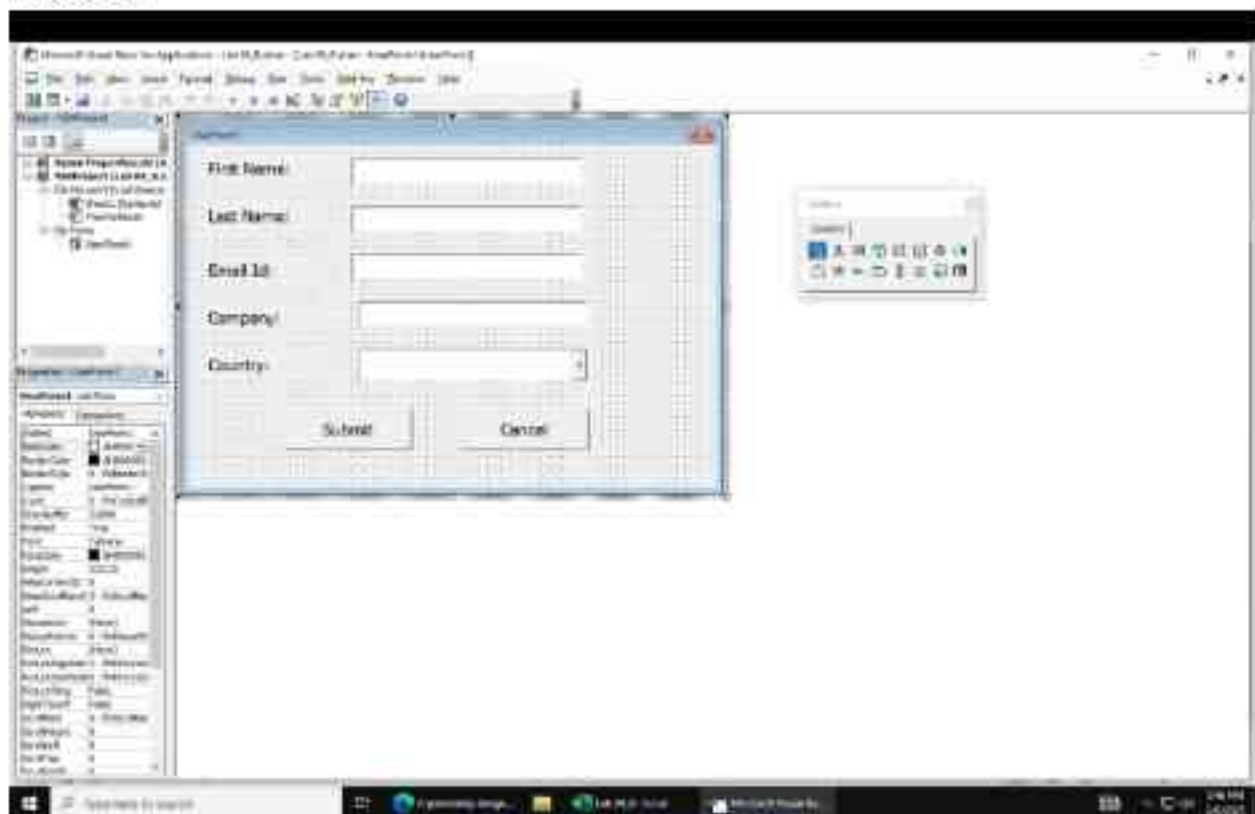
2. Using Sheet2

A. Create a modern GUI using UserForm and VBA. The form takes contact information (First Name, Last Name, E-mail Address, Company Name, and Country) and adds them to the sheet. By modern, we mean do the GUI formatting to get modern look & feel

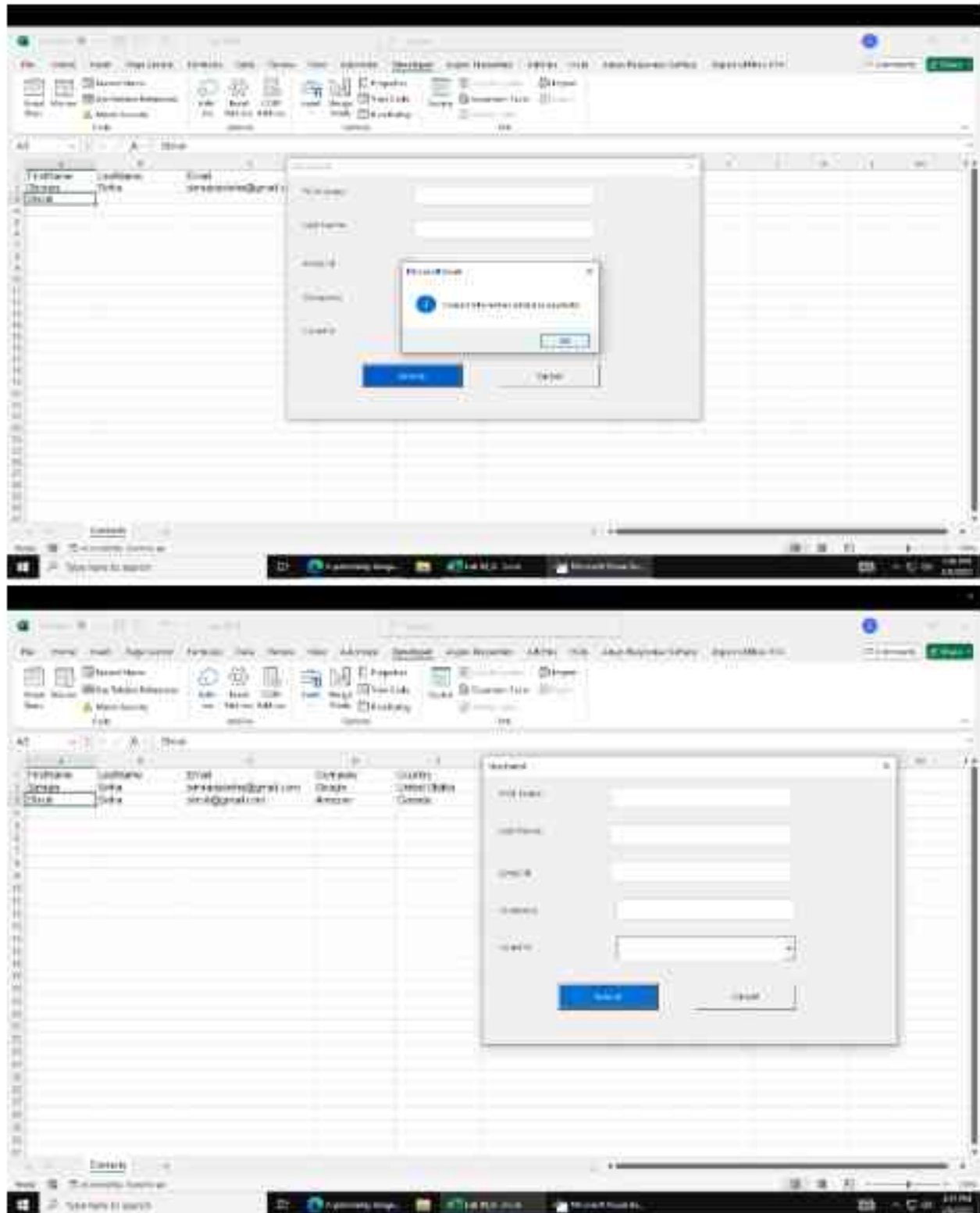
Code:

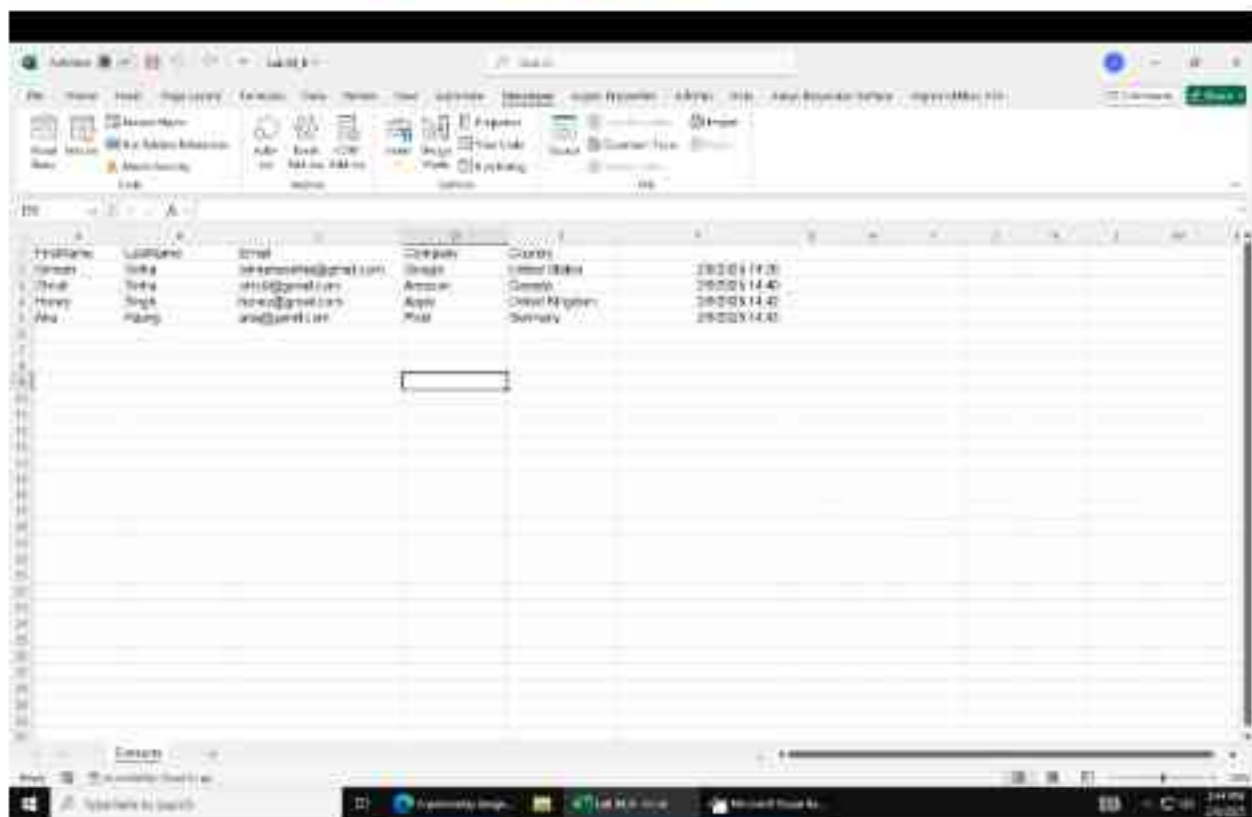
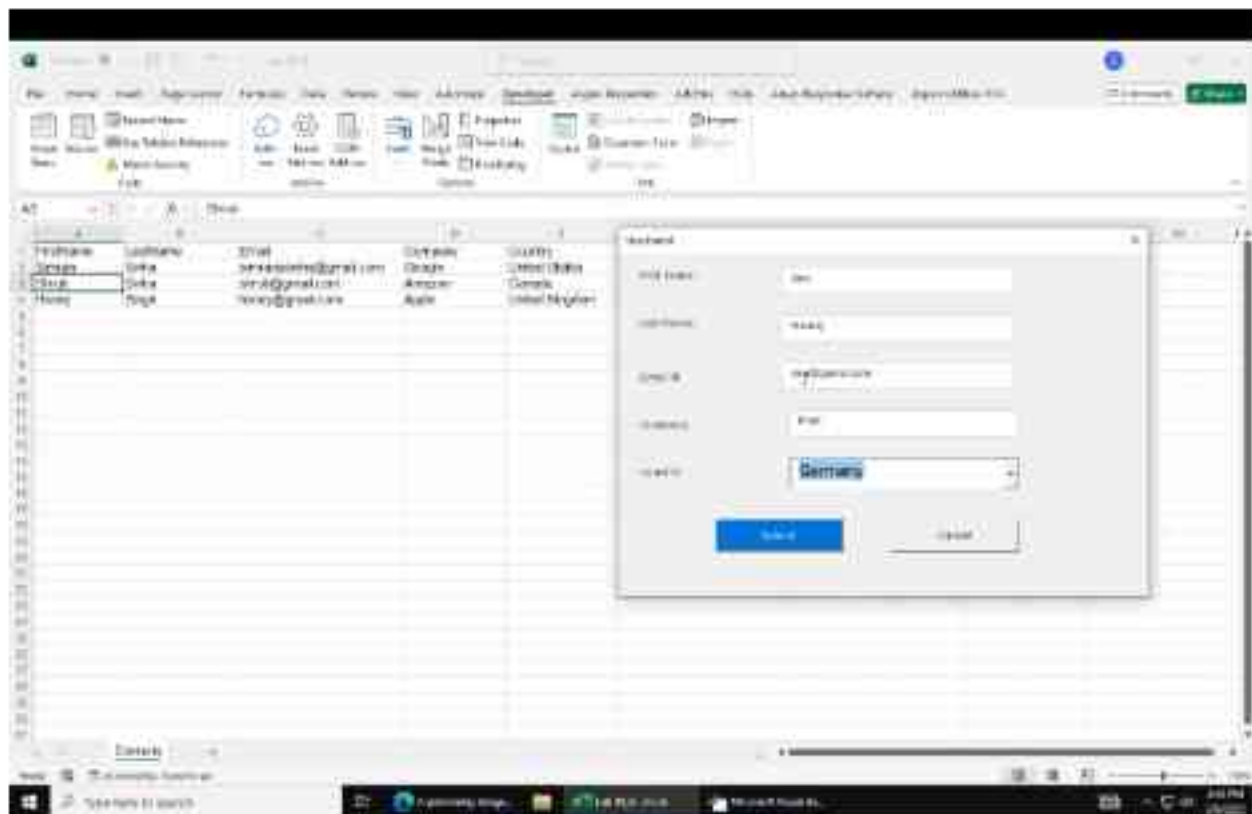


Interface:



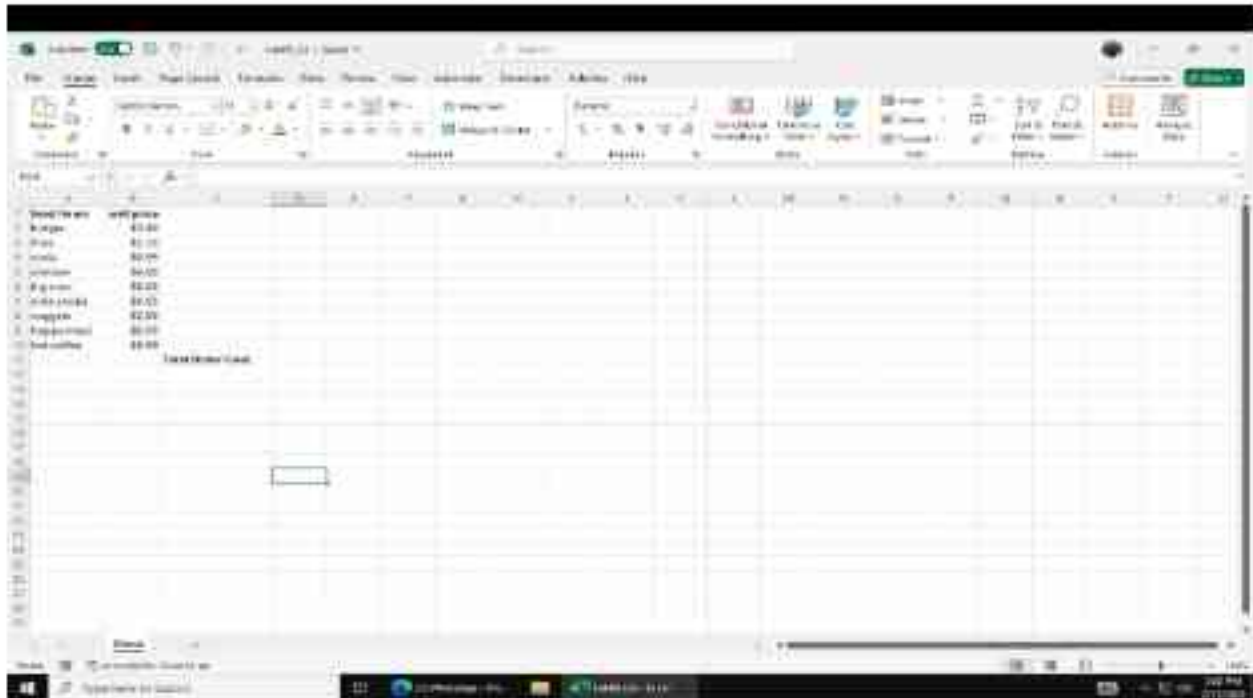
Output:



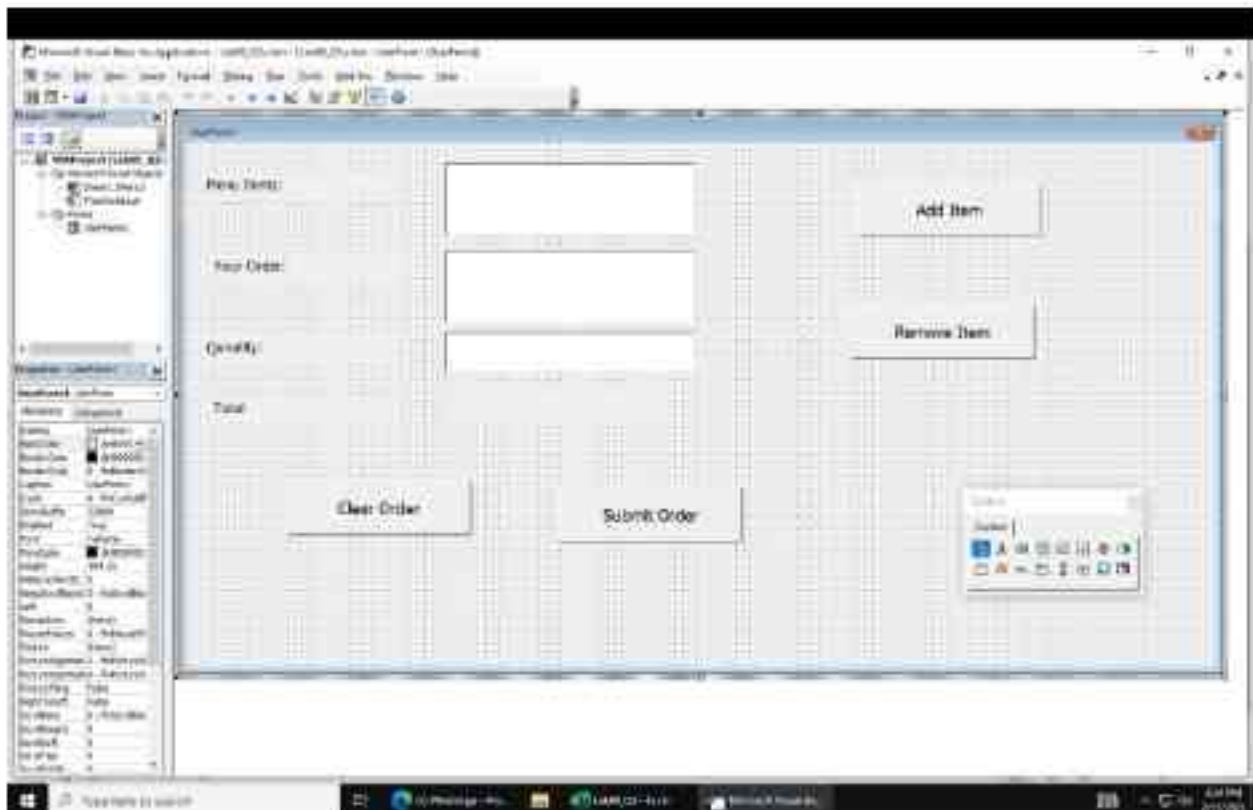


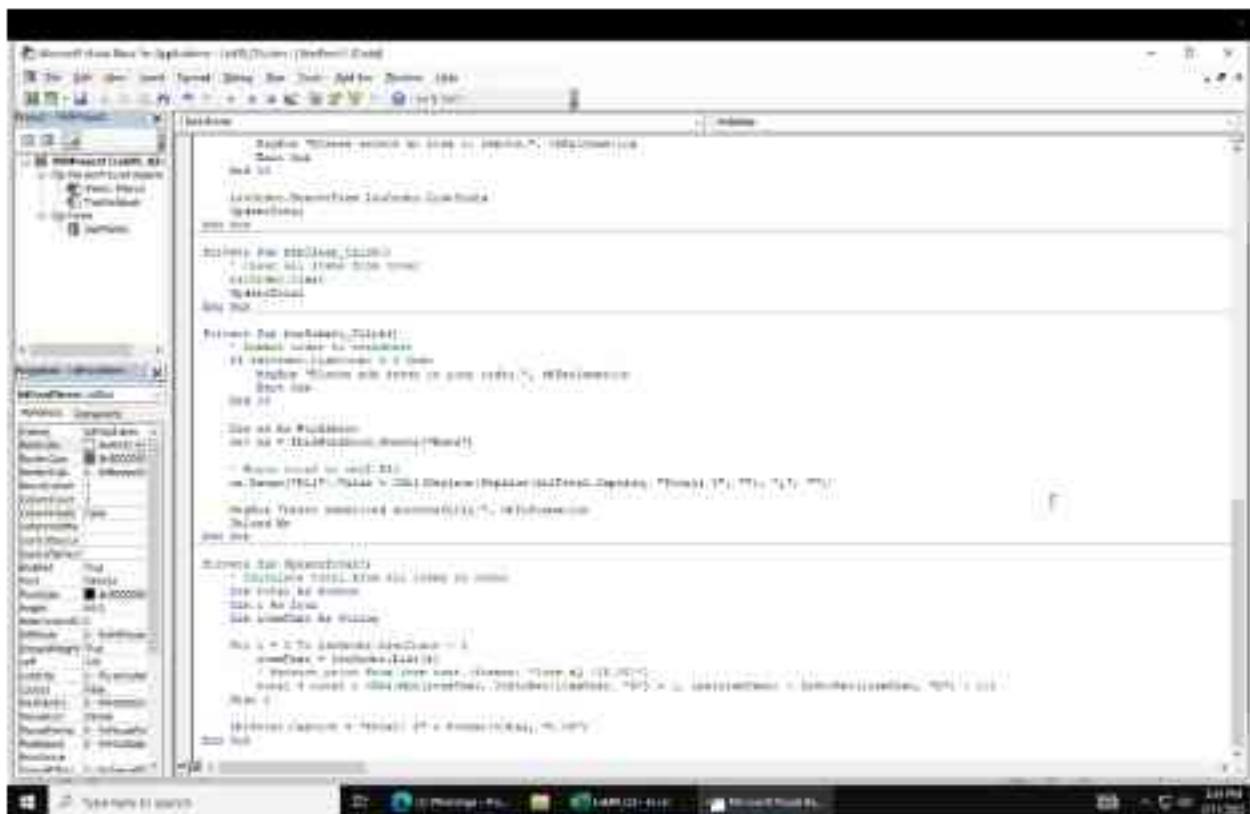
3. Redo Problem 9 in Lab 5 using User Form

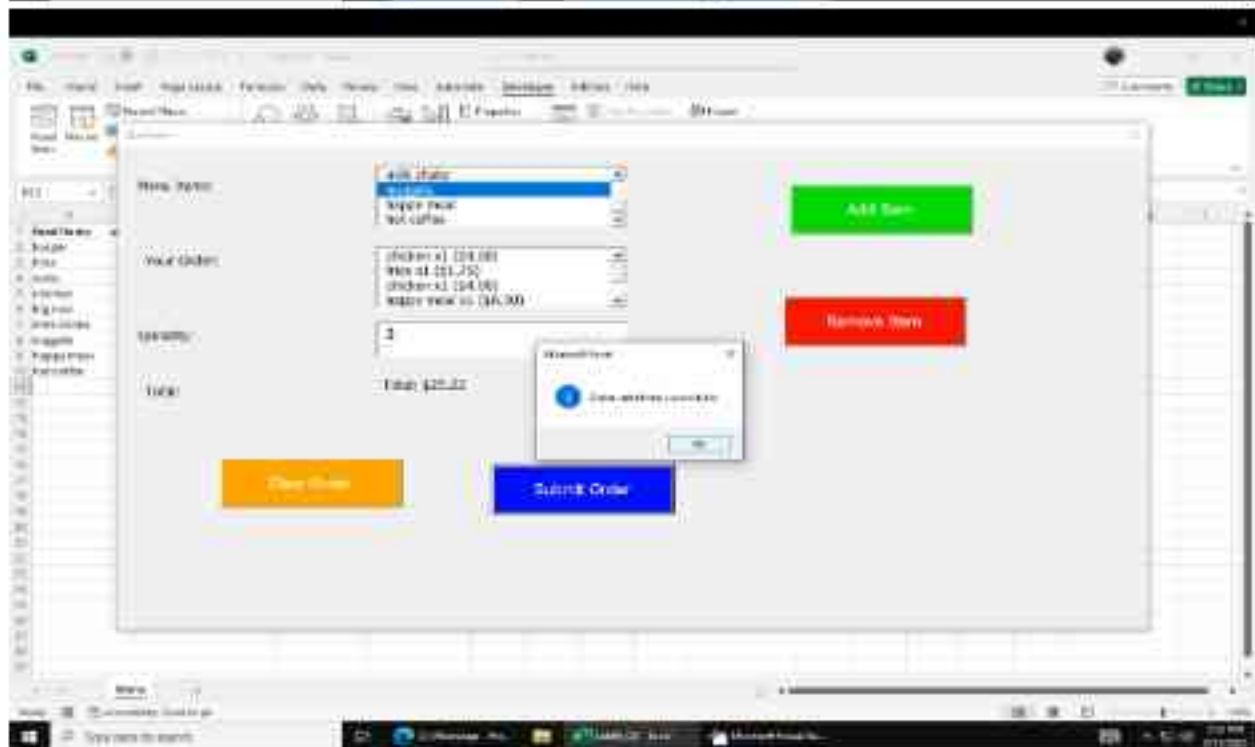
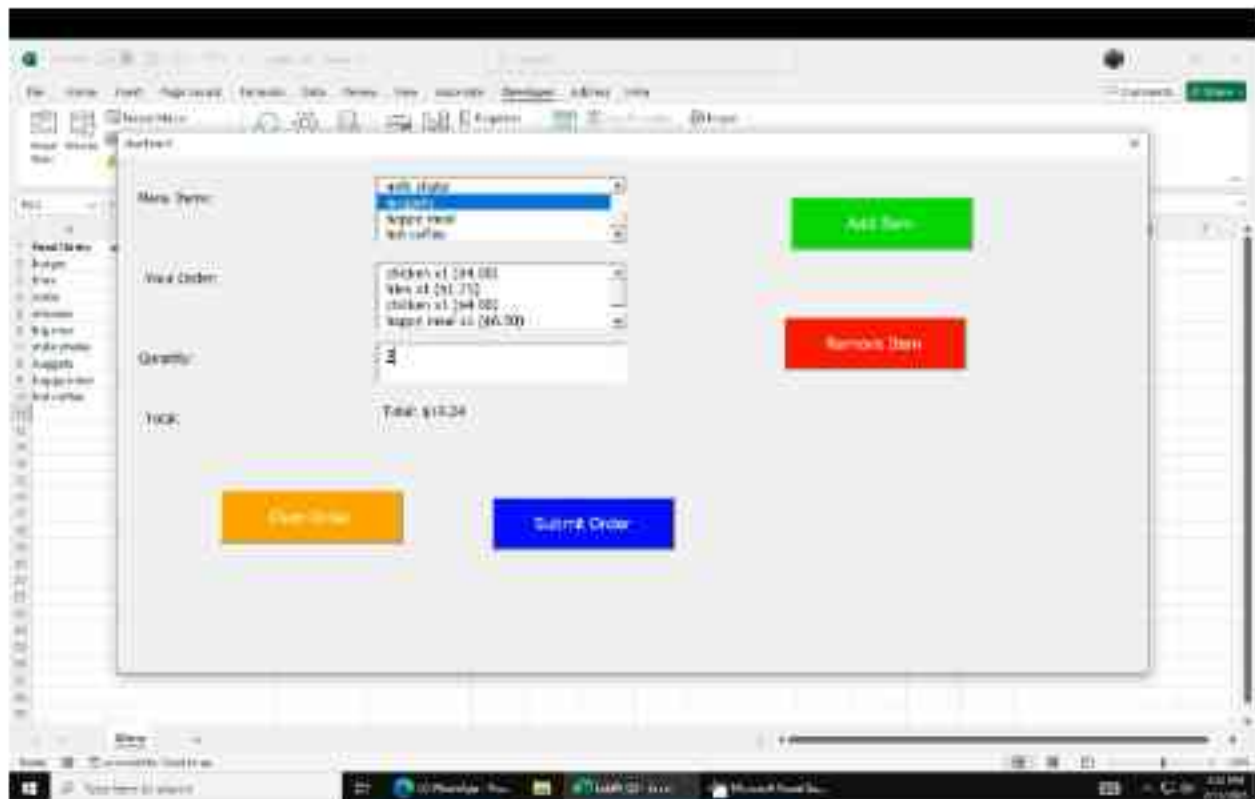
A. Copy Menu Sheet from Lab 5 Excel file to this Lab 9 Excel file.

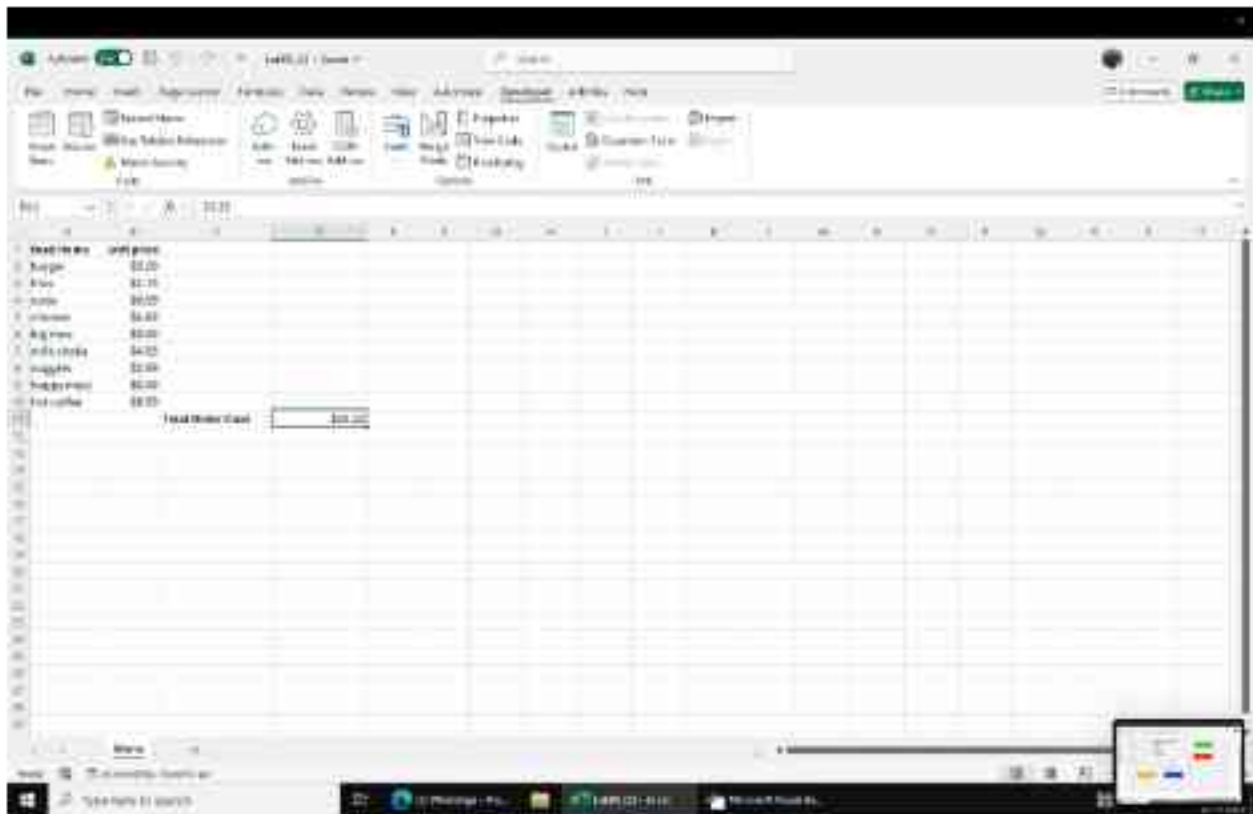


B. Create a user form that allows user to enter their order, use the input to populate Menu cells with order items and calculate the Total order cost







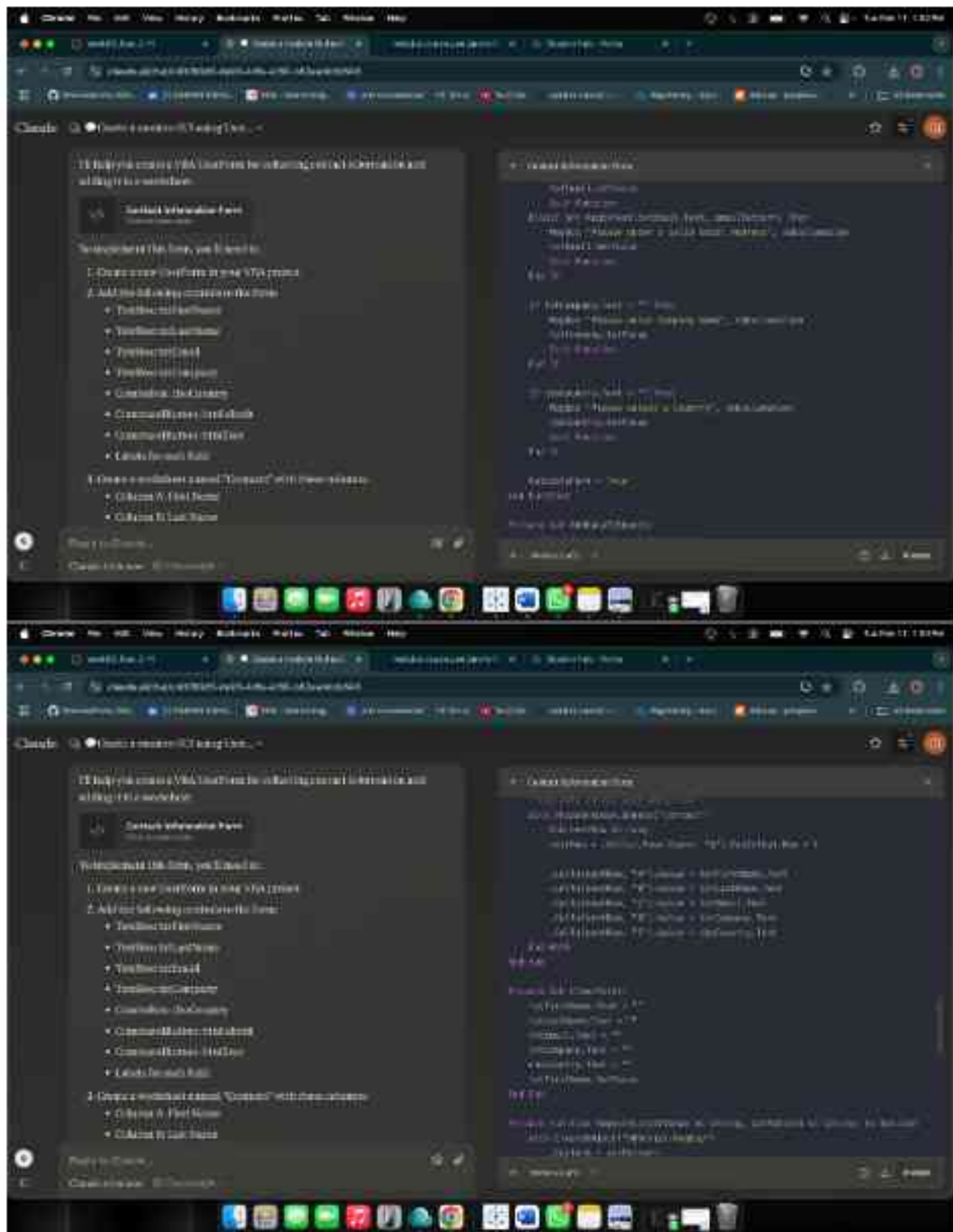


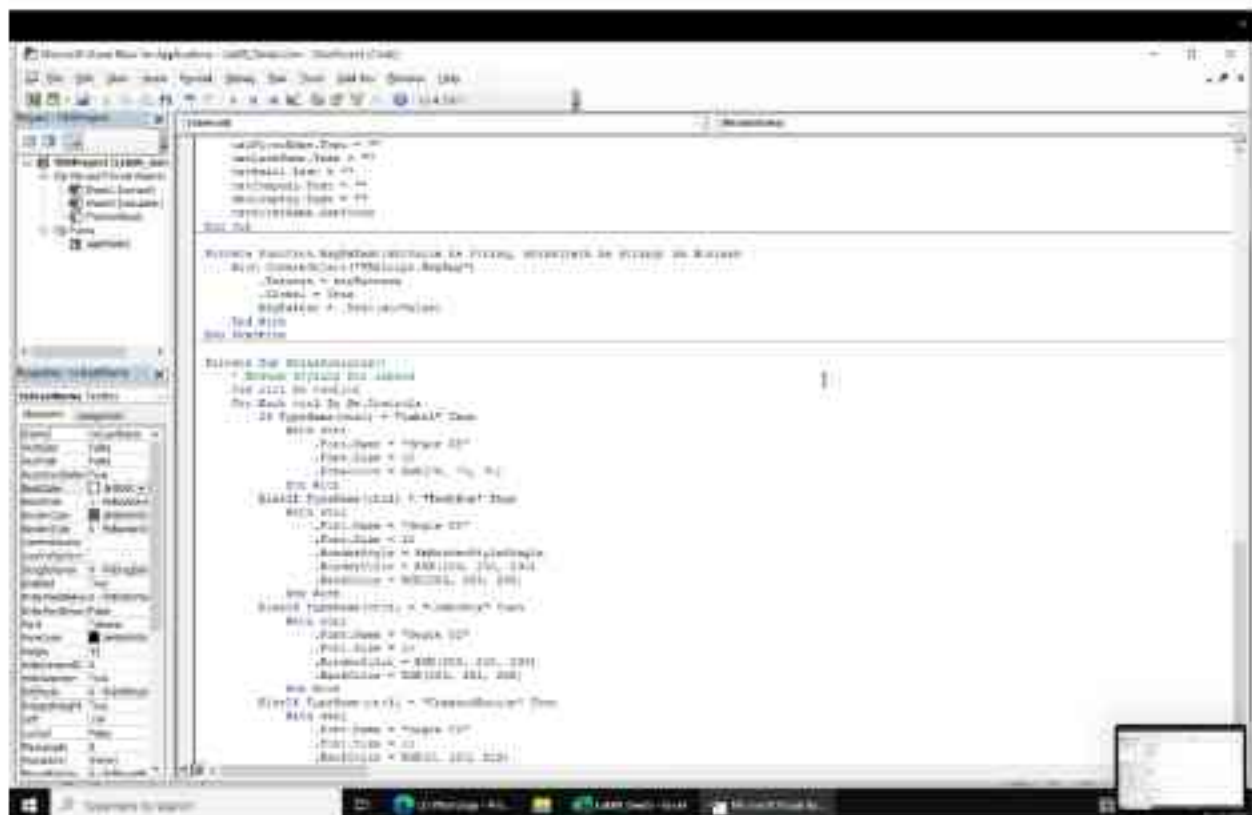
4. Gen AI and Prompt Engineering: ask your AI bot to do Problem 2 above to create a modern look and feel for the form. Compare with your manual approach. Who did a better job: you or the AI bot. write detailed explanation

I am using Claude.AI

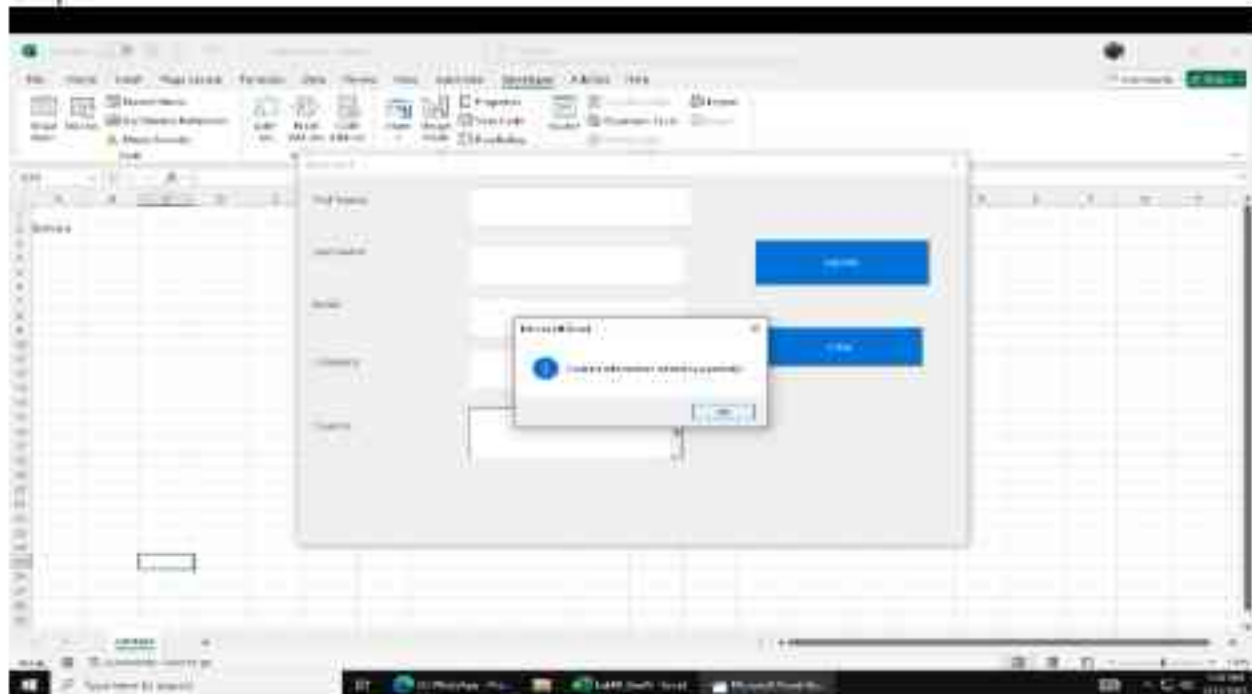
Prompt:







Output:



Which approach was better? Gen-AI's response or my manual approach?

- I feel like both has it's own pros and cons.

In Gen-AI:

The userform panel modification (UI) was not possible. Even if the bot gave answers/code to implement and modify the visuals of the controls, I had to manually create those controls, name them and align them to look presentable. However, I can get a clean workable code immediately, and hence this saves time.

It is also difficult to give the Gen-AI bot instructions. You can see that I asked it to give me a textbox for address.

In Manual approach:

The only downside is to write the working code manually. And as a result, it takes time to make the UI visually appealing, to give a modern look.

5. Gen AI and Prompt Engineering: Develop a manufacturing cost calculator

I am using Claude.AI

Prompt:



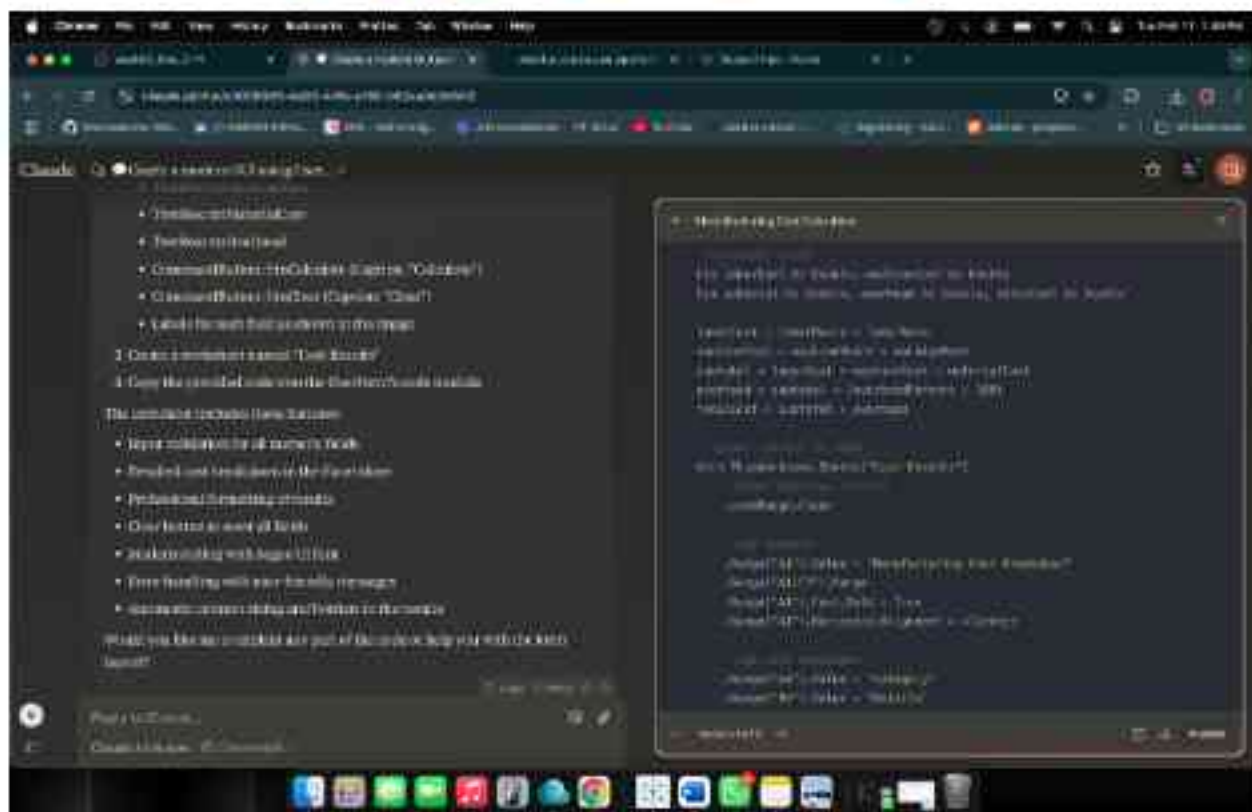
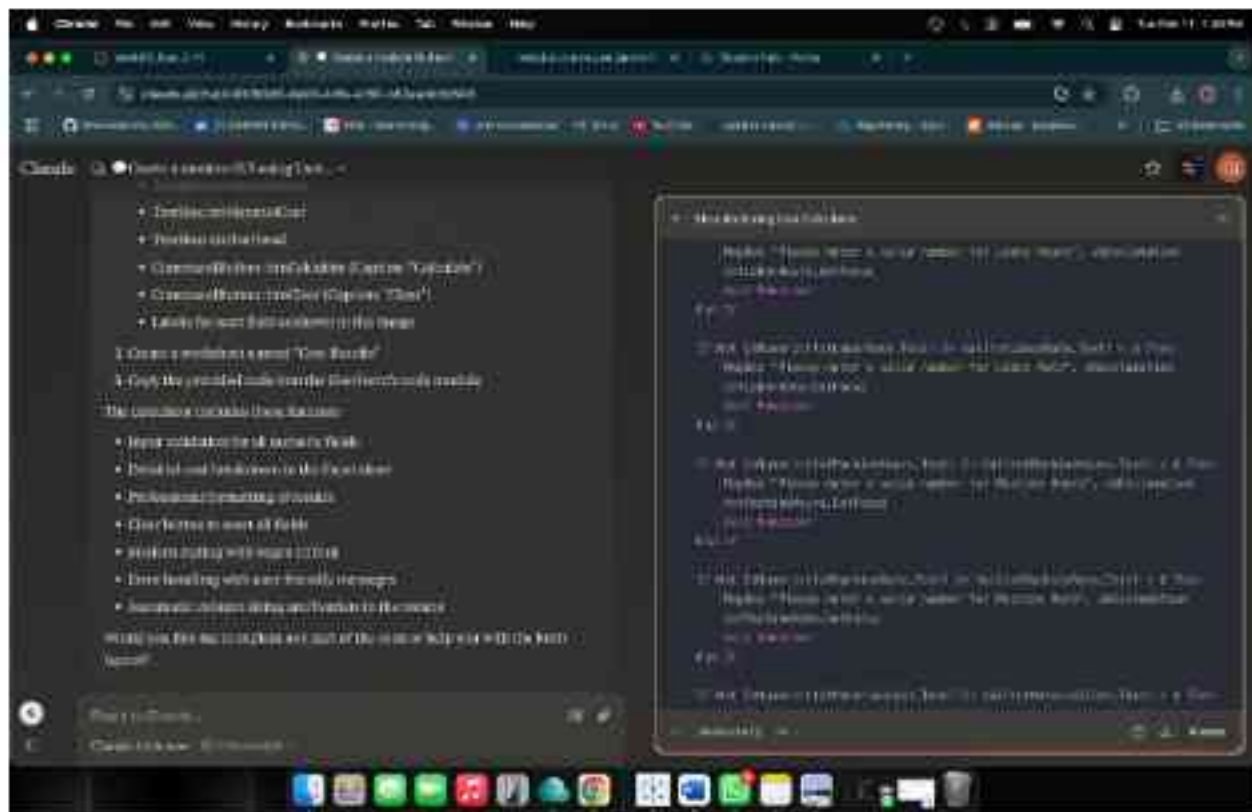
The screenshot shows a user form for a manufacturing cost calculator. The form has the following fields:

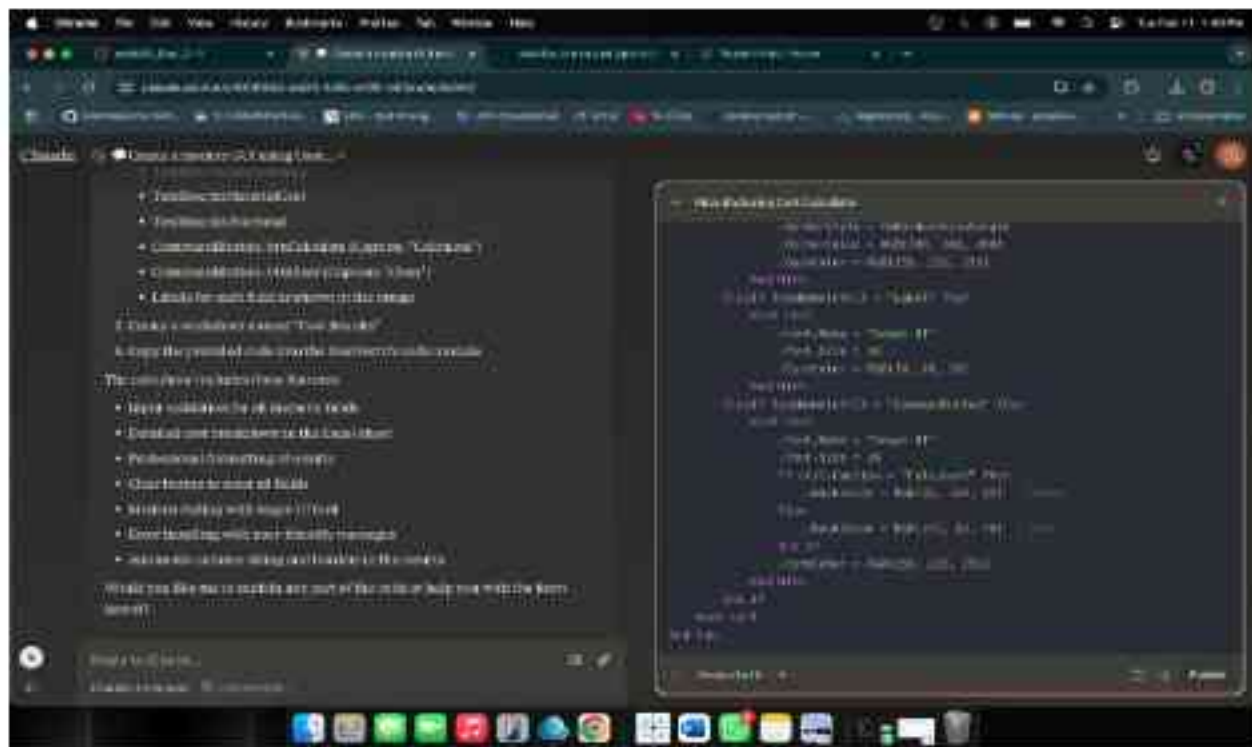
- Labor Hours:
- Rate (\$/hr):
- Machine Hours:
- Rate (\$/hr):
- Material Cost (\$):
- Overhead (%):

Below the fields are two buttons: "Calculate" (green) and "Clear" (red).

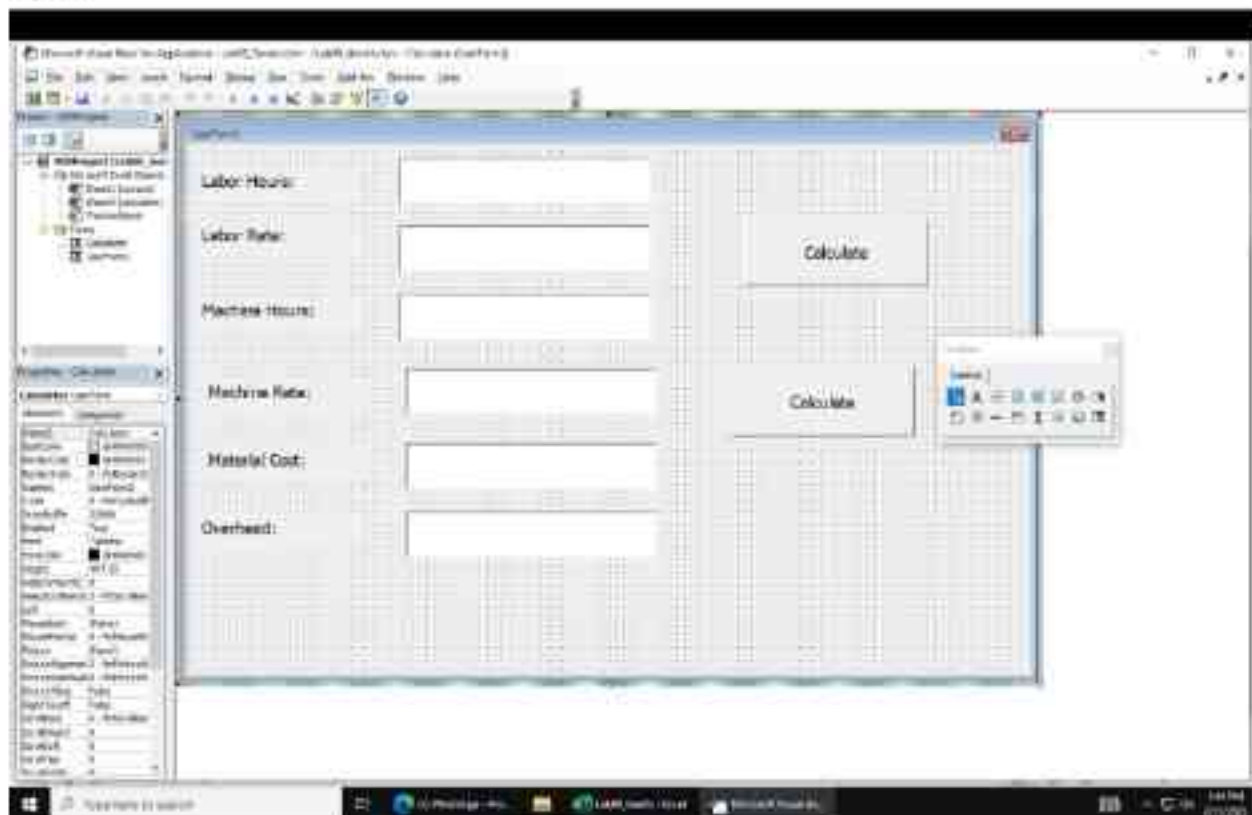
The prompt used to generate this form is as follows:

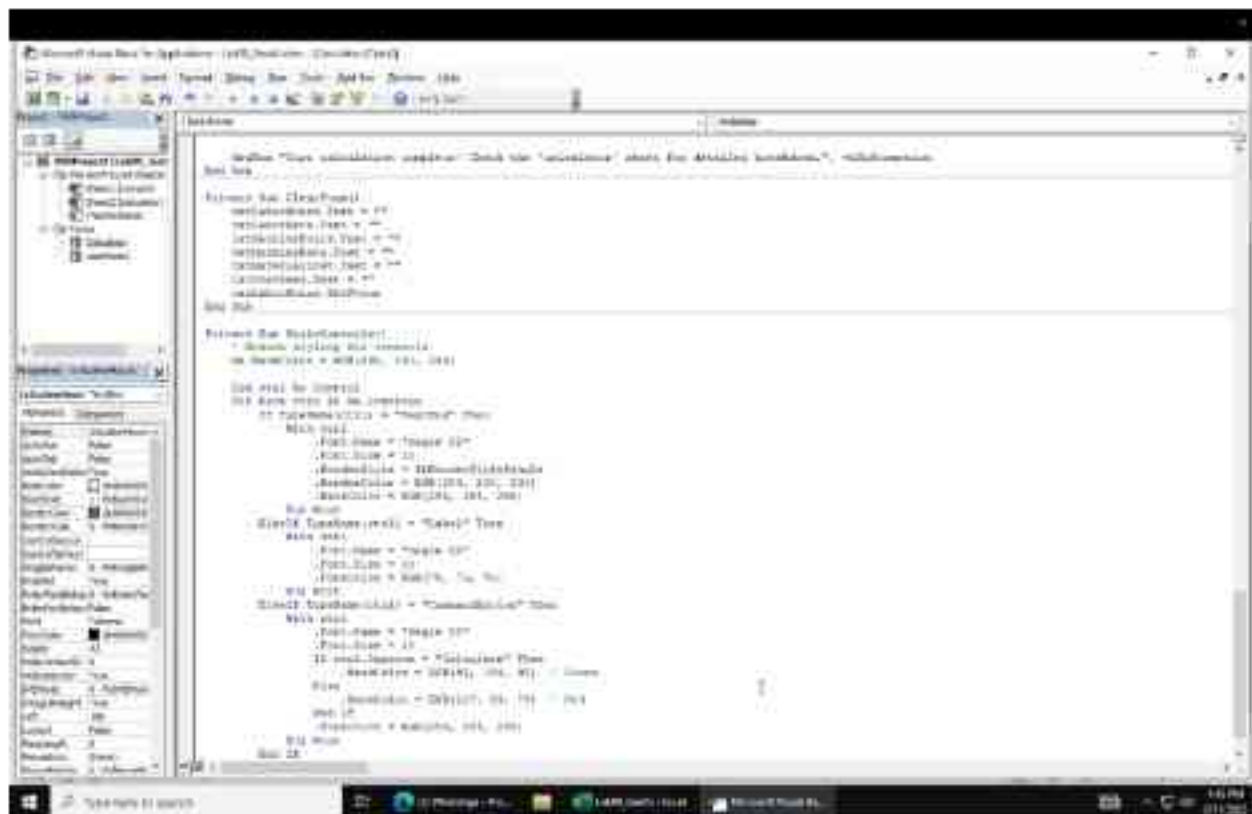
6. Develop a manufacturing cost calculator. A. Problem: Create a tool to calculate manufacturing job costs based on: Labor hours and rates Machine hours and rates Material costs Overhead percentage B. Setup: Create sheet named "Cost Results" Create UserForm with shown controls, below Add VBA code The form calculates total job cost including overhead and displays detailed breakdown in Excel.



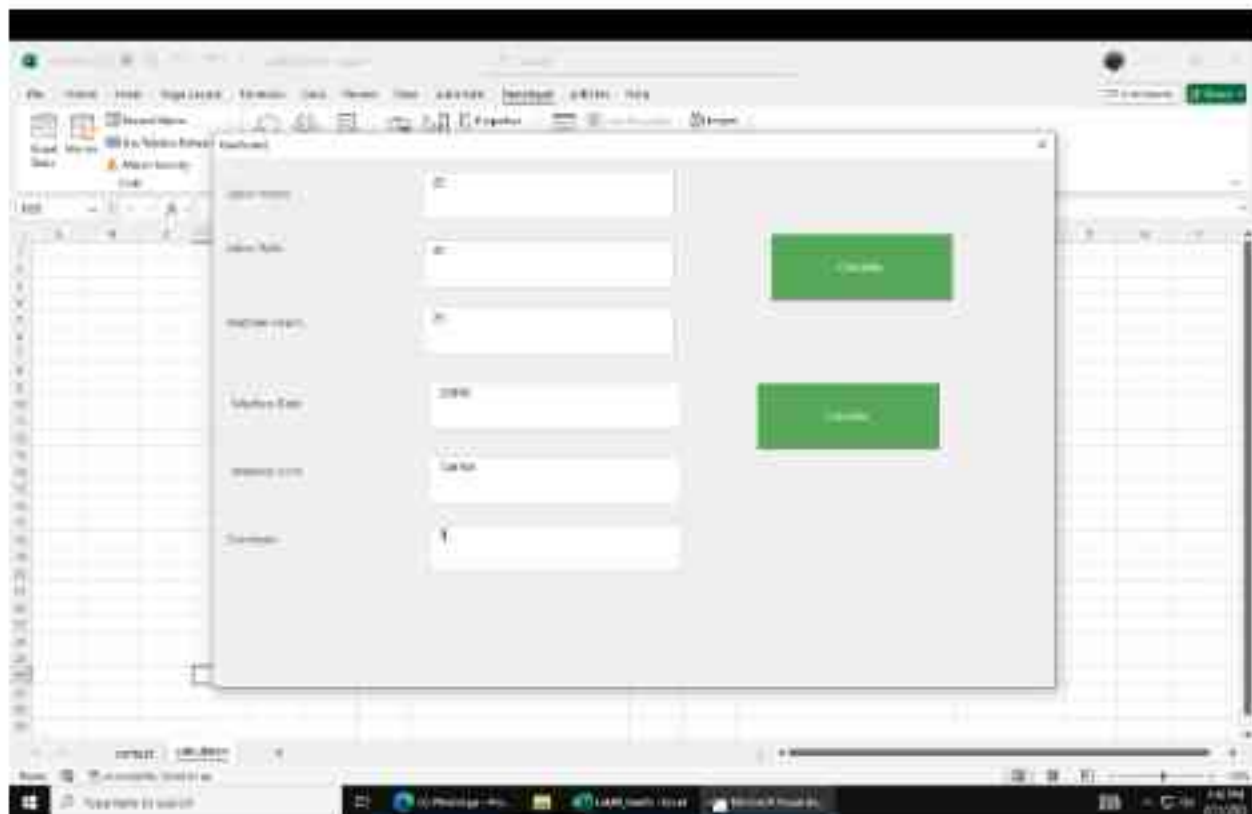


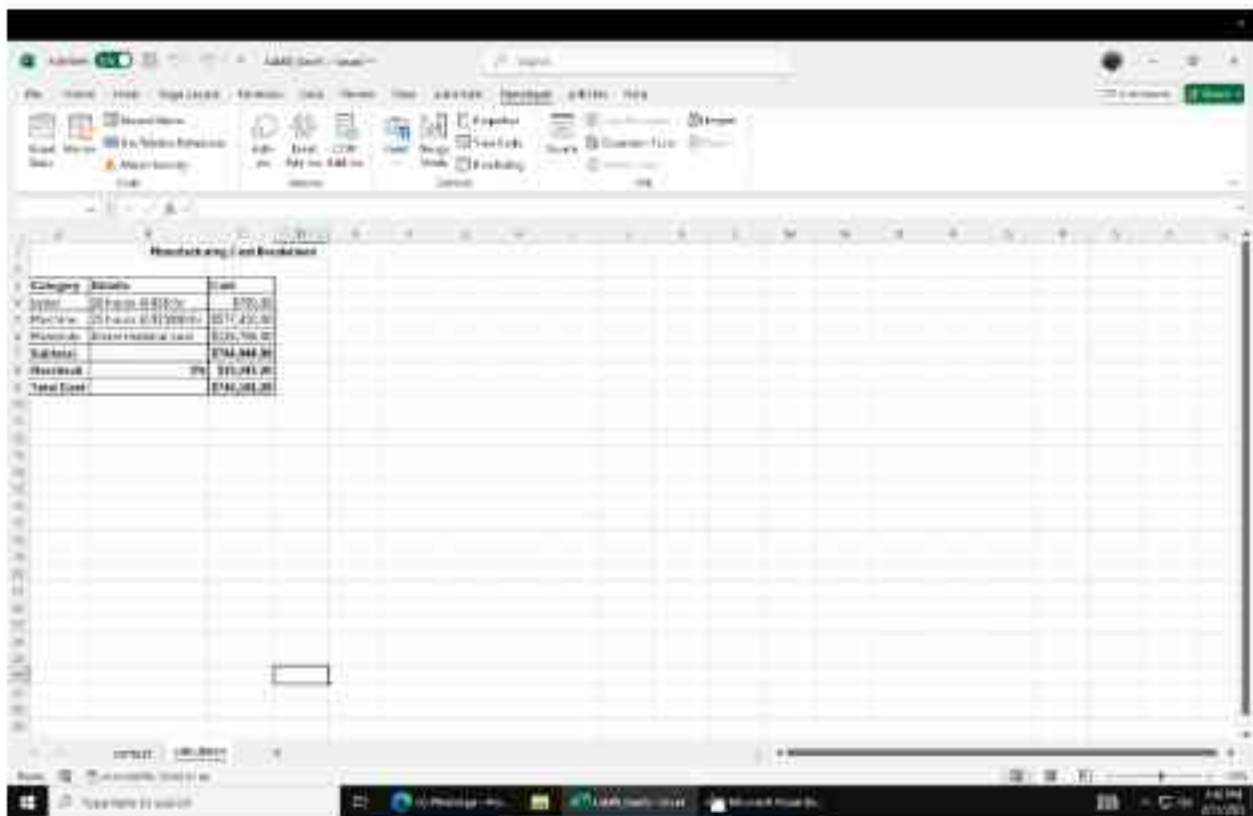
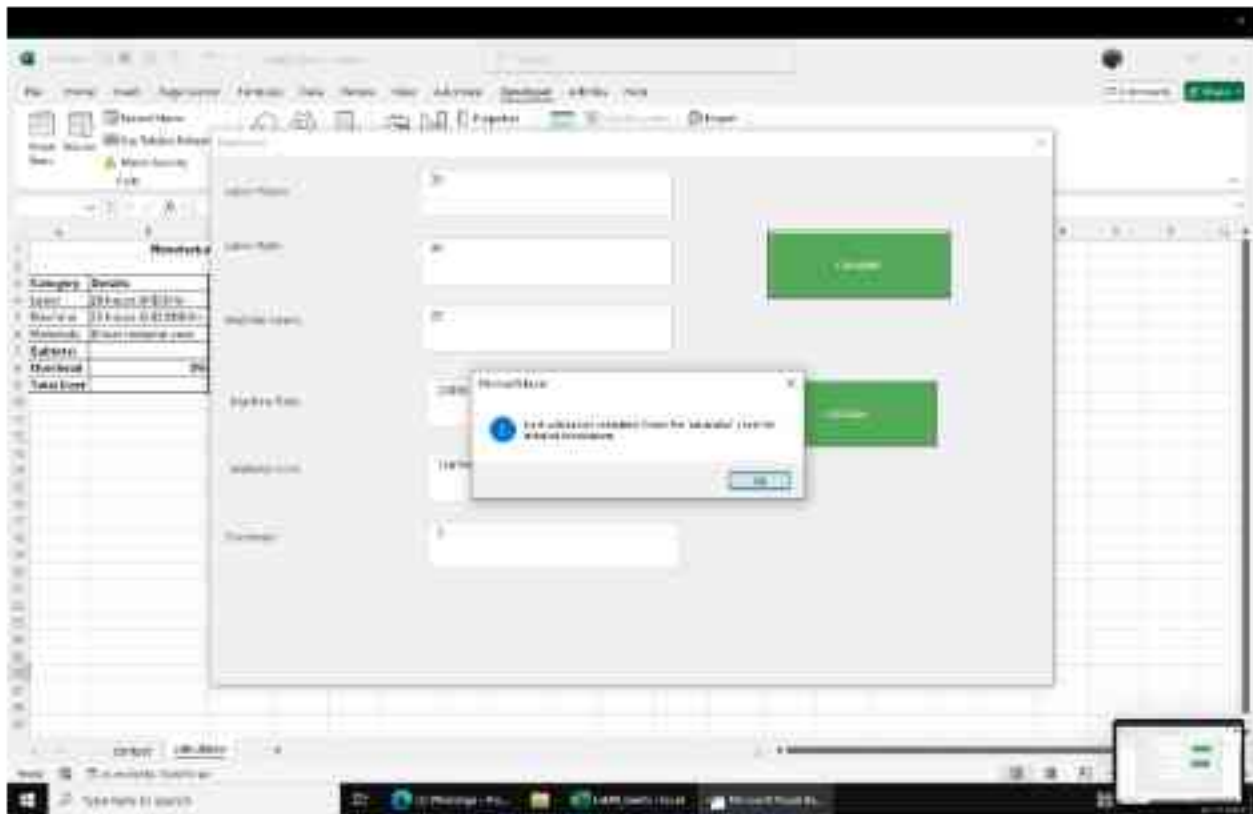
Excel:





Output:

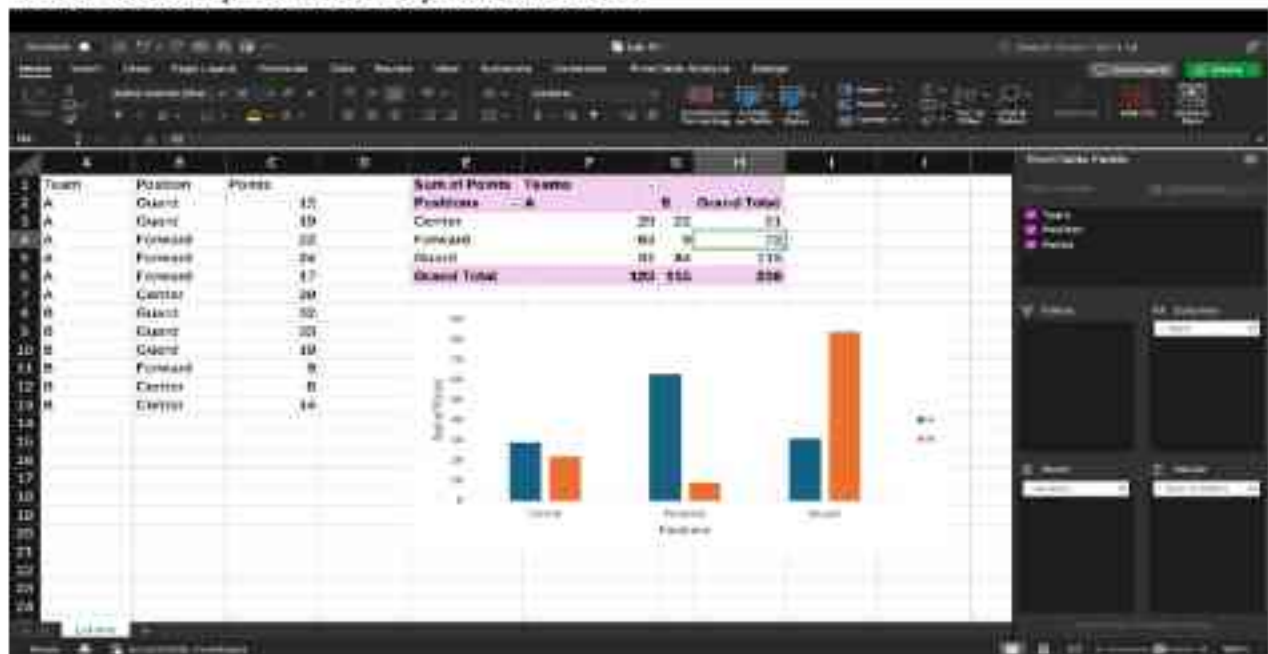




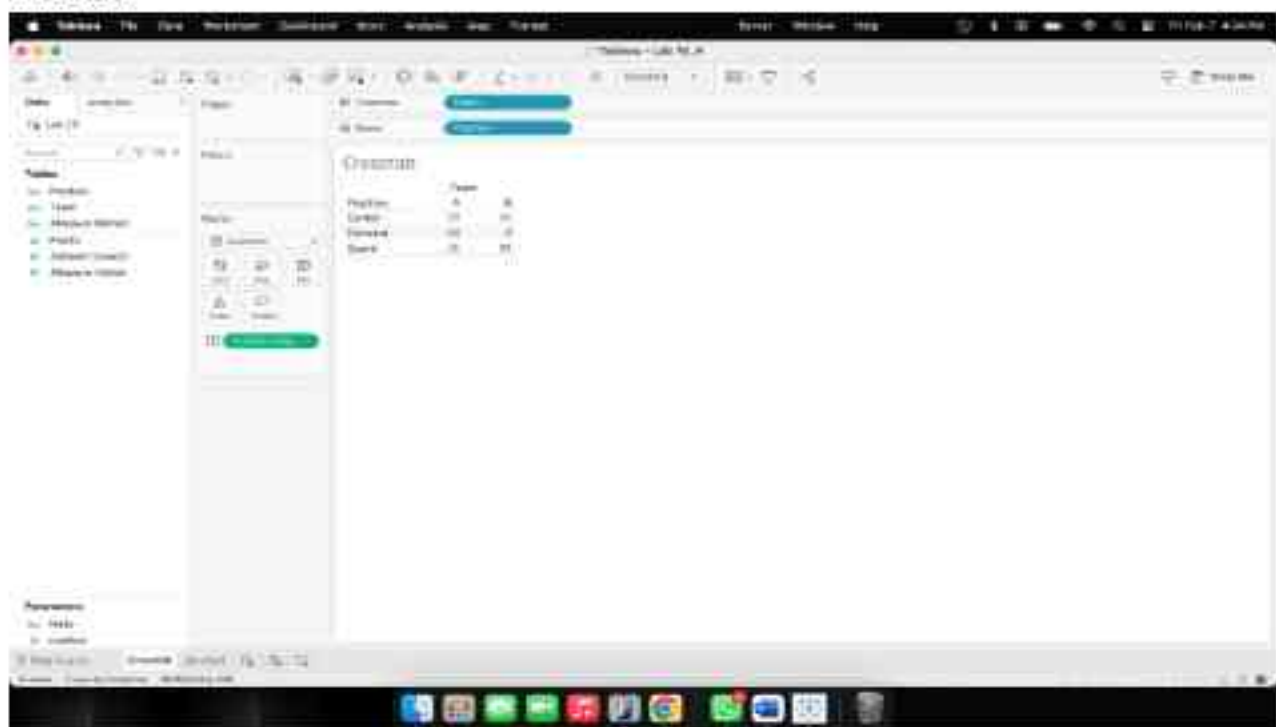
Lab 10

A Create data below in Excel, then import into Tableau as a data source. Use as follows:

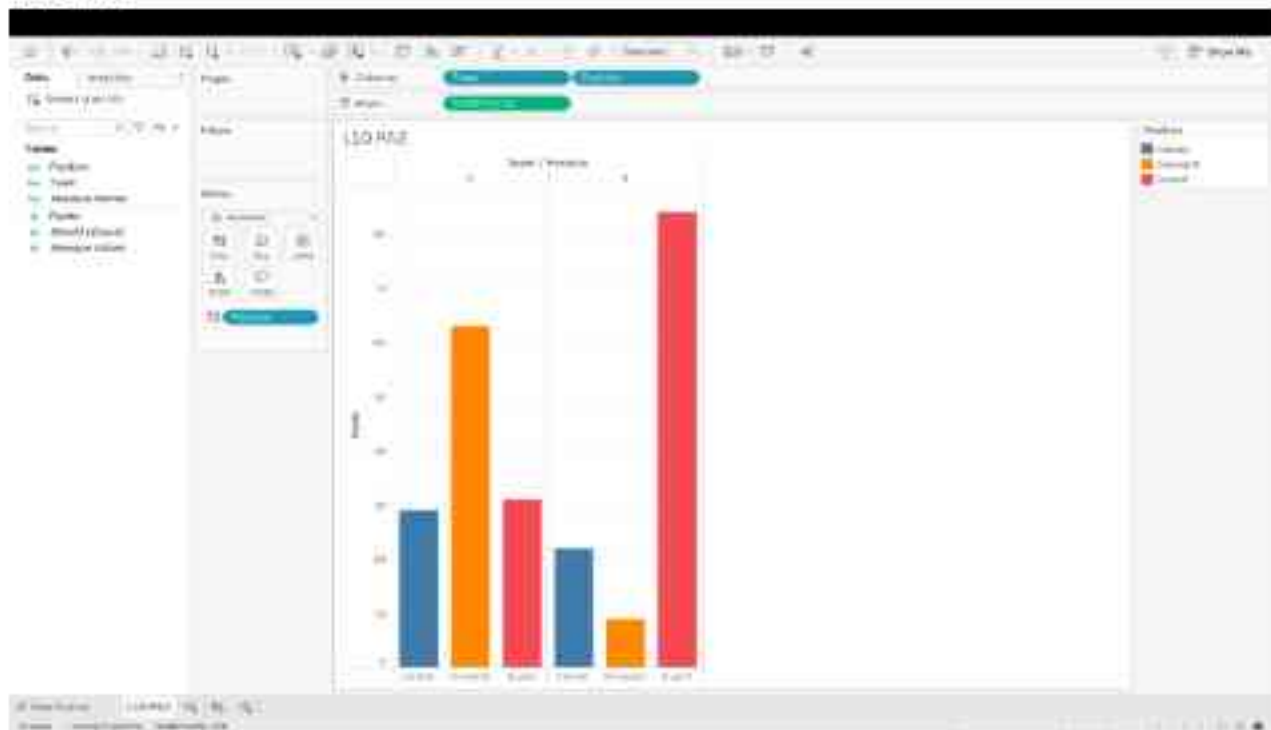
1. Create excel pivot table and pivot chart shown



2. Create a crosstab and bar chart in tableau that are equivalent to Excel Crosstab:



Bar chart:



3. Which method is easier to use

- Excel is more easy.

Excel's Recommended Charts feature automatically suggests the best chart based on the selected data.

Customization options are readily accessible through right-click menus

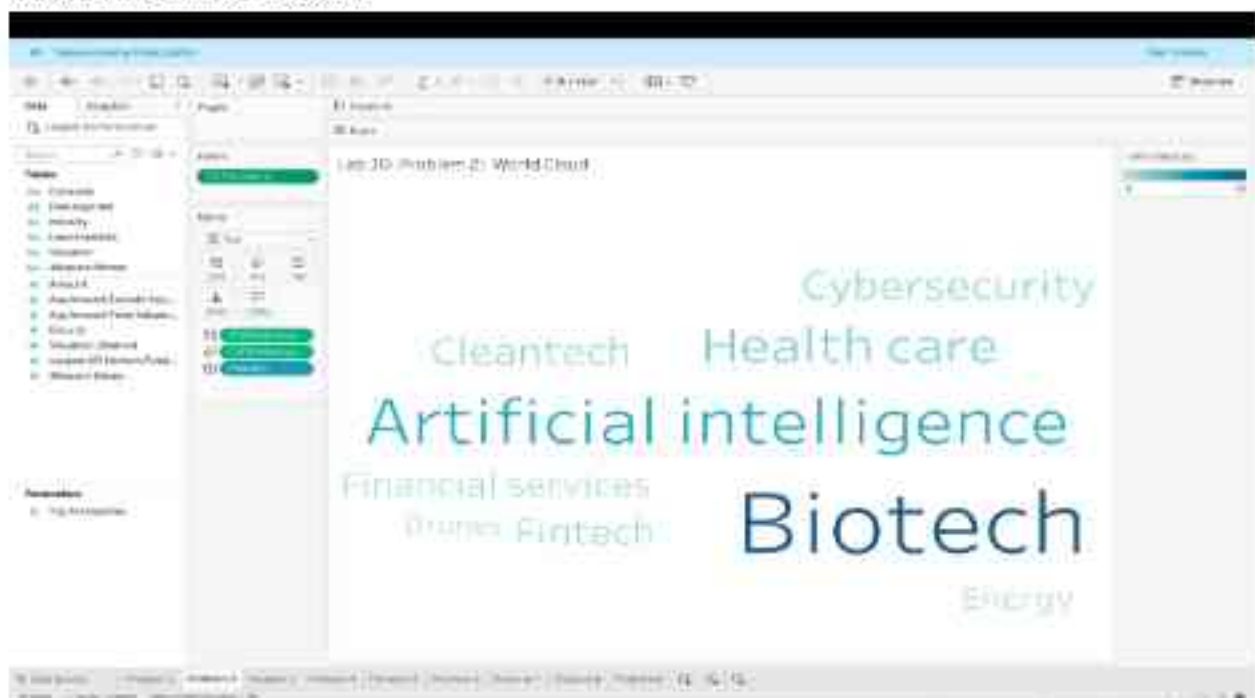
For quick and straightforward chart-making, Excel remains the go-to tool for ease of use.

Use the US Venture 2023 Dataset

1. Create a Donut Chart that displays the Top 10 Industries that received the greatest Amount of funding. Graph displays Industry and cumulative sum of the Amount. Include the total sum in the middle. Include each Industry's amount under the label.

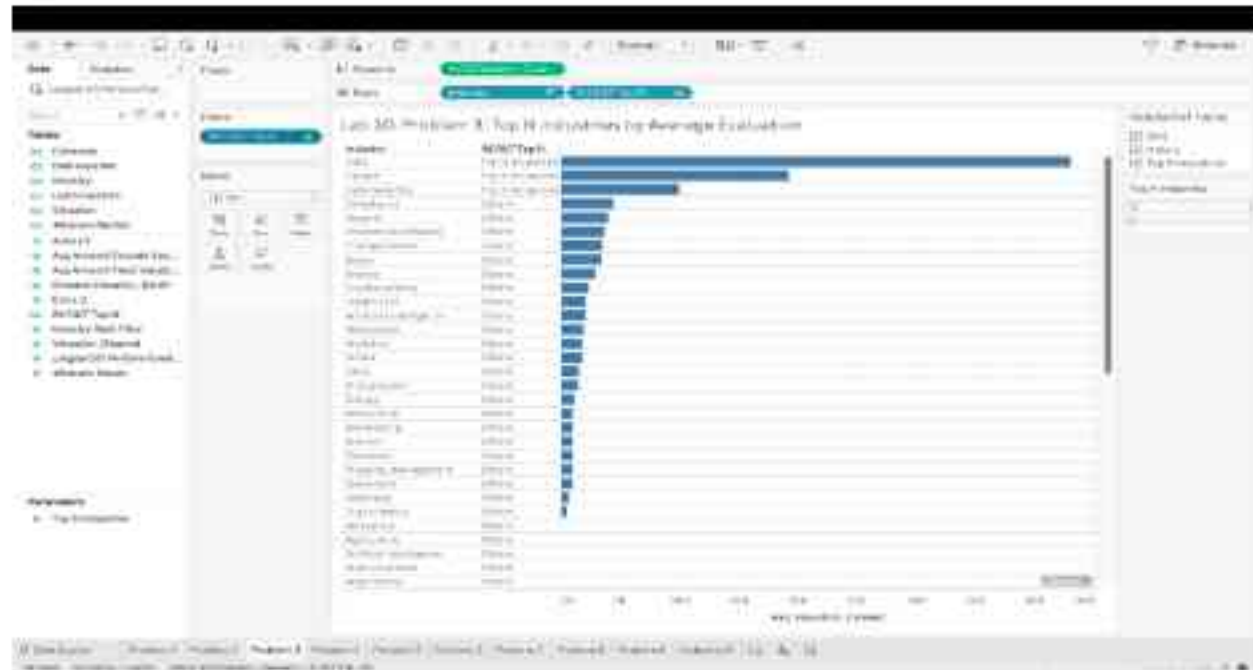


2. Create a word cloud with the 'Industry' attribute. The text appearing in the word cloud should exist 3 times in the dataset.

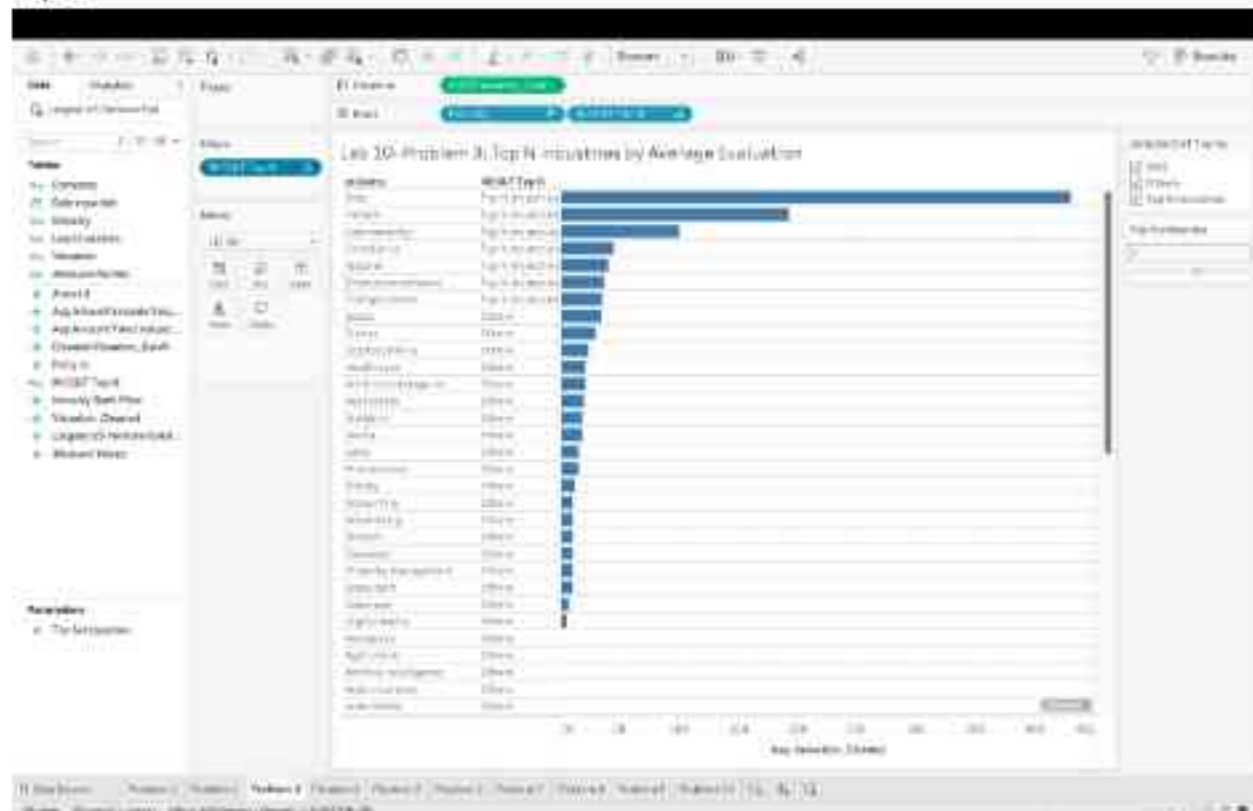


3. Create a bar chart that can display the top Industry from the data based on average Valuation. Use the Industry as a filter and create a parameter that allows you to select the top 7 Industries, top 5 Industries, and top 3 Industries based on Valuation

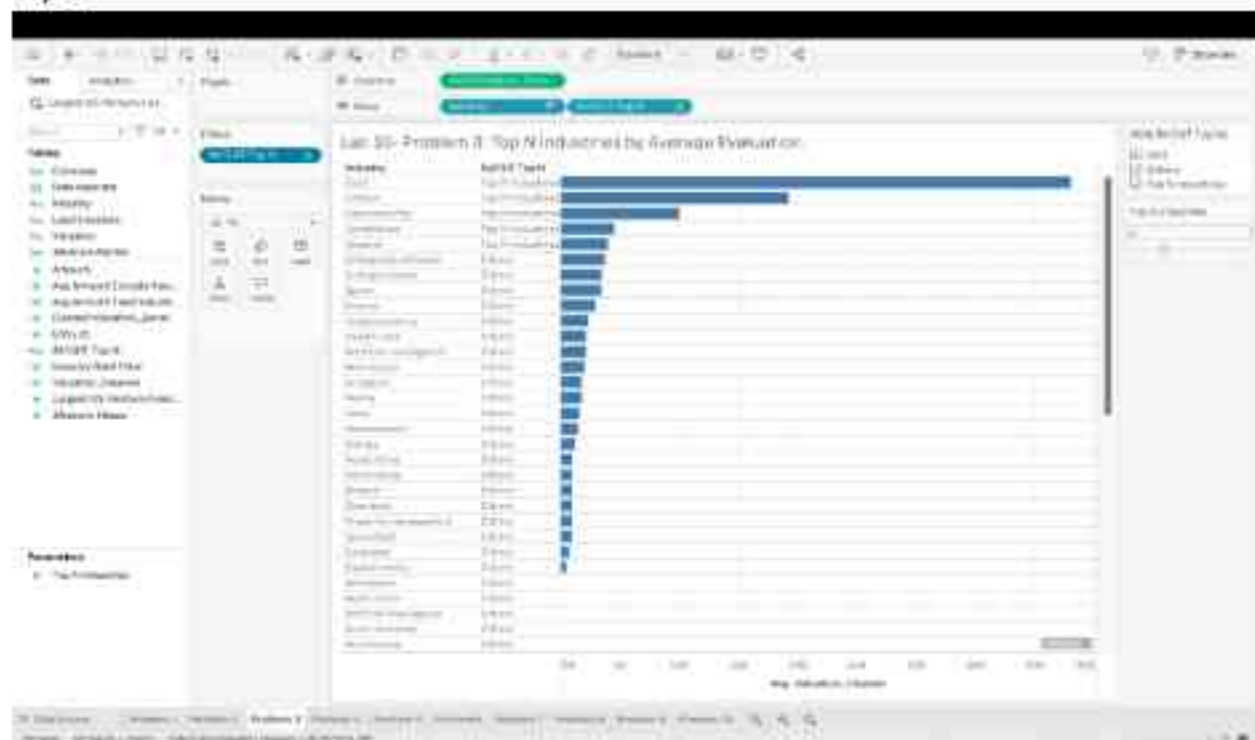
Top 7



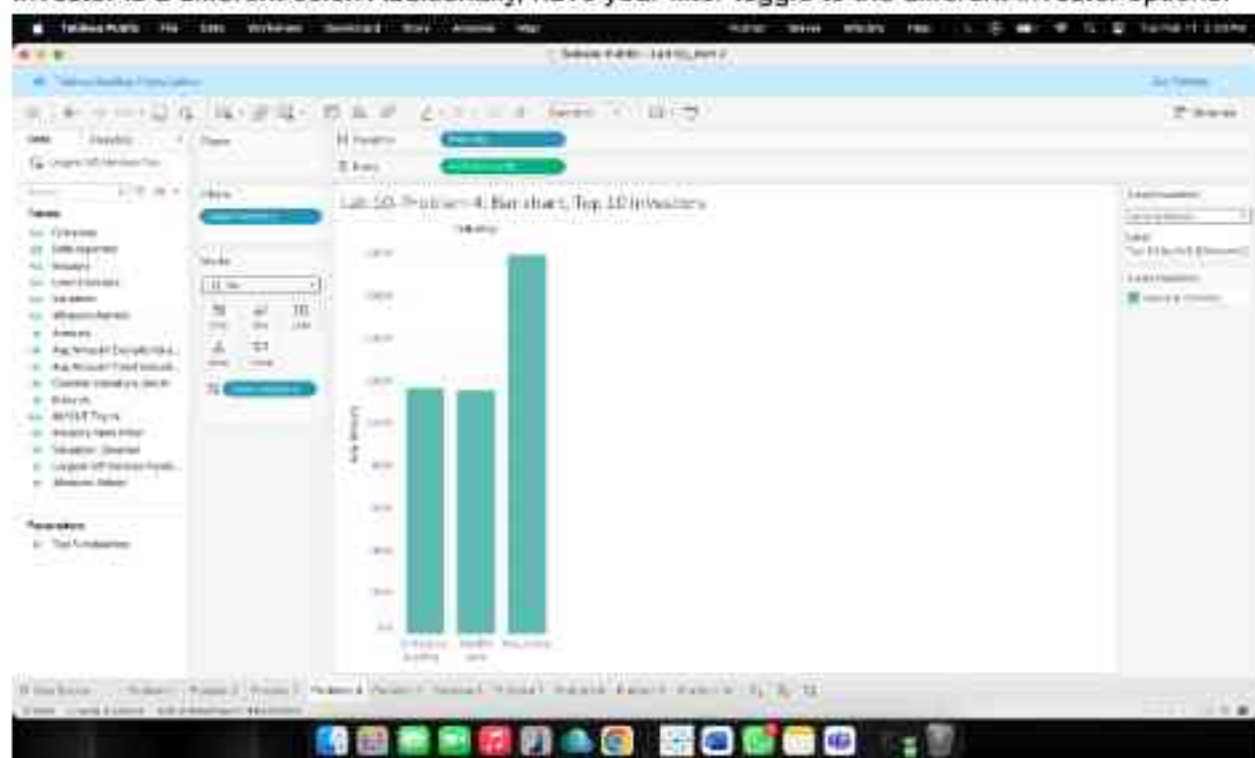
Top 3



Top 5

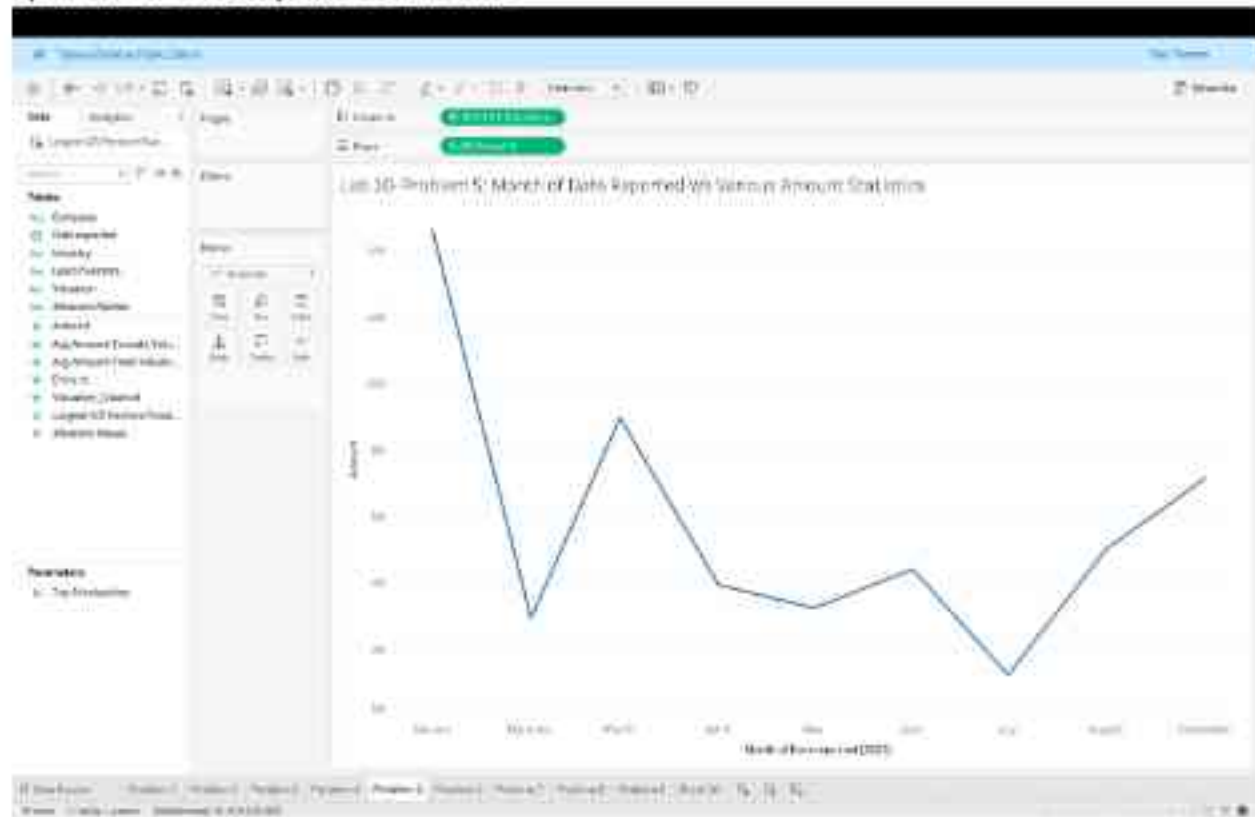


4. Create a bar charts that displays average Valuation, but this time – allow the user to select which of the Top 10 Lead Investors they want to see the Industries invested. Ensure that each Investor is a different color. Additionally, have your filter toggle to the different investor options.

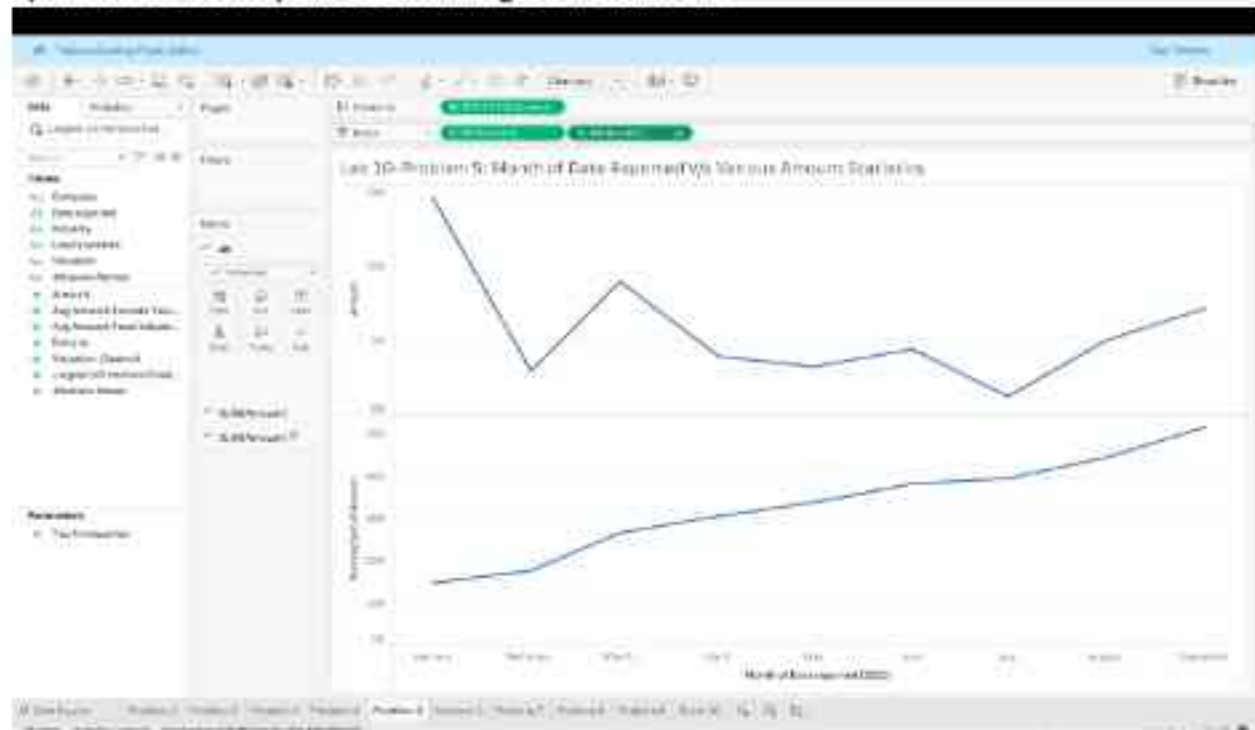


5. Create the following line charts:

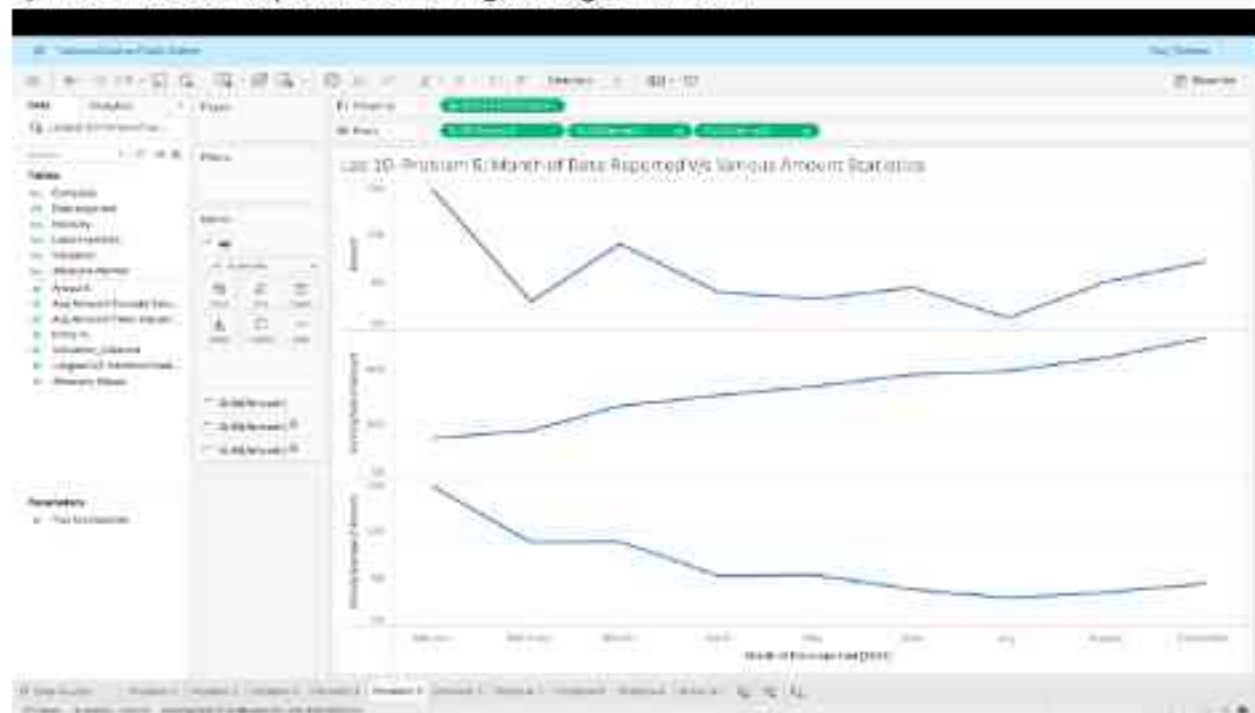
a) Month of Date Reported vs Amount



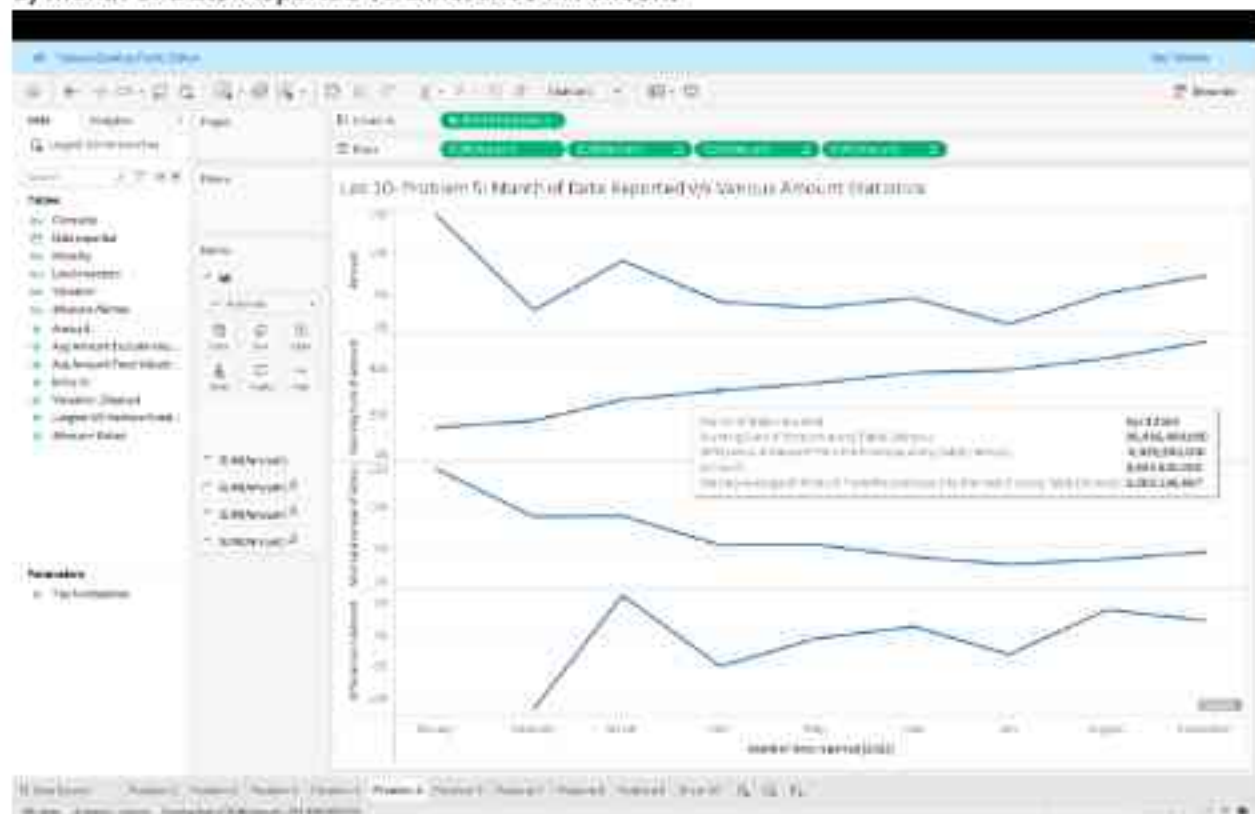
b) Month of Date Reported vs Running Sum of Amount



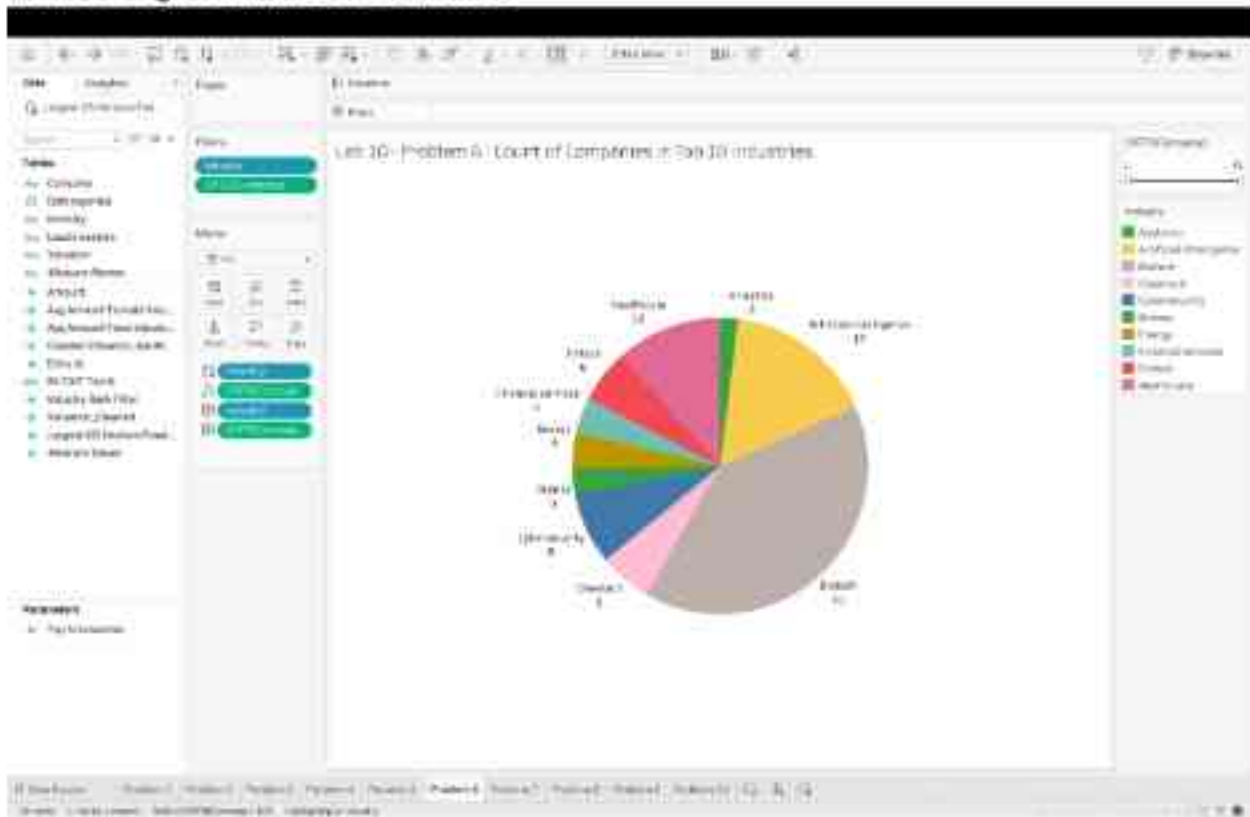
c) Month of Date Reported vs Moving Average of Amount



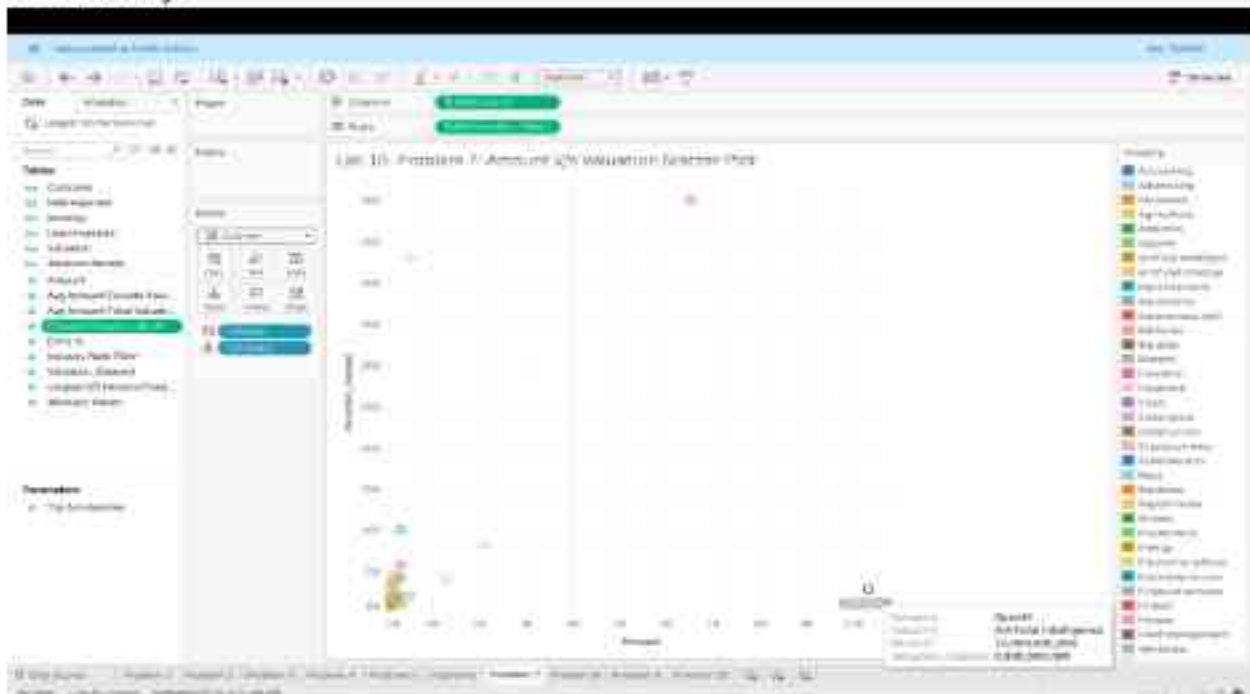
d) Month of Date Reported vs Difference in Amount



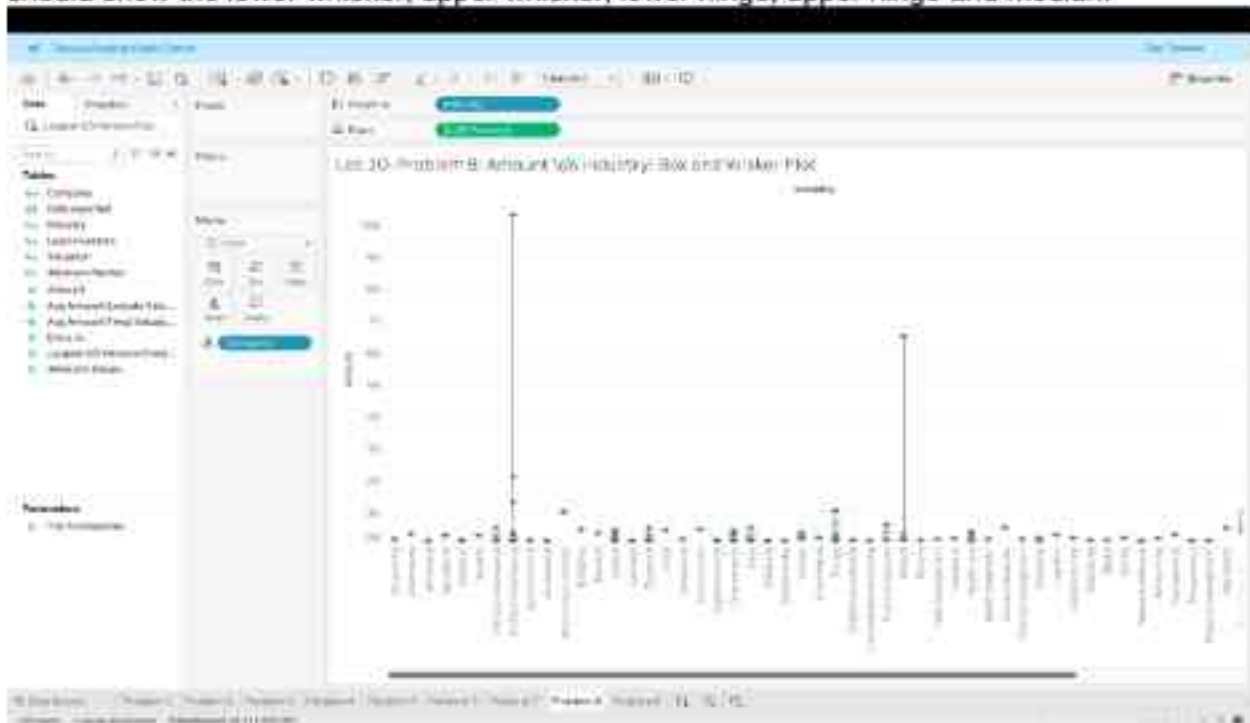
6. Create a pie chart that shows the count of the Companies by Top 10 Industries. Make sure to include a legend for the color scheme.



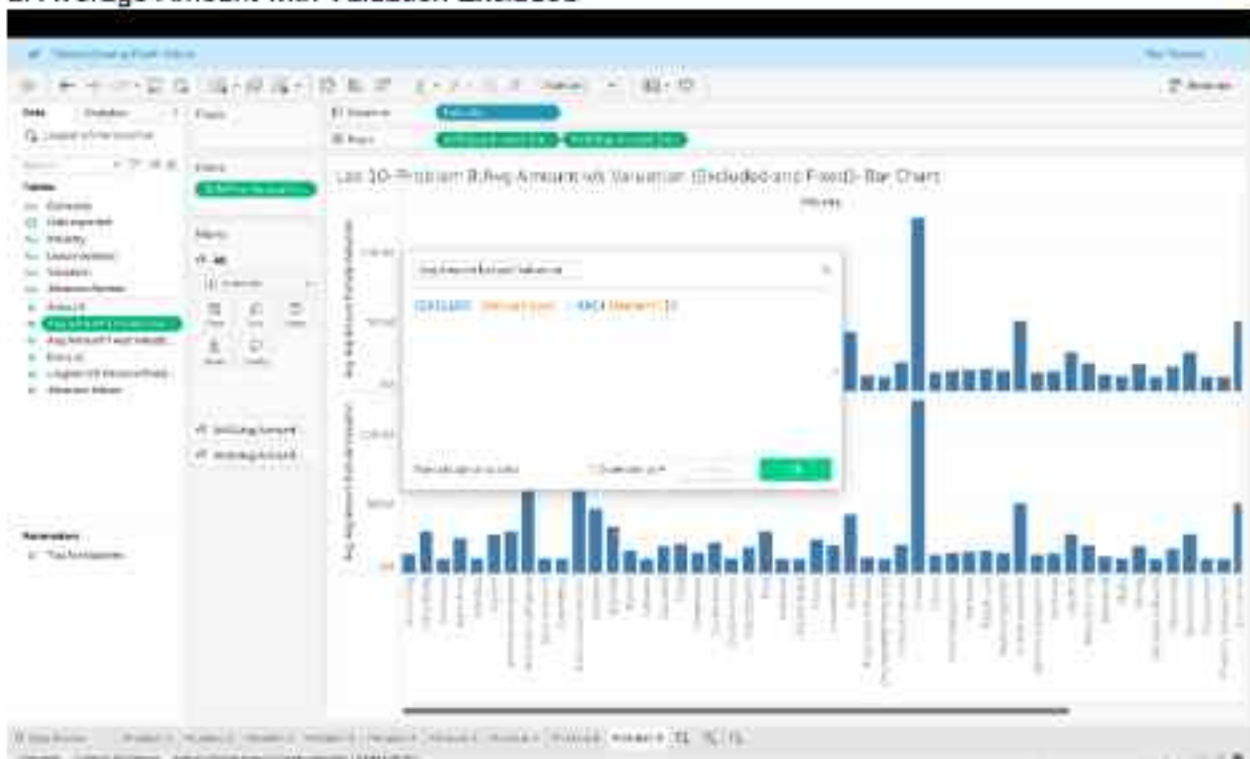
7. Create a scatter plot of Amount vs Valuation. The color of the points must be determined by their Industry.



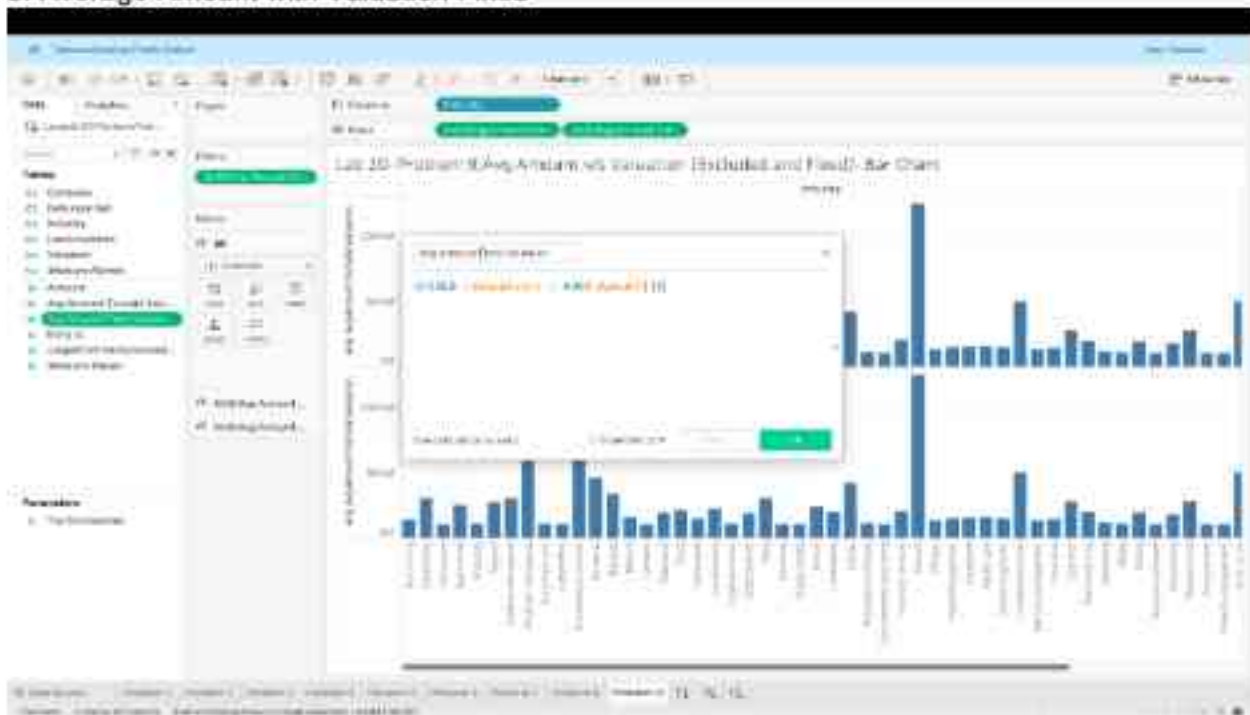
8. Create a box and whisker plot of Amount and Industry. For a particular Industry, the plot should show the lower whisker, upper whisker, lower hinge, upper hinge and median.



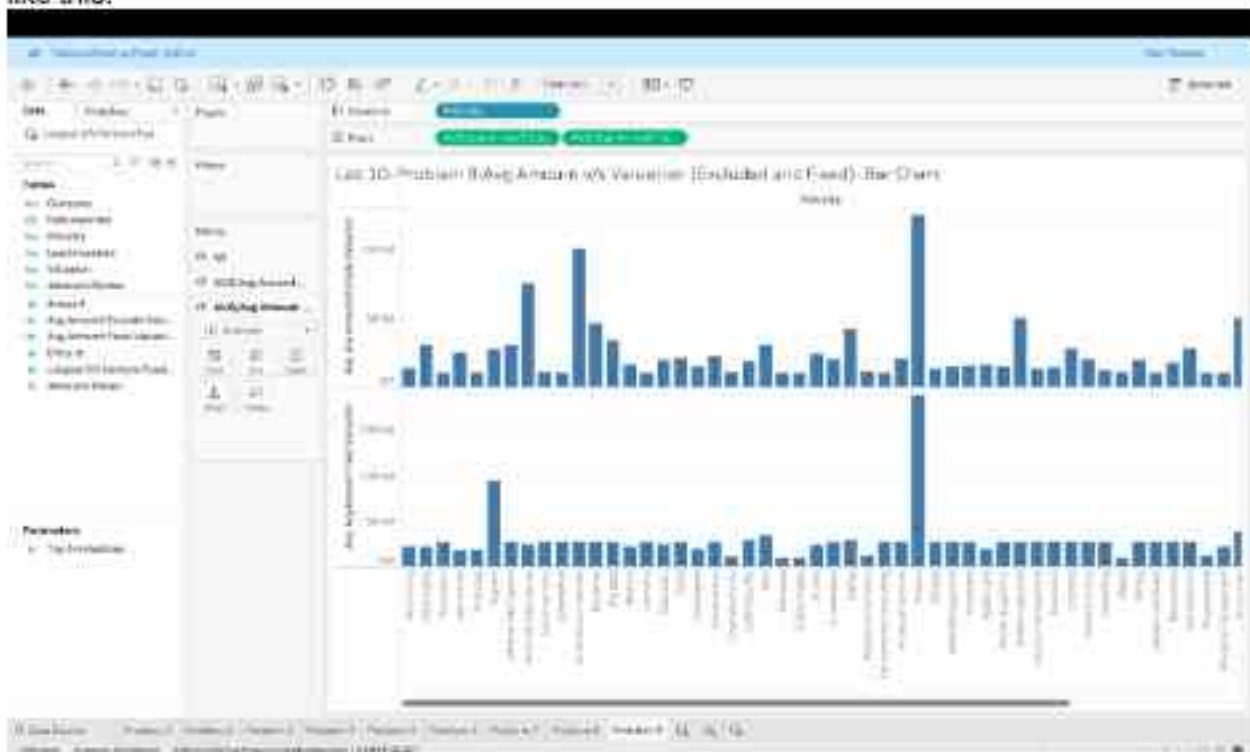
9. Create 2 Level of Detail Expressions
a. Average Amount with Valuation Excluded



b. Average Amount with Valuation Fixed



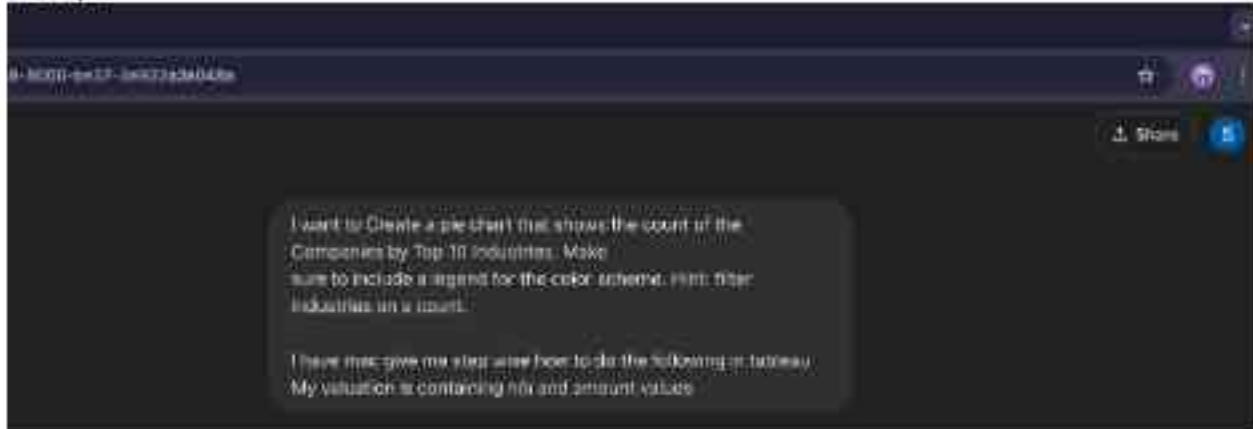
Use the above two expressions to create a dual axis plot vs Industry. It should look something like this.



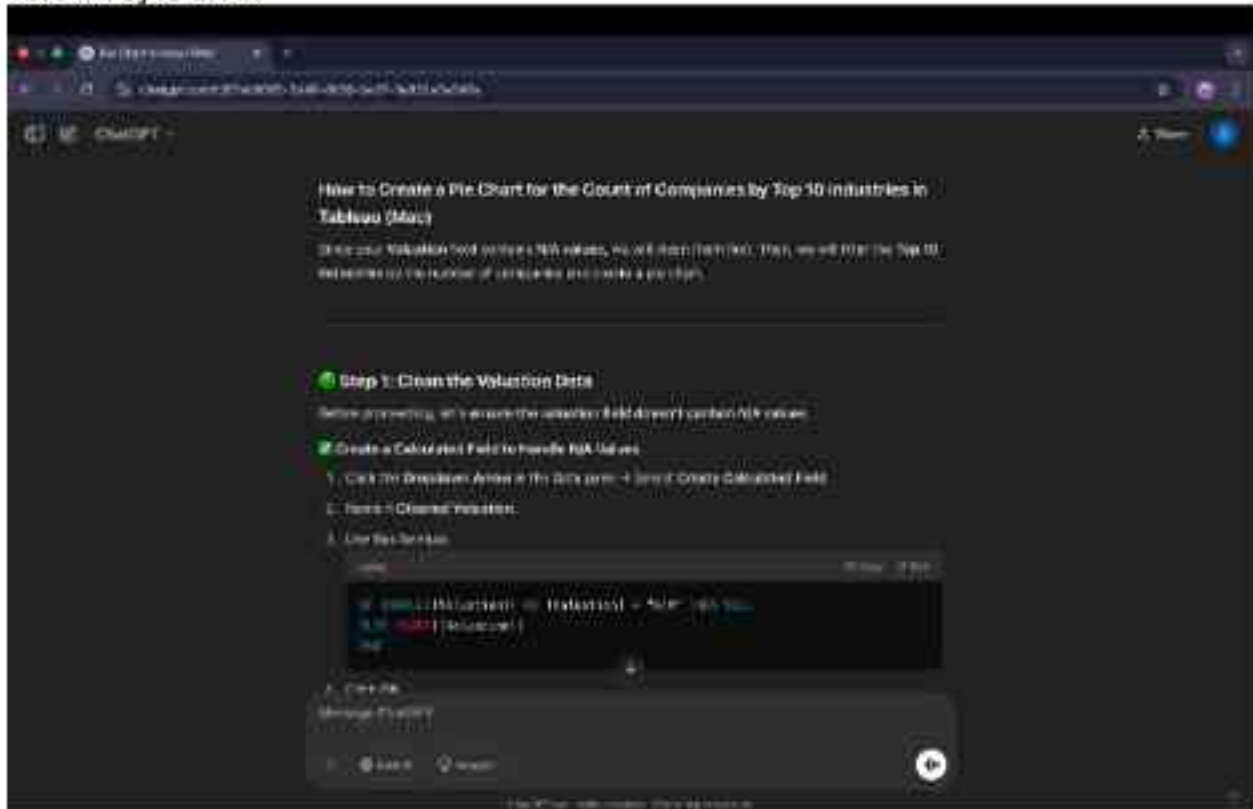
10. Gen AI and Prompt Engineering: how do you think you can use AI bots to help with tableau tasks. Find one useful use case and document its solution.

I am using ChatGPT

Prompt:



Solution by Gen AI:



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Step 2: Identify the Top 10 Industries by Company Count

To filter the pie chart to only the Top 10 Industries, we will first identify the Top 10 Industries based on the count of companies.

2. Apply a Filter to Select the Top 10 Industries

1. Drag Industry to the Filter Shelf.
2. Click on Industry in Filter.
3. Go to the Top tab.
4. Choose Top Field.
 - Select Top 10.
 - Choose Count of Companies (or Count of Records).
5. Click OK.

This filter ensures that only the Top 10 Industries appear in the pie chart.

Step 3: Create the Pie Chart

1. Change the Chart Type to Pie.
 - In the Marks card, click the dropdown to Select Pie.

Show Chart

The chart information is displayed.

IE5 (IE5 - Overview) A. Shaw

Step 3: Create the Pie Chart

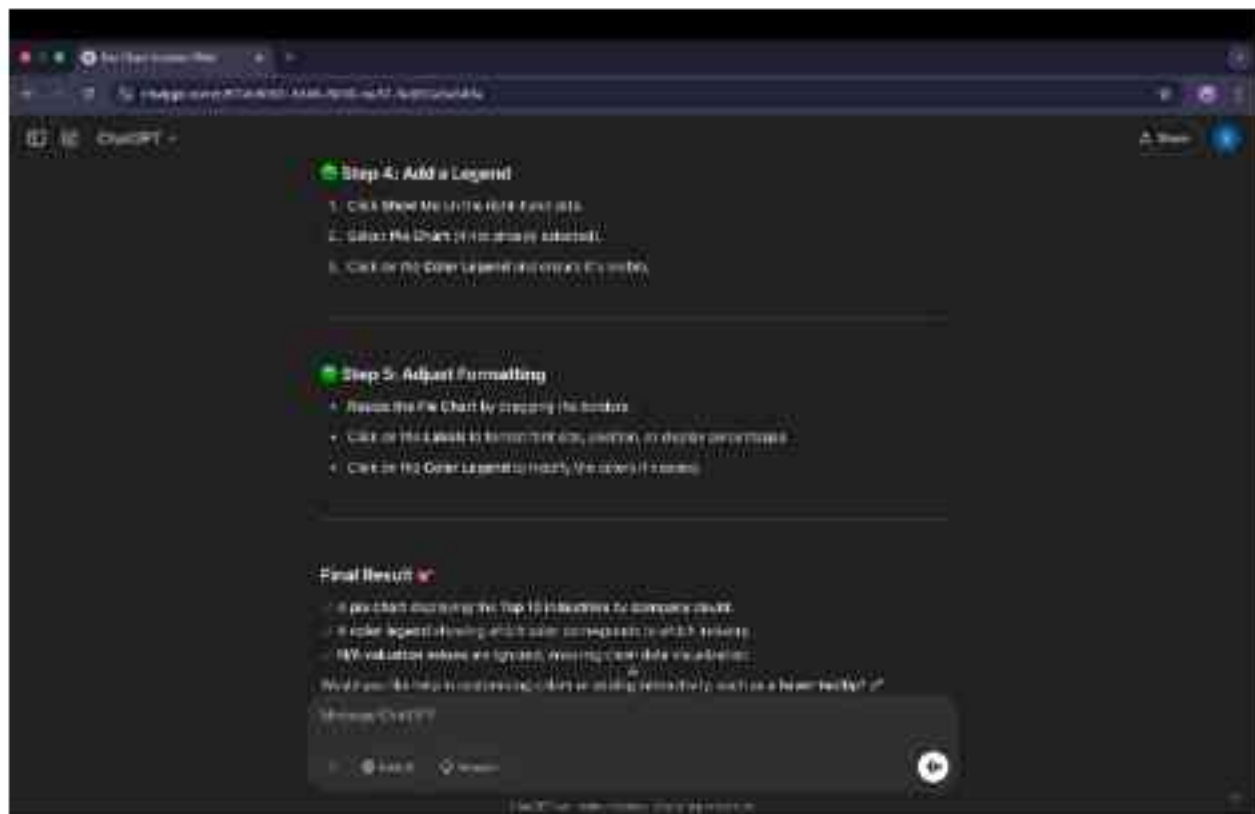
1. Change the Chart Type to Pie.
 - In the Marks card, click the dropdown to Select Pie.
2. Add Company Count to the Pie Chart.
 - Drag Company Name (or any unique identifier for companies) to the Angle section in the Marks card.
 - Right-click on the dimension (Company) in the Marks card.
3. Color the Pie by Industry.
 - Drag Industry to Color in the Marks card.
4. Label the Pie Slices.
 - Drag Industry to Label in the Marks card.
 - Drag Company Count to Label in the Marks card.

Step 4: Add a Legend

1. Click Show Legend in the right-hand side.
2. Select the chart if not already selected.

Show Chart

The chart information is displayed.



Tableau

