**LAB Book partners up with Practical Tableau Book: Used for Tableau Desktop Level 2**

**This Lab book is Part 3 of 5 Parts. Part 1 of the LAB BOOK has been designed for anyone who wants to prepare for Parts 2-5. [APPROX TIME – 88 MIN.]**

**If you did not take the Tableau Desktop Level 1 class, you should work your way through this Part 1 Lab Book, to be sure you understand the concepts taught in that class.**

**Desktop Level 1 Skillset is expected for success in this Desktop Level 2 Class**

**\*\*Please note that the Exercises used in this Part2 Lab\_ Advanced Book are created from scratch. However, there is a “PartTwo\_Advanced.twbx” file in the Workbooks folder which contains all the solutions.**

**\*\*Also note that the chapters in Part 2 will use the Marks Card, in order to create charts without the “Show Me” wizard.**

**For more help and information about Practical Tableau, please visit www.ryansleeper.com**

Part 2 – Chart Types - ADVANCED

Chapter 33 - Exercise (Sequential Path) - 3 Minutes – Book Pages: 195-198

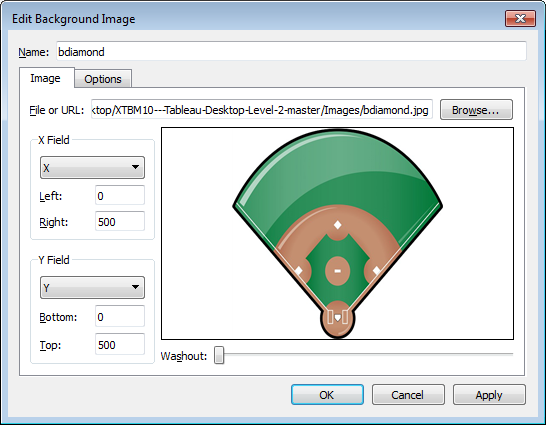
1. Create a new workbook connected to the Sample – Superstore.xlsx file and the Orders worksheet.
   1. Alternatively, you can create a new workbook based upon the **Saved Data Source | Sample – Superstore** located on the connection pane on Tableau’s Start Page.
2. Save this workbook as: **PartTwo\_Advanced.twbx**.
3. Rename Sheet1 as Sequential Path. Color the sheet tab if desired.
4. Open a new Data Source (Click on Data Menu, choose new Data Source) (Page 197 in the book shows you how to create this data source in excel up at the top. For the purpose of time, this excel sheet has been created for you)
   1. Choose Excel and choose the StopStart.xlsx file located in the Lab Files under Data Sources.
5. In the worksheet, select this data source in the Data tab.
6. Right-click the Stop measure and choose Convert to Dimension.
7. Drag the data source’s Longitude measure onto the Columns shelf - [not the *Longitude (generated*) measure.]
8. Drag the data source’s Latitude measure onto the Rows shelf - [not the *Latitude (generated*) measure.]
9. In the “Automatic” chart type section, choose Line as your type – this will add a Path shelf to the Marks Card
10. Drag the newly converted Stop dimension into the Path shelf on the Marks Card
11. Compare your chart to page 198

Chapter 34 - Exercise (Custom Background)   
5-15 Minutes (*depending on your choices below*) –  
Pages: 199-206

1. Create new worksheet, naming it Back Image. Color the worksheet tab if desired.
2. There are TWO possible data sources for this exercise: one is the “coords.xlsx” data set and the second is the “coords\_complete.xlxs”. You will need to choose one.
   1. You can choose to do this using either from scratch and create with completed dataset. PLEASE OPEN BOTH to look at them and see the difference. One is nearly empty and the other is complete. Below find both ways to complete Exercise:

Create with COMPLETE Data Source:

1. Add the coords\_complete.xlsx data source (from the downloaded Data Sources folder)
2. Add a background image to your view:
   1. Click on Map, Background Images (see the cords\_complete dataset and click it)
   2. In File or URL address text box, choose Browse and find the bdiamond.jpg file located in the downloaded data folder path:
      1. Tableau L2 Instruction Data and Examples\XTBM10---Tableau-Desktop-Level-2-master\Images\ bdiamond.jpg.
   3. The Pop-up box needs to be completed as follows: (be sure that there is both and X and a Y entry by using dropdown)
      1. X Position: 0 Left, 500 Right
      2. Y Position: ) Bottom, 500 Top
   4. Click OK until you return the main editing window in Tableau.



1. Drag the X measure to the Columns shelf
2. Drag the Y measure to the Rows shelf
3. Turn-off Aggregation (Analysis |Aggregation). This changes the scale (500 x 500) and allows a larger view of the background image.
4. Drag the Y field into the Color Shelf on the Marks Card, choose a palette (something with red would be good) – compare your chart with page 206 in the book.
5. In addition, you can also drag the Position dimension onto the Text Shelf on the Marks Card to see the positions labeled.
6. Change Mark type to Circle, change Color and Size.

If you want to “hide” the Lookup mark, create an Area annotation and place it atop the Lookup Mark. Type something like: “Player positions in Baseball.”

FROM SCRATCH:

* 1. Add the coords.xlsx data source (from PartTwo\_Advanced folder)
  2. Add a background image to your view:
     + Click on Map, Background Images (see the cords dataset and click it)
     + Browse to Baseball Diamond Image in Desktop Level 2 Images Folder.
     + The pop-up box needs to be completed as follows: (be sure that there is both and X and a Y entry by using dropdown)
       - X Position: 0 Left, 500 Right
       - Y Position: 0 Bottom, 500 Top
  3. Open the Data Source in Microsoft Excel – keep it open in the background
  4. Drag the X measure to the Columns shelf
  5. Drag the Y measure to the Rows shelf
  6. Turn-off Aggregation (Analysis |Aggregation)
  7. See your image on the view.
  8. We will “find” the positions for each player on the field by using the “Annotation” pointer:
     + Right click the view and choose “Annotate” and then “Point”.
     + By default, you will see the pop up with X and Y points.
     + Click OK and go back to your View
  9. Drag the Position dimension onto the Detail Shelf on the Marks Card.
     + You will see your background picture.
     + Use the “Point” and drag it around to each “position” on your image.
     + Record these points and add these data points in you’re the Excel (coords.xlsx) file.
     + Right click the cords data source and choose “Refresh” (or F5 *Refresh* key).
     + See each point with the coordinates
     + Delete the Annotation
  10. Refer to step # 3 (and on) in the prior optional exercise to complete.

**Chapter 35 - Exercise (Custom Polygon) –**

**This exercise should be skipped as we have seen much of same previously. If the students want to complete it, they should follow the directions on pages 207-210. However, they will need to create a custom data set in excel for the purposes of this lab.**

Chapter 36 - Exercise (Gantt) – 10 Minutes – Book Pages: 211-215

1. Create a new worksheet and name it Gantt. Color the sheet tab if desired.
2. Add a new Data Source named Projects.xlsx – you can find this in the data source folder in the downloaded Data Sources folder.
3. In the worksheet view, drag Start Date dimension to the Columns shelf. Choose Day (Continuous – 2nd Day choice in the menu) as how to show the data from the underlying date field.
4. Drag Project and Person dimensions to the Rows shelf. (Project, then Person on the shelf)
5. Create a new Calculated Field called “Days”
6. Type in this calculation (or use SOLUTION “PartTwo\_Advanced.twbx” and copy. Here is the calculation:

[End Date] - [Start Date]

1. Drag this new Days measure to the Size Shelf on the Marks Card.
2. Drag Person Dimension to Color Shelf on the Marks Card.
3. Right-click on x-Axis, Add a Reference Line. Choose these options from the pop up:
   1. Type: Line
   2. Scope: Entire Table
   3. Value: Change to “Constant” in the dropdown, then type this into the text box: 6/1/2018 12:00:00 AM
   4. Change line color to RED
4. Drag Percentage Complete measure into the Label Shelf on the Marks Card
5. Click on the Label Shelf and change horizontal alignment to CENTER
6. FORMAT the PANE for Percent Complete and change the number format to PERCENT with NO Decimal places. Also make the font to 10pt. and bold.
7. This chart will look a bit different from the book due to data differences. But the overall chart should resemble page 215 in your book.

Chapter 37 - Exercise (Waterfall) – 5 Minutes – Book Pages: 217-221

1. Create a new worksheet and name it Waterfall. Color the sheet tab if desired.
2. Use the Superstore data source.
3. Drag the Profit measure to the Rows shelf.
4. Drag the Sub-Category dimension to the Columns shelf.
5. Right-click the Horizontal (bottom) axis and choose Format…
   1. Under the HEADER Tab, choose ALIGNMENT in the DEFAULT section. Choose the middle “A” to turn the Axis data to “Vertical”
6. Change the Mark type to Gantt on Marks Card
7. Create a calculated field called Negative Profit, using the following calculation:

-[Profit]

1. Drag the new Negative Profit field to the Size shelf on the Marks Card.
2. Change the SUM(Profit) pill on the Rows shelf to a Quick Table Calculation using a Running Total.
3. Check your Waterfall chart with page 221 in your book.
4. Alt: drag Sub-Category to Color shelf in Marks Card and Show Mark Labels.

Chapter 38 - Exercise (Slope) – 5 Minutes – Book Pages: 223-225

1. Create a new worksheet and name it Slope. Color the sheet tab if desired.
2. Get a new data source. It is called Slope.xlsx in the Data Sources Folder
3. Drag the Year dimension to the Column shelf. Change Year pill to Discrete.
4. Change Fit settings to Fit Width in the view.
5. Drag the Measure measure to the Rows shelf.
6. Drag the Category dimension to the Detail Shelf on the Marks Card.
7. Drag Category dimension and the Measure measure to the Label Shelf on the Marks Card.
8. If needed, change the Mark type to Line.
9. Format the labels by clicking on the Label Shelf. Click on LINE ENDS and select the three Options check boxes to show line ends on both sides.
10. Check your chart with page 226.

Add a Dual-Axis to slope concept (5 Minutes) – 226-230

1. Create a new worksheet and name it “Slope Dual. Color the sheet tab if desired.
2. Get a new data source. It is called DualSlope.xlsx in the Data Source Folder.
3. Drag Social Network dimension to the Columns shelf.
4. Drag Company dimension to Column shelf, next to Social Network.
5. Drag the Size of Audience measure to Rows shelf.
6. Change the Mark type to Line on the Marks Card
7. Click the Color Shelf on the Marks Card and choose the middle “Markers” – this shows data marks along the line.
8. Drag another Size of Audience measure to Row Shelf, placing if after the one already there.
9. Select this second Size of Audience pill and change the chart type to Circle in the Marks Card. You now have two charts.
10. Right-click on the SECOND Size of Audience pill and choose Dual Axis from the pill’s menu choices; both charts are now combined.
11. Synchronize the Axis (do step #10, above, and choose Synchronize Axis).
12. Select the All header in the Marks Card. Drag the Company dimension to Color Shelf on the All header in the Marks Card
13. Important: select the LAST (2nd) Size of Audience pill in the Rows shelf. Drag Size of Audience to Label Shelf in Marks Card
14. In Marks Card, right-click on Sum(Size of Audience) pill currently controlling Label display
15. Add a Quick Table calculation: Percent Difference.
16. Then, change table calculation Compute Using: Pane (across)
17. Use Label shelf to format and change alignment as desired. Also, you can change the size of the circle marks to add more visuals to the view.
18. To hide the secondary scale (right), turn off the Header for right-hand axis (i.e., 2nd Size of Audience scale).
19. Check your chart with page 230 to compare.

Chapter 39 - Exercise (Donut) – 10 Minutes – Book Pages: 231-237

1. Create a new worksheet and name it Donut. Color the sheet tab if desired.
2. Select the Sample - Superstore data source.
3. Create a new calculation called Sales Goals – Actual Sales with the calculation:

8000000 – SUM([Sales])

1. Change the Mark type to Pie on the Marks Card
2. Create a calculated field called Placeholder:

Min(0)

1. Drag the Placeholder field to the Rows shelf. Make a copy of this pill on the Rows shelf – you now have 2 Placeholder pills on the Rows shelf.
2. Click the arrow pointing down on the second placeholder and choose Dual Axis
3. Change the second placeholder Mark type to Circle. Change the color the “White.” Play with the size to make it smaller to get the “donut” effect.
4. Select the 1st Placeholder pill on Rows shelf. Then, drag Measure Names to Color Shelf on Marks Card
5. Drag Measure Values to the Angle shelf (which was created when you changed chart type to pie) on the Marks Card
6. Put a filter on Measure Names. ONLY include Sales and Sales Goals – Actual Sales Measures
7. Format the visualization by making it bigger, adding a border and change the colors that you like for Sales and Sales – Actual Sales
8. Check your chart with page 236 to compare.
9. Bonus: create a calculation named: % of Goal with the calculation –

SUM([Sales])/[Sales Goals - Actual Sales].

1. Show this at center of 2nd pill for placeholder in donut. Format as percentage.
2. Show other Text labels as desired.
3. Hide all Axis Headers showing the Placeholder measures.

Chapter 40 Exercise (Funnel) – 5 Minutes – Book Pages: 239-246

1. Create a new worksheet and name it Funnel. Color the sheet tab if desired.
2. Get a new Data Source called Players.xlsx – find this in the Data Sources Folder.
3. Drag the Step measure into the “Dimensions” area in the Side Bar to convert it to a Dimension.
4. Right-click on Step dimension, choose Aliases.
5. Change Alias Values: 1 = Highschool; 2 = College; 3 = Professional.
6. Drag the Step dimension to the Rows shelf.
7. Drag the Players measure to the Columns shelf.
8. Change the chart type to Area on the Marks Card.
9. Change Fit of canvas workspace to Entire View
10. Create a calculated field called Negative Players.
11. The calculation is: -[Players]
12. Drag the new Negative Players measure to the Columns shelf (Place to the LEFT of the Players Measure)
13. Hide Headers for Players and Negative Players (pills) in the view.
14. Compare picture to page 243 of your book.
15. There are optional exercises on pages 244-246. You can continue if desired, however this will involve a change to the data source. To keep it simple for class, we will leave it here.

Chapter 41 Exercise (Pace) – 15 Minutes – Book Pages: 247-255

1. Create a new worksheet and name it Pace. Color the sheet tab if desired.
2. Get a new Data Source called Pace.xlsx. Find this in the Data Sources folder.
3. Create a new Calculation named % of Goal:

SUM([Current])/SUM([Goal])

1. Drag the new % of Goal measure to the Columns shelf.
2. Create another calculation, name it Pace :

(1/52) \* 42

1. Drag Pace measure to the Details shelf in Marks Card.
2. Drag the Measure dimension to the Row shelf
3. Change the view to Fit Height
4. Go to the Analytics tab in Side Bar and Add a Reference Line (to the TABLE)
   1. Change the Value to:
      1. Sum of Pace: Minimum
      2. Choose “Custom” Label and type PACE. Format as a red line, slightly fatter.
5. Go back to the Analytics tab, add a second Reference Line (to the TABLE)
   1. Change the Value to:
      1. AGG of % of GOAL: Maximum,
   2. Choose Custom Label and type in GOA. Format as a red line, slightly fatter.
6. Create one more Calculated field as follows:
   1. Name: Pace Score
   2. Calculation:

IF [% of Goal] / [Pace] >= 1 THEN "On Pace"

ELSEIF [% of Goal] / [Pace] >= .9 THEN "Slightly Behind Pace"

ELSE "Behind Pace"

END

1. Drag the new Pace Score measure/calculation to the Color Shelf.
2. Check your work with page 253
3. There is a variation on Pages 254-255 if you wish to continue on. This will require changing the Data Source
4. Extra/Bonus: Create a parameter to control the weeks determined for PACE in calculation in Step 18. Show the parameter control and adjust.

Chapter 42 Exercise (Pareto) – 10 Minutes – Book Pages: 257-263

1. Create a new worksheet and name it Pareto. Color the sheet tab if desired.
2. Create a new data source connection to Sample Superstore – or duplicate an existing Data Source connection to Superstore.
3. Customize the name this connection to Orders and Showing Returned Orders.
4. Drag Orders and Returns worksheets into the connection canvas area to the right. Then, change the JOIN type to LEFT JOIN (the second Venn diagram option from left.)
5. Go to the Pareto sheet (notice the “Returns” worksheet data section is now part of the Dimensions area.
6. Create a calculated field called Returns. Type in this calculation:

COUNT([Returned] = “Yes”)

1. Drag the Sub-Category dimension to the Columns shelf.
2. Drag the newly created Returns measure to the Row shelf – if needed, change the chart type from Automatic to BAR on the Marks Card.
3. Drag a SECOND Returns measure to the Rows shelf –Change the chart type to LINE on the Marks Card.
4. Set this pill (2nd Returns) to Dual Axis.
5. Go to the SECOND Returns pill and click the drop-down triangle, and choose “Quick Table Calculation”, then select Running Total.
6. Click the SECOND Returns pill AGAIN and click Edit Table Calculation.
   1. Check the box at the bottom which says “Add Secondary Calculation”. Change the secondary calculation to “Percent of Total”. *For a picture of this pop up and choices, see page 262 in your book*.
7. Click the first Sort (descending) tool on the toolbar.
8. Check your chart with the picture on page 263 of your book.

Chapter 43 Exercise (Control) – 5 Minutes – Book Pages: 265-269

1. Get a new Sheet and name it Control. Color the sheet tab if desired.
2. Use the Excel Sample Superstore (Orders) Data Source.
3. Drag the Order Date field to the Columns shelf. Click the arrow pointing down on the pill and choose Week Number (Continuous).
4. Drag the Profit Ratio measure to the Rows shelf.

If you need to create a Profit Ratio calculated field, do the following:

Create a calculation, name it ***Profit Ratio*** with the calculation: SUM([Profit])/SUM([Sales])

1. Right-click the Profit Ratio Axis and “Add Reference Line”
   1. Line as type
   2. Scope set to Entire Table
   3. Value: AGG(Profit Ratio), Average
   4. Label: Custom; Computation | Value
   5. Formatting: Dashed, thicker, Blue.
   6. Click OK.
2. Again, right click the Profit Ratio Axis and “Add Reference Line”
   1. Scope set to Entire Table
   2. Choose “Distribution as the type
   3. For the Distribution Value, select Standard Deviation
   4. Change the factors to -3 and 3 (see page 268 in your book to confirm choices)
   5. Choose the Line option and choose RED for the color
   6. Click OK.
3. Check page 269 in your book to compare your chart.

**Chapters 44-46: The three remaining charts are variations of charts you have already created in this book. Feel free to re-visit anytime and use the directions provided in your text book to get through them. Since you have previous experience with all the options, the text book will be sufficient to get through.**

44 – Dual Axis Bump

45 – Dumbbell

46 - Jitter