

Jumpstart Tableau

A Step-By-Step Guide to Better Data Visualization

Arshad Khan



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About the Author

Arshad Khan is a versatile IT business intelligence and SAP software professional with over 30 years of experience. He has extensive consulting experience in business intelligence/analytics and SAP. He has consulted for such leading companies as Accenture, PricewaterhouseCoopers, Deloitte, Pacific Gas & Electric Co., Bose Corporation, DaimlerChrysler, Home Depot, Genentech, Chevron, Textron, PepsiCo, Polycom, Unisys, and Hitachi America. Since 2014, Mr. Khan has been consulting for the US Navy as a business intelligence architect. At Juniper Networks (a four-billion-dollar company), he led the Tableau-based analytics development team.

Mr. Khan, who has fifteen books on diverse subjects to his credit, previously authored five books on BI/data warehousing. He has also taught at seven universities, including the University of California (Berkeley, Santa Cruz, and San Diego), since 1995. Mr. Khan has a graduate degree in engineering and an MBA.

About the Technical Reviewer



Girija Chavan is a data analysis and data visualization evangelist who has provided professional consulting to companies such as Juniper Networks, Hewlett-Packard, and Accept Software. Girija has been invited to teach Tableau at UCSC Extension and at Santa Clara University. She was a guest speaker at the 2014 Annual Tableau Conference. She has completed advanced Tableau Desktop and Server training, Jedi training, and Stephen Few's workshops for data visualization, and she continues to pursue studies in the fields of data science and predictive analytics.

Girija holds a bachelor's degree and an MBA in IT. She currently works as a lead BI analyst and Tableau server administrator at Juniper Networks.

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Introduction

Jumpstart Tableau aims to teach novices the basics of Tableau software so that they can quickly develop simple reports and visualizations. Tableau is a very powerful software with a very rich set of features and functionality. However, to get started, users need to learn only a few key functions, which are widely used in every type of business. This book aims to teach those basic functions through a series of exercises, which are based on step-by-step instructions. Learning these exercises will not make anyone an expert. However, they will provide enough knowledge and hands-on capability to novices so that they can quickly develop powerful and professional-looking visualizations.

Jumpstart Tableau contains 40 exercises. Of these, one explains the Tableau interface, while the others provide step-by-step instructions for performing various functions. Functions covered include swapping, sorting, drill down, grouping, hierarchies, aggregation, filtering, formatting, and trending. The exercises show how to delete, copy, and save workbooks, export the data/results to Excel or PDF, and display the detailed underlying data. They also demonstrate analysis functions, including Top N and forecasting.

Jumpstart Tableau also contains step-by-step exercises that demonstrate how to create a dashboard, incorporate quick filters in dashboards, and use layout formatting, as well as how to cascade worksheet changes in a dashboard.

The exercises in this book are based on two sample data files provided by Tableau Software. These files can be downloaded from www.apress.com/9781484219331.

CHAPTER 1

Log on to Tableau

Objective: This exercise demonstrates how to launch Tableau and connect to an Excel spreadsheet data source

• Launch the Windows Start menu, as displayed in Figure 1-1



Figure 1-1. Launching Tableau

• Click Start ➤ All Programs ➤ Tableau 9.1 (32-bit), which leads to the intermediate screen displayed in Figure 1-2

Electronic supplementary material The online version of this chapter (doi:10.1007/978-1-4842-1934-8_1) contains supplementary material, which is available to authorized users.

CHAPTER 1 🔲 LOG ON TO TABLEAU



Figure 1-2. Intermediate screen

The intermediate screen, which flashes and then disappears, is followed by the **Welcome** screen displayed in Figure 1-3.



Figure 1-3. Tableau Welcome window

The left-hand pane is called the **Connect** pane; it lists the various data sources that you can connect to. These sources include relational databases, online data sources, text files, as well as Excel. An Excel sheet is considered a database table. It is possible to join one or multiple tables (or sheets) in Tableau.

The middle section of the window with the light background, under **Open**, lists the workbooks that were used recently. A workbook in this area can be launched by just clicking it. The three items listed under **Sample Workbooks** are provided by Tableau and show up by default.

The right section, **Discover**, contains links for getting started in Tableau. In our exercise, we will connect to an Excel spreadsheet:

• Click Excel, as shown in Figure 1-3, which pops up the window displayed in Figure 1-4

CHAPTER 1 🔳 LOG ON TO TABLEAU



Figure 1-4. Datasource folder

The file that you want to connect to is at a lower level. Therefore, you need to drill down into the folder structure until the desired file is displayed.

Navigate to the desired spreadsheet as follows:

• My Tableau Repository ➤ Datasources ➤ 9.1 ➤ en_US-US

When the drilldown has completed, the display is as shown in Figure 1-5.

🔀 Tableau - Book1	A Long Manual State	And the second se	
🔀 Open			J
🕞 🖓 - 🕌 « Datasource	s ▶ 9.1 ▶ en_US-US	✓ 4y Search en_US-US	
Organize 🔻 New folder		III • 🗖 🔞	
 ★ Favorites ▲ Desktop ➡ Downloads > Recent Places 	Documents libr Arrange by: Fold	^{der} ▼ File that needs	
Documents	(to be enough)
		to ne obelied	v
Pictures			
Videos			1.00
🔣 Homegroup			1
r Computer			s_in_tabl n
🏭 OS (C:)			
💿 DVD RW Drive (D			
		•	
File nan	ne:	✓ Excel Workbooks (*.xls;*.xlsx;*.xl	
		Open 🔫 Cancel	ng_for_to v
		ail and a second s	
Saved data sources			
Sample - Superstore	Sample Workbooks		

Figure 1-5. Sample data source

The Sample – Superstore file is now displayed in Figure 1-5.

• Click the **Sample – Superstore** file, which highlights it, as shown in Figure 1-6

CHAPTER 1 🔲 LOG ON TO TABLEAU

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Favorites	Documents library en_US-US	Arrange by: Folder 🔻
Recent Places	Name	
	Sample - Superstore	
Libraries		
Documents		
J Music		Click Onen
Pictures		cher open
Homegroup Computer		1
DVD RW Drive (D		
+	< m	•
File	game: Sample - Superstore	Excel Wor pooks (*.xls;*.xlsx;*.xl 🔻

Figure 1-6. Data source Excel spreadsheet

• Click the **Open** button, as shown in Figure 1-6, which opens the **Sample – Superstore** spreadsheet and leads to the display shown in Figure 1-7



Figure 1-7. Data Connection window

This spreadsheet has three sheets: Orders, People, and Returns. We can connect to one or more of the sheets or tables, such as Orders.

The Orders sheet can be opened for analysis using one of two methods:

- Double-clicking the **Orders** sheet
- Dragging and dropping Orders onto the canvas

To drag and drop:

• Click the **Orders** sheet, as shown in Figure 1-8

CHAPTER 1 LOG ON TO TABLEAU

Tableau - Book1	Read I	And a state of the
Eile Data Server Wigdow Help		
♂ Sample - Superstore		
Connected to Excel	Click the Orders sheet	
Workbook	which highlights it	
Sample - Superstore.xls	which highlights it	
Sheets		
Enter sheet name		Drag sheets here
I Orders		N
People Orders		
III Returns		
	Copy	Show aliases Show hidden fields Rows
		Drag the Orders sheet
		from the left-hand side
		onto the canvas
		onto the canvas

Figure 1-8. Selecting the dataset

• Drag **Orders** onto the blank canvas area, as shown in Figure 1-8, which leads to the display shown in Figure 1-9

Tableau - Book1				Second Street	the state of the s			and the second second	- 0 X
File Qata Server Wigdow Help ☆ ← → 問 眞						_			
Orders (Sample - Super Connected to Exect Workbook Sample - Supersonals Sheets Sheets	orders	~		Data sourc Tableau is	e to which connected		ive © Extract Data c the co	ontained ir	ters b Add_
Interstreet name		Сору					Show aliases Sh	ow hidden fields R	ows 9,994 +
	Row ID	Order ID Abc	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name Abc	Segment Abc	Country
		CA-2013-152156	11/9/2013	11/12/2013	Second Class	CG-12520	Claire Gute	Consumer	United States
	2	CA-2013-152156	11/9/2013	11/12/2013	Second Class	CG-12520	Claire Gute	Consumer	United States
	3	CA-2013-138688	6/13/2013	6/17/2013	Second Class	DV-13045	Darrin Van Huff	Corporate	United States
	4	US-2012-108966	10/11/2012	10/18/2012	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States
	5	US-2012-108966	10/11/2012	10/18/2012	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States
	6	CA-2011-115812	6/9/2011	6/14/2011	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States
Go to Worksheet		CA-2011-115812	6/9/2011	6/14/2011	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States
🗇 Data Source Sheet 1 🏥 🏥 🟥									

Figure 1-9. Data imported from the Orders sheet

Figure 1-9 shows that the **Orders** sheet of the **Sample – Superstore** data source (Excel spreadsheet) is connected to Tableau. The lower section of the display shows the data contained in the selected sheet (Orders). The first row contains the column headers. The table itself contains sales data for customers buying specific products.

The exercises in this book are primarily based on the Sample – Superstore spreadsheet, which is a subset of the **Global Superstore** spreadsheet, which has also been used in some exercises. However, the Global Superstore has been used in most of the Tableau sample workbooks.

CHAPTER 2

Connecting to Two Data Sources

Objective: This exercise demonstrates how to connect to two data sources

Figure 2-1 shows the Tableau Welcome screen after it is launched. The left-hand pane, under **Connect**, lists the various data sources to which Tableau can connect. These are split into three groups of data sources:

- To a file
- To a server
- Saved data sources



Figure 2-1. Tableau Welcome screen

For this exercise as well as subsequent exercises, we will only use the first option, **To a file**, because the Excel data source we will use is available there. The second option can be used when we need to connect to external data sources, which primarily are databases.

CHAPTER 2 CONNECTING TO TWO DATA SOURCES

To display more data sources:

• Click **More Servers**, as shown in Figure 2-1, which leads to Figure 2-2, where the additional data sources are listed

		Additional data	sources
Connect	Şearch		
	Tableau Server	MarkLogic	
Excel		Microsoft Analysis Services	Other Databases (ODBC)
Text File	Actian Matrix	Microsoft PowerPivot	
Access	Actian Vector	Microsoft SQL Server	
Statistical File	Amazon Aurora	MySQL	
Other Files	Amazon EMR	OData	
	Amazon Redshift	Oracle	
	Aster Database	Oracle Essbase	
Tableau Server	Cloudera Hadoop	Pivotal Greenplum Database	
Microsoft SQL Server	DataStax Enterprise	PostgreSQL	
MySQL	EXASolution	Progress OpenEdge	
Oracle	Firebird	Salesforce	
Amazon Redshift	Google Analytics	SAP HANA	
More Servers	> Google BigQuery	SAP NetWeaver Business Warehouse	
	Google Cloud SQL	SAP Sybase ASE	
	Hortonworks Hadoop Hive	SAP Sybase IQ	
Sample - Superstore	HP Vertica	Spark SQL	
World Indicators	IBM BigInsights	Splunk	
	IBM DB2	Teradata	
	IBM PDA (Netezza)	Teradata OLAP Connector	
	MapR Hadoop Hive	Web Data Connector	

Figure 2-2. Additional data sources

For this exercise, you need to connect to the **Sample – Superstore** Excel spreadsheet data source:

- Connect to the **Sample Superstore** data source, using the method demonstrated in Chapter 1
- Drag the Orders sheet onto the canvas, which leads to the display shown in Figure 2-3



Figure 2-3. Sample data source

The source data can be used as-is. However, in some cases, data may need to be prepared so that it can enable better and/or easier analysis. For example, field names can be renamed so that they are easily understood by the business users. In some cases, a complex field may need to be split.

To rename the **Order ID** field:

- Hover over the **Order ID** field, as shown in Figure 2-3, which displays the pull-down arrow (shown next to the field name)
- Click the pull-down arrow for the **Order ID** field, which pops up the menu tree displayed in Figure 2-4

CHAPTER 2 CONNECTING TO TWO DATA SOURCES



Figure 2-4. Renaming or changing data type for a field

- Click **Rename**, as shown in Figure 2-4, which pops up the **Rename Field** window displayed in Figure 2-5
- If the data type needs to be changed in a column, click the icon below the column header, as indicated in Figure 2-4

CHAPTER 2 CONNECTING TO TWO DATA SOURCES



Figure 2-5. Rename popup window

- Enter the new field name in the **Name** field in the **Rename Field** popup box, as shown in Figure 2-5
- Click OK, which renames the field

There are two ways in which data can be accessed and used by Tableau. In **Connect Live**, a direct connection is made with the data source. In this mode, if the source data changes, it is immediately reflected in the visualizations and any analysis being performed.

Tableau also supports the **Extract** mode, in which data is pulled into the Tableau data engine, which takes the data offline. No live connection is maintained with the source system (from which the querying load is offloaded). However, in Extract mode, analysis can only be performed up to the time when the extract was pulled. When real-time data needs to be analyzed, this option will not work.

In Figure 2-6, the **Extract** mode is selected.

Orders	Copy	Click I switch Extrac	Live to from t mode Extra	act mode is s	selected	Inection Live © Extract Edt Ext with Actude all data.
Orders	Copy		Extra	act mode is s	selected	>
	Сору	<	Extra	act mode is s	selected	>
	Сору					
						🖾 Show aliases 🛛 Show H
ID	Order ID Abc	Order Date	Ship Date	Ship Mode Abc	Customer ID Abc	Customer Name Abc
1	CA-2013-152156	11/9/2013	11/12/2013	Second Class	CG-12520	Claire Gute
2	CA-2013-152156	11/9/2013	11/12/2013	Second Class	CG-12520	Claire Gute
3	CA-2013-138688	6/13/2013	6/17/2013	Second Class	DV-13045	Darrin Van Huff
4	US-2012-108966	10/11/2012	10/18/2012	Standard Class	SO-20335	Sean O'Donnell
5	US-2012-108966	10/11/2012	10/18/2012	Standard Class	SO-20335	Sean O'Donnell
-			2011	Standard Class	BH-11710	Brosina Hoffman
	Click thi	s tah to or	nen	Standard Class	BH-11710	Brosina Hoffman
	the work	ksheet		tandard Class	BH-11710	Brosina Hoffman
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Figure 2-6. Selecting Extract mode

To switch to **Live** mode:

• Click the Live radio button, as shown in Figure 2-6

To access the worksheet:

• Click the **Worksheet** tab (Sheet 1), as shown in Figure 2-6, which leads to the worksheet displayed in Figure 2-7

CHAPTER 2 CONNECTING TO TWO DATA SOURCES



Figure 2-7. Going back to the data source in data connection window

If you are working with a worksheet and need to go back to the data source:

• Click the **Data Source** tab, as shown in Figure 2-7, which opens the data source window

Additional data sources can be added to an existing data source. Figure 2-8 shows three data sources: Orders, People, and Returns. **Orders** is already connected.

CHAPTER 2 CONNECTING TO TWO DATA SOURCES



Figure 2-8. Selecting a second spreadsheet tab

To add the second data source, Returns:

• Drag and drop the **Returns** sheet onto the canvas next to **Orders**, as shown in Figure 2-8, which leads to the display shown in Figure 2-9

Tableau - Book1		-			1. A	Street, Square, Sq	of the second value of the		
<u>File Data Server</u>	Window H	jelp							
	4								
Order:	s (Samp	le - Supers	store)					Connecti Live	Extract
Connected to Excel									0
Workbook						~			<hr/>
Sample - Superstor	exis		Orders			Returns			
Sheets				/				Returns	has
Enter sheet name				//		\mathbf{X}		been dra	gged
Orders				~		$\backslash \backslash$		here	
People		Indicates	that the tv	vo		$1 \sim$			
III Return		tables are	joined		1				
						Click this	icon) 🗉	Show aliases 📰 Show
			Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name
			# Orders	Abc Orders	C Orders	C Orders	Abc Orders	Abc Orders	Abc Order
			19	CA-2011-143336	8/27/2011	9/1/2011	Second Class	ZD-21925	Zuschuss Donatelli
			20	CA-2011-143336	8/27/2011	9/1/2011	Second Class	ZD-21925	Zuschuss Donatelli
			21	CA-2011-143336	8/27/2011	9/1/2011	Second Class	ZD-21925	Zuschuss Donatelli
			56	CA-2013-111682	6/18/2013	6/19/2013	First Class	TB-21055	Ted Butterfield
			57	CA-2013-111682	6/18/2013	6/19/2013	First Class	TB-21055	Ted Butterfield
			58	CA-2013-111682	6/18/2013	6/19/2013	First Class	TB-21055	Ted Butterfield
			59	CA-2013-111682	6/18/2013	6/19/2013	First Class	TB-21055	Ted Butterfield
			60	CA-2013-111682	6/18/2013	6/19/2013	First Class	TB-21055	Ted Butterfield
Data Source	Sheet 1	ta 🛍 to							

Figure 2-9. Two selected data sources combined with a join

Tableau automatically joined the two tables, **Orders** and **Returns**, as an inner join.

• Click the **Join** icon, as shown in Figure 2-9, which displays the join details, as shown in Figure 2-10

CHAPTER 2 CONNECTING TO TWO DATA SOURCES



Figure 2-10. Table joins

Tableau automatically determined that **Order ID** is a common field in the two tables, **Orders** and **Returns**, as shown in Figure 2-10. It also provides the option to select a different field to join two tables. To use a different field for joining the two tables:

• Hover over the **Order ID** field, as shown in Figure 2-10, which displays its pull-down arrow, shown in Figure 2-11

🔀 Tableau - Book1	The state		and the second second	And in case of	Manufacture of the local division of the loc
<u>File Data Server Window H</u> elp					
⑦ Orders+ (Sample - Super	store)				
Connected to Excel					
Workbook					
Sample - Superstore.xls	Orders	Returns			
Sheets		Join			×
Enter sheet name		Inner	Left	Right Ful	l Outer
I Orders		Data Source	e	Returns	
I People		Order ID	· =	Order ID (Returns)	×
I Returns		Add new join dause			
-					
	Row ID # Orders	Order ID Abc Orde	Order D.		Ship Mode
	19	CA-2011	Click this pull- down arrow		Vlass
	20	CA-201			ass
	21	CA-2011-14			d Class
	56	CA-2013-111682	6/10/20		First Class
	57	CA-2013-111682	6/18/2013	6/19/2013	First Class
	58	CA-2013-111682	6/18/2013	6/19/2013	First Class
X	59	CA-2013-111682	6/18/2013	6/19/2013	First Class
Go to Worksheet	60	CA-2013-111682	6/18/2013	6/19/2013	First Class
🗇 Data Source Sheet 1 🏥 🗄 竹					

Figure 2-11. Displaying the fields to change the join

To use a different field for joining the two tables:

• Click the **Order ID** pull-down arrow shown in Figure 2-11, which leads to the display shown in Figure 2-12


Figure 2-12. Available join fields

To select a different field to join the two tables:

• Click the desired field from the list displayed in Figure 2-12, which changes the join field to the field that is clicked (instead of **Order ID**)

This step was performed in the **Data Source** tab. To see how the worksheet was impacted due to the addition of the second data source:

• Click the **Sheet 1** tab, as shown in Figure 2-12, which leads to the display shown in Figure 2-13



Figure 2-13. Display with two data sources

You can search for a field, which is a useful feature when a table has many dimensions or measures. Figure 2-14 shows a worksheet that has two sources: **Orders** and **Returns**.



Figure 2-14. Searching for a field

To search for a dimension:

• Click the **Find Field** icon shown in Figure 2-14, which leads to Figure 2-15, where the search box is displayed (with the prompt **Enter Search Text**)



Figure 2-15. Search box

- Type the field name in the search box, which is highlighted in Figure 2-15
- Hit Enter, which highlights the field(s) matching the search criteria

CHAPTER 3

Exploring the Tableau Interface

Objective: This exercise provides an overview of the Tableau interface

After connecting to a data source, you see a blank sheet, as displayed in Figure 3-1, where data visualizations can be developed. Through the Tableau interface shown in Figure 3-1, many powerful and useful features can be accessed.



Figure 3-1. Tableau interface

The **menu bar** at the top of the window provides access to many powerful features. Below it is the **toolbar**, which contains many buttons, such as **Save**, **Undo**, **Redo**, **Add New Data Source**, and **Duplicate Sheet**. These buttons are contextual, therefore, only the relevant ones are highlighted—based on the current state of the worksheet.

The **Marks** card contains additional shelves on which fields can be placed directly (through drag and drop). **Shelves** include **Color**, **Size**, **Text**, **Detail**, and **Tooltip**. Clicking these shelves activate pop-up windows that enable their characteristics, such as labels to be edited. The default **Marks** type is **Automatic**, as shown in Figure 3-2. However, many Mark types can be used instead of the default (Automatic).



Figure 3-2. Data and Analytics windows

The **Data** window, highlighted in Figures 3-1 and 3-2, has two tabs: **Data** and **Analytics**. The default tab is **Data**, which displays the Dimensions and Measures used to develop visualizations. The **Analytics** tab displays a completely different set of options, which are focused on analysis.

The open data connection is shown at the top of the Data window pane. In Figure 3-2, the data connection displayed is **Orders (Sample – Superstore)**.

Views are built by dragging and dropping fields from the **Data** window onto the canvas or directly onto the shelves. The shelves, which are also sometimes referred to as *cards*, are as follows:

- Columns shelf
- Rows shelf
- Filter shelf
- Pages shelf
- Marks card

The layout that is displayed when a **Dashboard tab** is selected is somewhat different compared to the **Worksheet tab** layout. When a Dashboard window is active...

- The Data window (used in Worksheets) is replaced by the Dashboard Window
- It lists all the sheets available (in the left-hand window)
- It lists the Dashboard objects
- It displays the controls for the objects
- It displays the sizing options

Figure 3-3 displays the menu tree when the **File** option is selected on the menu bar when the Worksheet tab is active.

CHAPTER 3 EXPLORING THE TABLEAU INTERFACE

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Figure 3-3. File menu tree



Figure 3-4 displays the menu tree when the Data option is selected on the menu bar.

Figure 3-4. Data menu tree

Figure 3-5 displays the menu tree when the Worksheet option is selected on the menu bar.



Figure 3-5. Worksheet menu tree



Figure 3-6 displays the menu tree when the Dashboard option is selected on the menu bar.

Figure 3-6. Dashboard menu tree

Figure 3-7 displays the menu tree when the Analysis option is selected on the menu bar.



Figure 3-7. Analysis menu tree

Figure 3-8 displays the menu tree when the Format option is selected on the menu bar.



Figure 3-8. Format menu tree

The following should be noted:

- Tableau does not save a worksheet automatically; hence, you must save your work before exiting
- Buttons are contextual; hence, the functions available depend on what is going on in the sheet

To undo or reverse an action, use the **Back** arrow. The **Back** and **Forward** arrows, highlighted in Figure 3-9, can be used to navigate and go back/forward as visualizations are developed and/or modified.



Figure 3-9. Navigation

The **Sheet** tabs at the bottom of the window, highlighted in Figure 3-9, are used to create new worksheets, dashboards, and stories. Sheets can be moved around (by dragging), renamed, and duplicated. By right-clicking the appropriate sheet, a menu tree pops up, which enables the following:

- Copying a sheet
- Renaming a sheet
- Deleting a sheet
- Exporting a sheet
- Creating a new worksheet, dashboard, or story

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To create a new sheet, dashboard, or story:

- Click the New Worksheet icon, as shown in Figure 3-9
- Click the New Dashboard icon, as shown in Figure 3-9
- Click the New Story icon, as shown in Figure 3-9

If two data sources are used in a sheet, they are displayed in the **Data** window, as shown in Figure 3-10. The data sources are as follows:

- Country Codes
- Global Superstore



Figure 3-10. Data connections

The view that is displayed in the **Data** window—the list of dimensions and measures—depends on the data source that is selected. For example, if the **Global Superstore** is selected, then its dimensions and measures are displayed in the Data window. In Figure 3-10, the dimensions and measures displayed belong to the **Global Superstore** data source.

If **Country Codes** is clicked, it changes the view, as shown in Figure 3-11, where the list of dimensions and measures reflects the data contained in the **Country Codes** data source.



Figure 3-11. Country Codes data source

CHAPTER 4

Developing a Simple Visualization

Objective: This exercise demonstrates how a simple visualization can be developed

- Launch Tableau
- Connect to the **Sample Superstore** Excel file using the procedure demonstrated in Chapter 1, which leads to the display shown in Figure 4-1



Figure 4-1. Sample Superstore

• Click the **Sheet 1** tab, as shown in Figure 4-1, which leads to Figure 4-2, where reports and visualizations can be developed



Figure 4-2. Dimensions and Measures

The left-hand side of Figure 4-2 shows two groups:

- Dimensions
- Measures

Dimensions are fields, such as product, region, and customer. They are used to slice and dice the data to provide different perspectives. Dimensions are color-coded blue in the data pane and in the view. Measures are metrics—that is, the numbers—used for analysis. They are color-coded green.

In the following steps, we drag and drop the desired dimensions and measures onto Columns and Rows.

• Click Category, as shown in Figure 4-2, which leads to the display shown in Figure 4-3



Figure 4-3. Selecting a dimension

• Drag and drop **Category** onto the **Rows** shelf, as shown in Figure 4-3, which leads to the display shown in Figure 4-4

CHAPTER 4 DEVELOPING A SIMPLE VISUALIZATION



Figure 4-4. Dropping a dimension onto the Rows shelf

• Drag and drop **Quantity** onto the **Columns** shelf, as shown in Figure 4-4, which leads to the display shown in Figure 4-5



Figure 4-5. Dropping a measure onto the Columns shelf

• Drag and drop **Segment** onto the **Rows** shelf, as shown in Figure 4-5, which leads to the display shown in Figure 4-6

CHAPTER 4 DEVELOPING A SIMPLE VISUALIZATION

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Figure 4-6. Dropping another dimension onto the Rows shelf

• Drag and drop **Region** onto the **Columns** shelf, as shown in Figure 4-6, which leads to the display shown in Figure 4-7



Figure 4-7. Enhancing through the use of color

To enhance the display by providing color:

• Drag and drop **Region** from the Dimensions pane onto the **Color** shelf (on the **Marks** card), as shown in Figure 4-7, which leads to the display shown in Figure 4-8

CHAPTER 4 DEVELOPING A SIMPLE VISUALIZATION

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Figure 4-8. Enhanced display using color

Tableau also provides the **Show Me** feature, which enables access from the toolbar, as shown in Figure 4-8.

CHAPTER 5

Saving Tableau Workbook and Tableau Packaged Workbook

Objective: This exercise demonstrates how to save a Tableau Workbook (.twb) and a Tableau Packaged Workbook (.twbx)

Tableau provides two options to save a workbook. In the first option, only the workbook can be saved (as a .twb file). In the second option, the data associated with the workbook is packaged and saved (as a .twbx file).



Figure 5-1 displays a view based on category, region, and sales.

Figure 5-1. View based on two dimensions and one measure

• Click **File** on the menu bar, as shown in Figure 5-1, which pops up the menu tree displayed in Figure 5-2

CHAPTER 5 SAVING TABLEAU WORKBOOK AND TABLEAU PACKAGED WORKBOOK



Figure 5-2. File menu tree

• Click the **Save As** menu tree item, as shown in Figure 5-2, which leads to the Save As window displayed in Figure 5-3

CHAPTER 5 SAVING TABLEAU WORKBOOK AND TABLEAU PACKAGED WORKBOOK



Figure 5-3. The Save As pop-up box

Selecting the **Save as** option enables you to rename the default file name, which is provided by the system. It also provides the option to select the file type.

• Rename the default File name (Book1), displayed in Figure 5-3, to **Sales_Analysis**, as shown in Figure 5-4

🔀 Tableau - Book1 x 🗱 Save As 1. 1 ✓ ↓ Search Tableau_Workbooks « My Documents + Tableau_Workbooks 2 New folder 0 Organize • . ٠ **Documents** library ☆ Favorites Arrange by: Folder -Tableau_Workbooks E Desktop Region / Downloads East Name Туре Recent Places No items match your search. 词 Libraries = Documents J Music File name has Pictures Videos been changed 🜏 Homegroup Computer 🚢 OS (C:) III File name: Sales_Analysis • Save as type: Tableau Workbook (*.twb) • Save Cancel Hide Folders Number of Records # Measure Values 0K Technology Furniture **Click Save** Data Source Sheet 1 to 🖽 to 12 marks 1 row by 12 columns SUM(Sales): 2,297,201

CHAPTER 5 SAVING TABLEAU WORKBOOK AND TABLEAU PACKAGED WORKBOOK

Figure 5-4. Renaming the file

• Click Save, as shown in Figure 5-4, which saves the workbook as Sales_Analysis.twb

The following procedure demonstrates how a workbook can be saved with its associated data as a .twbx file.

- Develop a worksheet with the following selections (which are shown in Figure 5-1):
 - Rows: Sales
 - Columns: Region and Category
- Click File on the menu bar, which leads to the menu tree displayed in Figure 5-5



Figure 5-5. Exporting a packaged workbook

• Click the **Export Packaged Workbook** menu tree item, as shown in Figure 5-5, which pops up the Export Packaged Workbook window displayed in Figure 5-6

CHAPTER 5 SAVING TABLEAU WORKBOOK AND TABLEAU PACKAGED WORKBOOK



Figure 5-6. Packaged Workbook file type

- Navigate to the folder where the workbook is to be saved (or accept the default location)
- Click Save as, shown in Figure 5-6, which saves the Packaged Workbook (.twbx)

To display the saved files, navigate to the **Tableau_Workbooks** folder (where the two workbook files were saved in the previous two exercises). Figure 5-7 displays the folder that contains the two saved workbooks:

- Tableau Workbook (without the data)
- Tableau Packaged Workbook (with embedded data)

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Figure 5-7. Saved workbooks

To open a workbook:

• Click File on the menu bar, which displays the menu tree shown in Figure 5-8

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Figure 5-8. File menu tree

• Click **Open**, as shown in Figure 5-8, which pops up the **Open** window displayed in Figure 5-9



Figure 5-9. Saved files that can be opened

• Click the workbook to be opened, **Tableau Workbook** in this case, which highlights it, as shown in Figure 5-10

CHAPTER 5 SAVING TABLEAU WORKBOOK AND TABLEAU PACKAGED WORKBOOK

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Figure 5-10. Selecting a file to open

• Click **Open**, as shown in Figure 5-10, which opens the workbook

CHAPTER 6

Using Basic Analysis Functions

Objective: This exercise demonstrates some basic analysis functions in Tableau

- Launch Tableau
- Open a new worksheet and connect to the **Orders** sheet in the **Sample Superstore** Excel file, as shown in Figure 6-1



Figure 6-1. Start analyzing data

• Drag and drop the **Sales** measure onto the **Rows** shelf, as shown in Figure 6-1, which leads to the display shown in Figure 6-2

CHAPTER 6 USING BASIC ANALYSIS FUNCTIONS



Figure 6-2. Total sales

• Hover over the **Sales** bar, as shown in Figure 6-2, which displays the total sales shown in Figure 6-3 (\$2,297,201)


Figure 6-3. Displaying total sales figure

The Tooltip in the Marks card, which can be seen in Figure 6-2, allows you to customize the information displayed when you hover over the visualization.

To view results over time:

• Drag and drop **Order Date** onto the **Columns** shelf, as shown in Figure 6-3, which leads to the display shown in Figure 6-4



Figure 6-4. Expanding the period

Date fields in Tableau, depending on their level of granularity, are automatically brought into the view as hierarchies. For example, when you drag Order Date to the Column shelf, Tableau plots the data by Year and shows a + symbol next to it, which indicates that you can drill down.

• Expand the + sign, located just before the **Year (Order Date)** in the **Columns** shelf, as shown in Figure 6-4, which leads to the display shown in Figure 6-5



Figure 6-5. Display expanded by quarter

In Figure 6-5, both quarters and years are in the displayed view. To analyze the performance over various quarters, swap **Quarter** with **Year** by:

• Dragging and dropping **QUARTER** to the left of **YEAR** on the **Columns** shelf, as shown in Figure 6-5, which leads to the display shown in Figure 6-6



Figure 6-6. Swapping position of items on the Columns shelf

• Drag and drop **Year** from the **Columns** shelf onto the **Color** shelf in the **Marks** card, as shown in Figure 6-6, which leads to the display shown in Figure 6-7



Figure 6-7. Dropping a dimension onto the Color shelf

To change the display from Quarters to Months:

• Hover over **Quarter** in the **Columns** shelf, as shown in Figure 6-7, which displays the pull-down arrow shown in Figure 6-8



Figure 6-8. Clicking to display the menu tree for a dimension

• Click the pull-down arrow displayed in Figure 6-8, which leads to the menu tree displayed in Figure 6-9

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Figure 6-9. Menu tree for selected dimension

• Click the **Month** menu tree item, as shown in Figure 6-9, which leads to the display shown in Figure 6-10



Figure 6-10. Month selection

To analyze the Average of Sales instead of the SUM of Sales (shown in Figure 6-10):

- Hover over **SUM (Sales)** in the **Rows** shelf, as shown in Figure 6-10, which displays a pull-down arrow
- Click the pull-down arrow when it is displayed, which leads to the menu tree displayed in Figure 6-11



Figure 6-11. Menu tree for selected measure

• Click the menu tree item **Measure (Sum)**, as shown in Figure 6-11, which leads to the secondary menu tree displayed in Figure 6-12



Figure 6-12. Selecting the average

• Click the menu tree item **Average**, as shown in Figure 6-12, which leads to the display shown in Figure 6-13



Figure 6-13. Display showing average

To analyze year-over-year growth, we start with Figure 6-14 (which is the same as Figure 6-10). This visualization is based on

- Row: Month (Order Date)
- Column: SUM(Sales)



Figure 6-14. Visualization to be analyzed

- Hover over **SUM (Sales)** in the **Rows** shelf, as shown in Figure 6-14, which displays a pull-down arrow (shown in Figure 6-15)
- Click the pull-down arrow when it is displayed, which leads to the menu tree displayed in Figure 6-15



Figure 6-15. Menu tree for measure

• Click the menu tree item **Quick Table Calculation** as shown in Figure 6-15, which leads to the secondary menu tree displayed in Figure 6-16



Figure 6-16. Secondary menu tree

• Click the menu tree item **Year over Year Growth**, as shown in Figure 6-16, which leads to the display shown in Figure 6-17



Figure 6-17. Adding the Sales measure

To display the original sales figures in the same chart:

• Drag and drop the **Sales** measure onto the **Rows** shelf, as shown in Figure 6-17, which leads to the display shown in Figure 6-18

When calculating comparisons such as year-over-year growth, the first year in the data table is empty. This causes it to show as null, because there is no existing data from the previous year that it can be compared to.



Figure 6-18. Two charts displayed simultaneously

This figure now enables analysis to be made from two different perspectives (Sales and % Difference in Sales).

To enable values to be displayed when the cursor is placed over an item, i.e., enable hovering:

• Drag **SUM (Sales)** from the **Rows** shelf onto the **Tooltip** shelf (in the **Marks** card area), as shown in Figure 6-19



Figure 6-19. Using the Tooltip shelf

• Hover over a line in the chart, which causes its associated data to be displayed, as shown in Figure 6-20



Figure 6-20. Using hovering to display relevant date

CHAPTER 7

Adding, Removing, and Renaming a Dimension

Objective: This exercise demonstrates how a dimension or measure is added or deleted from a visualization, and explains how to rename a dimension

We start with the visualization shown in Figure 7-1, which includes one dimension (**Region**) and one measure (**Sales**).



Figure 7-1. Visualization to be modified

To add the Order Date dimension:

• Drag and drop **Order Date** from the **Data** window onto the **Columns** shelf, as shown in Figure 7-1, which leads to the display shown in Figure 7-2

CHAPTER 7 ADDING, REMOVING, AND RENAMING A DIMENSION



Figure 7-2. Visualization after adding period

To remove the **Region** dimension:

• Drag and drop **Region** from the **Columns** shelf onto the **Data** window or below the **Marks** card, as shown in Figure 7-2, which leads to the visualization displayed in Figure 7-3

Tableau - 1_Getting_started_finished File <u>Data Worksheet Dashboard Story Analysis Map Format Server Window</u> Help 舞. $\leftarrow \rightarrow$ ▋ \$ **₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽** Abc Normal • 🛏 🗶 • 🛱 Data Analytics Pages **Columns** YEAR(Order Date) Global Superstore) Rows SUM(Sales) mp -Dimensions Filters City Order Date Country Category 4500K Abc Customer ID Abc Customer Name =Abc Distribution Center Marks 4000K Abc Market 📋 Order Date II Bar Abc Order ID 0 0 Abc Order Priority Region has been Postal Code Color Size Abc Product ID removed 👗 Products Detail Tooltip Abc Category Abc Sub-Category Abc Product Name 2500K Abc Region Sales Abc Row ID Abc Segment 2000K 🛱 Ship Date Abc Ship Mode State Sub-Category (group) 1500K Abc Measure Names 1000K Measures Discount

500K

OK

2011

2012

Sales by Category

2013

2014

Customer Breakdown

Figure 7-3. Visualization after removing dimension

Sales Seasonality

Crosstab

SUM(Sales): 12,642,502

=

Profit

Quantity

Sales # Shipping Cost

Sets

Action (Country, State)

4 marks 1 row by 4 columns

Data Source

The procedure to add and/or delete a measure is similar to the one used to add/delete a dimension, which was demonstrated earlier in this exercise.

Global Sales and Profits

Renaming is another useful feature. Sometimes, the dimensions and measures in the source files have names that are not clear to end users. Therefore, renaming them can make the system less confusing and more user-friendly. Tableau provides the ability to rename dimensions and measures in the Data window, where they are displayed.

E Sales D

We now rename the **Region** dimension, as shown in Figure 7-4.



Figure 7-4. Selecting the dimension to be renamed

To rename the **Region** dimension:

• Right-click **Region**, as shown in Figure 7-4, which pops up the menu tree displayed in Figure 7-5



Figure 7-5. Menu tree displaying the rename option

• Click **Rename**, as shown in Figure 7-5, which pops up the **Rename Field** window shown in Figure 7-6

CHAPTER 7 ADDING, REMOVING, AND RENAMING A DIMENSION

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Conder Date Abc Order ID Postal Code Abc Product ID Abc Product Name Abc Region Row ID Abc Segment Ship Date Abc Ship Mode Conder Date	Abc Automatic Abc Automatic Color Size Text Detail Tooltip	field Drop field here here Rename Field	
Abc Sub-Category	-	Reset	OK Cancel
Measures		C	
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Data Source Sheet 1	ta 😫 to		

Figure 7-6. Rename Field pop-up window

• Rename the **Name** field from **Region** to **Geography**, as shown in Figure 7-6, which leads to the display shown in Figure 7-7



Figure 7-7. Renamed dimension

• Click **OK**, as shown in Figure 7-7, which leads to the display shown in Figure 7-8 where the dimension is displayed with the new name (**Geography**)

CHAPTER 7 ADDING, REMOVING, AND RENAMING A DIMENSION



Figure 7-8. Renamed dimension displayed in Data window

CHAPTER 8

Copying or Deleting a Worksheet

Objective: This exercise demonstrates how to copy or delete a worksheet We start with the **Sales by Region** worksheet displayed in Figure 8-1.



Figure 8-1. Visualization to be duplicated

CHAPTER 8 COPYING OR DELETING A WORKSHEET

To make a duplicate copy of the worksheet:

• Right-click the **Sales by Region** sheet, as shown in Figure 8-1, which pops up the menu tree displayed in Figure 8-2



Figure 8-2. Menu tree displaying option to duplicate sheet

• Click the **Duplicate Sheet** menu tree item, as shown in Figure 8-2, which leads to the display in Figure 8-3



Figure 8-3. Worksheet displaying duplicated sheet

Figure 8-3 now shows two worksheets:

- Sales by Region (original)
- Sheet 2 (duplicate)

To delete a worksheet:

• Right-click the sheet to be deleted, which pops up the menu tree displayed in Figure 8-4

CHAPTER 8 COPYING OR DELETING A WORKSHEET



Figure 8-4. Menu tree displaying the option to delete a sheet

• Click the **Delete Sheet** menu tree item, as shown in Figure 8-4, which deletes the sheet

CHAPTER 9

Changing the Display from One Chart Type to Another

Objective: This exercise demonstrates how to change the display from one chart type to another Figure 9-1 shows a bar chart for the sum of Sales by Region and Category.



Figure 9-1. Opening the Show Me window

Figure 9-1 shows the **Show Me** button, which is used to suggest the appropriate chart based on the selected data or to change the type of chart that is displayed. While **Show Me** displays many chart types, it only highlights the ones that can be used with the underlying data. If a chart cannot be used, it is grayed out.

To change the displayed chart type:

• Click the **Show Me** button, as shown in Figure 9-1, which leads to Figure 9-2, where the various chart options are displayed



Figure 9-2. Show Me window is displayed

In the **Show Me** window in Figure 9-2, the chart type that is not gray can generate a view of your data. If you hover over each chart type, the description at the bottom displays the requirements to plot that chart. One of the chart types highlighted in Figure 9-2 is the stacked bar chart.

• Click the **stacked bar chart** icon, as shown in Figure 9-2, which leads to the display shown in Figure 9-3

CHAPTER 9 \blacksquare Changing the display from one chart type to another



Figure 9-3. Stacked bar chart

To change the chart type, all you need to do is click the desired chart in the **Show Me** window.

• Click the **chart** icon, as shown in Figure 9-3, which leads to the chart displayed in Figure 9-4

CHAPTER 9 CHANGING THE DISPLAY FROM ONE CHART TYPE TO ANOTHER



Figure 9-4. Side-by-side bar chart

To display the data as a pie chart:

• Click the **pie chart** icon, as shown in Figure 9-4, which leads to the display shown in Figure 9-5



Figure 9-5. Pie chart

To display the data as a treemap:

• Click the **Treemap** icon, as shown in Figure 9-5, which leads to the display shown in Figure 9-6

CHAPTER 9 CHANGING THE DISPLAY FROM ONE CHART TYPE TO ANOTHER

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2 200 201 074					Central	
1,200 200,014						0 or more dimensions 1 or more measures
		Furniture	Furniture			
		Central			Office Supplies South	

Figure 9-6. Treemap

To display the data in table format:

• Click the **Text Table** icon, as shown in Figure 9-6, which leads to Figure 9-7, where the data is displayed in a Text Table format
CHAPTER 9 CHANGING THE DISPLAY FROM ONE CHART TYPE TO ANOTHER

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ages	iii Columns	Region				• 123 129 • 123 129 • 129 129	
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	Furniture	163,797	208,291	117,299	252,613	888	0
	Office Supplies	167,026	205,516	125,651	220,853	And my	
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Figure 9-7. Text table

CHAPTER 10

Using the Show Me Tool for Selecting a Visualization

Objective: This exercise demonstrates how to use the **Show Me** tool to select the appropriate visualization for the data being analyzed

Show Me is a powerful tool that helps users pick the appropriate view for the data being analyzed. The **Show Me** window contains commonly used chart types, which can help a user to get started with visual analysis. Based on the data that is being analyzed, the **Show Me** tool highlights only the relevant views, while the others are grayed out.

Figure 10-1 shows a blank worksheet, where the Show Me window is minimized.



Figure 10-1. Blank worksheet

To display the **Show Me** window:

• Click the **Show Me** button, as shown in Figure 10-1, which leads to the display shown in Figure 10-2



Figure 10-2. Worksheet with displayed Show Me window

In the following steps, we select various measures and dimensions, which immediately cause the **Show Me** window to highlight the visualizations that are relevant for the selected items.

If you hover over each chart type, the description at the bottom shows the requirements to plot the chart.

• Click the **Sales** measure, as shown in Figure 10-2, which highlights the bar chart option displayed in Figure 10-3



Figure 10-3. Chart highlighted after a single measure is selected

To add the **Region** dimension:

• Click the **Region** dimension, as shown in Figure 10-3, which highlights additional charts, besides the bar chart, as displayed in Figure 10-4

🔀 Tableau - Book1 File Data Worksheet Dashboard Story Analysis Map Format Server Window Help A ← → 🖬 • 🗇 • 📑 +🖿 🖉 • Abc 🖬 • Normal - -= Z · 🛱 Data Analytics ٥ Pages Columns Orders (Sample - Superstore) III P Dimensions Abc Category Click Category City III Show Me × Country 123 123 123 123 123 123 Abc Customer ID Abc Customer Name Drop Marks 🛱 Order Date Drop field here field Abc Order ID Abc Automatic here • Postal Code 0 0 Abc 123 Abc Product ID Abc Product Name Color Size Text Abc Region # Row ID Detail Tooltip Abc Segment 🗄 Ship Date uhiti Abc Ship Mode C State 1 Abc Sub-Category Measures # Calculation1 # Discount For horizontal bars try Clicking Region # Profit 0 or more dimensions # Quantity has highlighted 1 or more measures # Sales Latitude (generated) additional items in Longitude (generated) # Number of Records this window # Measure Values Data Source Sheet 1 Sheet 2 Sheet 3 ta 🖽 ta

CHAPTER 10 USING THE SHOW ME TOOL FOR SELECTING A VISUALIZATION

Figure 10-4. Charts highlighted after a dimension is added

To add an additional dimension, Category:

• Click the **Category** dimension, as shown in Figure 10-4, which leads to the display shown in Figure 10-5 (where more icons are highlighted)



Figure 10-5. Charts highlighted after three items being selected

In Figure 10-5, three items have been highlighted in the Data window (Category, Region, and Sales).

- Drag and drop the Category and Region dimensions onto the Columns shelf
- Drag and drop the Sales measure onto the Rows shelf

This generates the visualization that is displayed in Figure 10-6.

Note If you want to select multiple items in one step, hold the **Ctrl** key and then click the desired dimensions and/or measures. This is useful in the case where, for the selected dimensions and/or measures, you want to check the visualization type(s) that are relevant (which become highlighted in the **Show Me** window).



Figure 10-6. Visualization generated after selected items are dragged and dropped

Clicking any highlighted icon in the **Show Me** window displays the selected visualization. To select the stacked bar chart:

• Click the **stacked bar** icon in the **Show Me** window, as shown in Figure 10-6, which generate the visualization displayed in Figure 10-7



Figure 10-7. Stacked bar chart



Figure 10-8 displays the visualization generated when the side-by-side bars icon is selected.

Figure 10-8. Chart changed to side-by-side bar chart in the Show Me window

CHAPTER 11

Crosstab Display and Swapping

Objective: This exercise demonstrates how to display visualization data in a crosstab format, how to swap axes so that data can be viewed from a different perspective, and how to resize a view

We start this exercise with Figure 11-1, which is based on two dimensions (**Category** and **Order Date**) and one measure (**Sales**).



Figure 11-1. Visualization to be displayed in Crosstab format

CHAPTER 11 CROSSTAB DISPLAY AND SWAPPING

• Right-click the **Sheet 1** tab, as shown in Figure 11-1, which pops up the menu tree displayed in Figure 11-2



Figure 11-2. Menu tree displaying Crosstab option

• Click the **Duplicate as Crosstab** menu tree item, as shown in Figure 11-2, which leads to the display shown in Figure 11-3

Analytics *	Pages	III Columns	MONTH	(Order Date	e)								
Orders (Sample - Superstore)		E Rows	Category		E YE	AR(Order D	(ate)						
limensions III P +	-		congoij			outereer e							
City	Filters								Order	Date			
Country		Category	Year of Orde	January	February	March	April	May	June	July	August	Septemb	October
bc Customer ID		Furniture	2011	5,952	2,130	14,574	7,945	6,913	13,206	10,821	7,320	23,816	12,304
bc Customer Name	Marks		2012	11,740	3,319	12,315	10,476	9,375	7,714	13,674	9,639	26,273	12,027
Order Date			2013	7,623	3,926	12,473	13,406	15,031	12,027	13,199	13,619	26,739	10,131
bc Order ID	Abc Automatic 🔹		2014	5,964	6,866	10,597	9,053	17,267	16,903	13,882	14,909	29,598	21,884
Postal Code	Color Size Text	Office Supplies	2011	4,851	1,072	8,606	11,155	7,136	12,953	15,121	11,379	27,423	7,211
Product Name			2012	1,809	5,427	15,824	12,559	9,114	10,648	4,720	11,735	19,306	8,673
bc Region			2013	5,300	6,683	17,458	10,640	13,007	10,902	12,677	9,219	23,286	14,799
# Row ID	Detail Tooltin		2014	21,704	7,390	14,317	14,922	14,138	297	10,699	29,973	32,759	23,403
bc Segment		Technology	2011	3,143	1,609	32,511	9,195	9,600	26	8,004	9,210	30,538	11,938
Ship Date	Abs SUM(Sales)		2012	4,625	3,465	10,328	11,161	11,643	1 \	10,371	15,525	19,017	10,705
bc Ship Mode	1.7		2013	5,620	12,259	21,255	15,203	28,653		12,564	10,427	22,883	31,533
Sub-Category			2014	17,035	6,027	28,994	16,138	14,247		3.848	16,634	28,132	32,507
Aeasures												-	
Calculation1 Discount Profit Quantity Sales		Cross	ab data	is			\langle		Cross	stab da	ata)
Lontitude (generated) Longitude (generated) Number of Records Measure Values		displa	yed in a	new s	heet			8					

Figure 11-3. Crosstab display

Notice that a new worksheet has been created, **Sheet 2**, where the crosstab data is displayed.

The following steps demonstrate how to swap axes so that data can be viewed from a different perspective. We start this exercise with the data displayed in Figure 11-4.

File Data Worksheet Dashb	oard Story <u>A</u> nalysis <u>M</u> ap	F <u>o</u> rmat <u>S</u> erv	er Wi <u>n</u> dow J	Help				-		
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Orders (Sample - Superstore)		-		Order Date	:)					_
Dimensi	~ <	III Rows	Category		E YE	AR(Order D	late)			
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• • • • • • • • • • • • • • • • • • •		Category	Year of Orde	January	February	March	April	May	June	
Country		Furniture	2011	5,952	2,130	14,574	7,945	6,913	13,206	1
Abc Customer Name			2012	11,740	3,319	12,315	10,476	9,375	7,714	1
📋 Order Date	Marks		2013	7,623	3,926	12,473	13,406	15,031	12,027	1
Abc Order ID	Abc Automatic 🔹		2014	5,964	6,866	10,597	9,053	17,267	16,903	1
Postal Code		Office	2011	4,851	1,072	8,606	11,155	7,136	12,953	1
Abc Product ID		Supplies	2012	1,809	5,427	15,824	12,559	9,114	10,648	
Abc Region			2013	5,300	6,683	17,458	10,640	13,007	10,902	1
# Row ID	Detail		2014	21,704	7,390	14,317	14,922	14,138	15,297	1
Abc Segment		Technology	2011	3,143	1,609	32,511	9,195	9,600	8,436	
📋 Ship Date	Abs SUM(Sales)		2012	4,625	3,465	10,328	11,161	11,643	6,435	1
Abc Ship Mode	123 00000000		2013	5,620	12,259	21,255	15,203	28,653	16,502	1
State Sub-Category	*		2014	17,035	6,027	28,994	16,138	14,247	16,060	1
Measures										
 # Calculation1 # Discount # Profit # Quantity # Sales © Latitude (generated) © Longitude (generated) *# Number of Records # Measure Values 										
Data Source Sheet 1 144 marks 12 rows by 12 column	Sheet 2 til	ן								

Figure 11-4. Swap icon

To perform the axis swap:

• Click the **Swap** icon, as shown in Figure 11-4, which leads to the display shown in Figure 11-5, where the rows have been swapped with the columns

Pages	III Columns	Category	t		E YEAR(Ord	er Date)							
	II Rows		TH(Order D	ate)									
filters	1					(Category / C	Order Date					
			Furnit	ure			Office Su	pplies			Techno	logy	
	Month of Or	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	201
tada	January	5,952	11,740	7,623	5,964	4,851	1,809	5,300	21,704	3,143	4,625	5,620	17,03
narks	February	2,130	3,319	3,926	6,866	1,072	5,427	6,683	7,390	1,609	3,465	12,259	6,02
Abc Automatic 🔹	March	14,574	12,315	12,473	10,597	8,606	15,824	17,458	14,317	32,511	10,328	21,255	28,99
Abc	April	7,945	10,476	13,406	9,053	11,155	12,559	10,640	14,922	9,195	11,161	15,203	16,13
Color Size Text	May	6,913	9,375	15,031	17,267	7,136	9,114	13,007	14,138	9,600	11,643	28,653	14,24
COIDI DIZE TEXT	June	13,206	7,714	12,027	16,903	12,953	10,648	10,902	15,297	8,436	6,435	16,502	16,06
Detail Tooltin	July	10,821	13,674	13,199	13,882	15,121	4,720	12,677	10,699	8,004	10,371	12,564	23,84
loonp	August	7,320	9,639	13,619	14,909	11,379	11,735	9,219	29,973	9,210	15,525	10,427	16,63
Abc SUM(Sales)	September	23,816	26,273	26,739	29,598	27,423	19,306	23,286	32,759	30,538	19,017	22,883	28,13
	October	12,304	12,027	10,131	21,884	7,211	8,673	14,799	23,403	11,938	10,705	31,533	32,50
	November	21,565	30,881	33,659	32,927	26,862	21,218	21,428	30,070	30,201	23,874	27,105	49,33
	December	30,646	23,086	37,069	35,537	18,006	16,202	38,112	31,855	20,893	35,632	22,057	23,08
	December	30,646	23,086	37,069	35,537	18,006	16,202	38,112	31,855	20,893	35,632	22,057	23
	Mont	hs hav	ve bee	en mo	oved s)					

Figure 11-5. Display after swap

In Figure 11-5, due to the swap:

- Months are now displayed in the rows
- Categories are now displayed in the columns

Resizing

Sizing a view can be done quite easily in Tableau. The following steps demonstrate how to size a view. We start with Figure 11-6, which displays a visualization that covers only part of the available window. It does not cover the full screen, and therefore, valuable real estate is wasted. Hence, we resize the display so that it covers the width of the window.



Figure 11-6. Visualization with unused area

To expand the visualization:

• Click the pull-down arrow, as shown in Figure 11-6, which displays the available screen size options shown in Figure 11-7



Figure 11-7. Sizing options

• Click the **Entire View** menu tree item, as shown in Figure 11-7, which leads to the display shown in Figure 11-8

CHAPTER 11 CROSSTAB DISPLAY AND SWAPPING



Figure 11-8. Visualization covering available area

CHAPTER 12

Sorting

Objective: This exercise demonstrates how to perform the sort function Figure 12-1 displays results that need to be sorted in descending order.



Figure 12-1. Visualization to be sorted

• Click the **descending sort** icon, highlighted in Figure 12-1, which leads to the display shown in Figure 12-2

CHAPTER 12 SORTING



Figure 12-2. Sorted visualization

To analyze the results by profitability:

• Drag and drop the **Profit** measure onto the **Color** shelf in the **Marks** card, as shown in Figure 12-2, which leads to the display shown in Figure 12-3

CHAPTER 12 SORTING



Figure 12-3. Profitability indicated by color intensity

The intensity of the color indicates the profitability. For example, while EMEA and Africa sales are nearly equal, Africa is far more profitable (as indicated by the intensity of the shade of green).

The following steps show how to sort within a sub-category. Figure 12-4 shows an initial view.



Figure 12-4. Visualization to be sorted within Sub-Category

- Click **Sub-Category** in Columns, as shown in Figure 12-4
- Click the **Descending sort** icon, also highlighted in Figure 12-4, which leads to the display shown in Figure 12-5

CHAPTER 12 SORTING



Figure 12-5. Sort within Sub-Category

CHAPTER 13

More About Sorting

Objective: This exercise demonstrates the sort function in more detail

Figure 13-1 shows a chart that displays the sum of **Sales** by **Category** and **Sub-Category**.



Figure 13-1. Visualization to be sorted

To sort the displayed data using the Quick Sort icon:

• Move the cursor over **Sales**, as shown in Figure 13-1, which displays the **Quick Sort** icon shown in Figure 13-2



Figure 13-2. Sort icon location on axis

• Click the **Quick Sort** icon, as shown in Figure 13-2, which sorts the bars in each category in descending order, as shown in Figure 13-3



Figure 13-3. Descending display

• Click the **Quick Sort** icon again, as shown in Figure 13-3, which re-sort the bars in ascending order, as displayed in Figure 13-4



Figure 13-4. Ascending display

• Click the **Quick Sort** icon again, as shown in Figure 13-4, which removes the sort and the visualization reverts back to its original state (see Figure 13-2)

Advance sorting options are available via the sort option, as demonstrated in the following procedure, where we start from the visualization displayed in Figure 13-5.



Figure 13-5. Visualization to be sorted

- Hover over **Region** (in the Columns shelf), as shown in Figure 13-5, which displays the pull-down arrow for the **Region** dimension
- Click the pull-down arrow when it is displayed, which leads to the menu tree shown in Figure 13-6



Figure 13-6. Menu tree with sort option

• Click the **Sort** menu tree item, as shown in Figure 13-6, which pops up the window displayed in Figure 13-7

Pages	iii Columns	E Region *				
		SUM(Sales)				
Filters				Region		
		Sort [Region]		X		
Marks	\$2,500,000	Sort order				
Color Size Label		Ascending Descending		Click the Fi	eld)
Detail Tooltip	\$2,000,000	Sort by				
SUM(Profit)		Alphabetic Eeld		Angranation		
SUM(Profit)	\$ \$1,500,000	Category		Count		
\$17,817 \$311,40	04	Manual Africa Canada		_ Up		
	\$1,000,000	Caribbean Central Central Asia		Down		
	\$500,000	East EMEA North North Asia				
		Oceania South		Ŧ		
	S0	Clear	ОК	Cancel Apply	uth Asia Ossania Se	

Figure 13-7. Sort pop-up window

In the pop-up window displayed in Figure 13-7, the ascending or descending sort order can be specified, as well as the field to be used for sorting.

To specify the field to be used for sorting:

• Click the **Field** radio button, as shown in Figure 13-7, which leads to the selection displayed in Figure 13-8

Tableau - v3_sorting	1.00			ALC IN	ing instant Strend Ba		
Eile Data Workshee	t Dash <u>b</u> oar	d Story Analysis	Map Format Server	r Wigdow <u>H</u> elp			
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Data Analyti	cs °	Pages	111 Columns	🕑 Region 💌			
Ciobal Superscore			E Rows	SUM(Sales)			
Dimensions Customers Ac Customer DI Ac Customer DI Ac Customer Na Ac Segment Corder Date Ac Order ID Ac Order ID Ac Order ID Ac Order ID Ac Order ID Ac Corder Priority Shipping Shipping Ship Date Ac Ship Mode Custor Ac Region Custor State City Postal Code Ac Category Messures Discounts Profit Quantit Ship Shipping Date Ac Custor Ac Code Postal Code Discounts	me E	Filters Marks II Automatic Color Size Detail Tooltip SUM(Profit) S17.817 SI	111.404	Sort (Region) Sort order Sort order Sort order Sort by Descending Sort by Deta source Abberot Field Category Manual Africa Canada Carible EMEA		Field has been selected	
# 9	CIICK	the pull-d	own	North North Asia			
e	arrow	w to display	/ the	Oceania			
.#	uno			South		*	
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🗇 Data Source	Quick Sort	Headers/Legend S	orting from the Pill Sor	ting Across Panes Pill Types	ta te to		
13 marks 1 row by 13	columns	SUM(Sales): \$12,642,50	2				

Figure 13-8. Field selection

• Click the pull-down arrow for **Category**, as shown in Figure 13-8, which displays the fields as shown in Figure 13-9



Figure 13-9. Available fields

• Scroll down the pop-up window until the **Sales** field is displayed, as shown in Figure 13-9

03	rd Story Analysis Map	Format Server W	Category City Country	
•	Pages	III Columns	Customer ID Customer Name Re Discount Market Multiple of Records	
•	Filters		Order Date Order ID Order Priority Postal Code	Region
Е	Marks	\$2,500,000	Re Product ID Product Name or Profit Quantity Region Row ID	Click Sales
	Color Size Label Detail Tooltip	\$2,000,000 - S	ort Sales Segment Ship Date Ship Mode Shipping Cost	
	SUM(Profit) \$17,817 \$311,404	\$ \$1,500,000 -	Category Manual Africa	Count
		\$1,000,000-	Canada Canbbean Central Central Asia East EMEA North	
		so	North Asia Oceania South	Change the Aggregation function to Sum
rt	Headers/Legend Sorting fr	rom the Pill Sorting A	Across Panes Pill Types 🛅 🏥 🖞	

Figure 13-10. Selecting a field for sorting

• Click **Sales**, as shown in Figure 13-10

After selecting the field, the **Aggregation** function needs to be selected. In this case, **Count** is already selected. However, we will change that to **Sum**, using the pull-down arrow for **Aggregation**.

• Select Sum, as shown in Figure 13-10, which leads to the display shown in Figure 13-11



Figure 13-11. Sort selections

- Click the **Descending** radio button, as shown in Figure 13-11
- Click **OK** after all the changes have been made, which leads to the display shown in Figure 13-12 (which is in descending order)



Figure 13-12. Visualization in descending order

CHAPTER 14

View Details/Underlying Data

Objective: This exercise demonstrates how to view the values for all the rows in the data source that make up the visualization

Figure 14-1 shows a chart with the sum of sales for various Regions by Category and Sub-Category.



Figure 14-1. Chart with sum of sales

• Click the **Furniture** bar for APAC, as shown in Figure 14-1, which leads to Figure 14-2, where a pop-up box is displayed

CHAPTER 14 VIEW DETAILS/UNDERLYING DATA



Figure 14-2. Popup box with view data option highlighted

• Click the **View Data** icon, as shown in Figure 14-2, which pops up the **View Data** window shown in Figure 14-3


Figure 14-3. View Data window

The **Summary** tab displays the aggregated data for the fields used in the report.

• Click the **Underlying** tab, as shown in Figure 14-3, which leads to the display in Figure 14-4, where the detailed data is displayed

CHAPTER 14 VIEW DETAILS/UNDERLYING DATA

ages		III Columns	E Category	🕀 Sub-	c	Deta	alled da	ata that	
		I Rows	Market	SUM(Sa	les)	incl	udes al	l fields	
Filters									/
Market		Market		Furniture	/		CC CHIPPING		
					/	/			
	_		\$400,000		//	· ·			
Marks	···· View D	Data	A		//				
II Automatic									
	971	⇒ 🔽	Show aliases	Show all fields				Сору	Export All
Color Size	Categ	ory City	Country	Customer ID	Customer Name	Market	Order Date	Orler ID	Order Priori *
	Furnit	ure Papakura	New Zea	land KL-16645	Ken Lonsdale	APAC	1/3/2011	1 2011-80230	Low
Detail Tooltin	Furnit	ure Papakura	New Zea	land KL-16645	Ken Lonsdale	APAC	1/3/2011	2011-80230	Low
Detail	Furnit	ure Depok	Indonesi	a HK-14890	Heather Kirkland	APAC	1/26/2011	2011-36011	High
SUM/Profit	Furnit	ure Waitakere	New Zea	land HE-14800	Harold Engle	APAC	1/30/2011	011-80545	High
Somerond	Furnit	ure Melbourne	Australia	LS-17200	Luke Schmidt	APAC	1/31/2011	011-32196	High
	Furnit	ure Bangkok	Thailand	GD-14590	Giulietta Dortch	APAC	2/2/2011	011-60882	Medium
SUM(Profit)	Furnit	ure Kuantan	Malaysia	FO-14305	Frank Olsen	APAC	2/10/201	011-61050	Critical
	Furnit	ure Mount Gar	mbier Australia	BW-11110	Bart Watters	APAC	2/16/20	011-65033	Medium
(\$20,998)	Furnit	ure Mount Gar	mbier Australia	BW-11110	Bart Watters	APAC	2/16/20	011-65033	Medium
	Furnit	ure Jaipur	India	RD-19900	Ruben Dartt	APAC		01005	Medium
	Furnit	ure Singapore	Singapor	e AG-10900	Arthur Gainer				
	Furnit	ure Rawalpind	Pakistan	RF-19735	Roland Fjeld		Conv /	Export	
	Furnit	ure Palembang	Indonesi	a LH-17155	Logan Hausha		oopy /	Export	
	Furnit	ure Bekasi	Indonesi	a MZ-17515	Mary Zewe				
	Furnit	ure Brisbane	Australia	GD-14590	Giulietta Dortch	APAC	JILILOUS	00896-11-24800	Medium
	Furnit	ure Tongi	Banglade	esh MV-18190	Mike Vittorini	APAC	3/3/2011	IN-2011-52853	High +
	•		-						•
	Summary	V Underlying							971 rows
	_			40 4	e	2 9	5 8	Par	d g
			a k	T IS	9	Ne De	ast	ŝ	Su Su

Figure 14-4. Detailed data window

By default, the **Show all fields** option is selected, as shown in Figure 14-4. This ensures that all the fields in the dataset are displayed. If you uncheck this option, you will be able to view only the fields used in your visualization.

This window also offers the option to copy and paste or export data in .csv format (as indicated in Figure 14-4).

CHAPTER 15

Grouping

Objective: This exercise demonstrates how grouping is performed

Figure 15-1 shows a chart with the sum of Sales for various Sub-Categories.



Figure 15-1. Dimensions to be grouped

• Right-click **Sub-Category**, as shown in Figure 15-1, which pops up the menu tree displayed in Figure 15-2



Figure 15-2. Menu tree with the group option

- Navigate to the secondary menu shown in Figure 15-2 via the Create ➤ Group menu path
- Click **Group**, as shown in Figure 15-2, which leads to the **Create Group** (Sub-Category) pop-up window displayed in Figure 15-3

Pages	III Columns SUM(Sales)	
	E Rows	
Filters Marks II Automatic Color Size Detail Tooltip	Sub-Category Phones Copies Chairs Storage Appliances Appliances Appliances Tables Binders Bi	0 51

Figure 15-3. Create Group pop-up window

Select the items displayed in the **Create Group (Sub-Category)** window in Figure 15-3. To select multiple items:

• Hold down the Ctrl key and then click the desired items

After the items highlighted in Figure 15-3 have been selected:

• Click the **Group** button, as shown in Figure 15-3, which leads to the display shown in Figure 15-4

CHAPTER 15 GROUPING



Figure 15-4. Renaming the group

To make the title more meaningful, we will change the default group name to **Small Office Supplies**. To change the name:

• Overwrite the default name shown in Figure 15-4 by typing **Small Office Supplies**, which leads to the display shown in Figure 15-5

Columns	SUM(Sales)		
Rows	E Sub-Category F		
Sub-Category Phones Copiers Copiers Bookcases Storage Appliances Machines Tables Accessories Binders Furnishings Furnishings Art Supplies Envelopes	Create Group [Sub-Category]	Group name been change	has d
Labels S0	Storage - \$1,000,000 Group Rename Lingroup V show Add Location Include 'Other' Find >> Reset OK Cancel	51,200,000 \$1,400,000	\$1,600,000
		Click OK	

Figure 15-5. Renamed group

After the group name has been changed:

• Click **OK**, which saves the group and places it in the list of dimensions in the **Data** window, as shown in Figure 15-6

CHAPTER 15 GROUPING



Figure 15-6. New group displayed in the Dimensions pane

A group can be edited, and, as needed, items can be added to it or deleted from it. In Figure 15-7, the **Sub-Category** group is modified.



Figure 15-7. Group to be modified

To modify the Sub-Category (group):

• Right-click **Sub-Category (group)**, as shown in Figure 15-7, which pops up the menu tree displayed in Figure 15-8

CHAPTER 15 GROUPING



Figure 15-8. Menu tree with the Edit Group option

• Click the menu tree item **Edit Group**, as shown in Figure 15-8, which pops up the **Edit Group (Sub-Category (group))** window displayed in Figure 15-9

CHAPTER 15 GROUPING

	Statement of the local division of the local		A Lings Mund Ref.
oar	rd Story <u>A</u> nalysis <u>M</u> ap	Format Server	Window Help
G	₩u <mark>x</mark> • ¶ ₁ •@• I	; 1 1 <i>∅</i> -	Abc 🔐 🔹 Normal 💌 😾 💋
•	Pages	iii Columns	SUM(Sales)
		III Rows	Sub-Category (group)
	Filters Marks II Automatic Color Size Label Detail Tooltip	Sub-Category (gr Accesso Appliar Bind Bookce Ch Cop Furnishi Mach Pho Small Office Supp Stor Ta	Edit Group [Sub-Category (group)] Field Name: Sub-Category (group) Groups: Add to: Accessories Applances Art Binders Bookcases Chairs Copiers > Pones Storage Tables Click Machines Phones Storage Tables Click Machines Reset OK
iro	up? Header Data Wind	low Hierarchies	Visual Grouping 1 Visual Grouping 2 📩 🖽 🗂
	SUM(Sales): \$12,642,502		

Figure 15-9. Adding an item to the group

To add the item **Machines** to the group:

• Click **Machines**, as shown in Figure 15-9, which leads to the display shown in Figure 15-10

ermat <u>Server</u> Wij	ndow Help	al 🔻 🛏 🟒	•			
I Rows	Sub-Category (group)				
Sub-Category (Access Appli Bi Book C C Furnis L Mac Pi Small Office Sur St Sur T	Edit Group [Sub- Field Name: Su Groups: Accessorie Appliances Art Binders Bookcases Chairs Copiers Bookcases Storage Storage Coupiers Tables Copiers Tables Reset	Category (group)] b-Category (group) Add to:s s Office Supplies s Rename U er' OK	Ingroup	Show Add Location Find >>	Click the Add to pull-down arrow	\$1,400
Hierarchies Visi	ual Grouping 1	Visual Grouping 2	ta ta ta	ĺ.		

Figure 15-10. Selecting the group

To select the group to which the highlighted item, **Machines**, is to be added:

• Click the pull-down arrow for **Add to**, as shown in Figure 15-10, which leads to the display shown in Figure 15-11

CHAPTER 15 GROUPING

Pages	Columns	SUM(Sales) Sub-Category	(aroup)		
Filters Marks II Automatic Color Size Detail Tooltip	Sub-Category Acce App Bor Furr M Small Office S	Edit Group [Sub Field Name: Su Groups: Accessorie Appliance: At Bookcases Chairs Copiers Bookcases Chairs Copiers Copiers Machines Paper Phones Storage Storage Group Indude 'Oth Reset	Category (group)] b-Category (group)] b-Category (group) Add to:	al Office Supples	Click Small Office Supplies
Header Data Window	Hierarchies	Visual Grouping 1	Visual Grouping 2	ta ta to	

Figure 15-11. Displays group to which new item is to be added

• Click **Small Office Supplies**, as shown in Figure 15-11, which leads to the display shown in Figure 15-12

CHAPTER 15 GROUPING

Note that in this case, only one item (**Small Office Supplies**) is displayed when the pull-down arrow for **Add to** is clicked. Typically, the selection can be made from multiple groups.



Figure 15-12. New item added to group

• Click **OK**, as shown in Figure 15-12, which saves the changes and adds the selected item (**Machines**) to the group

Another method of creating a group is to press and hold the **Command** key, multiselect headers in the view, and then click the **Group** icon.

CHAPTER 16

Building a Hierarchy

Objective: This exercise demonstrates how to build a hierarchy

Create the report shown in Figure 16-1, which is based on the following selections:

- Columns: Sales
- Rows: Category and Sub-Category



Figure 16-1. Data pane displaying dimensions to be used

To create a **Product** hierarchy:

• Click **Sub-Category** in the **Data** window, as shown in Figure 16-1, which leads to the display shown in Figure 16-2 (where the **Sub-Category** dimension is highlighted)



Figure 16-2. Dimension to be used in the hierarchy is selected

• Drag **Sub-Category**, the highlighted dimension, onto the **Category** dimension, as shown in Figure 16-2, which leads to the **Create Hierarchy** pop-up window displayed in Figure 16-3



Figure 16-3. Create hierarchy pop-up window

We now rename the default hierarchy name that is provided by Tableau. In the **Name** field shown in the pop-up window displayed in Figure 16-3:

• Type **Products**, which leads to the display shown in Figure 16-4

CHAPTER 16 BUILDING A HIERARCHY

Pages	III Columns	SUM(Sales)	Click OK after hierarch	У
	I Rows	Category	has been renamed	
Filters	Category Furniture	Sub-Category Bookcases Chairs		
Marks	1	Furnishings Tables		
Image: Automatic Image: Automatic Imag	Office Supplies Technology	Appliances Art Binders Envelopes F Create Hierarchy L Name: Products S An Copiers Machines	OK Cancel	
		Phones	40K 60K 80K 100K 120K 140K 160K 180K Sales	200K 220K 240K 26
(The	new hierarch	/ name,	
	Pro	ducts, has bee	en entered	
sneet 2 Sheet 3				

Figure 16-4. Renaming the hierarchy

• Click **OK** to save the hierarchy



The hierarchy can now be viewed in the Data window, as shown in Figure 16-5.

Figure 16-5. New hierarchy in the list of dimensions

To add an additional item, Product Name, to the hierarchy:

• Drag and drop **Product Name** under the **Sub-Category** dimension, as shown in Figure 16-5, which leads to the display shown in Figure 16-6

CHAPTER 16 BUILDING A HIERARCHY



Figure 16-6. Another dimension added to the hierarchy

To collapse the hierarchy:

• Click the **- sign** next to **Category** (in Rows), as shown in Figure 16-6, which collapses the hierarchy and leads to the display shown in Figure 16-7



Figure 16-7. Collapsed hierarchy

To expand the hierarchy:

• Click the **+sign** next to **Category** (in Rows), as shown in Figure 16-7, which expands the hierarchy and leads to the display shown in Figure 16-8

CHAPTER 16 BUILDING A HIERARCHY

Pages	III Columns	SUM(Sales)								Hiera	arcny	/ nas		en		1
	III Rows	E Categor	у	⊕ S	iub-Catego	ory				expa	ndeo	to t	he			
iiters Varks II Automatic Color Size Label Detail Tooltip	Category Furniture Office Supplies	Sub-Category Bookcases Chairs Furnishings Tables Applige	Click expar to the	the + nd the	sign hiera	i to archy I				Seco		ever				
	Tashnolomi	Supp					/		_							
	Technology	Supp Accessories Copiers Machines				_										
	Technology	Supp Accessories Copiers Machines Phones	ок 20к	40K	бок	80K 100K	120K	140K	160K 180K Sales	200К	220K	240K	260K	280K	300K	32

Figure 16-8. Expanded hierarchy

To further expand the hierarchy by another level (third):

• Click the +sign next to Sub-Category (in Rows), as shown in Figure 16-8, which expands the hierarchy and leads to the display shown in Figure 16-9



Figure 16-9. Hierarchy expanded to third level

CHAPTER 17

Aggregate Measures

Objective: This exercise demonstrates how to work with aggregates Figure 17-1 displays a blank worksheet.



Figure 17-1. Blank worksheet

• Drag and drop **Sales** onto the **Columns** shelf, as shown in Figure 17-1, which leads to the display shown in Figure 17-2



Figure 17-2. Worksheet with one measure

• Drag and drop **Profit** onto the **Rows** shelf, as shown in Figure 17-2, which leads to the display shown in Figure 17-3, where the aggregated value is highlighted



Figure 17-3. Worksheet with two measures displaying aggregate numbers

To display the aggregate value:

• Move the cursor over the aggregate symbol, as shown in Figure 17-3, which leads to Figure 17-4, where the exact value for the total sales and total profit is displayed

When two measures to be visualized are selected, Tableau chooses a scatterplot by default. It displays a single mark, which is the aggregated data for all the values in the database.



Figure 17-4. Displaying aggregate value

To deaggregate and display individual values:

• Click **Analysis** on the **menu bar**, as shown in Figure 17-4, which pops up the menu tree displayed in Figure 17-5

Note that when you deaggregate measures, the view shows a mark for every row in the data.



Figure 17-5. Menu tree displaying option to aggregate and disaggregate measures

To remove the check mark for Aggregate Measures:

• Click the **Aggregate Measures** menu tree item, as shown in Figure 17-5, which leads to the display shown in Figure 17-6



Figure 17-6. Deaggregated display

• Click **Automatic** in the **Marks** card, as shown in Figure 17-6, which pops up the menu tree displayed in Figure 17-7



Figure 17-7. Menu tree for Mark Types in the Marks card

• Click the **Square** option from the menu tree item, as shown in Figure 17-7, which leads to the display shown in Figure 17-8



Figure 17-8. Squares display

• Click **Color** on the **Marks** card, as shown in Figure 17-8, which leads to the display shown in Figure 17-9



Figure 17-9. Selecting the color

• Click the desired color (green), as shown in Figure 17-9, which leads to the display shown in Figure 17-10, where the color has changed (from blue to green)



Figure 17-10. Display with changed color

In the printed book, which is in black and white, the changed color display can be observed in the relative darkness (intensity) of the symbols.

CHAPTER 18

Exclude and Keep

Objective: This exercise demonstrates how the Exclude and Keep functions are used Figure 18-1 shows a chart with the sum of sales for four regions.



Figure 18-1. Visualization to be modified

CHAPTER 18 EXCLUDE AND KEEP

Suppose we want to exclude the sales for a specific region and only focus on the sales for the remaining three regions. In other words, we want to "exclude" one region from the analysis. The following steps show how this is done.

To exclude the West region:

• Right-click the fourth bar (i.e., for the West region, which needs to be excluded), as shown in Figure 18-1, which pops up the menu tree displayed in Figure 18-2



Figure 18-2. Menu tree with the Exclude option

• Click **Exclude**, as shown in Figure 18-2, which leads to the display shown in Figure 18-3, where the results are limited to the remaining three regions

When the **Exclude** or **Keep** option is used, Tableau creates a filter for the selected dimension. This is shown in Figure 18-3, where the **Region** filter has been created. What this does is exclude/filter out all the data for the West region from the view.



Figure 18-3. Display after executing the Exclude function
Another useful Tableau function is **Keep**. It retains selected items while excluding all the other displayed items. The following steps show how this is done.

oard Story Analysis Map Format Server Window Help 🖬 • 😂 • 📅 + 🖢 + 🔊 • Abc 📊 • Normal - **x** II II 1. 1 Click Tables -bit Pages III Columns Sub-Category Rows SUM(Sales) . Filters Sub-Category Marks Click Chairs nL . 123 250K Label Color Size Detail Tooltip 200K Sales 150K 100K 50K OK Art Binders Chairs Copiers urnishings Labels ppliances ookcases Fasteners Paper invelopes Phones Machines ta 🖽 🛍 SUM(Sales): 2,297,201

Figure 18-4 displays the sum of sales for various sub-categories.

Figure 18-4. Visualization to be modified

Suppose that you want to analyze the sales for only two items: chairs and tables.

- Hold down the **Ctrl** key on the keyboard and then:
 - Click the **Chairs** bar
 - Click the **Tables** bar

This leads to the display shown in Figure 18-5, where two bars are selected and highlighted. Notice the small pop-up window that displays the **Keep Only** and **Exclude** options.



Figure 18-5. Pop-up window displaying the Keep Only option

• Click **Keep Only** in the pop-up window, as shown in Figure 18-5, which leads to the display shown in Figure 18-6

CHAPTER 18 EXCLUDE AND KEEP



Figure 18-6. Display after executing the Keep Only function

CHAPTER 19

Filtering on the Filter Shelf

Objective: This exercise demonstrates how to filter using the Filter shelf Figure 19-1 shows a chart that plots the sum of sales against the sum of profits.



Figure 19-1. Scatter plot view on which filtering is to be applied

• Drag and drop **Region** from the **Data** window onto the **Filters** shelf, as shown in Figure 19-1, which pops up the **Filter (Region)** window displayed in Figure 19-2

CHAPTER 19 FILTERING ON THE FILTER SHELF



Figure 19-2. Filter pop-up window

• Place check marks for **North** and **South**, as shown in Figure 19-2, which leads to the display shown in Figure 19-3



Figure 19-3. Filters selected

• Click **OK**, as shown in Figure 19-3, which leads to the display shown in Figure 19-4, where the filtered data is displayed



Figure 19-4. View with filtered data

To remove a filter:

• Drag and drop the filter out of the Filters shelf, as shown in Figure 19-4

The following steps can also be used to remove a filter:

• Click the pull-down arrow for the **Region** filter, as shown in Figure 19-5, which pops up the menu tree displayed in Figure 19-5



Figure 19-5. Menu tree option for filters

• Click Clear Filter, as shown in Figure 19-5, which removes the filter

CHAPTER 20

Quick Filters

Objective: This exercise demonstrates how a Quick Filter is created, used, and removed Figure 20-1 displays a view based on Category, Region, and Sales.



Figure 20-1. Visualization without any filter

Quick Filters enable users to focus on smaller datasets so that they can perform analysis from different perspectives. The following steps show how a Quick Filter is added.

- Click **Region**, as shown in Figure 20-1
- Drag and drop **Region** onto the **Filter** shelf, as shown in Figure 20-1, which pops up the **Filter (Region)** window displayed in Figure 20-2

CHAPTER 20 QUICK FILTERS

Pages	III Columns	Category Region	
	III Rows	Filter [Region]	
filters		General Wildcard Condition Top Select from list © Custom value list © Use all	Technology
Marks	250K -	Enter Text to Search Image: Central Image: Central	
Detail Tooltip	200K -		
	Sales	All None Exclude	
	100K -	Field: [Region] Selection: Selected 4 of 4 values Wildcard: All Condition: None	
	50K -	Reset OK Cancel Apply	
	ок		

Figure 20-2. Filter pop-up window

If the default values displayed in the pop-up window are to be accepted as-is:

• Click **OK**, as shown in Figure 20-2, which leads to the display shown in Figure 20-3



Figure 20-3. Display after Region filter is added

The Quick Filter is not displayed in Figure 20-3. To display it so that it is available for easy access:

• Click **Region** in the **Filter** shelf, as shown in Figure 20-3, which leads to the menu tree displayed in Figure 20-4

CHAPTER 20 QUICK FILTERS



Figure 20-4. Menu tree with option to display Quick Filter

• Click **Show Quick Filter**, as shown in Figure 20-4, which leads to Figure 20-5, where the **Quick Filter** is displayed

CHAPTER 20 🔲 QUICK FILTERS



Figure 20-5. Visualization with Quick Filter displayed

Items in the Quick Filter can be selected or deselected by adding or removing a check mark next to the desired item. For example, the check marks next to **Central** and **West** can be deselected, which limits the analysis to the remaining two regions (**East** and **South**).

Figure 20-6 shows that two items have been deselected from the **Region** Quick Filter: Central and West. Hence, the displayed results are limited to the remaining two regions: East and South.



Figure 20-6. Deselecting two regions

A Quick Filter can be added for any dimension contained in the Data window. We will now add a Quick Filter for **Category** to the visualization displayed in Figure 20-7.



Figure 20-7. Adding a Quick Filter to the Category dimension

- Click the pull-down arrow next to **Category** in the **Data** window, as shown in Figure 20-7, which pops up the menu tree (**Add to Sheet**)
- Click **Show Quick Filter**, as shown in Figure 20-7, which leads to Figure 20-8, where the **Category** Quick Filter has been added



Figure 20-8. The Category Quick Filter has been added

Suppose that we want to display the results only for the **Furniture** category (i.e., filter out the data for **Office Supplies** and **Technology**):

• Deselect **Office Supplies** and **Technology** by removing their associated check marks from the **Category** Quick Filter, as shown in Figure 20-8, which leads to the visualization displayed in Figure 20-9

CHAPTER 20 🔲 QUICK FILTERS



Figure 20-9. Quick Filter selection limited to furniture

Quick Filters can be removed when they are not needed. Figure 20-10 shows two Quick Filters in place: Market and Region.



Figure 20-10. View with two Quick Filters

To remove the **Region** Quick Filter:

• Place cursor within the **Region** Quick Filter box, which causes a pull-down arrow to be displayed, as shown in Figure 20-11



Figure 20-11. Removing a Quick Filter

When the pull-down arrow is displayed in the Quick Filter box:

• Click the **pull-down arrow**, as shown in Figure 20-11, which pops up the menu tree displayed in Figure 20-12

CHAPTER 20 QUICK FILTERS



Figure 20-12. Menu tree displaying option to remove filter

• Click **Remove Filter**, as shown in Figure 20-12, which removes the filter

CHAPTER 21

Customization for Quick Filters

Objective: This exercise demonstrates Quick Filter customization

Figure 21-1 displays a visualization with the **Sub-Category** Quick Filter, which can be customized using options that can be accessed via its menu tree.

ages	III Columns						Click this pull-							
	III Rows Order Priority E					down arrow								
iters														Choose a Sub
Sub-Category	Order Priority	Category	Sub-Category		APAC		EU		LATA	M		US		(IIA)
	Critical	Furniture	Bookcases			1		1						Accessories
			Chairs			ĩ		- î		í			10	Appliances
arks			Furnishings	1		Î.		Ē		1				TA V
Automatic •			Tables	1		- î		1		- 1				Bookrases
		Office Supplies	Appliances	1				í		i				Chairs
😜 🔿 📆			Art	í.		Ē								Copiers
olor Size Label			Binders	î –		í.				- 1	1			Envelopes
tail Teable			Envelopes	i –										Fasteners
tail			Fasteners	1										Furnishings
SUM/Drofit)			Labels											Labels
Somerony			Paper	1		1				- 1				Machines
			Storage	ii -		- in		- 1		í				Paper
M(Profit)			Supplies	ĩ –		- E				î				Phones
		Technology	Accessories	í.		Í		1		í				Supplies
3,554) \$67,771			Copiers	î.		- îi		i î		í	ī			Tables
			Machines	ĩ.		- E		- 6		í	i			Lank Z
			Phones	in -						i	i i			Apply
	High	Furniture	Bookcases			- 1		- 1		- 1				
			Chairs											
			Furnishings	1		- E		- E		i				
			Tables							- i				
		Office Supplies	Appliances	-		- 6		- 1		- 1				
			Art	1				- î	_	i				
			Binders	î .		- E		. í						
				\$0		\$300,000 \$0		\$300,000 \$		\$300,000	50	\$30	0,000	
					Sales		Sales		Sale	15		Sales		

Figure 21-1. Visualization to be customized

• Click the **Quick Filter** pull-down arrow, as shown in Figure 21-1, which pops up the menu tree displayed in Figure 21-2



Figure 21-2. Menu tree displaying Quick Filter options

The menu highlighted in Figure 21-2 displays three options for applying the Quick Filter. Depending on which sub-menu tree item is selected, the Quick Filter can be applied to the selected worksheet or the currently displayed worksheet. In Figure 21-2, the **Only This Worksheet** menu tree item is selected. Therefore, the Quick Filter only applies to the currently displayed worksheet.

We will now navigate through some of the commonly used items displayed in the Quick Filter menu tree. Figure 21-3 displays various options for the **Customize** menu item:

• Click **Customize**, which pops up the sub-menu tree shown in Figure 21-3, where five out of the seven displayed items are currently check marked, and hence, selected

	5 41 4F d	P - Abc	Normal		i ina value	<	2	the Show N	le
iges iters Sub-Category	Critical	Y Category Furniture	Clic	k Customize	Marke	et LATAM		Choose a Sub Edit Filtes Remove Filter	م ד
larks III de la de	Check- are cur	marked rently s	items electeo			 ✓ Show "All" Value ✓ Show Search Button ✓ Show Include/Exclude ✓ Show Filter Types ✓ Show There Types 	~	Apply to Worksheets Format Quick Filters Customize Show Title Edit Title Single Value (List) Single Value (Drandown)	
SUM(Profit)			Paper			Show More/Fewer Button Show All Values Button		Single Value (Slider)	-0-
UM(Profit) 13,554) \$67,771		Technology	Storage Supplies Accessories Copiers			Show Apply Button	•	Multiple Values (List) Multiple Values (Dropdown) Multiple Values (Custom List) Wildcard Match	
JM(Profit) 13,554) 567,771	High	Technology	Storage Supplies Accessories Copiers Machines Phones Bookcases Chairs Furnishings Tables			Show Apply Button	•	Multiple Values (List) Multiple Values (Costown) Multiple Values (Custom List) Wildcard Match Only relevant values All values in database Include Values Exclude Values	

Figure 21-3. Customize options

Each of these sub-menu tree items enables useful functionality. For example, if a list is very long, the search box can be used to narrow the search.

To access the search box:

• Click the **Find Values** icon, as shown in Figure 21-3, which opens a small box, displayed in Figure 21-4, where the name to be searched can be typed



Figure 21-4. Search box

In Figure 21-5, the seventh item in the **Customize** sub-menu tree, **Show Apply Button**, is unchecked. This item is used to display or hide the **Apply** button.

Pages	III Columns	🕀 Market		SUM(Sales)								
	II Rows	Order Prior	ity 🛓	E Category	Œ	Sub-Category						
iters Sub-Category Aarks III Automatic Color Size Label Detail Tooltip & SUM(Profit) S13,554)	Order Priority Critical	Category Furniture Office Supplies	Sub-Category Bookcases Chairs Furnishings Tables Applances Art Binders Fasteners Labels Paper Supples	АРАС		Market EU	LAT Show Show Show Show Show Show	"All" Value "All" Value Search Button Include/Exclude Filter Types More/Fewer Button All Values Button Apply Button		Edit Filter Remove Filt Apply to W Format Qui Customize Show Title Edit Title Single Valuu Single Valuu Single Valuu Multiple Va Multiple Va	Choose a Sub er orksheets ck Filters (List) (Dropdown) (Slider) ues (Dropdown) ues (Lustom List) arch	۱۹۳۲ ۱۹۹۹ ۱۹۹۹ ۱۹۹۹ ۱۹۹۹ ۱۹۹۹ ۱۹۹۹ ۱۹۹۹
	Click SI	office Supplies	Furnishings Tables Appliances	tton					• • ×	Only releva All values in Include Valu Exclude Valu Hide Card	nt values i database ves ves	
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Figure 21-5. Show Apply Button

To display the **Apply** button:

• Click **Show Apply Button**, as shown in Figure 21-5, which leads to the display shown in Figure 21-6



Figure 21-6. View with Apply button

The Quick Filter title can be edited to make the title more meaningful or to provide a prompt to the users.

To edit the Quick Filter title:

• Click the Quick Filter's pull-down arrow, as shown in Figure 21-7, which pops up the menu tree

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Figure 21-7. Editing the Quick Filter title

• Click **Edit Title**, as shown in Figure 21-7, which pops up the **Edit Quick Filter Title** window displayed in Figure 21-8



Figure 21-8. Renaming the title

• Rename the default title **Select a Sub-Category**, as shown in Figure 21-8, by entering the new title, which leads to the display shown in Figure 21-9



Figure 21-9. Renamed title

• Click **OK** after the title has been renamed, as shown in Figure 21-9, which leads to the display shown in Figure 21-10



Figure 21-10. Quick Filter prompt with title renamed

Renaming the filter title provides the **Select a Sub-Category** prompt to the users, as shown in Figure 21-10, which makes the visualization more user-friendly.

CHAPTER 22

Quick Filters Single and Multiple Value Lists

Objective: This exercise demonstrates how single and multiple value lists can be used in Quick Filters Tableau provides many categorical filter options—single or multiple—for displaying the values in a Quick Filter. These are displayed in Figure 22-1.



Figure 22-1. Quick Filter options menu tree

• Click the pull-down arrow for **Select a Sub-Category**, as shown in Figure 22-1, which pops up the menu tree displayed in Figure 22-1

To provide the Single Value (Dropdown):

• Click the **Single Value (Dropdown)** menu tree item, as shown in Figure 22-1, which leads to the display shown in Figure 22-2



Figure 22-2. Single value drop-down

To display other values, besides All (which is currently displayed):

• Click the pull-down arrow under **Select a Sub-Category**, as shown in Figure 22-2, which displays other possible values, as shown in Figure 22-3

The **All** option shown in Figure 22-2 can be removed by unchecking the **Show "All" Value** menu tree item in the **Customize** secondary menu (which is displayed in Figure 21-3).

CHAPTER 22 QUICK FILTERS SINGLE AND MULTIPLE VALUE LISTS



Figure 22-3. Drop-down values displayed

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The next step demonstrates how to select the Single Value (List), commonly known as radio buttons.

Figure 22-4. Selecting Single value (List)

• Click the pull-down arrow for **Select a Sub-Category**, as shown in Figure 22-4, which pops up the menu tree displayed in Figure 22-4

To provide the Single Value (List):

• Click the **Single Value (List)** menu tree item, as shown in Figure 22-4, which leads to the display shown in Figure 22-5



Figure 22-5. Single Value (List) displayed

In this case, only a single value can be selected, because the system only allows one radio button to be checked at any time. If multiple selections need to be made, then the **Multiple Values (List)** option can be used, as shown in the next step.

CHAPTER 22 ■ QUICK FILTERS SINGLE AND MULTIPLE VALUE LISTS



Figure 22-6. Selecting Multiple Values (List)

• Click the pull-down arrow for **Select a Sub-Category**, as shown in Figure 22-6, which pops up the menu tree displayed in Figure 22-6

To provide the Multiple Values (List):

• Click the **Multiple Values (List)** menu tree item, as shown in Figure 22-6, which leads to the display shown in Figure 22-7
CHAPTER 22 QUICK FILTERS SINGLE AND MULTIPLE VALUE LISTS



Figure 22-7. Multiple Values (List) displayed

If multiple values need to be selected using a drop-down:

• In Figure 22-6, click the **Multiple Values (Dropdown)** menu tree item, which leads to the display shown in Figure 22-8



Figure 22-8. Drop-down with multiple values

Figure 22-8 displays a drop-down with multiple items. Using check marks, individual items can selected or deselected.

CHAPTER 23

Quick Filter Sliders

Objective: This exercise demonstrates how sliders are set up and used

A slider is quite useful when working on filtering quantitative data, since this type of filtering generally involves a range that needs to be specified dynamically.

To set up a Single Value slider:

• Click the **Quick Filter** pull-down arrow, as shown in Figure 23-1, which pops up the menu tree displayed in Figure 23-1



Figure 23-1. Menu tree displaying slider options

• Click the **Single Value (Slider)** menu tree item, as shown in Figure 23-1, which leads to the display shown in Figure 23-2

CHAPTER 23 QUICK FILTER SLIDERS



Figure 23-2. Single Value slider

The slider in Figure 23-2 can be moved to the left or right, as needed, to dynamically change the range being analyzed.

A Multiple Value slider contains two sliders that can dynamically specify the low and high range values. To set up a Multiple Value slider:



• Populate the Rows and Columns, as shown in Figure 23-3

Figure 23-3. View needing a Multiple Value slider

• Drag and drop the **Shipping Cost** measure onto the **Filters** pane, as shown in Figure 23-3, which causes the **Filter Field (Shipping Cost)** window to pop up, as displayed in Figure 23-4

CHAPTER 23 QUICK FILTER SLIDERS

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Figure 23-4. Filter field pop-up menu

• Click **Sum**, as shown in Figure 23-4, which leads to Figure 23-5, where the **Sum** measure is selected and highlighted



Figure 23-5. Selecting the aggregation method on the selected filter field

• Click **Next**, as shown in Figure 23-5, which pops up the **Filter (Shipping Cost)** window displayed in Figure 23-6

CHAPTER 23 QUICK FILTER SLIDERS



Figure 23-6. Entering values for slider range

- Enter the lowest value, **12,000**, for the slider range in the field highlighted in Figure 23-6
- Enter the highest value, **20,000**, for the slider range in the field highlighted in Figure 23-6



Figure 23-7 shows that the lowest and the highest values have been entered.

Figure 23-7. Values specified for slider range

• Click OK, as shown in Figure 23-7, which leads to the display shown in Figure 23-8

CHAPTER 23 QUICK FILTER SLIDERS



Figure 23-8. View with active shipping cost filter

The Quick Filter slider is not currently displayed, although it is active. To display the filter:

• Click **SUM** in the **Filters** pane, as shown in Figure 23-8, which pops up the menu tree displayed in Figure 23-9



Figure 23-9. Menu tree with Show Quick Filter option

• Click **Show Quick Filter**, as shown in Figure 23-9, which leads to Figure 23-10, where the slider is displayed

CHAPTER 23 QUICK FILTER SLIDERS



Figure 23-10. View with slider

There are three options available in a slider, which are displayed in Figure 23-6:

- At Least: Includes all values that are greater than or equal to a specified value
- At Most: Includes all values that are less than or equal to a specified value
- **Special**: Allows you to specify whether only null values, non-null values, or all values are to be included

CHAPTER 24

Dependency in Quick Filters

Objective: This exercise demonstrates how two filters can be made dependent, which is also known as cascading filters

If there are two Quick Filters on a worksheet, the items displayed in the second filter can be made dependent on the item selected in the first filter. The filters can be set up so that, for example, if Africa is selected as the **Region** in the first filter, only the countries in Africa will be displayed in the **Countries** Quick Filter—instead of every country in every region.

Figure 24-1 displays a visualization based on Sales by Region.



Figure 24-1. Visualization where two filters will be added

• Drag and drop **Region** onto the **Filters** pane, as shown in Figure 24-1, which pops up the window displayed in Figure 24-2

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E Rows	Filter [Region]	
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	Select from list Custom value list Use at Enter Text to Search	Deselect all items
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	Canada	
	Central	
\$2 000 000-	Central Asia	E
92,000,000	EAST EMEA	
	Vorth North	
	Vorth Asia	
e \$1,500,000	Cceania	
0		
	All None	Exclude
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\$1,000,000	Field: [Region]	
	Wildcard: All	
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Figure 24-2. Filter pop-up window

• Deselect all items except **Caribbean** by removing their check marks, as shown in Figure 24-2, which leads to the display shown in Figure 24-3



Figure 24-3. View with deselected regions

• Click **OK**, as shown in Figure 24-3, which leads to Figure 24-4, where the results displayed are limited to the Caribbean region



Figure 24-4. View with single region (Caribbean)

• Right-click **Region**, as shown in Figure 24-4, which pops up the menu tree displayed in Figure 24-5



Figure 24-5. Menu tree with Show Quick Filter option

• Click **Show Quick Filter**, as shown in Figure 24-5, which leads to the **Region** Quick Filter being displayed, as shown in Figure 24-6



Figure 24-6. View with displayed Quick Filter

To add the Country Quick Filter:

• Right-click **Country**, as shown in Figure 24-6, which pops up the menu tree displayed in Figure 24-7



Figure 24-7. Menu tree with Show Quick Filter option

• Click **Show Quick Filter**, as shown in Figure 24-7, which leads to Figure 24-8, where the **Country** Quick Filter has been added to the visualization



Figure 24-8. View with two Quick Filters

• Deselect **Caribbean** and select **Africa** by removing and adding check marks, respectively, as shown in Figure 24-8, which leads to the display in Figure 24-9



Figure 24-9. View with Africa selection

In Figure 24-9, only African countries are being displayed in the second filter (**Country**) because Africa has been selected in the first filter (**Region**), which determines the items to be displayed in the second filter.

CHAPTER 25

Saving in PDF Format

Objective: This exercise demonstrates how to save a visualization in PDF format Figure 25-1 shows a chart that needs to be saved in a PDF format.



Figure 25-1. View to be saved in PDF format

• Click **File** on the **menu bar**, as shown in Figure 25-1, which leads to the menu tree displayed in Figure 25-2

Tableau - Book1					1			-
<u>File</u> <u>Data</u> <u>Worksheet</u> Dash <u>b</u> oard Story <u>A</u> nalysis	<u>M</u> ap	Format	Server	Window <u>H</u>	delp	_		
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Save	Ctrl+S	Rows		SUM(Sales)				
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Data Source Sheet 1 Sheet 2	H 10							
12 marks 1 row by 12 columns SUM(Sales): 2,297,201								

Figure 25-2. Menu tree with option to save in PDF format

• Click the **Print to PDF** menu tree item, as shown in Figure 25-2, which pops up the **Print to PDF** window displayed in Figure 25-3



Figure 25-3. Print to PDF pop-up window

• Click the Landscape radio button, if needed

A drop-down to select the **Paper Size** is also available, as shown in Figure 25-3. If the **View PDF File After Printing** check box is selected, as shown in Figure 25-3, it automatically opens the PDF after it is saved. If the **Show Selections** check box is selected, it retains any selections made on the view when the PDF is saved.

After the desired selections have been made in Figure 25-3:

• Click **OK**, as shown in Figure 25-3, which pops up the **Save PDF** window displayed in Figure 25-4

CHAPTER 25 SAVING IN PDF FORMAT

Columns	Region	Category	
Rows	SUM(Sales)		
		Region / Category	
-	Central	East	South West
	Save PDF		
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FOK		🕌 Styles	File folder
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	RACHAEL-PC		···· · · · · · · · · · · · · · · · · ·
	File name: Bool	3	
Fur	Save as type: Adol	e Portable Document Format (*.pdf)	

Figure 25-4. Save PDF window

• Rename the default **Book 1** file name to **Sales by Region**, as shown in Figure 25-5

CHAPTER 25 SAVING IN PDF FORMAT



Figure 25-5. Rename file

• Click **Save**, as shown in Figure 25-5, which leads to the Figure 25-6 display (which contains the PDF display in a separate window)

CHAPTER 25 SAVING IN PDF FORMAT



Figure 25-6. View displaying PDF

CHAPTER 26

Exporting an Image to PowerPoint

Objective: This exercise demonstrates how to copy and export a displayed image Figure 26-1 shows the visualization that needs to be exported as an image.



Figure 26-1. View to be exported

• Right-click within the chart, as shown in Figure 26-1, which pops up the menu tree displayed in Figure 26-2

CHAPTER 26 EXPORTING AN IMAGE TO POWERPOINT



Figure 26-2. Menu tree with the Copy option

• Click **Copy**, as shown in Figure 26-2, which leads to the secondary menu tree displayed in Figure 26-3

CHAPTER 26 EXPORTING AN IMAGE TO POWERPOINT



Figure 26-3. Secondary menu with the Image option

• Click **Image**, as shown in Figure 26-3, which pops up the **Copy Image** window displayed in Figure 26-4

CHAPTER 26 EXPORTING AN IMAGE TO POWERPOINT

Columns	. E M	ONTH(Order Date	e)					
Rows	E Ca	ategory	SUM(Sales)					
Category					Order Da	te		
Furniture	200K	Copy Image	-					
	0K 200K	Show Title View Caption	Color Legend Shape Legend Size Legend	Map Legend				
Office Supplie	sales V 100K	Image Options					5	N
Technology	200K							
	OK				lune	huly	August 'S	ente

Figure 26-4. Copy Image pop-up window

The **Copy Image** pop-up window provides the ability to choose what needs to be copied from the view, such as title and legend, by simply checking or unchecking the selections. It also permits you to specify where the legends should appear.

After making the appropriate selection:

• Click **Copy**, as shown in Figure 26-4, which captures the displayed image

The displayed image can now be exported to another application. To export the image into PowerPoint:

- Launch PowerPoint
- Paste onto the displayed blank PowerPoint slide, as shown in Figure 26-5, where the image is displayed



Figure 26-5. Image displayed in PowerPoint

CHAPTER 27

Exporting Data

Objective: This exercise demonstrates how to display and save the data associated with a displayed visualization

Figure 27-1 shows the visualization whose data needs to be displayed.



Figure 27-1. Visualization for which underlying data is to be viewed

CHAPTER 27 EXPORTING DATA

• Right-click within the chart area, which pops up the menu tree displayed in Figure 27-2



Figure 27-2. Menu tree with View Data option

• Click **View Data**, as shown in Figure 27-2, which pops up the **View Data** window displayed in Figure 27-3

E Rows IB Category SUM(Sales) iters Category Order Date 200K 200K tarks View Data ✓ Automatic Ø Store Ø State Category Month of Order Date Year of Order Date Ø State Category Month of Order Date Year of Order Date Ø State Category Month of Order Date Year of Order Date Ø VEARCOF Furniture Furniture March 2014 2014 Furniture March 2014 2014 Furniture March 2014 2014 Furniture March 2014 2014 Furniture June 2014 2014 Furniture August 2014 2014 Furniture August 2014 2014 Furniture August 2014 2014 Furniture August 2014 2014 <tr< th=""><th>iges</th><th></th><th>III Col</th><th>lumns MONTH(C</th><th>Order Date)</th><th></th><th></th><th></th><th>IT AII</th></tr<>	iges		III Col	lumns MONTH(C	Order Date)				IT AII
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Furniture March 2014 37.325% 89,705.38 Furniture April 2014 29.292% 70,576.33 Furniture May 2014 32.079% 98,312.10 Furniture May 2014 18.126% 126,154.28 Furniture Jun 2014 14.618% 82,368.19 Furniture August 2014 12.647% 125,776.64 Furniture October 2014 37.647% 175,776.64 Furniture October 2014 37.647% 175,776.64 Furniture November 2014 37.647% 178,267.83 2013 Furniture November 2014 37.847% 188,86.67 2014 Furniture December 2014 19.988% 171,826.78 Furniture January 2013 92.487% 81,804.60 Furniture March 2013 18.929% 65,333.29 Furniture March 2013 18.229% 65,4356	etail	Tooltip	Furniture	February	2014	-2.394%	57,702.83		
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Figure 27-3. View Data pop-up window

The **View Data** pop-up window displays the underlying data, which can be analyzed, exported, or saved.

To save the data:

• Click the **Export All** button, as shown in Figure 27-3, which leads to the **Export Data** pop-up window displayed in Figure 27-4

CHAPTER 27 EXPORTING DATA



Figure 27-4. Export Data pop-up window

In the **Export Data** window, the default folder for saving data is displayed (**My Tableau Repository**). If needed, the folder in which to save the file can be changed.

• Click Save, as shown in Figure 27-4, which saves the data
To export data using the Crosstab function:

• Right-click the chart, which pops up the menu tree displayed in Figure 27-5



Figure 27-5. Menu tree with Crosstab option

- Navigate to the secondary menu tree, as shown in Figure 27-5 (Copy ➤ Crosstab)
- Click **Crosstab**, which captures the date for export

The captured data can now be copied onto an Excel spreadsheet. To copy this data:

- X L (* - 14 0. E Autos X Cut Conditional Format Cell Formatting * as Table * Styles * -27 🕅 Cal - 11 A Wrap Text 7 A Fill -Copy 14 .13 Insert Delete Format Sort & Find & Filter * Select в I U . A IE. -10 -At Me s -% , J Format P Q Clear f, A1 D 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 27 0 0 4 2 8 0 9 🖬 🏴 🔐 🌖 11:08 Al
- Open a new Excel worksheet (see Figure 27-6)

Figure 27-6. New Excel spreadsheet

• Paste the data in the open spreadsheet (you can use the Windows **Ctrl+V** function for this purpose)

The pasted data is displayed in Figure 27-7.

CHAPTER 27 EXPORTING DATA

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4	Furniture	2011	Sales % Differ	34,464 et 23.31%	30,641	44,780	31,345	44,981	78,369	31,385	69,984	95,02	9 77,412	90,757	127,045						
6	Furniture	2012	Sales % Differ	42,499	37,898	55,082 18,59%	54,702 -0.21%	62,961 18,22%	81,481 41,46%	41,491	84,644 32,68%	96,16	6 84,824 6 5,30%	120,308	96,846 47,87%						
8	Furniture	2013	Sales	81,805	59,118	65,323	54,587	74,435	115,262	71,863	112,306	127,70	1 89,319	122,803	143,203						
9	Furniture	2014	% Differ	er -14.68%	-2.39%	37.33%	29.29%	32.08%	18.13%	14.62%	12.45%	37.659	6 46.33%	37.50%	19.99%						_
11	Office Sur	2014	Sales % Differ	ence in Sale	s from the	Previous V	Par of Orde	r Date	130,134	02,300	120,204	1/5,//	/ 130,/01	100,049	1/1,02/						
12	Office Sur	2011	Sales	33,527	22,277	34,395	46,604	46,110	65,150	41,359	56,697	102,93	9 48,235	94,327	83,988						
13	Office Sur	2012	% Differ	er 40.40%	9.94%	56.19%	-5.83%	32.38%	16.42%	12.06%	71.54%	-23.419	6 23.11%	6.00%	27.66%						
14	Office Sur	2012 :	Sales	47,071	24,490	53,721	43,886	61,041	75,846	46,346	97,260	78,84	4 59,383	99,990	107,215						
15	Office Sup	2013	% Differ	ei 38.05%	110.50%	15.43%	27.07%	22.36%	46.98%	51.64%	-4.24%	40.489	6 30.33%	10.75%	19.32%						
16	Office Sur	2013	Sales	64,984	51,553	62,008	55,766	74,692	111,477	70,282	93,140	110,76	2 77,393	110,736	127,926						_
17	Office Sur	2014	% Differ	er 17.96%	7.04%	25.11%	45.87%	31.17%	7.92%	9.48%	66.88%	21.339	6 49.59%	47.97%	17.43%						
18	Technolog	2014	Sales % Differ	70,034	55,184	77,576 Draulour V	81,340	97,975	120,309	70,948	155,431	134,38	/ 115,//1	103,851	150,220						_
20	Technolog	2011	Sales	30 908	38 234	66 554	38 967	55.658	71.689	42 767	80.900	92.24	7 73 425	113 412	122.893						
21	Technolos	2012	% Differ	er 49.51%	-0.29%	-18.45%	60.30%	51.57%	37.89%	34.21%	49.86%	23.999	6 48.09%	-8.99%	9.20%						
22	Technolog	2012	Sales	46,211	38,122	54,273	62,464	84,363	98,849	57,399	121,239	114,37	9 108,733	103,214	134,196						
23	Technolog	2013	% Differ	er 13.39%	48.39%	31.30%	8.01%	32.02%	71.76%	52.94%	-0.16%	20.799	6 16.52%	36.08%	0.10%						
24	Technolog	2013	Sales	52,398	56,569	71,263	67,469	111,372	169,780	87,784	121,043	138,15	7 126,695	140,451	134,325						
25	Technolog	2014	% Differ	er 80.95%	27.19%	34.46%	34.65%	-17.29%	-14.39%	13,22%	44.50%	23.779	6 39.15%	58.47%	34.82%						
26	Technolog	2014 :	Sales	94,815	71,951	95,819	90,849	92,114	145,351	99,390	174,905	170,99	4 176,295	222,579	181,097						
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Figure 27-7. Crosstab data displayed in spreadsheet

CHAPTER 28

Displaying Underlying Data

Objective: This exercise demonstrates how to display and export the detailed underlying data behind a visualization

Figure 28-1 shows a chart with the sum of sales by region by category.



Figure 28-1. Visualization for displaying underlying data

- Right-click in the chart area, which pops up the menu tree displayed in Figure 28-1
- Click **View Data**, as shown in Figure 28-1, which pops up the **View Data** window displayed in Figure 28-2

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	Summa	ry Und	Furnitu	re Office	Technology	Furniture	Office	Technology	Furniture	Office	Technology	Furniture	12 rows Office	Technol

Figure 28-2. View Data pop-up window

In Figure 28-2, two tabs are displayed: **Summary** and **Underlying**. The Summary tab shows the aggregated numbers for the displayed visualization, while the Underlying tab displays the raw/underlying data for those aggregated numbers.

To view the detailed underlying data:

• Click the **Underlying** tab, as shown in Figure 28-2, which leads to the display shown in Figure 28-3



Figure 28-3. Data displayed in View Data window

• Place a check mark in the **Show all fields** field, as shown in Figure 28-3, which causes all fields to be displayed, as shown in Figure 28-4

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		Category	City	Country	Customer ID	Ourtomer Name	Order Date	Order ID	Portal Code	Draduc
×.		Europhice	Henderson	Linited States	CG-12520	Claire Gute	11/9/2013	CA-2013-152156	42420	FID.80
		Furniture	Henderson	United States	CG-12520	Claire Gute	11/9/2013	CA-2013-152155	42420	RRO
		Office Supplies	Los Angeles	United States	DV-13045	Darrin Van Huff	6/13/2013	CA-2013-138688	90036	OFELA
		Furniture	Fort Lauderdale	United States	\$0-20335	Sean O'Donnell	10/11/2012	US-2012-108966	33311	FUR-TA
		Office Supplies	Fort Lauderdale	United States	SO-20335	Sean O'Donnel	10/11/2012	US-2012-108966	33311	OFE-ST
K		Furniture	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	FUR-FL
		Office Supplies	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	OFF-A
		Technology	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	TEC-PH
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ĸ		Office Supplies	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	OFF-A
		Furniture	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	FUR-TA
		Technology	Los Angeles	United States	BH-11710	Brosina Hoffman	6/9/2011	CA-2011-115812	90032	TEC-PH
		Office Supplies	Concord	United States	AA-10480	Andrew Allen	4/16/2014	CA-2014-114412	28027	OFF-P
		Office Supplies	Seattle	United States	IM-15070	Irene Maddox	12/6/2013	CA-2013-161389	98103	OFF-BI
K-		Office Supplies	Fort Worth	United States	HP-14815	Harold Pawlan	11/22/2012	US-2012-118983	76106	OFF-A
		Office Supplies	Fort Worth	United States	HP-14815	Harold Pawlan	11/22/2012	US-2012-118983	76106	OFF-8
		< [m							•
		Summary Und	erlying						9,9	994 row
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Figure 28-4. Display with all fields

To export the displayed data:

• Click **Export All**, as shown in Figure 28-4, which pops up the **Export Data** window displayed in Figure 28-5

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Figure 28-5. Export Data pop-up window

To change the default file name provided by the system to **Region_Category_Underlying_Data**:

• Type the new file name, as shown in Figure 28-5, which leads to the display shown in Figure 28-6

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Figure 28-6. View with renamed file

• Click **Save**, as shown in Figure 28-6, which saves the file as a .csv file

CHAPTER 29

Exporting Crosstab Data

Objective: This exercise demonstrates another method for exporting crosstab data to Excel Figure 29-1 shows a chart whose data needs to be exported to Excel.



Figure 29-1. View to be exported

• Click **Worksheet** on the **menu bar**, as shown in Figure 29-1, which pops up the menu tree displayed in Figure 29-2



Figure 29-2. Menu tree displaying option to export

- Navigate to the secondary menu tree displayed in Figure 29-2
- Click **Crosstab to Excel**, as shown in Figure 29-2, which launches the Excel application and populates it with the relevant data, as displayed in Figure 29-3

CHAPTER 29 EXPORTING CROSSTAB DATA

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2	Category	Central	East	South	West						
3	Furniture	163,797	208,291	117,299	252,613						
4	Office Supplies	167,026	205,516	125,651	220,853						
5	rechnology	170,416	264,974	148,772	251,992						
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Figure 29-3. Exported data in Excel

CHAPTER 30

Formatting

Objective: This exercise demonstrates commonly used formatting functions Figure 30-1 displays a chart used to demonstrate basic formatting functions.



Figure 30-1. Visualization to be formatted

To size the width of the bars:

• Click the **Size** icon on the **Marks** card, as shown in Figure 30-1, which leads to Figure 30-2, where a slider is shown



Figure 30-2. Slider from the Size marks card

The slider can be used to change the width of the bars simply by adjusting the slider position.

• Move slider to the left, as shown in Figure 30-2, which decreases the bar width, as shown in Figure 30-3



Figure 30-3. Slider with changed position

To display the individual values for the bars:

• Click the **Label** icon on the **Marks** card, as shown in Figure 30-4, which pops up the window displayed in Figure 30-4



Figure 30-4. Labels pop-up window

• Place a check mark in the **Show mark labels** field, as shown in Figure 30-4, which leads to the display shown in Figure 30-5



Figure 30-5. The Show mark labels field is selected

To change the color of the displayed numbers:

• Click the **Font** pull-down arrow, as shown in Figure 30-5

This pops up another window, which is shown in Figure 30-6, where the font size and color can be selected.

The **Alignment** options can be set from the alignment drop-down, as shown in Figure 30-5. The **Marks to Label** option, shown below the Alignment option in Figure 30-5, enables the user to specify the position of the marks. Using this feature, the user can specify where and when the marks should appear.

- All: Shows marks on all the points
- Selected: Shows mark label when selected/on click
- Min/Max: Shows only the minimum and maximum values
- **Highlighted**: Shows all the values when a particular item is clicked on the color-legend card menu

CHAPTER 30 ■ FORMATTING

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	Text: Font: Arial, 8 Alignment: Arial Marks to Label All Min/Mas Options Allow lab	B I U Automatic		148,7 125,651 117,299
,	Text: Font: Arial, 8 Alignment: Arial Marks to Label All Min/Maz Options	B Z U Automatic More Colors		148,7 125,651 117,299

Figure 30-6. Font pop-up window

• Click the **Red** color, which changes the color of the displayed numbers to red, as shown in Figure 30-6

To change the color of the bars:

• Click the **Color** icon in the **Marks** card, which pops up the **Color** selection window shown in Figure 30-7



Figure 30-7. Color selection pop-up window

• Click the green color in the **Color** pop-up window, as shown in Figure 30-7, which leads to the display in Figure 30-8 (where the bar colors have changed to green)

As shown in Figure 30-7, the transparency of the color can be adjusted by moving the slider to the left. This is useful when you have to view data that is overlapping other marks.

Border colors can also be added to visually distinguish closely spaced marks, as shown in Figure 30-7.



Figure 30-8. Bars with changed colors

To access additional formatting functionality:

• Right-click within the chart area, which pops up the menu tree displayed in Figure 30-9



Figure 30-9. Menu tree displaying Format option

• Click **Format**, as shown in Figure 30-9, which pops up the **Format Font** window displayed in Figure 30-10

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Pane: Arial, 8pt 🔹			
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ritur, opt		<i></i>	117,299
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		OK	
		Furniture Office Techno Supplies	logy Furniture Office Technology Furniture Supplies
Clear			
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12 marks 1 row by 12 columns	SUM(Sales): 2,297,201		

Figure 30-10. Format Font window

Various formatting operations can now be performed through the **Format Font** window for the **Sheet**, **Rows**, or **Columns** (which can be selected by clicking the appropriate tab). In Figure 30-10, the **Sheet** tab has been selected (by default).

• Click the **Worksheet** pull-down arrow, as shown in Figure 30-10, which pops up the window displayed in Figure 30-11, where the desired changes can be made

CHAPTER 30 FORMATTING



Figure 30-11. Pop-up window for selecting colors

• Click the red color, as shown in Figure 30-11, which changes the color of the column and row titles to red, as shown in Figure 30-12

CHAPTER 30 FORMATTING



Figure 30-12. Pop-up window displaying font sizes

- Click the font size pull-down arrow, as shown in Figure 30-12, which displays the different font sizes shown in Figure 30-12
- Click 11, as shown in Figure 30-12, which increases the text size to 11 for the row and column headers, as displayed in Figure 30-13



Figure 30-13. View with changed font size

To change the color for the column and row headers to black (from green):

• Click the black color in the color selection box, as shown in Figure 30-13, which leads to the display shown in Figure 30-14 (where the headers have changed to black)

CHAPTER 30 FORMATTING



Figure 30-14. Headers with changed color

Annotations are text boxes used to highlight a specific mark, point, or the entire area of a view.



Figure 30-15. Menu tree displaying Annotate option

To add an annotation for highlighting a chart:

- Right-click the bar for the **West**, as shown in Figure 30-15, which pops up the menu tree displayed in Figure 30-15
- Navigate to Annotate ➤ Mark, as shown in Figure 30-15, which pops up the Edit Annotation window displayed in Figure 30-16



Figure 30-16. Edit Annotation pop-up window

The default annotation can be accepted as-is or it can be modified by typing in the desired text in the **Edit Annotation** box, as shown in Figure 30-16. In this case, we will not add any custom text.

• Click **OK**, as shown in Figure 30-16, which adds the annotation, as shown in Figure 30-17

CHAPTER 30 FORMATTING



Figure 30-17. View with annotation

CHAPTER 31

Highlighting with Colors

Objective: This exercise demonstrates how to highlight the data in the visualization using color We start this exercise with Figure 31-1, which displays crosstab data.



Figure 31-1. View with crosstab data

To analyze the profits:

• Drag and drop **Profit** onto the **Color** shelf in the **Marks** card, as shown in Figure 31-1, which leads to the display shown in Figure 31-2

Pages	III Columns	Category	1	Œ	YEAR(Ord	er Date)							
	III Rows		TH(Order D	ate)									
ilters						(Category / C	Order Date					
			Furnit	ure			Office Su	pplies			Techno	logy	
	Month of Or	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	201
	January	5,952	11,740	7,623	5,964	4,851	1,809	5,300	21,704	3,143	4,625	5,620	17,03
larks	February	2,130	3,319	3,926	6,866	1,072	5,427	6,683	7,390	1,609	3,465	12,259	6,02
Abc Automatic 🔹	March	14,574	12,315	12,473	10,597	8,606	15,824	17,458	14,317	32,511	10,328	21,255	28,99
Abc Abc	April	7,945	10,476	13,406	9,053	11,155	12,559	10,640	14,922	9,195	11,161	15,203	16,13
Color Size Text	May	6,913	9,375	15,031	17,267	7,136	9,114	13,007	14,138	9,600	11,643	28,653	14,24
	June	13,206	7,714	12,027	16,903	12,953	10,648	10,902	15,297	8,436	6,435	16,502	16,06
Datail	July	10,821	13,674	13,199	13,882	15,121	4,720	12,677	10,699	8,004	10,371	12,564	23,84
Detail	August	7,320	9,639	13,619	14,909	11,379	11,735	9,219	29,973	9,210	15,525	10,427	16,63
SUM/Profit)	September	23,816	26,273	26,739	29,598	27,423	19,306	23,286	32,759	30,538	19,017	22,883	28,13
be current	October	12,304	12,027	10,131	21,884	7,211	8,673	14,799	23,403	11,938	10,705	31,533	32,50
SUM(Sales)	November	21,565	30,881	33,659	32,927	26,862	21,218	21,428	30,070	30,201	23,874	27,105	49,33
	December	30,646		37,069	35,537	18,006	16,202	38,112	31,855	20,893	35,632	22,057	23,08

Figure 31-2. Numbers displayed in color

When aggregated measures are dropped on the **Color** shelf, a quantitative legend with a continuous range of colors is created.

In Figure 31-2, the red and green colors indicate the relative profitability or loss for the relevant item. The displayed colors are not bright and some enhancement is desired. To enhance the colors:

• Click the **Color** icon in the **Marks** card, which pops up the window displayed in Figure 31-3

le Data Worksheet Dashboard Story Analysis b \$ ← → ■ 🖻 💀 🖓 🛺 • 🔒 • ⊘ •	Map Format Server	Window	Help	I ▼ →	. Z.				
ata	Columns	Category			YEAR(Ord	er Date)			
Click the	E Rows		TH(Order D	ate)					
Color icon			Furnit	ure		(Category / C	Order Date	
	Month of Or.	2011	2012	2013	2014	2011	2012	2013	2014
c Customer Name	January	5.952	11.740	7.623	5.964	4.851	1.809	5.300	21.70
Order Date Marks	February	2.130	3.319	3.926	6.866	1.072	5.427	6.683	7.39
Order ID bc Automatic	 March 	14.574	12.315	12.473	10.597	8.606	15.824	17.458	14.31
Postal Code	April	7,945	10.470				12 559	10.640	14.92
Product ID 19	May	-			/			007	14.13
Product Name Color Size Te	oxt ne	(C	lick I	Edit (color	S	2	15.29
Region Color		~						12 677	10.69
Seament Edit Colors	THIS!	7.320	9.639			11.07/3	11,735	9,219	29.97
Ship Date	tember	23.816	26 273	26 739	29 598	27 423	19.306	23 286	32.75
Ship Mode	ober	12 304	12 027	10 131	21.884	7.211	8,673	14 700	23.40
State	100% Ober	21 565	30.881	33,659	32 927	26.862	21 218	21 428	30.07
Sub-Category Effects		30.646	23 086	37.069	35.537	18,006	16 202	38 112	31.85
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Profit -3.014 11	,708								
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Figure 31-3. Color pop-up window

• Click **Edit Colors**, as shown in Figure 31-3, which leads to the display shown in Figure 31-4

	III Columns	Category	1		YEAR(Orde	er Date)			
		E MON	TH(Order D	ate)					
ilters			Furnite	ire		c	ategory / O Office Sup	order Date	
	Month of Or	2011	2012	2013	2014	2011	2012	2013	2014
larks	January	2,852	3.310	3,025	6,866	4,051	5 427	5,300	7 300
Abc Automatic 🗸	March	Carrier	0,010	3,320	0,000	1,012	3,721		D 317
	April	Edit Colo	rs [Profit]						922
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Effects Halo: 0,014 11,706	ce check	Reve	nped Color ersed Full Color Ra	s 👽 st	еря	Car	Adv	Apply	1.070 855

Figure 31-4. Edit Colors pop-up window

- Place a check mark in the check box located to the left of **Stepped Color**, as shown in Figure 31-4
- Increase **Steps** from 5 to 6 (which specifies how many steps/bins or buckets are being created)



Figure 31-5 shows the display after the changes have been made.

Figure 31-5. Stepped color modified view

• Click **OK**, as shown in Figure 31-5, which leads to Figure 31-6, where the changed highlighting is displayed

CHAPTER 31 ■ HIGHLIGHTING WITH COLORS

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Orders (Sample - Superstore)		t Dama			ata)	
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Abc Customer ID		lanuary	5.952	11.740	7 623	5.964
Abc Customer Name	Marks	February	2 130	3 319	3,926	6,866
Abc Order ID	Abc Automatic 🔹	March	14.574	12.315	12.473	10.597
Postal Code E		April	7,945	10.476	13,406	9.053
Abc Product ID		May	6,913	9.375	15.031	17,267
Abc Product Name	Color Size Text	June	13,206	7,714	12,027	16,903
# Row ID		uly	10,821	13,674	13,199	13,882
Abc Segment	Detail	gust	7,320	9,639	13,619	14,909
🛱 Ship Date	SUM/Profit)	tember	23,816	26,273	26,739	29,598
Abc Ship Mode	Abr curve i a	er	12,304	12,027	10,131	21,884
State	123 SUM(Sales)	ber	21,565	30,881	33,659	32,927
Measures		er	30,646	23,086	37,069	35,537
 # Calculation1 # Discount # Profit # Quantity # Sales <i>Latitude (generated)</i> <i>Longitude (generated)</i> # Number of Records # Measure Values 	SUM(Profit) -3,014 15,071	Click the lown arr	pull- ow	-		
Data Source Sheet 1 144 marks 12 rows by 12 columns	Sheet 2 tim the tim SUM(Sales): 2,297,201]				

Figure 31-6. View displaying modified highlighting

The default red and green colors can be changed by clicking the color selector, as shown in Figure 31-5. These can be reversed by checking the **Reversed** check box.

• Click the **Automatic** pull-down arrow, as shown in Figure 31-6, which leads to Figure 31-7, where the available options are displayed

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Orders (Sample - Superstore)							
Dimensions III P 🔻		I Rows	H MONT	H(Order D	ate)		
Abc Category	Filters						c
City				Furnit	Ire		
Country Abc Customer ID		Month of Or	2011	2012	2013	2014	2011
Abc Customer ID Abc Customer Name		January	5,952	11,740	7,623	5,964	4,851
	Marks 🔻	February	2,130	3,319	3,926	6,866	1,072
Abc Order ID	Abc Automatic	March	14,574	12,315	12,473	10,597	8,606
Postal Code E	Abc Automatic	April	7,945	10,476	13,406	9,053	11,155
Abc Product ID	II Bar	May	6,913	9,375	15,031	17,267	7,136
Abc Region	∼ Line	June	13,206	7,714	12,027	16,903	12,953
# Row ID	Area	July	10,821	13,674	13,199	13,882	15,121
Abc Segment	Square	August	7,320	9,639	13,619	14,909	11,379
📋 Ship Date	Circle	September	23,816	26,273	26,739	29,598	27,423
Abc Ship Mode	• Circle	October	12,304	12,027	10,131	21,884	7,211
State Sub-Category	x+ Shape	November	21,565	30,881	33,659	32,927	26,862
Measures	Abc Text	Recember	30,646	23,086	37,069	35,537	18,006
=# Calculation1	Street Filled Map						
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# Profit	- Gantt Bar						
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# Measure Values							
Data Source Sheet 1	Sheet 2 to the the						
144 marks 12 rows by 12 columns	SUM(Sales): 2 297 201						

Figure 31-7. Marks card drop-down menu

• Click **Square**, as shown in Figure 31-7, which leads to the display shown in Figure 31-8
CHAPTER 31 HIGHLIGHTING WITH COLORS

Pages	Columns	Category	H(Order Date)	E YEAR(On	der Date)	over	e curs an ite	em)		
Filters	Month of Or	2011	Furniture 2012 2013	2014	2 2012	2013	2014	2011	Techr 2012	tology 2013	2014
Marks Square Color Size Labe Detail Tooltip SUM(Profit) 수당 SUM(Sales)	February March April May June July August September October November December	Ē									
SUM(Profit)	71	(Dis	splay s	hape						

Figure 31-8. View after square mark type selection

To display the value associated with any item in the displayed visualization:

• Place the cursor over the item, as shown in Figure 31-8, which displays its value, as shown in Figure 31-9

CHAPTER 31 HIGHLIGHTING WITH COLORS

Pages	Columns	Catego	ŋ		E YEAR(O	Irder Date)						
1	Rows	. MO	NTH(Order	Date)								
ilters			Furr	iture		Ca	ategory / Office S	Order Date			Techr	ology
	Month of Or	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013
Marks	January					-						
Square 👻	March							-				
	April					Month of Ore	der Date	February				
Color Size Label	May					Year of Orde	er Date:	2014				
	June					Profit:		-199				
Detail Tooltip	July					Sales:		0,000				
	August											
SUM(Profit)	October											
SUM(Sales)	November											
	December											
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Figure 31-9. Values displayed for selected item in Tooltip

The visualization in Figure 31-9 would be more intuitive if the value labels were shown. This is done as follows:

• Click the **Label** icon, as shown in Figure 31-9, which pops up the window displayed in Figure 31-10

CHAPTER 31 HIGHLIGHTING WITH COLORS

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Pages					YEAR(Or	der Date)	
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Detail Tooltip SUM(Profit) Abc SUM(Sales)	Label Appeara Text: Font:	Show mark labels ince <sum(sales)></sum(sales)>					
SUM(Profit)	Alignment: Marks to Labe All Min/Ma:	I Selected x Highlighted					
Sheet 2	告 201						

Figure 31-10. Pop-up window for displaying mark labels

• Place a check mark next to **Show mark labels**, as shown in Figure 31-10, which leads to Figure 31-11, where the values are displayed

		Columns	Categor	у		E YEAR(Or	der Date)							
		III Rows		TH(Order [Date)									
ers								Category / (Order Date					
				Furni	ture			Office Su	pplies			Techno	plogy	
		Month of Or	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
irks		January	5,952	11,740	7,623	5,964	4,851	1,809	5,300	21,704	3,143	4,625	5,620	17,0
Course	-	February	2,130	3,319	3,926	6,866	1,072	5,427	6,683	7,390	1,609	3,465	12,259	6,0.
square		March	14,574	12,315	12,473	10,597	8,606	15,824	17,458	14,317	32,511	10,328	21,255	26,9
8	9 Abc 123	April	7,945	10,476	13,406	9,053	11,155	12,559	10,640	14,922	9,195	11,161	15,203	16,1
olor	ize Label	мау	0,913	9,575	12,027	16,003	12 052	10 649	10,007	15 207	9,000	6 435	16 502	10.0
		E channel ha	and a	13.674	13 100	13,882	15 121	4 720	12,677	10,699	8,004	10 371	12 564	23.8
etail Too	oltip	Show mark lac	Dels	9,639	13,619	14 909	11 379	11 735	9.219	29.973	9 210	15 525	10.427	16.6
	Label Ap	ppearance		26 273	26 739	29 598	27 423	19 306	23.286	32 759	30 538	19.017	22 883	28.13
SUM(P	rofit)	Text: <sum(sales)< td=""><td>)></td><td>12 027</td><td>10 131</td><td>21.884</td><td>7 211</td><td>8 673</td><td>14 799</td><td>23 403</td><td>11 938</td><td>10 705</td><td>31 533</td><td>32.50</td></sum(sales)<>)>	12 027	10 131	21.884	7 211	8 673	14 799	23 403	11 938	10 705	31 533	32.50
SUM(S	ales)		· [10000	30 881	33.659	32.927	26 862	218	21.428	30.070	30,201	23.874	27,105	49.33
		Font: Arial, 8pt	•	23.086	37.069	35.537	18.006	02	38.112	31.855	20,893	35.632	22.057	23.08
M(Profit)	Align	ment: Automatic	•											
	Marks to	o Label												
014		All S	selected											
	N	fin/Max Hi	ghlighted						No.					
				_										
							-							
					/		Mu	mori	r valı	100				
					(Nu	morn	vait	103				
							are	dien	lavo	4		1		

Figure 31-11. View with marks highlighted in color

CHAPTER 32

Axis Formatting

Objective: This exercise demonstrates how to format the chart axes and display labels

Figure 32-1 displays the sum of profits vs. the average shipping cost as a scatter plot. On the **Marks** card, **Order Priority** has been added to the **Color** shelf, while **Market** has been added to **Shape**.



Figure 32-1. Visualization to be formatted and labeled

• Click the vertical axis, as shown in Figure 32-1, which leads to the display shown in Figure 32-2, where the axis is highlighted



Figure 32-2. Axis highlighted

• Right-click the axis, as shown in Figure 32-2, which pops up the menu tree displayed in Figure 32-3



Figure 32-3. Menu tree with Edit Axis option

• Click Edit Axis, as shown in Figure 32-3, which pops up the Edit Axis (Avg. Shipping Cost) window displayed in Figure 32-4



Figure 32-4. Edit Axis pop-up window

The following selection options are available in the Edit Axis pop-up window (see Figure 32-4):

- Automatic: Sets the range on axis automatically, based on the data in the view
- **Uniform axis range for all rows or columns:** Sets the axis range uniformly to the maximum data range for all panes in the view

- **Independent axis ranges for each row or column:** Sets independent axis range for each pane in the view, depending on the range of data in each pane
- Fixed: Sets specific start and end values for the axis

Under Scale, the two check boxes can be used to reverse the axis and use the logarithmic scale.

• Click the **Fixed** radio button, as shown in Figure 32-4, which leads to the display shown in Figure 32-5

F <u>o</u> rmat <u>S</u> erver Wi <u>n</u> dow <u>H</u> elp	
Change the End	\searrow
iii Columns SUM(Profit) value to 120	
IE Rows AVG(Shipping Cost)	
Edit Axis [Avg. Shipping Cost] General Tick Marks Range Automatic Uniform axis range for all rows or columns Independent axis ranges for each row or column Fixed Start: End: 0 106.294262795 \$0 \$106 Scale Titles Reversed Title: Automatic Logarithmic Subtitle: VAutomatic O OK Clear OK Cancel Apply Sto,000 \$100,000 \$150,000 Sto,000 \$100,000 \$150,000	
ooltips Quick Filter Axes Map Options 🏥 🏥	

Figure 32-5. View with Fixed radio button selected

• Change the end value for the range to **120**, as shown in Figure 32-5, which leads to the display shown in Figure 32-6

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Figure 32-6. View with modified end value

• Click the **Tick Marks** tab, as shown in Figure 32-6, which leads to the display shown in Figure 32-7

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Figure 32-7. Tick Marks tab

• Change the **Major tick marks** units from 100 to **50**, as shown in Figure 32-7, which leads to the display shown in Figure 32-8

CHAPTER 32 AXIS FORMATTING

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Figure 32-8. View with modified tick marks

• Click **OK**, as shown in Figure 32-8, which implements the changes that were made

The next part of this exercise demonstrates how to display the values/labels. We start with Figure 32-9, which displays a visualization in which the numeric values for the individual bars are not displayed.



Figure 32-9. View without numeric values displayed

To view the values for the bars:

• Click the **Abc** icon on the toolbar, as shown in Figure 32-9, which leads to the display shown in Figure 32-10



Figure 32-10. View with displayed numeric values

CHAPTER 33

Formatting Tables

Objective: This exercise demonstrates how to format a table

Figure 33-1 displays a table on which some basic formatting operations will be performed.

Rows stegory irniture ffice ipplies	Category Sub-Category Bookcases Chairs Furnishings Tables	Central 24,157 85,231 15,254	Sub-(Regio East 43,819 96,261	Category on South 10,899 45 176	West 36,004
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fice	Bookcases Chairs Furnishings Tables	24,157 85,231 15,254	43,819 96,261	10,899	36,004
fice	Chairs Furnishings Tables	85,231 15,254	96,261	45 176	
fice ipplies	Furnishings Tables	15,254		40,110	101,781
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pplies	Appliances	23,582	34,188	19,525	30,236
	Art	5,765	7,486	4,656	9,212
	Binders	56,923	53,498	37,030	55,961
	Envelopes	4,637	4,376	3,346	4,118
	Fasteners	778	820	503	923
	Labels	2,451	2,603	2,353	5,079
	Paper	17,492	20,173	14,151	26,664
	Storage	45,930	71,613	35,768	70,533
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Figure 33-1. Table to be formatted

• Right-click the table displayed in Figure 33-1, which pops up the menu tree displayed in Figure 33-2

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Figure 33-2. Menu tree displaying Format option

• Click **Format**, as shown in Figure 33-2, which pops up the **Format Font** window displayed in the left-hand side of Figure 33-3

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		Technology	Accessories	33,956	45,033	27,277	61,114
			Copiers	37,260	53,219	9,300	49,749
			Machines	20,797	00,100	53,891	92,999
			Phones	72,403	100,615	58,304	98,684

Figure 33-3. Format Font window

• Click the **Header** pull-down arrow in the **Format Font** window, as shown in Figure 33-3, which pops up the window displayed in Figure 33-4

CHAPTER 33 FORMATTING TABLES



Figure 33-4. Color pop-up window

• Click the green color, as shown in Figure 33-4, which leads to the display in Figure 33-5 (where the color of the headers has changed to green)

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ile <u>D</u> ata <u>W</u> orksheet Dash <u>b</u> oard S <u>t</u> ory <u>A</u> nalysis <u>M</u> ap	Format Serv	er Wi <u>n</u> dow <u>H</u>	lelp			
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	1	Copiers	37,260	53,219	9,300	49,749
		Machines	26,797	66,106	53,891	42,444
		Phones	72,403	100,615	58,304	98,684
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Data Source						

Figure 33-5. View with headers in green color

To change the color of the numeric values displayed in the table:

• Click the pull-down arrow for **Pane** in the **Format Font** window, as shown in Figure 33-5, which pops up the window displayed in Figure 33-6

CHAPTER 33 FORMATTING TABLES



Figure 33-6. Color pop-up window

• Click the red color, as shown in Figure 33-6, which leads to the display in Figure 33-7 (where the table data has turned red)

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		Machines	26,797	66,106	53,891	42,444	
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Figure 33-7. Table with numbers in red color

• Click the pull-down arrow for **Worksheet** in the **Format Font** window, as shown in Figure 33-7, which pops up the window displayed in Figure 33-8

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		Technology	Accessories	33,956	45.033	27.277	61,114
			Copiers	37,260	53,219	9.300	49,749
			Machines	26,797	66,106	53,891	42,444
			Phones	72,403	100,615	58,304	98,684
			,				
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Figure 33-8. Pop-up window displaying font size

• Change the font size to **12** (from the default size 8), as shown in Figure 33-8, which leads to Figure 33-9, where the numbers displayed in the table are bigger (size 12)

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il Teeltin		Envelopes	4,637	4,376	3,346	4,118
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		Storage	45,930	71,613	35,768	70,533
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	Technology	Accessories	33,956	45,033	27,277	61,114
		Copiers	37,260	53,219	9,300	49,749
		Machines	26,797	66,106	53,891	42,444
		Phones	72,403	100,615	58,304	98,684
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68 marks 17 rows by 4 columns SUM(Sales): 2,297,201						

Figure 33-9. View with numbers displayed in bigger font

Formatting can also be performed via the menu bar, as shown in Figure 33-10, where the available **Format** options are displayed.



Figure 33-10. Menu bar formatting options

CHAPTER 34

Top N Function

Objective: This exercise demonstrates how to use the Top N function to determine top performers Figure 34-1 shows a chart with the sum of sales by state.



Figure 34-1. Visualization for executing the Top N function

• Click the pull-down arrow for the **State**, as shown in Figure 34-1, which pops up the menu tree displayed in Figure 34-2



Figure 34-2. Menu tree with the Filter option

• Click **Filter**, as shown in Figure 34-2, which pops up the **Filter (State)** window displayed in Figure 34-3

Columns	State •	Top tab	
Rows	Filter [State]		
_	General Wildcard Condition Top		
	Select from list Custom value list Use all I		
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	Field: [State]		
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Figure 34-3. Filter pop-up window

• Click the **Top** tab, as shown in Figure 34-3, which leads to the pop-up window displayed in Figure 34-4

CHAPTER 34 TOP N FUNCTION



Figure 34-4. Pop-up window with Top tab selected

• Click the **By field** radio button, as shown in Figure 34-4, which leads to the display in Figure 34-5

CHAPTER 34 TOP N FUNCTION



Figure 34-5. Filter by field

• Click **OK**, as shown in Figure 34-5, which leads to Figure 34-6, where the ten top states with the highest sales are displayed



Figure 34-6. View displaying top ten states

To view the top ten states by profit rather than by sales:

• Navigate to the **Filter (State)** pop-up window shown in Figure 34-7, which is the same as Figure 34-5, using the procedure demonstrated earlier in this exercise



Figure 34-7. Filter pop-up window

• Click the pull-down arrow, as shown in Figure 34-7, which leads to the menu tree displayed in Figure 34-8 (from which the desired field, profit, can be selected)

CHAPTER 34 TOP N FUNCTION



Figure 34-8. List of fields available for selection

• Click Profit, as shown in Figure 34-8, which leads to the display shown in Figure 34-9



Figure 34-9. Pop-up view with Profit field selected

• Click **OK**, as shown in Figure 34-9, which leads to Figure 34-10, where the ten top states with the highest profit are displayed

CHAPTER 34 TOP N FUNCTION



Figure 34-10. Top ten states with highest profit

Figure 34-10 displays **Sales** on the vertical axis. To also view **Profit** on the vertical scale:

• Drag and drop **Profit** onto the **Rows** shelf, as shown in Figure 34-10, which leads to Figure 34-11, where both the **Sales and Profit** charts are displayed



Figure 34-11. Views showing top ten by sales and profit

To display only **Profit** on the vertical axis:

• Drag **Sales** out of the **Rows** shelf, as shown in Figure 34-11, which leads to Figure 34-12, where only **Profit** is displayed on the vertical axis

CHAPTER 34 TOP N FUNCTION



Figure 34-12. View by profit only
CHAPTER 35

Trend Lines

Objective: This exercise demonstrates how trend lines are inserted in a chart Figure 35-1 displays a line chart that shows the sum of sales over a 12-month period.



Figure 35-1. Line chart

To show a trend line for the displayed data:

• Right-click within the chart area, as shown in Figure 35-1, which pops up the menu tree displayed in Figure 35-2

CHAPTER 35 TREND LINES



Figure 35-2. Menu tree with Show Trend Lines option

- Navigate as follows: Trend Lines ➤ Show Trend Lines, as shown in Figure 35-2
- Click **Show Trend Lines**, as shown in Figure 35-2, which leads to Figure 35-3, where the trend line has been inserted



Figure 35-3. View with trend line

• Hover over the trend line, as shown in Figure 35-3, which displays more information about the trend, such as P-value, as shown in Figure 35-4

CHAPTER 35 TREND LINES



Figure 35-4. Trend line values displayed

Figure 35-4 displays the P-value, which indicates the significance of the result. A low value indicates that the results are significant; however, a high P-value can indicate that the trend in the data is due to chance—not due to the model.

If you right-click a trend line, it opens the window displayed in Figure 35-5.

	Describe Trend Line Format
<	Show Trend Lines
	Edit Trend Lines
	Descri <u>b</u> e Trend Model
<	Show Recalculated Line

Figure 35-5. Editing trend lines

• Click the **Edit Trend Lines** menu item, highlighted in Figure 35-5, which pops up the window shown in Figure 35-6 (where the trend line options are displayed)

Trend Lines Option	s 🛛
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Linear	
C Logarithmic	
Exponential	
Polynomial, De	egree: 2 🗼
Options	
Include the follow	ing fields as factors:
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The second	nce Bands
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Show Confider Force y-interce Show recalculate	ated line for highlighted or selected data points

Figure 35-6. Editing trend lines

In the **Trend Lines Options** window shown in Figure 35-6, the **Show Confidence Bands** option is selected by default, which can make the window look busy. It can be easily deselected by removing the check mark.

An alternative method can also be used for inserting trend lines in a chart, which is demonstrated in the following steps. For this method, we start with the visualization displayed in Figure 35-7.



Figure 35-7. Visualization for displaying a trend line using Analytics tab

• Click the **Analytics** tab in the **Data** window, as shown in Figure 35-7, which leads to the display shown in Figure 35-8



Figure 35-8. View with Analytics tab selected

- Click **Trend Line**, as shown in Figure 35-8
- Drag **Trend Line** onto the chart area, as shown in Figure 35-8, which pops up the window displayed in Figure 35-9

CHAPTER 35 ■ TREND LINES

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Figure 35-9. Pop-up window for adding a trend line

The type of trend line that is desired can be selected in the pop-up window. To select the exponential model:

• Click the **Exponential** icon, as shown in Figure 35-9, which generates the trend line shown in Figure 35-10

CHAPTER 35 TREND LINES



Figure 35-10. View with trend line

CHAPTER 36

Forecasting

Objective: This exercise demonstrates the forecasting feature in Tableau Figure 36-1 shows the sales by year and month.



Figure 36-1. View with historical data

• Click the **Analytics** tab, as shown in Figure 36-1, which leads to the display shown in Figure 36-2

CHAPTER 36 FORECASTING



Figure 36-2. Analytics pane

• Drag and drop **Forecast** from the **Analytics** tab onto the chart area, as shown in Figure 36-2, which leads to Figure 36-3, where the forecast is displayed



Figure 36-3. Forecast displayed

• Right-click the chart, as shown in Figure 36-3, which pops up the menu tree displayed in Figure 36-4



Figure 36-4. Menu tree displaying forecast options

- Navigate to the Forecast sub-menu tree, as shown in Figure 36-4
- Click **Forecast Options**, as shown in Figure 36-4, which opens the **Forecast Options** window displayed in Figure 36-5

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Figure 36-5. Forecast options pop-up window

- Change the Forecast Length to 2 Years, as shown in Figure 36-5
- Click **OK**, which leads to the display shown in Figure 36-6, where the forecast for two years is displayed

CHAPTER 36 FORECASTING

The Forecast Model has three options: Automatic, Automatic without Seasonality, and Custom. The Automatic option selects an exponential smoothing model for data that has a trend and a seasonal pattern.



Figure 36-6. View with two years forecast

CHAPTER 37

Creating a Dashboard

Objective: This exercise demonstrates how to create a dashboard

Dashboards can present one or more views, so that a consolidated view is provided. A view incorporated into a dashboard is just a window to the underlying worksheet. Dashboards tie together different views and frequently offer filters, legends, and interactivity. They can include worksheets, images, text, and web pages. Stories are walk-throughs of one or more dashboards or sheets. Dashboards answer "What?" whereas stories answer "Why?".

Figure 37-1 shows the following five sheets that can be incorporated into a dashboard:

- Sales Seasonality
- Crosstab
- Global Sales and Profits
- Sales by Category
- Customer Breakdown

CHAPTER 37 CREATING A DASHBOARD



Figure 37-1. View with five sheets

• Click the **New Dashboard** icon, as shown in Figure 37-1, which leads to the display shown in Figure 37-2, where a new dashboard sheet (**Dashboard 1**) has been added



Figure 37-2. Dashboard with five available sheets

To resize the dashboard display:

• Click the **Dashboard** pull-down arrow, as shown in Figure 37-2, which pops up the menu tree displayed in Figure 37-3

CHAPTER 37 CREATING A DASHBOARD



Figure 37-3. Size options

The size to be selected depends on the device(s) used for viewing the dashboard, which includes devices as diverse as desktops, laptops, tablets, and smartphones.

• Click Laptop (800 × 600), as shown in Figure 37-3, which leads to the display shown in Figure 37-4



Figure 37-4. View with Laptop size selection

• Drag and drop the **Global Sales and Profits** worksheet onto the dashboard as shown in Figure 37-4, which leads to the display in Figure 37-5

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Figure 37-5. Dashboard containing one worksheet

When the first view is brought into a dashboard, it automatically takes up the entire view. However, any subsequent worksheet can be placed in specific areas of the screen. If the mouse button is held down as it is moved around the dashboard, gray areas indicate where the dragged view will be located when the mouse button is released. If the view is brought all the way down to the bottom of the screen, it fills the entire width.

• Drag and drop the **Sales by Category** worksheet onto the Dashboard area, as shown in Figure 37-5, which leads to the display shown in Figure 37-6



Figure 37-6. Dashboard containing two worksheets

• Drag and drop the **Customer Breakdown** worksheet onto the Dashboard area, which leads to the display shown in Figure 37-7

CHAPTER 37 CREATING A DASHBOARD



Figure 37-7. Dashboard containing three worksheets

• Right-click the **Dashboard 1** sheet, as shown in Figure 37-7, which leads to the menu tree displayed in Figure 37-8



Figure 37-8. Menu tree with Rename Sheet option

- Click **Rename Sheet**, as shown in Figure 37-8, which enables **Dashboard 1** to be renamed
- Rename **Dashboard 1** as **Sales Dashboard**, which leads to the display shown in Figure 37-9, where the new dashboard name is displayed (**Sales Dashboard**)



Figure 37-9. Renamed dashboard

The individual worksheets on a dashboard and the dashboard itself are customizable. Clicking a worksheet displays a pull-down arrow, through which various options can be accessed. To customize the **Customer Breakdown** worksheet in the dashboard:

• Click within the **Customer Breakdown** window, as shown in Figure 37-10, which displays its pull-down arrow



Figure 37-10. Menu tree with Fit option

• Click the **Customer Breakdown** pull-down arrow, which leads to the menu tree displayed in Figure 37-10

As the menu tree options indicate, there are many options for customizing the worksheet.

• Click **Fit**, as shown in Figure 37-10, which pops up the secondary menu tree displayed in Figure 37-11

CHAPTER 37 CREATING A DASHBOARD



Figure 37-11. Secondary menu tree with Entire View option

• Click **Entire View**, as shown in Figure 37-11, which only applies to the **Customer Breakdown** worksheet

To display the dashboard name in the title:

• Place a check mark next to **Show Title**, as shown in Figure 37-11

This places the dashboard name (Sales Dashboard) in the title, as shown in Figure 37-12.



Figure 37-12. Dashboard title displayed

CHAPTER 37 CREATING A DASHBOARD

Dashboard items can be rearranged and/or resized as desired. Figure 37-13 shows the new **Sales Dashboard** layout after its three worksheets were rearranged through simple drag-and-drop operations.



Figure 37-13. Swapping the location of two worksheets

CHAPTER 38

Dashboard Quick Filters

Objective: This exercise demonstrates how to apply Quick Filters for selected worksheets on a dashboard In Figure 38-1, the **Sales Dashboard** contains the **Category** Quick Filter, where the **All** radio button has been selected.



Figure 38-1. Dashboard with Quick Filter

• Click the **Furniture** radio button, as shown in Figure 38-1, which leads to the display shown in Figure 38-2, where the data is restricted to the **Furniture** category for all three worksheets in the **Sales Dashboard**



Figure 38-2. Quick Filter with furniture selected

The **Category** Quick Filter box displays a pull-down arrow in the upper right-hand corner, as shown in Figure 38-2.

• Click the **Category** Quick Filter box, which displays the pull-down arrow, as shown in Figure 38-3



Figure 38-3. Displaying the Quick Filter pull-down arrow

• Click the pull-down arrow, as shown in Figure 38-3, which pops up the menu tree displayed in Figure 38-4

CHAPTER 38 DASHBOARD QUICK FILTERS



Figure 38-4. Menu tree with Apply to Worksheet option

• Click **Apply to Worksheets**, as shown in Figure 38-4, which leads to the sub-menu tree displayed in Figure 38-5

CHAPTER 38 DASHBOARD QUICK FILTERS



Figure 38-5. Secondary menu tree with Selected Worksheets option

• Click **Selected Worksheets**, as shown in Figure 38-5, which pops up the window **Apply Filters to Worksheets (Category)** displayed in Figure 38-6

CHAPTER 38 DASHBOARD QUICK FILTERS



Figure 38-6. Pop-up Apply Filter to Worksheets window

By default, all the worksheets on the dashboard are selected. To deselect a worksheet:

• Remove check mark to the left of the worksheet (to which the filter is not to be applied)

In Figure 38-7, a check mark has only been retained for the **Sales by Category** worksheet. Hence, the filter will only apply to that worksheet.

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L		Tables		Sales Seasonality	Existing filter keeps Furniture.	
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Figure 38-7. View with deselected worksheets

• Click **OK** after the desired deselection is done

Figure 38-7 displays the Quick Filter from the Global Sales and Profits sheet. In this figure, the filter is applied to two sheets (there are two check boxes selected for two sheets—**Global Sales and Profits** and **Sales by Category**).
Figure 38-8 displays the dashboard where the filter applies to only one worksheet (Sales by Category).



Figure 38-8. View with filter applied to a single worksheet

CHAPTER 39

Cascading Worksheet Changes in a Dashboard

Objective: This exercise demonstrates how changes to a worksheet cascade in a dashboard Figure 39-1 shows a chart that plots the sum of sales against the sum of profits.



Figure 39-1. Scatterplot sheet

The **Scatterplot** sheet is currently active. In the **Category** Quick Filter, two items currently have check marks: Furniture and Office Supplies.

To go to the dashboard:

• Click the **Dashboard** tab, as shown in Figure 39-1, which leads to the display shown in Figure 39-2

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271 marks 1 row by 1 column	STIM/Sales> 57 807 944

Figure 39-2. Dashboard displaying available sheets

• Drag and drop the **Scatterplot** sheet onto the Dashboard, as shown in Figure 39-2, which leads to the display shown in Figure 39-3



Figure 39-3. Dashboard containing Scatterplot sheet

A worksheet can be dropped onto a **Story** sheet in the same way that it is dropped onto a **Dashboard** sheet, as explained in the previous steps.

To drop the **Scatterplot** sheet onto the **Story** tab:

• Click the Story sheet, which makes it the active sheet

After the **Story** sheet is displayed:

• Drag and drop the **Scatterplot** sheet onto the **Story** canvas, as shown in Figure 39-3, which leads to the display shown in Figure 39-4



Figure 39-4. Story containing Scatterplot sheet

• Click the **Scatterplot** sheet, as shown in Figure 39-4, which leads to the display shown in Figure 39-5



Figure 39-5. Scatterplot sheet view

• Remove the check mark from **Office Supplies**, as shown in Figure 39-5, which leads to the display shown in Figure 39-6



Figure 39-6. Scatterplot after single Category selection

• Click the **Story** sheet, as shown in Figure 39-6, which leads to the display shown in Figure 39-7



Figure 39-7. Story view

Note that the change made to the **Scatterplot** sheet in Figure 39-6 (where **Office Supplies** was deselected and only **Furniture** was retained) is now reflected in the **Story** sheet as well, where only the **Furniture** category remains selected.

To check if the change to the **Scatterplot** sheet is reflected on the **Dashboard**:

• Click the **Dashboard** sheet, as shown in Figure 39-7, which leads to the display shown in Figure 39-8



Figure 39-8. Dashboard view

Note that the change that had been made to the **Scatterplot** sheet in Figure 39-6 (where **Office Supplies** was deselected and only **Furniture** was retained) is now reflected on the **Dashboard** sheet as well, where only the **Furniture** category remains selected.

On the **Dashboard** sheet shown in Figure 39-8:

- Uncheck Furniture
- Place a check mark for Technology, which leads to the display shown in Figure 39-9



Figure 39-9. Dashboard view with Technology selection

• Click the **Scatterplot** sheet, as shown in Figure 39-9, which leads to Figure 39-10



Figure 39-10. Scatterplot sheet with Technology selection

Note that the change to the **Dashboard** (where only **Technology** is currently selected) has cascaded to the **Scatterplot** sheet (which also has only one item currently selected—**Technology**).

Changes made to a **Story** do *not* cascade.

• Click the Story sheet, which leads to Figure 39-11



Figure 39-11. Story view

To select all categories:

• Click **All**, as shown in Figure 39-11, which selects all categories (Furniture, Office Supplies, and Technology)

If you now go to the **Scatterplot** sheet or the **Dashboard** sheet, the change made on the **Story** sheet (i.e., selecting **All** categories in Figure 39-11), will not be reflected on those sheets.

CHAPTER 40

Working with Dashboard Content

Objective: This exercise demonstrates how to modify the dashboard and views display through layout and formatting changes and by adding content

Formatting a Dashboard

Figure 40-1 shows a dashboard with two embedded visualizations:

- Running Total Shipping Costs
- Average Cost for Same Day, Second Class, and Standard Class Shipping



Figure 40-1. Dashboard with two embedded visualizations

To format the dashboard:

• Click **Format** on the **menu bar** as shown in Figure 40-1, which pops up the menu tree displayed in Figure 40-2



Figure 40-2. Format menu tree

• Click **Dashboard**, as shown in Figure 40-2, which pops up the **Format Dashboard** pane displayed in Figure 40-3 (on the left-hand side)

The **Format Dashboard** pane enables adjustment of the font, alignment, background shading, and borders on the dashboard title, subtitles, and text objects.



Figure 40-3. Format Dashboard pane

• Click the **Font** pull-down arrow, as shown in Figure 40-3, which pops up the window displayed in Figure 40-4



Figure 40-4. Font pop-up window

The **Font** pop-up window enables any desired changes to be made to the dashboard title (font type, size, and colors). No font changes have been made in this step, which is for information purpose only. To change the **Alignment**:

• Click the pull-down arrow for **Alignment** (which is hidden behind the **Font** pop-up window), as shown in Figure 40-4, which leads to Figure 40-5, where the alignment options are displayed



Figure 40-5. Alignment options

No alignment changes have been made in this step, which is for information purposes only. To change the **Shading**:

• Click the **Shading** pull-down arrow (hidden behind the **Alignment** pop-up window shown in Figure 40-5), which leads to Figure 40-6, where the shading options are displayed



Figure 40-6. Shading options

No shading changes have been made in this step, which is for information purposes only.

Formatting Views

Figure 40-7 displays a dashboard, with two views, which needs to be modified. To reformat a view:

• Right-click in the view to be modified (**Average Cost for Same Day**, **Second Class**, or **Standard Class Shipping**), which pops up the menu tree displayed in Figure 40-7



Figure 40-7. Dashboard containing two views

• Click **Format**, as shown in Figure 40-7, which pops up the **Format Font** pane displayed in Figure 40-8 (on the left-hand side)



Figure 40-8. Format Font pane

Notice the window on the left, where formatting is made. This pane provides the option to make changes for a **Sheet**, **Rows**, or **Columns**, which are selected by clicking the appropriate tab.

Adding a URL to a Dashboard

Web pages, which provide easy access to external web sites, can be easily added to a dashboard.



Figure 40-9. Web Page option

To add a web page to a sheet:

• Drag the **Web Page** item onto the canvas, as shown in Figure 40-9, which pops up the **Edit URL** window displayed in Figure 40-10



Figure 40-10. Edit URL pop-up window

• Enter www.fedex.com in the Edit URL pop-up window, as shown in Figure 40-10, which leads to Figure 40-11



Figure 40-11. Pop-up window after entering URL

• Click **OK**, which adds the URL and leads to Figure 40-12, where the FedEx web site is displayed

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E FedEx web site is now displayed	ip Date	Month of Ship L		2013 2014	015 2011 2012	014 201	2013 20	2012	0,000 0,000 \$0 2011
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Standard Class				30 \$35 \$40	\$25	\$20			

Figure 40-12. Dashboard containing FedEx URL

The individual views in a sheet can be sized or moved, as desired.

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