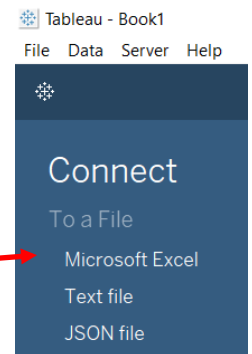


Tableau 2 Assignment – NOTE: there are several submissions – be sure to check out the details on this.

- If you didn't complete the Tableau 1 project, please consider doing that tutorial so you know how Tableau works. **At a minimum, refer to the Tableau Overview page and Canvas home page to register for and download the Tableau software.**
- Download the project data file (Tableau 2 Data F22.xlsx) on to your laptop from the Tableau 2 assignment.
- The scenario for this assignment is that you have been given a data file and have been asked to evaluate the sales for the various product lines. The data owners admit that the data may not be 'clean', meaning it may have errors. You don't have correct these errors; they just want you to be aware and perhaps note them in your analysis.
- How to start? One good way to start is to use Excel filtering to check out what is in each field. For example, if you turn filters on and then filter on year, you can see how many years the data spans, or the types of products or states where product is sold. You can also use pivot tables. Getting an overview with Excel can be helpful.
Then you'll analyze the data with Tableau to see what sales / marketing recommendations you can make for the future, given several years' data. Page 3 & 4 of these instructions has notes on analyzing data and Tableau Tips.
- Data / Prep
 - Import the data: Open Tableau, go to the Connect pane (left) and click on Microsoft Excel and **browse** to the data file and click 'Open'
 - Open a blank sheet and check the field properties,
 - Geographic fields (locations) should have a globe-like icon next to them. If they don't, you can this property. Right click the name (Region, for example), select 'geographical role and then select country / region.
NOTE: Keep the geographical roles of fields State and State Abbrev as State/Province.
 - For any currency fields, right click each field, select 'Default Properties', then 'Number Format' and select 'Currency (Standard)'.
 - For any percentage fields, do the same but select percentage with 1 decimal place.
 - You can now start analyzing the data. The last page of this document has guidelines and tips to get you started. A few additional suggestions: with this data, some things to investigate might be states or regions with high sales (what is selling?), those with low sales (what isn't selling?), states in a region and what seems to be similar in terms of sales. Any outliers you see, drill down and see what is causing the variation in sales.



Deliverables:

1) Tableau Workbook Analysis uploaded to Canvas (worth 35 points)

Save your Tableau workbook as a Tableau Packaged Workbook (.twbx). USE 'SAVE AS'. Name it your lastname_Tableau2.twbx. See the Tableau 1 instructions for more on this saving workbooks correctly.

Your tableau workbook should include:

- 1) The Data
- 2) At least 4 worksheets / visualizations - at least one map sheet and 3 additional sheets – each with a different format. Include filters, colors, and labels in your charts.
- 3) At least 1 **interactive** dashboard (made up of at least 2 visualizations). An example of an interactive dashboard is in Tableau 1, where you can click on one state and year and the other chart on the dashboard shows data for that particular state.
- 4) One story made up of at least 5 panes – must include all worksheets / visualizations and your dashboard(s).
- 5) Comments on each story pane briefly explain what you are showing.

For notes on how to analyze the data, see the last page of these instructions: "Analyzing Data – Tableau 2.pdf"

2) Word Documentation uploaded to Canvas (worth 40 points) - Name your Word document yourname_Tableau2.docx. Include the following sections:

Part 1) The Data - A paragraph describing the data - what's included in the columns and rows and how you approached the analysis of this data. This should include: 1) what you did to initially analyze the data, 2) how the initial data analysis influenced the types of visualizations you included, 3) any problems you had and 4) any changes in your thoughts about the data as you worked through the project. In other words, pretend I didn't give you the data, and describe it!

Part 2) Workbook Sheets – Screenshots of the (at least) 4 sheets that you’ve created. **Do not use cell phone pictures.** Below each screenshot, include a detailed paragraph (more than a few sentences) describing: 1) what you are showing **AND what you learned about your data from the visualization**, 2) what led to this visualization and 3) the relevance / importance in relationship to the data. Also include 4) why you chose the particular visualization format and 5) a response to the question, “Why is this analytic / visualization meaningful?”

Part 3) Workbook Dashboard - Include a screenshot (**not a cell phone picture**) of at least 1 dashboard and below the dashboard a detailed paragraph describing: 1) what the components you included & how the interaction works, 2) why you included them and 3) what’s the point of this collection of sheets - why did you include them together, what’s do they show as a group?

Part 4) The Story – Include small screenshots of each story point (or pane). . Then include: 1) A narrative of how your worksheets and dashboard(s) tell your analysis ‘story’. 2) The points you are making by including them in the ‘story’

Part 5) Conclusions –

Part A: A paragraph detailing your specific recommendations to improve profit / sales / etc. going forward and how your analysis led you to these specific recommendations.

Part B: A paragraph describing what you learned about Tableau. Include skills learned and obstacles overcome.

3) YouTube Video URL entered in the assignment comment section (worth 25 points)

Create a short video (aim for 5 minutes, no less than 4 minutes). **No phone videos.** The video should include:

1. You! Introduce yourself, using your laptop camera to record yourself* (your face!) so you are included in the video.
2. Switch your video to your desktop* and with your Tableau file open, walk through your Tableau project, describing:
 - a) The data
 - b) Each of your 4 (or more) worksheets / visualizations, explaining why each analytic is meaningful.
 - c) Your dashboard(s) – what is included and why you included these visualizations. **Your dashboard should be interactive, so demonstrate this.**
 - d) Your analysis ‘story’ – what your analysis shows, the conclusions and your recommendations.
 - e) What you learned about Tableau and your data
(Use your Word document above to guide your video script.)
3. Upload your video to YouTube as an unlisted video and test your URL / link. Try it on your phone as well as your laptop.

Information on video software, uploading to YouTube and Tableau/Video/YouTube help sessions can be found at the “Tableau Projects and Citizen Data Science Certificate” document, found in our Tableau Overview page (modules area). You can also do this via MS Teams. Start your own meeting, share your screen and video, record and then download the mp4 and upload to YouTube.

*If you are using software that records your desktop and records you at the same time (in a small inset window), you can do your introduction in this format. An easy way to create your video is to start a Teams meeting for yourself, record it as you introduce yourself and then share your screen to create your video. You can then save it and download it and upload it to YouTube.

--If you have any privacy issues submitting your video YouTube, please contact me **well before** the due date to discuss.

Submitting your Deliverables – READ THIS CAREFULLY – follow all steps

1. **For your class grade: upload to the Tableau 2 Canvas Assignment.** This should include:
 - 1) your Tableau Packaged Workbook, ‘saved as’ a Tableau Packaged Workbook .twbx (or we won’t be able to grade it. Named correctly.
 - 2) your Word document, named correctly.
 - 3) and the URL to your video story (add this to the comment area of your submission)
2. **Complete the Citizen Data Science Certificate Survey (another assignment on Canvas).** You’ll just enter your name and the URL to your YouTube video. **Just ONE URL, NO comments please.** Something like <http://youtube....> You won’t get credit towards the Citizen Data Science Certificate unless you complete the project fully, including demonstrating the interaction of your dashboard and complete this survey.

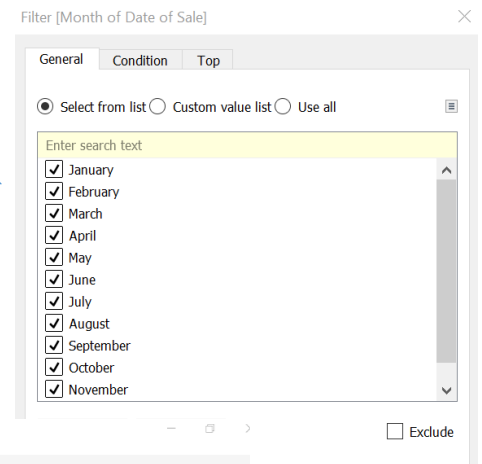
Tableau is being used in many businesses so be sure to include Tableau, Access and Excel in your resume when mentioning analytics.

How do I get started? Using the Tutorial (Tableau 1) as a guide, you can follow a very similar process:

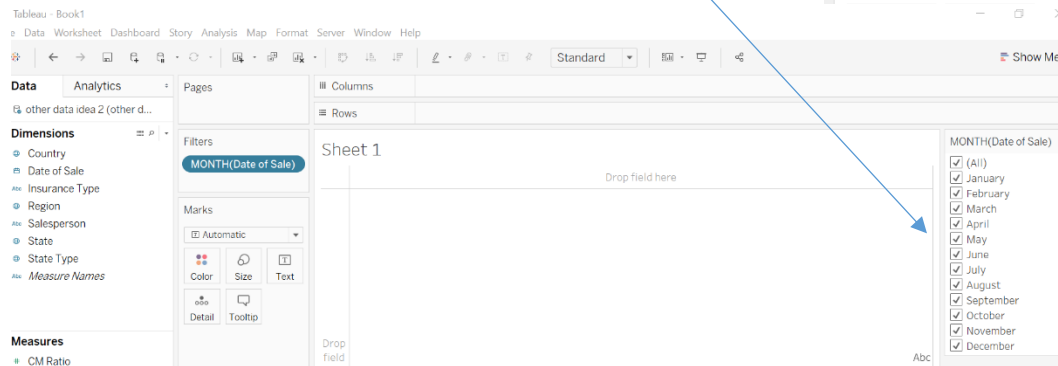
1. Look at the source data to get an idea of what it's all about (you can do this either in Tableau or look at it in Excel). If you are using Excel, you can do some filtering or pivot tables to see what is in each field – looking for any outliers or interesting trends. Some things you might want to look at are:
 - Dates, any spikes or dips in sales, which brands / departments, which states or regions, profits
 - Cities, states or regions, what sells, how much in sales and/or profit
 - Brands or departments – what sells best in which states or regions, at which times, etc.
2. In Tableau, create an initial broad visualization (sheet #1) and again, notice some outliers or some trends that may be interesting
3. Create sheet #2 to further explore either the outlier(s) or the trends. For example, depending on your data, this could lead to geographic questions, questions relating to years, specific products, departments, etc. You can do this by duplicating sheet 1 and filtering / drilling down.
4. Create sheet 3 to explore the questions in sheet 2 in more detail – by filtering again and /or showing some different attributes (fields) and using a different visualization format. This will lead to more questions about the trend / outliers that you can further drill down to analyze
5. Sheet 4 (or more) will let you keep looking at the data in more detail until you figure out what triggered the outlier or is most responsible for the trend. Depending on your data, this could be product sales in a specific region or by a specific product or department.
6. When you have figured this out – come up with one or more recommendations. Depending on your data, it could be something like - don't sell xxx in this state, or this was a bad month for product xxx in state yyy, but they recovered, or... whatever you discover. Create a dashboard or two to illustrate this.
7. Then go back and create a story with your sheets and dashboard(s), be sure to include all of the required Tableau features (see the instructions on this) .

TIPS / Notes – Also refer to the Tableau 1 Project (tutorial) – It demonstrated all the Tableau skills you need for this project.

- **Filtering:** To do this, select a specific field and drag it to the filter 'box'
 - For example: drag the 'Sales Date' to the Filter box >> double click 'Months' >> and try selecting the months you want or select 'All'



- Then you can also right click the 'Month...' label in the filters box and select 'Show Filter' and the checklist will show up on the right and you can select months that way.



- You can do similar filtering with other fields.

- **Quick Map** steps:

- Drag 'state' to detail.
- Drag 'region' to filter and select the filter'.
- Drag 'sales' (or another field) to color.
- Drag any fields to labels or tool tips.

- Set the **number format** for a field.

- On a created worksheet, right-click the field in the list of fields.
- Select default properties.
- Select number format and then select the specific number format you want.