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**Chapter 2 – Working with Data in Tableau**

**Pages 58-59**: Connecting to data on a server - SQL Server Connection (Azure). The book does not have step-by-step instructions for this demo so follow the steps provided below.

1. Click the Connect to SQL Server tab.
2. Activate the Data>>New Data Source menu option.
3. Activate the Microsoft SQL Server option under the To A Server section in the data connect panel using the following information:

**SQL Server Sign In:**

Server: onlcdb.database.windows.net

Database: AdventureWorks

Sign In Option: Use a specific username and password

UserName: Student

Password: Pa55w.rd

**Build the SQL Server Data Source and a Query**:

1. Double click the Sales Order Header table to activate the data in the Data Source window.
2. Click the Automatic Update button.
3. Click the Connect to SQL Server tab.
4. Drag the Customer ID dimension to the Rows shelf and the Total Due measure to the Text shelf.

**Pages 60-61**: Connecting to Data in the Cloud using Google Sheets

1. Click the Connect to Google Sheets tab.
2. Double click the title.
3. Copy to the clipboard the URL provided.
4. Activate the Data>>New Data Source menu option.
5. Activate the Google Sheets option under the To A Server section in the data connect panel using the following information:

**Google Gmail Sign In (for Google Sheet data)**:

Username: onlclearntableau@gmail.com

Password: Pa55w.rd

Continue to follow the book starting on page 61, step #5 to complete the query. It is not necessary to change the data source to an extract as directed in step #7.

**Pages 66-70**: Creating/Using Extracts

1. Start a new Tableau workbook.
2. Use Excel Superstore located in the Learning Tableau - Chapter 2 folder on the desktop.
3. Select the Orders table.
4. Click Extract in the top, right under Connection. Point out how now the extract includes ALL data.
5. Click Edit next to Extract.
6. Click Add button under Filters.
7. Click Region and choose East and West.
8. Click the OK button twice.
9. Click the Orange tab labeled Sheet 1 at the bottom.
10. Save the .hyper file in the default directory, My Tableau Repository\Datasources, and name it EastandWest.hyper.
11. Drag the Region dimension to Rows to show that only East and West are included in the data extract.
12. Right click the extract data source in the Data pane. Click Use Extract to unselect. Show how all regions are now there.
13. Click the Data Source tab to show that the data source is now a Live connection and no longer using the extract.
14. Discuss that this toggle to use or not use the extract is available in this workbook because this is where it was created.
15. Return to the Chapter 2 workbook and click the Extract tab.
16. Click Data>>New Data Source menu.
17. Click More… under To A File in the New Data Source panel.
18. Navigate to My Tableau Repository>>Datasources.
19. Select EastandWest.hyper to build the data source.
20. Click the Extract sheet.
21. Drag the Region dimension to Rows to show that only East and West regions are included in the data extract.

**Pages 74-80**: Joins

1. Click the Joins sheet.
2. Activate the Data>>New Data Source menu option.
3. Use Excel Superstore located in the Learning Tableau - Chapter 2 folder on the desktop.
4. Select the Orders table.
5. Click the Joins sheet.
6. Drag the Order ID dimension to the Rows. Click Add all members if prompted. Notice that that there are 6455 Marks in the bottom left corner in the status bar representing all orders.
7. Click the Data Source tab
8. Double click the Returns Table.
9. Click the circles in between the tables to show the join type as Inner. Explain this is an exact match based on Order ID matching in both tables which means there will be no nulls.
10. Click the Joins sheet.
11. Drag the Order ID (Returns) from the Returns table to the Rows to the left of the Order ID from the Orders table. Notice that there are now 617 Marks with no nulls. This listing is now showing only the Order IDs that have returns.
12. Click the Data Source tab and click the circles in between the tables.
13. Click the LEFT option.
14. Click the Joins sheet. Notice that ALL the Orders (Left Table) are displaying and for the Returns there is a NULL in place of any order that did NOT get returned. The Marks are back to 6455.
15. Click the Data Source tab and click the circles in between the tables.
16. Click the Right option.
17. Click the Joins sheet. Notice that all the Returns (Right Table) are displaying, but there are still no NULLS because we are looking at ALL the records from the Right Table and any that match from the Left Table. Notice we are back to 617 marks.
18. Click the Data Source tab and click the circles in between the tables.
19. Click the Full Outer option. This will provide the full data set to be returned with 6455 Marks again because we have asked for ALL the records from both tables to appear which includes the NULLS.

More join information can be found at: [www.w3schools.com](http://www.w3schools.com)

Use the left side of the hub to go to SERVER SIDE and then LEARN SQL. Go to the SQL Joins section and use the “Try it Yourself” options to reiterate what you have done above.

**Blends**

1. Click the Blend sheet.
2. Click the Data>>New Data Source menu option.
3. Click Microsoft Excel under To A File on the Connect Pane.
4. Select the Sales Goals.xlsx file in the Chapter 2 resource folder on the Desktop.
5. Click the Blend sheet.
6. Drag the State Name pill to the Rows.
7. Click the Superstore Data Source in the top of the Data pane.
8. Drag the State pill onto the Rows.
9. Click OK on the Warning Window.
10. Drag the Sales pill to the Text shelf.
11. Click OK on the Warning Window.
12. Click the Data >>Edit Blend Relationships.
13. Ensure Sales Goals is noted as the Primary Data Source.
14. Click Superstore as the Secondary Data Source.
15. Click the Custom Radio Button.
16. Click the Add Button.
17. Click State under the Secondary Data Source Field.
18. Click OK twice. All of the data is now displaying accurately.
19. Notice the red-orange link next to the State pill on the Superstore data source. This indicates that the State field in the Secondary Data Source is blended to the Primary Data Source using this data. If the red-orange link is clicked, the link will break and the fields will no longer display the data accurately.

**Filters**

You can make up any filter on the fly here, but if you go to a new sheet and want a quick, easy one:

1. Click the Filters sheet.
2. Select the Superstore data source.
3. Drag Region dimension to Rows.
4. Drag Ship Mode to Rows.

Note that there are 3 Ship Modes. Let’s assume that “Delivery Truck” is not needed.

1. Click the Ship Mode pill down arrow on the Rows shelf and choose Filter.
2. Uncheck “Delivery Truck”. Click OK.
3. Click the down arrow on the Ship Mode pill in the Filter shelf. Choose Show Filter. Point out that this is the way the filter can be provided for user interactivity with the data.
4. Drag Order Date to Columns.
5. Click Order Date down arrow on Columns and select Show Filter.

**SECTION 2 – Leveraging the Full Power of Tableau**

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**Chapter 4 – Starting an Adventure with Calculations**

**Page 157:** Edit the Measure pill called: INVALID: Cannot Mix Aggregate and Non-Aggregate by clicking the drop-down arrow on the pill and select Edit. The calculation is stated as follows:

[Discount] / Sum(Rent)

1. Click the red -------------------drop-down arrow on the message at the bottom of the calculation window: The calculation contains errors. In a calculation, mixing aggregates and non-aggregates is not allowed. In addition, Rent is not properly punctuated with square brackets.
2. Fix the calculation to read: SUM([Discount]) / SUM([Rent])
3. Rename the calculation as: Discount %
4. Follow the TIP to put a permanent format on the Discount % pill.

**Page 168-171**:Parameters do not have a demo to illustrate how they work. Use this example to see how they work.

1. Create a new sheet and name it Parameter.
2. Create a parameter called Seasonal Discount with the following values:
   1. Summer
   2. Winter
3. Create a calculation called Seasonal Discount Rate with the following code:

CASE [Seasonal Discount]

WHEN “Summer”

THEN SUM([Rent]) \* .10

WHEN “Winter”

THEN SUM([Rent]) \* .20

END

1. Activate the parameter by clicking the down arrow on the pill and selecting Show Parameter Control.
2. Place Rental Property and Full Name on the Rows.
3. Place Rent on the Text shelf.
4. Double click Seasonal Discount Rate to activate Measure Values and Measure Names.
5. Select the values from the parameter to see the values change.
6. Double click the title to use the parameter in the title text.

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**Chapter 5 – Diving Deep with Table Calculations**

**Page 188**: Demonstrate a Quick Table Calculation by recreating the screen shot using the Superstore data source on the Quick Table Calc-Running Sum tab.

1. Place the Order Date field on the Columns and make it a Continuous Month.
2. Drag the Sales measure to the Rows.
3. Perform CTRL + Drag to copy the Sales measure to create a second pill to the right of the first one.

(This is a dual chart similar to was in Chapter 2).

1. Click the down arrow on the second Sales pill. Select the Quick Table Calculation menu option and click “Running Total” to compare with the book.

**Page 210-212**: Create the top two calculations on the bottom of page 211 (The third calculation, Size, is already created). There is an error in the second formula noted at the bottom of page 211, so use the following code instead:

WINDOW\_SUM(MIN(1))

Perform the following to show all three options in the Caption and one of them in the title:

1. Drag and drop all three of the calculations on the Detail shelf.
2. Activate the Worksheet>>Show Caption menu option.
3. Double click the Caption text in the bottom of the visualization.
4. Add the three calculations in the window by using the Insert drop down.
5. Click OK.
6. Double click the title.
7. Add the number of states by including one of the calculations by using the Insert drop down.

**SECTION 4 – Advanced Techniques and Sharing with Others**

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**Chapter 11 – Advanced Visualizations, Techniques, Tips and Tricks**

**Page 427-429**: The Unit/Symbol chart will not work as illustrated on the CSV file. The following changes will need to be made for the chart to be created:

1. Create a new data source connecting to the Orders table in the Excel Sample-Superstore located in the following directory:

C:\Documents\My Tableau Repository\Datasources\2020.2\en\_US-US

1. Add the Region and State pills to the Rows.
2. Alter the Late Shipping calculation to read:

DATEDIFF(‘day’, [Order Date], [Ship Date]) > 6

1. Place a Descending Sort on State based on the Distinct Count of Customer ID.

**Page 456**: Use the following to illustrate Animation:

1. Place the continuous Month of Order Date on Columns
2. Place SUM(Sales) on Rows.
3. Place Region pill on the Color shelf.
4. <CTRL> click the Month of Order Data pill on the Columns shelf. Drag a copy of the pill to the Pages shelf.
5. Click Show History and set the options as follows:
   1. Marks to show history for: ALL
   2. Show: BOTH
6. Click Right Arrow to play animation.