

TUTORIAL

Get Started with Tableau Desktop

Learn how to connect to data, create data visualizations, present your findings, and share your insights with others.

This tutorial walks you through features and functions of Tableau Desktop. As you work through this tutorial, you will create three views in a Tableau workbook. The steps you'll take is based on a SAM's Club data set from the University of Arkansas Enterprise System group in the Information Systems Department.

Dataset Overview:

Sam's Club Integrated				
Table Name	Time Frame	Rows	Attributes	Size (GB)
ITEM_DESC	1/28/1983 to 10/1/2017	1,863,843	86	1.479
ITEM_SCAN	1/1/2014 to 3/31/2014	964,534,590	9	140.761
STORE_INFO	12/15/1982 to 12/31/2049	1,034	34	1.320
TENDER	1/1/2014 to 3/31/2014	367,741,511	6	38.903
VISIT	1/1/2007 to 4/20/2014	180,567,699	13	18.813
5 TABLES			148	199.958
Platform data is currently available: Y	/es			

The dataset has a total of 1,514,708,677 records and 148 attributes distributed among five tables.

This tutorial shows you how to:

- 1. Connect directly to the WCOB_SAMS_INTEGRATED dataset residing on the TERADATA system.
- 2. Prepare the dataset before working on it.
- 3. Create three visualizations based on an investigation of transaction amounts.

NOTE: This tutorial assumes you have been granted access to the University of Arkansas VMWare platform. Requesting access can be done from the Enterprise Systems website at the University of Arkansas (<u>https://walton.uark.edu/enterprise/</u>). The data used should not be downloaded to your personal drives. All files should remain on the Remote Desktop S: drive provided by the University of Arkansas. This is due to our agreement with the data providers. Questions can be directed to Ron Freeze at <u>rfreeze@walton.uark.edu</u>.

http://onlinehelp.tableau.com/current/guides/get-started-tutorial/en-us/get-started-tutorial- home.html

ESTIMATED COMPLETION TIME: 20-40 minutes



The Story

Suppose you are an employee for a large retail chain. You have just been hired as an area sales manager and are interested in understanding the total transaction amount spent per visit for your area as well as other areas of the company.

Initially, you are interested in visualizing the transaction amount value of the Top 10 Zip Codes. Next, you want to take the insights gained in the first visualization and break it down to a state level. At this point, you should have a clear understanding of which zip codes and states generated the highest revenue. Finally, and using the previous insights, you want to narrow down your work by looking at the zip codes in the states for which you are responsible.

In order to reach the desired visualizations, the following are the steps we will follow:

1. CONNECTING TO THE DATA (here)

- Connect to Teradata.
- Connect to WCOB_SAMS_INTEGRATED database.
- Connect to the two tables: VISIT and STORE_INFO.

2. PREPARING THE DATA (here)

- Use hide and filter tools to reach this list of attributes:
 - STORE NBR
 - Store Type (filter/Tran type = 'S')
 - City
 - o State
 - \circ Zip Code
 - o Tot Visit Amnt
 - Visit Date
 - Visit Time
 - Tot Unique Itm Cnt
 - o Tot Scan Cnt

(Table: STORE_INFO) (Table: STORE_INFO) (Table: STORE_INFO) (Table: STORE_INFO) (Table: STORE_INFO) (Table: VISIT) (Table: VISIT) (Table: VISIT) (Table: VISIT) (Table: VISIT)

* For further understanding of the attributes listed above, please refer to the <u>data dictionary</u> appended at the end of the document.

3. CREATE THE VISUALIZATIONS (here)

- 1. A column chart of the top 10 Zip Codes
- 2. A geographic view by state
- 3. A geographic view by Zip Code of part of Midwest area (Indiana, Michigan, and Ohio).



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Open Tableau Desktop and begin

This tutorial assumes that you have logged in to University of Arkansas VMWare platform. Select the **Start Windows** icon, look for **Tableau 2019.2** and click on it. Wait 10 seconds until the application opens. If an update Tableau window

pops up, exit this window.

The first thing you see after you open Tableau Desktop is the start PAGE. Here, you select the connection that you want to use how you will connect to your data

The start page gives you several options to choose from:

- a. Click the Tableau icon in the upper left-hand corner of any page to visit the start page at any time.
- b. Under Connect, you can:
 - Connect to data that is stored in a file, such as Microsoft Excel or Access.
 - Connect to data that is stored on a server, such as Tableau Server, Microsoft SQL Server, or Google Analytics.



o Connect to a data source that you've connected to before.

Tableau supports the ability to connect to a wide variety of data stored in a wide variety of places. The **Connect** pane lists the most common places that you might want to connect to, or click the **More...** link to see more options. **More on connecting to data sources** in the Learning Library (in the top menu).

- c. Under **Open**, you can open workbooks that you have already created.
- d. Under **Sample Workbooks**, view sample dashboards and worksheets that come with Tableau Desktop.
- e. Under **Discover**, find additional resources like video tutorials, forums, or the "Viz of the week" to get ideas about what you can build.



Connect to Teradata

Under **Connect > To a Server**, select **More**. A new window will open, click on **Teradata** as shown in the figure alongside.

A window will ask you to enter the following information:

Server: 130.184.26.161

Username: given to you by instructor

Password: given to you by instructor

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Connect to WCOB_SAMS_INTEGRATED

Now we have to access the **WCOB_SAMS_INTEGRATED** database through the panel to the left:

1. Type

"WCOB_SAMS_INTEGRATED", click on the search icon. A new "WCOB_SAMS_INTEGRATED" will appear below, click on it.

- 2. Once on the database, click on the search icon.
- 3. Finally, tables from the database should appear on the panel to the left.

Your window should look like the picture on the right. You are connected to WCOB_SAMS_INTEGRATED database (circled in red). The left panel shows the tables (circled in green) in the database.

At the bottom left corner, there are two tabs named **Data Source** and **Sheet 1.** Click on **Sheet 1** and a blank window will appear.





VISIT (WCOB. ATED.VISIT)

New Custom SQL

Sheet 1 does not currently have data. This is indicated by an exclamation point next to the database name (circled in red).

Click on the **Data Source** tab on the bottom left. This will take you to the previous window where you connected to the Database and displayed the tables.

Connect to VISIT table

On the Data Source window:

- 4. Drag and drop the **VISIT** table on the left panel to the blank space at the top where is says "*Drag tables here*".
- 5. Click on **Update Now** (circled in green) and Tableau will fill the columns with data.
- 6. Click on Sheet 1.

You will now note that you can see the table attributes assigned to **Dimensions** and **Measures**.

As a recap:

After you connect to your data, Tableau does the following:

- Opens a new worksheet. This is a blank slate where you create your first view.
- Automatically assigns data types (such as date, number, string, etc.) and roles (dimension or measures) to your data. (We'll talk more about these terms later.)
- Adds columns from your data source to the Data pane on the left-hand side. Columns are added as fields.

If you want to review details of your data, you can select the Data Source tab in the bottom left-hand corner. Here, you can view the first 1,000 rows of your data. What happens in Tableau stays in Tableau; the data is safe.

When you connect to your own data, you might need to do some prep work before connecting to it in Tableau. This is because Tableau makes assumptions about your data so that it can display it properly. With the VISIT table added, we have the first five variables needed for our analysis: Tot Visit Amnt, Visit Date, Visit Time, Tot Unique Itm Cnt, and Tot Scan Cnt.

Note: If you navigated to Data Source to check out the details, just click on the tab for **Sheet 1** to get back to where you started.

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Add the STORE_INFO table

To obtain the variables for the remainder of the analysis, we need to add and connect the **STORE_INFO** table to the **VISIT** table. The connection is possible since both tables share a single variable attribute: **Store NBR**.

- 7. Return to the Data Source page.
- 8. Drag and drop **STORE_INFO** to the blank space like you did with **VISIT**.
- 9. The two intersecting circles (circled in green) mean that they were successfully connected. This is considered an inner join.

Right click on the join symbol. The popup shows all the different joins Tableau allows you to do. Here **VISIT** table is taken as 'Data Source' inner joining **STORE_INFO** table. Both have Store NBR as the common attribute joined by an equal sign (circled in red).

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10. Click on the **Update Now** button and you should have a window similar to the one alongside.

Now we have the attributes from both the **VISIT** table and the **STORE_INFO** table.

Preparing the Data

Hide Unneeded Fields

To get the list of attributes stated in <u>Here's the story</u>, we need to hide the ones we don't need:

- 11. Click the down arrow at the top right corner of each attribute not needed in the analysis.
- 12. Click on Hide and the attribute will no longer appear in the data.

To undo this, click the 'Show hidden fields' box at the far right of the window and manually unhide the attribute.

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6377	JONESBORO, AR	Copy Values	
4744	BUDD LAKE, NJ	Hide	
6651	CATONSVILLE, MD	Aliases	
6567	EASTON, PA	Create Calculated Field	
4876	BOWLING GREEN, KY	Split	
6614	EL MONTE, CA	Custom Split	
8203	MARIETTA GA	Describe	
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After hiding all the unnecessary attributes and keeping only the ones mentioned (*STORE NBR, Store Type, City, State, Zip Code, Tot Visit Amnt, Visit Date, Visit Time, Tot Unique Itm Cnt, and Tot Scan Cnt*) your screen should look like the following:

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	STORE NBR	Store Type	City	State	Zip Code	Tot Visit Amt	Visit Date -	Visit Time	Tot Unique Itm Cnt	Tot Scan Cnt	J	
	6568	S	AMES	IA	50010	78.54	1/15/2014	1,953	12	11		1
	6356	S	FISHKILL	NY	12524	50.06	3/5/2014	1,307	10	17		
	6219	S	COLORADO	со	80920	639.32	2/26/2014	1,015	1	1		
	8239	S	LAWTON	ОК	73505	6.43	1/2/2014	1,340	1	1		
	6416	S	SAN ANTO	ТХ	78216	11.76	2/19/2014	1,232	3	6		
	4718	S	SOUTH JOR	UT	84095	0.96	3/23/2014	1,724	1	1		
	6662	S	ROSEVILLE	MI	48066	25.42	3/9/2014	1,627	5	5		
	6664	S	UTICA	MI	48315	49.01	1/9/2014	624	1	1		
	8116	S	JACKSONVI	FL	32246	212.66	1/22/2014	2,018	12	18		
	4860	S	BECKLEY	WV	25801	42.18	2/14/2014	1,345	3	4		
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One more tool that can help you visualize your data before working with it is to order your data in ascending or descending order. For instance:

13. Click on the bar figure next to the name of the attribute (circled in red) and this will organize your column. The two figures below show how to do this.

Sort field:	Data source	e order	*	Show all							
# store_info STORE NBR	Abc store_into Store Type	City	Abc store_info State	Distance_info Zip Code	# Tot Visit Amt	e + Visit Date 🗐	# Visit Time	# visit Tot Uniqu			
6568	s	AMES	IA	50010	78.54	1/15/2014	1,953				
6356	s	FISHKILL	NY	12524	50.06	3/5/2014	1,307				
6219	S	COLORADO	со	80920	639.32	2/26/2014	1,015				
8239	s	LAWTON	ОК	73505	6.43	1/2/2014	1,340				
6416	S	SAN ANTO	TX	78216	11.76	2/19/2014	1.232				

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# * store_info STORE NBR E	Abc store_info Store Type	tora_info City	Abc store_info State	store_info Zip Code	# vist Tot Visit Amt	E Visit Date =	# visit Visit Time	# visit Tot Uniqu
4709	S	CORONA	CA	92881	115.43	1/2/2014	1,854	
8239	s	LAWTON	ОК	73505	6.43	1/2/2014	1,340	
6428	s	MEDFORD	NY	11763	1.93	1/2/2014	1,125	
6443	s	GOLDSBORO	NC	27534	33.76	1/2/2014	2,003	
6506	S	ALBANY	GA	31707	92.02	1/2/2014	1,529	



Filter Fields

Due to the size of the VISIT table (180 million records), we need to reduce our focus in order to display the results more efficiently.

GRATED	ITEM_DESC (V	VCO	B_SAMS_IN	ITEGRAT	ED.ITEM	_DE.	Connection ① Live O Extract		Filters
vi	Sit Add Filter Select a field:		tore_ir	fo X		Edit Data	a Source Filters Details Edit Remove OK Car Show aliases Show hid	Keel 1.0	0 Add
# store_if STOR	Enter search text City Region Nbr State Store Type Tot Scan Cnt Tot Unique Itm Cnt Tot Visit Amt Visit Date Visit Time Zip Code			Jinfo SART VERCHINE STWORTH V V PORT RICH	Abc store_inf State GA OH IILLAGE TX FL	* L	Filter [Store Type] General Wildcard Condition Top 	× Time 1,757 1,538 1,802 947	# Vak Tot Unique Itm
	6718		OK Cancel	CRIANDO	TE FL			1,742	
	4702	52	s	FRIENDSWOOD	ТХ		All None Exclude	1,240	
	6434	85	s	LAUREL	MD		Summary Field: [Store Type]	1,959	
	6423	20	S	MIDDLETOWN	NY		Selection: Selected 1 of 5 values Wildcard: All	1,355	
	6249	28	S	FRANKLIN	TN		Condition: None Limit: None	1,649	
4							Reset OK Cancel	14-4	н н 💠 📰 🔳

On the picture above, at the top right corner, you can find a **Filters** subtitle.

- 14. Click on Add. A new window will open, click on Add.. again.
- 15. You are now in the 'Add Filter' window. Click on **Store Type** and then **click OK.** A window will 'Filter [Store Type]' will pop-up stating the five different values present in that field.
- 16. Click on the **S box** (circled in red) to only work with **Store Type = S** and **click OK**. The data now is updated for only **Store Type = S**.

We have finished organizing our data:

17. Click on **Sheet 1**, your window should look like the picture below.



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Create the Visualizations

Top 10 Zip Codes

Create the column chart for the Top 10 Zip Codes in the United States.

The following are the parameters you wanted for the exploration of the transaction value in your column chart.

- Top 10 Zip Codes in descending order.
- For the year 2017.
- Show the City and State associated with the Zip Code.
- The chart should be in US Dollars.

The parameters help set which dimensions and measures you are interested in using. Tableau will assume certain things for you as you create your visualization.

 Start by dragging and dropping the dimensions of Zip Code, City and State to the Columns cell and the Tot Visit Amnt measure to Rows cell.

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Data	Analytics +	Pages	iii Columns	Zip Code	City	State
	DESC (WCOB_SA		∃ Rows	SUM(Tot Visit Amt)		

Since we only want the top 10 Zip Codes for the year 2017, we need to drag and drop, in <u>order</u>, the **Zip Code** dimension and the **Visit Date** dimension to the Filters cell. A filter []

pop-up will appear to select what is to be filtered.

Drag Zip Code to Filters:

- 1. Select the Top tab (circled in red).
- 2. Select the radial button By field:
- 3. The Top 10 by **Tran Amnt** Sum should already be selected.
- 4. Click OK.

The column is not currently in descending order.

- 5. Select descending on the top tool bar. (circled in red)
- 6. Drag Visit Date to Filters
- Select Years in Filter Field (highlighted in blue) and click Next.

You will notice that it is impossible to filter our data to 2017 since is solely data for the year 2014.

8. Select 2014, Click OK.

At this point, we have our visualization but need to adjust the Title, the y-axis to reflect currency and the bars in order to see the City spelling completely.

Quarters

Months

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- 9. To adjust the Title, double click on the Sheet 1 tab at the bottom
- 10. Rename Sheet 1 to Top 10 Zip Codes for 2014.
- 11. Hit enter to complete.
- <u>To adjust the y-axis</u>, right click on **Tot Visit Amnt** and select *Format* The left navigation pane will change to allow you to format the y-axis.
- 13. Under Scale, select the down arrow on **Numbers**: and select **Currency** (Custom).

Change the *Decimal places:* to 0 Change the *Units:* to Millions (M).

- 14. Verify the following (see screen shot):
 - Negative values: is (\$1234)
 - Prefix / Suffix: is \$
 - · Include thousands separators is checked

Updated by Matias Delay – Sept 2019







2014

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- 15. Click off the pop-up to save settings and return to your worksheet.
- 16. <u>To adjust the column widths</u>, mouse over one of the separators between the zip codes at the top until you get the double arrow.
- 17. Right click and drag the column to the appropriate width.
- Finally, to view your final product, click on Presentation Mode (F7) on the top tool bar (circled in red).

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iii Columns	Zip Code	City	State	
⊞ Rows	SUM(Tot Visit Amt)			

19. Your visualization should look similar to the following visualization:



You note that Madison Heights, Michigan with zip code 48071 leads all other zip codes with the highest total transaction amount at almost \$60 million.

To help you visualize this graph, you can drag the **Tot Visit Amt** measure and drop it on the **Color** box under **Marks** palette. This will color your graph as the picture below. If you want to choose a different color, simply click on **Color** and change it to the one you prefer.





Now you would like to see how these transaction amounts compare to each other at a state level.

Geographic View by State

Now you would like to see how each state compares in terms of total transaction amount in 2014. We will need to create a new visualization.

- 1. Click on the tab to the right of your **Top 10 Zip Codes for 2014** tab to create a *New Worksheet.*
- 2. Tableau creates a new Sheet 2.
- 3. Double click on Sheet 2 and rename it to 2014 Total Visit Amount by State

Tableau allows multiple ways to create visualizations. For each Dimension and Measure, you can double click on your selected variables and allow Tableau to place and create your visualization.

- 4. Double click on **Tot Visit Amt**.
- 5. Double click on **State**.
- 6. Do not filter **Visit Date** since we discovered the only date available is 2014.

Tableau automatically created a column chart and our filter shows Texas as the highest total visit amount. However, we are interested in a geographic visualization to show each state. To do this, we need to change the visualization to a geographic representation.

- Right Click on State under Dimensions and look for Geographic Role and then click on State/Province. (Path shown in figure alongside).
- 8. Now, locate **Show Me** at the top right of the page and select the indicated visualization.
- Repeat the same step as above and drag and drop Tot Visit Amt to the Color box under Marks.
- 10. Go to Presentation Mode (F7).





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The map confirms that Texas is the highest selling stated. Move the mouse over of the Texas circle and you will not that is consistent with the indication in the Legend that the highest total visit amount is \$2 Billion. Move the mouse over the circle of Michigan (where the highest zip code sales resided) shows that all of Arkansas had sales revenue of \$698 M or roughly 1/3 of Texas.



Midwest Area view by Zip Code

Now we are ready to drill down to the area of responsibility by zip code. Select a new worksheet and name it: **Midwest Area 2014 Revenue by Zip Code.**

- 1. Double click on **Tot Visit Amt.**
- 2. Double Click on Zip Code.
- 3. Drag and Drop State to Filters.
- 4. Select your Areas (IN, MI, OH) and Click OK.
- 5. Do not filter **Visit Date** since we discovered the only date available is 2014.
- 6. Select **Show Me** and select the indicated geographic visualization to the right (Circled in red).

This graph provides the outline of the zip code area and not just a circle. We would assume that the zip code of Madison Heights, MI 48071 would have been highlighted differently to the other ones for being the one with highest total visit amount. Nevertheless, in the graph we analyzed <u>above</u>, we see that it is not the only zip code from Michigan that is the United top 10 zip codes of the United States.





Updated by Matias Delay - Sept 2019



On Your Own

These visualizations provide a starting point for analyzing Visit Revenue for Sam's Club and the Midwest Area. Play with tableau and try to reach the following visualization:



Notice that it is not organized visualization. You would like to show your boss that between all the Midwest States, Illinois is the one with the highest transaction revenue. *Hint: States IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI.*



You should arrive to the following visualization when finished:

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I would like to show the label of my Measure values:

- 1. Click on Label under Marks.
- 2. Check the "Show mark labels" box.
- 3. Change the font of the label.
- 4. Try different labels.
- 5. NOTE: There is never a right way of labeling your data, it is subjective to what you want to show or highlight.



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I would like to show that the state with the highest Visit revenue is Illinois, however only the measure value is labeled:

- 1. Right click on the state with the highest Visit revenue.
- 2. Place mouse over Annotate.
- 3. Select Mark...
- 4. A new window will open where you can edit the annotation you want to show.
- 5. ADVICE: Make sure the colors you choose contrast your visualization.





Try formatting the annotation you just created and reach the following visualization:





Data Dictionary

ITEM_DESC Table

Column name	Key	Datatype	Short Description	Long Description	Sample Values or Format
ltem_Nbr	РК	INTEGER	Item Number	Item Number in New System	53102146, 2468055
Old_Nbr		INTEGER	Item Number	Item Number in previous system	957117, 44857
Order_Dept_Nbr		SMALLIN T	Ordering Department Number	Dept number used for ordering	90, 34
Acct_Dept_Nbr		SMALLIN T	Accounting Department Number	Dept number used for accounting	0, 50
Primary_Desc		CHAR	Primary Description	General Description	JKT GREY M, CELERY HEARTS
Secondary_Desc		CHAR	Secondary Description	Denotes further categorical details	8, HO
Color_Desc		CHAR	Color Description	Color of item	CLEAR, ASST
Size_Desc		CHAR	Size Description	Sizes of item	32-42, S-XXL
Status_Code		CHAR	Status Code	Denotes status	D or A
Type_Code		CHAR	Type Code	Denotes type	20 or 22
Fineline		CHAR	Fineline	Number assigned to items with similar sales patterns	7018, 2392
UPC		CHAR	UPC	Universal Product Code	13 digit number
UPC_Desc		CHAR	UPC Description	General description	TARTAR SAUCE, FASHION BOOT
PLU_Nbr		SMALLIN T	PLU Number	Price lookup code	0, 94285
Create_Date		DATE	Created Date	Date of data creation	MM/DD/YYYY
Effective_Date		DATE	Effective Date	Date item became active	MM/DD/YYYY
Obsolete_Date		DATE	Obsolete Date	Date item deactivates	MM/DD/YYYY
Vendor_Nbr		CHAR	Vendor Number	Vendor Number	029579, 244884
Vendor_Nbr_Finelin e		CHAR	Vendor Fineline Number	Vendor Fineline Number	null

Vendor_NameCHARVendor NameName of supplierCLUB CAFE, VF IMAGEWEARVendor_Stock_NbrCHARVendor Stock NumberSupplier's item numberFATHOM, 19068VNPK_QtyINTEGERVNPK QuantityQuantity field in Retail Link system1, 72VNPK_Cubic_FtDECIMALVNPK Cubic FeetSize of packaged item Quantity0.1, 49.6WHPK_Cubic_FtINTEGERWHPK QuantityWHPK QuantityInvariantWHPK_Cubic_FtDECIMALWHPK Cubic FeetWHPK Cubic Feet0, 4.52WHPK_Cubic_FtINTEGERVOM CodeUnit of measureEA, UNIOM_CodeCHARIOM CodeInit of measureEA, UNDSD_FlagCHARDSD FlagInitInuli					
Vendor_Stock_NbrCHARVendor Stock NumberSupplier's item numberFATHOM, 19068VNPK_QtyIN TEGERVNPK QuantityQuantity field in Retail Link system1, 72VNPK_Cubic_FtDECIMALVNPK Cubic FeetSize of packaged item0.1, 49.6WHPK_QtyIN TEGERWHPK QuantityWHPK QuantityInvariantWHPK_Cubic_FtImage: Size of packaged item0.1, 49.610.1WHPK_Cubic_FtImage: Size of packaged itemImage: Size of packaged item10.4.52WHPK_Cubic_FtImage: Size of packaged itemImage: Size of packaged item10.1WHPK_Cubic_FtImage: Size of packaged itemImage: Size of packaged item10.1WHPK_Cubic_FtImage: Size of packaged itemImage: Size of packaged item<	Vendor_Name	CHAR	Vendor Name	Name of supplier	CLUB CAFE, VF IMAGEWEAR
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WHPK_Cubic_FtDECIMALWHPK Cubic FeetWHPK Cubic Feet0, 4.52Return_Sheet_NbrININTEGERInvariantInvariantUOM_CodeCHARUOM CodeUnit of measureEA, UNFact_FlagCHARFact FlagYor N or nullDSD_FlagCHARDSD FlagInull	WHPK_Qty	INTEGER	WHPK Quantity	WHPK Quantity	Invariant
Return_Sheet_Nbr INTEGER Invariant UOM_Code CHAR UOM Code Unit of measure EA, UN Fact_Flag CHAR Fact Flag Yor N or null DSD_Flag CHAR DSD Flag null	WHPK_Cubic_Ft	DECIMAL	WHPK Cubic Feet	WHPK Cubic Feet	0, 4.52
UOM_Code CHAR UOM Code Unit of measure EA, UN Fact_Flag CHAR Fact Flag Tag used for display Y or N or null DSD_Flag CHAR DSD Flag null	Return_Sheet_Nbr	INTEGER			Invariant
Fact_Flag CHAR Fact Flag Tag used for display Y or N or null DSD_Flag CHAR DSD Flag null	UOM_Code	CHAR	UOM Code	Unit of measure	EA, UN
DSD_Flag CHAR DSD Flag null	Fact_Flag	CHAR	Fact Flag	Tag used for display	Y or N or null
	DSD_Flag	CHAR	DSD Flag		null

Updated by Matias Delay – Sept 2019

Created by Ron Freeze – June 2018



Scale_Flag	CHAR	Scale Flag	Denotes if scale flag made	Y or N
RX_Flag	CHAR	RX Flag	Tag used to show item is prescription	N or null
Catalog_Code	CHAR	Catalog Code	Denotes if coded in catalog	N or null
Ordbk_Stars_Qty	SMALLIN T			Invariant
Multi_Hdl_Code	CHAR			Invariant
Seasonal_Code	CHAR			Invariant
Promo_Ordbk_Flag	CHAR			N or null
Xref_From_Nbr	INTEGER			Invariant
Xref_To_Nbr	INTEGER			Invariant
Trait_Flag	CHAR			Y or N or null
Asm_Week_Code	CHAR			0 or null
Asm_Interval_Code	CHAR			0 or null
Ordbk_Flag	CHAR			N or null
Whse_Align	CHAR			null
Min_Order_Qty	INTEGER	Minimum Order Quantity	Smallest orderable amount	0, 1
Max_Order_Qty	INTEGER	Maximum Order Quantity	Largest orderable amount	0 or 999 only
Never_Out_Flag	CHAR	Never-Out Flag	Requirement for item to always be available	Y or N
Cancel_When_Out_F lag	CHAR			N or null

Last_Change_Date	DATE	Last Change Date	Date of last change	MM/DD/YYYY
Last_Change_Time	INTEGER	Last Change Time	Time of last change	20383703
Order_Book_Sequen ce_Number	INTEGER	Order Book Sequence Number	Order Book Sequence Number	0 or 21 only
Priced_Flag	CHAR	Priced Flag	Denotes if priced flag made	Y or null
Shelf_Label_Print_Fl ag	CHAR	Shelf Label Print Flag	Denotes if label made	N or null
Foodstamp_Flag	CHAR	Foodstamp Flag	Denotes if covered by foodstamps	Y or N
Stock_Status_Flag	CHAR			null
New_Order_Book_P age_Code	CHAR	New Order Book Page Code	Denotes if code for item is in New Order Book	Y or N or null
Expiration_Date	DATE	Expiration Date	Date product expires	MM/DD/YYYY
Status_Chg_Date	DATE	Status Change Date	Date of last status change	MM/DD/YYYY
Shelf_Label_Flag	CHAR	Shelf Label Flag	Denotes if shelf label made	Y or null
Mfg_Nbr	CHAR	Manufacturin g Number	Number used by manufacturer	129510, 478107
Itm_Master_Pk_Cd	CHAR	Item Master Pack Code	Denotes if in a master pack	B or C or null
International_Code	CHAR			invariant
Product_Code	INTEGER	Product Code	Product Code	667773
Activity_CD	CHAR	Activity Code	Activity Code	Y or N



Activity_TY_IND	CHAR	Activity This Year Indicator	Activity this year indicator	Y or N
Activity_LY_IND	CHAR	Activity Last Year Indicator	Activity last year indicator	Y or N
Activity_TY_Q1_IND thru Activity_LY_Q4_IND	CHAR	Activity This Year, Quarter 1 thru Activity Last Year, Quarter 4	Shows activity by quarter	Y or N
Catg_User_Key	CHAR			0 or null
Shelf_User_Key	CHAR			0 or null
Division_Nbr	CHAR			0 or null
Dept_Desc_ID	CHAR			0 or null
Catg_Desc_ID	CHAR			0 or null
Fineline_Desc_ID	CHAR			0 or null

Product_Desc_Id	CHAR			0 or null
Shelf_Desc_ID	CHAR			0 or null
ITEM_STORE_TYPE	CHAR			0 or null
WHPK_WGT_QTY	DECIMAL			0.1, 12.5
VNPK_WGT_QTY	DECIMAL	VNPK Weight Quantity	Weight used in Retail Link system	0.1, 38.0
frsh_ITM_SHELF_LIF E	DECIMAL	Fresh Item Shelf Life	Gives shelf life in days for fresh items	5.0, 10.0
Vendor_Nbr_Dept	CHAR	Vendor Department Number	Dept number used by supplier	61, 64

ITEM_SCAN Table

Column name	Кеу Туре	Datatype	Short Description	Long Description	Sample Values or Format
STORE_NBR	FK to STORE_INFO	INTEGER	Store Number	Store Number	6556, 6670
VISIT_NBR		INTEGER	Visit Number	Number assigned to transaction	430500019, 430500528
SCAN_TYPE		INTEGER	Scan Type	Denotes method used for UPC input	0, 3
SCAN_ID	FK to ITEM_DESC*	INTEGER	Scan Identifier	Gives code to interpret SCAN_ID using rules given following this table	83815 <i>,</i> 40899111
VISIT_DATE		DATE	Visit Date	Date of visit	MM/DD/YYYY
RETURNED_ITEM_IND		INTEGER	Returned Item Indicator	Indicates if an item was returned	0 or 1
VOIDED_ITEM_IND		INTEGER	Voided Item Indicator	Indicates if an item was voided	0 or 1
unit_qty		DECIMAL	Unit Quantity	Quantity of item per scan	1.00, 4.79
retail_price		DECIMAL	Retail Price	Price per unit quantity	5.35, 10.96



STORE_INFO Table

Column/Field Name	Key Type	Datatype	Short Description	Long Description	Sample Values Or Format
DIVISION_NBR		BYTEINT	Division Number	Number 18 denotes Sam's Club	18 ONLY
STORE_NBR	РК	INTEGER	Store Number	Any 4-digit number	6,670
STORE_NAME		CHAR	Store Name	Name given to store	SEARCY SAMS DC
ALIGN_SUB_DIVISION_NBR		CHAR	Subdivision Number	Denotes subdivison	A thru Z
REGION_NBR		SMALLINT	Region Number	Number assigned to region	0 thru 99
DISTRICT_NBR		SMALLINT	District Number	Number assigned to district	0 thru 998
SIZE_SQFT		INTEGER	Store Size	Store size in square feet	144,601
OPEN_DATE		DATE	Opening Date	Date store opened	MM/DD/YYYY
OPEN_STATUS		CHAR	Open Status	Denotes operating hours	0 thru 7
EXPANSION_SIZE_SQFT		INTEGER	Expansion size	Size of expansion in square feet, if applicable	130,595
EXPANSION_OPEN_DATE		DATE	Expansion Opening Date	Date expansion opened, if applicable	MM/DD/YYYY
DRY_RUN_DATE		DATE	"Dry Run" Date	Date store began normal operations, usually the day before grand opening	MM/DD/YYYY
STORE_TYPE		CHAR	Store Type	Denotes if store is a regular Sam's, Distribution Center, etc.	G, W, S, R
STREET_ADDR		CHAR	Street Address	1 st line of mailing address	280 WALMART RD
CITY		CHAR	City	City of mailing address	YPSILANTI, TUPELO
STATE		CHAR	State	State of mailing address	AR, WA
ZIP_CODE		INTEGER	ZIP code	ZIP code of mailing address	72,716
PHONE_NBR		CHAR	Phone number	Phone number for store	007149656666
MANAGER_NAME		VARCHAR	Store Manager Name	First three letters of manager's first name	JEF, LIS
OPEN_SUNDAY_FLAG		CHAR	Open Sunday Flag	Denotes if store is open on Sundays	Y or N ONLY
*_WHSE		CHAR	Warehouse	Warehousing Information	null
GEOGRAPHIC_ZONE		DECIMAL	Geographic zone	Zone as determined by Sam's Club	0 thru 8



APPAREL_ZONE	SMALLINT	Apparel Zone	Denotes zone per apparel	invariant
SIZECLASS	SMALLINT	Size Class	Denotes size class	invariant
SALESCLASS	SMALLINT	Sales Class	Denotes sales class	invariant
STORE_CODE	CHAR	Store Code	Denotes type of store	N, A, C, T ONLY
DELIVERY_TYPE	CHAR	Delivery Type	How merchandise is delivered	WPM, 7NT
MDSE_MAJOR_ZONE	SMALLINT	Merchandis e Major Zone	Corresponds to geographic zone	0 thru 8
MDSE_SUB_ZONE	SMALLINT	Merchandis e Sub Zone	Denotes subzone for merchandise	invariant

TENDER Table

Column Name	Кеу Туре	Datatype	Short Description	Long Description	Sample Values or Format
STORE_NBR	PK, FK for VISIT, FK for STORE_INFO	INTEGER	Store Number	Number of store	6,605
VISIT_NBR	PK, FK for VISIT	INTEGER	Visit Number	Sequential visit number	104,605,375
VISIT_DATE		DATE	Visit Date	Date of visit	MM/DD/YYYY
TENDER_TYPE		BYTEINT	Tender Type	Payment Method	0 thru 99
TENDER_AMT		DECIMAL	Tender Amount	Amount tendered	46.85, 103.73
CASH_BACK_AMT		DECIMAL	Cashback Amount	Amount given as cashback	0.00, 60.00

VISIT Table

Column Name	Кеу Туре	Datatype	Short Description	Long Description	Sample Values or Format
STORE_NBR	PK, FK for STORE_INFO	INTEGER	Store Number	Store Number	6,620
VISIT_NBR	РК	INTEGER	Visit Number	Sequential visit number	301,303,484
REGISTER_NBR		SMALLINT	Register Number	Number of register	5
TOTAL_TAX_AMOUNT		DECIMAL	Total Tax Amount	Amount of tax	7.27
TOT_VISIT_AMT		DECIMAL	Total Visit Amount	Transaction total	27.49
VISIT_DATE		DATE	Visit Date	Date of visit	MM/DD/YYYY
VISIT_TIME		SMALLINT	Visit Time	Time of visit	Given in 24- hour time
NEW_RFND_PROC_IND		BYTEINT	New Refund Procedure Indication	Indicates if new refund procedure used	0 or 1
RFND_NO_RECPT_IND		BYTEINT	Refund No Receipt Indication	Denotes if refund performed without an original receipt	0 or 1
REFUND_RECEIPT_IND		BYTEINT	Refund Receipt Indication	Denotes if receipt given for refund transaction	0 or 1



TOT_UNIQUE_ITM_CNT	SMALLINT	Total Unique Item Count	Number of unique items in transaction	1, 14, 27
TOT_SCAN_CNT	SMALLINT	Total Scan Count	Number of items scanned	1, 14, 27
OPERATOR_NBR	SMALLINT	Operator Number	Employee who conducted transaction	52, 2530