Tableau 9 Overview

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Objective

This presentation will communicate at a high level my methodology for systematically analyzing data using Tableau's visual techniques. Fundamental and Advanced Tableau concepts will be presented and you will be introduced to many very useful visualizations along the way.

This presentation contains detailed, step-by-step instructions for reproducing each visualization. During the presentation, you can do these steps along with me or just watch.

At the end of each section, I'll ask "How might you use what you've just seen on your project?"

My Elements of Data Visualization UT Class Website

- http://www.cs.utexas.edu/~cannata/dataVis/

Course 50675 | TTh 5:00 - 6:30 in GDC 1.304 | Syllabus | Honesty | Code of Conduct

Projects | Quizzes

Project 1

Interesting article "Letter written by 'Titanic's coward' goes up for auction" here. And another one here.

1. Open the Titanic SQL file at this link. Copy the contents into a SQLDeveloper worksheet for your account and click the Run

Project 2

Project 3 - Due Friday October 16 at 11:59 pm

Project 4 - Due Monday November 2 at 11:59 pm

Project 5 - Due Friday November 13 at 11:59 pm

Project 6 - Due Moday November 23 at 11:59 pm

Final Project - December 7, and 8, 2015

CS329e Welcome | Interesting Links | Recommended Videos

Elements of Data Visualization

Dr. Philip Cannata, phil.cannata@oracle.com, office hours: TTh 4:00 - 4:45 in GDC 5.402.

TAs: Xun Li, xun.bhsfer@utexas.edu, office hours: GDC 3.802A, W 3:00 - 5:00 pm

Canvas link.

We will be using Piazza.

Make sure you are registered with piazza for this course and be sure to check and read your piazza email several times a day because this will be the primary means of communication outside of class time. **Dr. Cannata will not alter his proceedure of *always* sending *all* of his messages to the *entire* class.**

Students with disabilities link.

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, and the link above.

Draft Syllabus for Elements of Programming Languages link.

Class Notes | Getting Started | R Resources | SQL Resources | Data Sources | Tableau Resources | Tableau Overview | EPL

- Super Store Orders.tde
- US Super Store Quota.tde
- Coffee Chain.tde

Tableau for Teaching License Request Form

Tableau Overview Presentation.

Also see the "Tableau Resources" Tab in this column of this website.

Non-Aggregated Measures Analysis (start with a green thing) - also demonstrates Boxplots, Dates, and Pages

- Boxplot Show Me.twbx

Aggregated Measures Analysis (start with a green thing) - also demonstrates Histograms, Dual-axis Plots and Show Me

- Histogram Show Me.twbx

Scatter Plot (start with 2 green things) -also demonstrates Maps, Actions, Dashboards, and the Analytics Tab - Models and Forecasting

- Scatter Plot.twbx

Crosstabs (start with two blue things and a green thing) - also demonstrates Key Performance Indicators (KPIs), Calculated Fields, Sets, Parameters, and Hierarchies

- Crosstab with KPI.twbx

Barcharts (start with a blue thing and a green thing) - also demonstrate Table Calculations, the Analytics Tab - Reference Lines, ID Sets, and Formatting

- Barchart.twbx

Data Blending - also demonstrates

- Data Blending.twbx

Two Useful Books

Tableau Terminology

1. Open Super Store Orders Extract.tde
2. Select Sheet 1

Tableau Terminology – Dimensions and Blue Things

1. Click on Department under Dimensions and select Describe
2. Click Load if necessary

Tableau Terminology – Measure and Green Things

1. Click on Discount under Measures and select Describe
2. Click Load if necessary

Methodology

To analyze a Data Source

1. Start with a green thing (usually a Measure) in non-aggregated mode and make a Boxplot
2. Start with a green thing in aggregated mode and make a Histogram
3. Start with 2 green things and make a Scatter plot
4. Start with two blue things (usually Dimensions) plus a green thing and make a Crosstab
5. Start with a blue thing and a green thing and make a Barchart

Non-Aggregated Measures Analysis (start with a green thing) - also demonstrates Boxplots, Dates, and Pages

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Barchart.twbx

Joining Tables - this section demonstrates how to join two tables.

Data Blending - this section demonstrates how to blend two tables, which is not the same as joining tables.

Boxplot Story (start with a green thing)

1. Open Super Store Orders Extract.tde
2. Uncheck Aggregate Measures under the Analysis tab and Rename the Current Sheet to Sales Boxplot.
3. Click on Sales Under Measures and then click on the boxplot icon on "Show Me" i.e., the right icon on row 7.
4. Drag Category onto Columns.
5. Drag Region onto the Color Shelf.
6. Drag Region onto the Filters Shelf and from this Pill's menu, select Show Quick Filter.
7. Drag Sales onto the Filters Shelf and from this Pill's menu, select Show Quick Filter.
8. Drag Customer Name onto Detail
9. Explore the outliers
10. Drag Region onto Pages
11. Set the minimum Sales to $20,000
12. Click through the Regions on Pages and notice "office Supplies" is common to all

Boxplot Story (start with a green thing) +
Sales over Quarter Time using Pages

1. Duplicate the Sales Boxplot Sheet and rename it to Sales Boxplot over Time.
2. On the Order Date item under Dimensions, select Change Data Type -> Date
3. Drag Order Date on top of Regions on the Pages Shelf and on this Pill's menu, change it to Quarter (make sure you select the second Quarter option)
4. On the Analytics Tab. Click and hold on the Average Line pill and drag to Pane
5. Select the forward play button.

Boxplot Story (start with a green thing) +
Profit over Quarter Time using Pages

1. Duplicate the Sales Boxplot over Time Sheet to a new sheet named Profit Boxplot over Time.
2. Drag Profit on top of Sales on Row to replace Sales with Profit
3. Select a region of interest and play the movie.

How might you use what you've just seen on your project?

Histogram Story (start with a green thing)

1. Open Super Store Orders Extract.tde
2. Rename Sheet 1 to Shipping Cost Histogram
3. Click on Shipping Costs under Measures and then click on the Histogram Icon on Show Me (i.e., the middle icon on row 7).
4. Notice a Shipping Costs (bin) item was created under Dimensions. Open the menu on this item and select Edit. Change the bin size to 10.
5. Drag Container onto the Pages Shelf.
6. On the Analytics Tab. Click and hold on the Average Line pill and drag to Pane
7. Step through each Container type.
8. Drag Category on top of Container on Pages

Histogram Story (start with a green thing) +
Profit on a Dual-axis

1. Duplicate the current Sheet to a new Sheet named Shipping Cost + Profit Histogram
2. Drag Profit to the right axis to create a dual axis plot.
3. Click on the CNT(Shipping Costs) Pill on the Marks Card and change its Mark to Bar.
4. On the Analytics Tab. Click and hold on the Average Line pill and drag to Sum(Profit)/Pane
5. Step through each Container type.

Histogram Story (start with a green thing) +
Packed Bubbles Plot

1. Duplicate the Shipping Cost + Profit Histogram Sheet to a new Sheet named Packed Bubbles
2. Go to Show me and pick Packed Bubbles
3. Change the Type of Order Date to Date if necessary
4. Drag Order Date to Pages
5. Click through the Quarters

Histogram Story (start with a green thing) +
Treemap Plot

1. Duplicate the Shipping Cost + Profit Histogram Sheet to a new Sheet named TreemapDrag
2. Go to Show me and pick Treemap
3. Change the Type of Order Date to Date if necessary
4. Drag Order Date to Pages
5. Click through the Quarters

How might you use what you've just seen on your project?

Scatter Plot Story (start with 2 green things)

1. Open Super Store Orders Extract.tde
2. Uncheck Aggregate Measures under the Analysis tab and Rename the Current Sheet to Scatter Plot
3. Drag Sales onto the Columns Shelf
4. Drag Profit onto the Rows Shelf
5. Drag Category onto the Pages Shelf
6. Click on the Analytics Tab and double click on Trend Line
7. Click on the Data Tab
8. Drag State onto Color
9. Remove Country Region from Color

Scatter Plot Story (start with 2 green things) +
Maps and Actions

1. Create a new Sheet named Map
2. Double click on State
3. Click on the Worksheet Tab and select Actions
4. Select Add Action -> Filter
5. Select Run Action on Select
6. Select Map for the Source
7. Select Scatter Plot for Target
8. Click on Ok and Ok
9. Click on Texas on the map

Scatter Plot Story (start with 2 green things) +
Dashboards

1. Create a new Dashboard
2. Drag the Scatter Plot and Map Sheets onto the Dashboard
3. Zoom into the United States
4. Drag select Washington, Oregon, and California
5. Click on the white “Use as Filter” icon just to the left of the X in the Scatter Plot Sheet
6. Step through the Categories and compare the States

Scatter Plot Story (start with 2 green things) +
Trend Model

1. Right click on the blue trend line and select Describe Trend Model

Scatter Plot Story (start with 2 green things) +
Forecasting

1. Create a new Sheet named “Forecasting”
2. Change the type of Order Date to Date
3. Drag Order Date onto Columns
4. Change Order Date to Quarters
5. Drag Sales onto Rows
6. On the Analytics Tab select Forecast and drag it to Add a Forecast
7. Drag Category to Pages
8. Step through Category and see how many are forecast to be flat

How might you use what you've just seen on your project?

Crosstabs + KPI Story (start with two blue things and a green thing)

1. Open Super Store Orders Extract.tde
2. Rename Sheet 1 to Crosstab + KPI
3. Drag Category to the Columns Shelf
4. Drag State to the Rows Shelf
5. Drag Country Region to the Filters Shelf and select United States of America
6. Drag Sales to Text on the Marks Card
7. View the data by clicking on the View Data icon on the Dimensions Tab, notice there is no column named “KPI – Profit Ratio”
8. On the Dimensions Tab, click on the menu icon and select Create Calculated Field
9. Name the Calculated Field “KPI - Profit Ratio”
10. Enter **Sum([Profit])/Sum([Sales])** as the calculation
11. On the Dimensions Tab, click the View Data icon and see that a new field named “KPI - Profit Ratio” was added to the data.
12. View the data again, now notice there is a column named “KPI – Profit Ratio”
13. Drag KPI - Profit Ratio onto Color
14. Drag KPI - Profit Ratio onto Size
15. Change the Color Palette to Red-White-Green Diverge

State	Appliances	Binders and Binder Accessories	Bookcases	Chairs and Chairmats	Computer Peripherals	Copiers and Fax	Envelopes	Labels	Office Furnishings	Office Machines	Paper	Pens and Art Supplies	Rubber Bands	Scissors, Rulers and Trimmers	Storage and Organization	Tables	Telephones and Communication
Alabama	7,081	10,814	5,892	5,348	10,733	3,550	2,486	87	3,461	50,715	2,634	1,248	97	319	1,948	9,128	11,175
Arizona	1,862	2,361	8,630		3,993	6,914	384	196	7,285	39,458	3,706	785	53	309	8,638	20,368	15,456
Arkansas	1,772	2,053	27,182	6,179	8,423	8,026	480	89	2,305	14,033	1,492	1,046		34	4,702	7,396	10,983
California	40,768	42,758	152,999	143,678	46,619	31,036	17,388	1,845	84,142	166,334	27,951	17,618	1,144	13,259	124,862	136,560	112,774
Colorado	3,900	2,532	15,839	6,765	4,802	19,654	1,703	91	6,069	12,639	2,534	704	245	409	12,421	21,430	20,473
Connecticut	166	4,453	8,515	2,372	1,969		893		2,158	3,222	2,263	636	169	25	1,422	5,992	8,047
Delaware	119	316		664	101		345		37	105	206	174					1,476
District of Columbia	2,717	79,526		41,779	7,890	14,300	9,123	382	19,323	4,226	1,557	3,208	179	7	2,801	8,388	23,463
Florida	20,861	32,916	26,917	64,101	62,405	19,797	3,932	1,461	29,534	44,871	18,266	3,889	368	1,019	23,594	98,308	51,379
Georgia	4,942	14,628	8,076	29,759	10,525	5,603	1,262	723	15,543	53,934	5,871	808	81	227	7,528	22,478	14,356
Idaho	923	14,545	6,052	13,959	8,973	5,613	2,055	76	2,453	16,914	2,170	330	49	35	2,942	5,943	12,608
Illinois	25,819	78,377	32,556	102,373	29,050	25,799	5,089	2,463	28,434	104,002	14,421	4,214	705	5,079	50,776	76,939	81,699
Indiana	16,224	12,702	7,699	26,633	9,723	28,947	959	98	14,932	6,584	5,545	1,644	10	326	6,373	32,146	23,544
Iowa	4,084	1,723	5,114	6,701	3,715	16,243	2,489	231	6,445	4,144	2,662	2,216	414	212	12,291	3,274	16,750
Kansas	3,240	3,876	4,886	21,307	5,963	29,015	1,385	136	2,349	2,670	2,619	1,076	37	138	4,511	14,301	13,083
Kentucky	1,588	826	412	11,520	5,190		39	149	463	12,792	2,160	319	58	971	6,601	8,132	9,542
Louisiana	2,669	6,780	3,080	2,130	1,250	205	128	98	978	29,644	1,478	1,018	15	575	354	8,267	7,947
Maine	1,448	4,094	8,973	19,397	1,968	10,180	203	202	5,697	2,166	2,401	628	114	282	5,767	22,107	11,496
Maryland	2,762	6,964	3,598	32,468	5,371	1,421	580	277	3,920	5,737	2,878	1,747	57		10,502	34,970	11,651
Massachusetts	26,114	10,987	12,699	11,013	14,641	13,742	3,130	1,113	5,263	22,915	13,658	5,646	355	314	7,699	28,936	50,228
Michigan	20,734	14,905	17,469	27,754	22,641	15,307	2,629	279	32,116	32,553	9,094	2,811	109	603	22,726	58,871	43,989
Minnesota	8,489	5,520	13,425	15,168	9,546	20,627	2,264	308	6,819	33,631	8,523	1,775	229	911	8,698	31,351	23,203
Mississippi	1,072	1,650		1,407	5,462		35	94	232	2,746	1,511	775	68	230	8,020	11,964	6,655
Missouri	19,910	6,853	2,856	4,412	3,440	741	831	132	6,150	23,751	1,909	2,073	138	239	9,991	21,065	9,213
Montana	2,320	179	379	3,431	2,663			343	3,068	7,010	565	412	66	234	407	4,935	3,394
Nebraska	2,327	8,791	3,810	6,860	1,133		437	35	2,074	266	1,618	48		274	5,442	1,068	6,741
Nevada	388	1,414	8,602		619		440		226	710	962	1,106	42	312	1,198	1,011	2,997
New Hampshire	93	2,745	5,780	2,775	1,038		3,448	81	1,714	3,417	600	91		212	4,950	10,326	3,560
New Jersey	7,383	7,359	14,340	11,639	9,449	7,144	290	215	4,570	22,601	4,143	2,315	117		11,969	26,001	13,826
New Mexico	8,013	992	1,450	20,742	2,075	10,161	2,835	379	2,409	7,080	989	660	138	76	1,659	2,112	8,313
New York	44,179	71,035	17,924	139,886	45,055	107,690	12,201	3,069	21,340	120,344	24,529	10,947	1,000	999	44,857	50,619	123,927
North Carolina	15,285	17,909		14,013	11,767	3,458	2,316	961	16,522	36,540	7,715	2,953	164	242	8,878	27,150	34,177
North Dakota	2,297	547		3,145	317			35	414		1,200	203		184	3,802	1,964	3,247
Ohio	14,975	42,045	2,312	36,019	18,964		4,809	321	14,726	11,362	8,977	4,068	184	204	36,901	58,954	35,463
Oklahoma	828	3,109	6,621	8,463	3,637	11,146	156	558	6,875	10,906	1,408	103	18		3,736	2,250	7,110
Oregon	6,419	1,287	8,472	11,224	2,272	19,233	385	386	3,621	61,573	4,357	1,478	121	458	1,172	9,005	20,273
Pennsylvania	29,765	21,216	6,543	70,593	19,071	4,944	17,113	542	11,597	14,168	5,856	1,620	255	198	26,901	36,940	30,040
Rhode Island	2,270		850		3,505				533	7,029	404	66		157			3,670
South Carolina	3,546	3,196	431	10,342	1,968	5,063	492	281	4,457	1,932	2,793	813	41	89	4,763	4,368	9,297
South Dakota	41	2,651		4,025	6		1,160	50	140	14,812	1,052	346	24		109	3,887	5,074
Tennessee	2,517	4,938	5,004	6,216	10,884	11,398	3,132	261	6,391	6,313	2,209	1,996	161	428	19,379	5,375	8,284
Texas	59,833	37,688	17,265	81,886	36,100	43,635	10,175	2,620	25,771	66,565	14,168	8,583	862	9,895	24,586	18,394	85,083
Utah	1,788	5,845	3,676	5,068	9,209	5,177	417	327	3,873	13,494	5,237	1,326	72	30	8,521	7,700	11,178
Vermont	2,074	257	2,768	4,222	2,889	4,730	488		3,785	8,709	1,861	710		165	2,386	1,881	3,202
Virginia	13,448	12,246	6,308	10,486	5,117	21,467	710	1,278	7,492	26,007	5,634	316	138	251	12,454	11,516	21,536
Washington	11,137	17,970	15,562	88,767	9,415	105,891	24,839	972	12,167	62,903	12,987	5,431	271	290	6,033	54,082	80,095
West Virginia	504	272		7,360	2,040	450	448	30	316	1,076	1,212	1,024			1,717	19,475	1,628
Wisconsin	6,022	12,253	5,883	19,183	6,648	22,908	1,435	163	3,047	16,110	5,571	253	302	211	8,730	12,660	27,346
Wyoming		480	647	1,354	617		377	9	1,398	7,942	64	9				1,935	3,633

Crosstabs + KPI Story (start with two blue things and a green thing) + Sets

1. Create a new Sheet named “Four Highest”
2. Drag Category to the Columns Shelf
3. Drag Sales to the Rows Shelf
4. Drag Country Region onto Filters and select United States of America
5. Select the four highest Sales Categories and hover over one of them
6. Click on the Set icon and select Create Set
7. Name the Set “Four Highest Sales Categories”

Crosstabs + KPI Story (start with two blue things and a green thing) + Sets

1. Duplicate the “Crosstab + KPI” Sheet a new Sheet named “Crosstab + KPI 2”
2. Drag the Four Highest Sales Category Set to Filters and change it to Show In/Out of Set
3. Show Quick Filter on this Set
4. Set this Filter to In

Crosstabs + KPI Story (start with two blue things and a green thing) + Sets

1. Create a new Sheet named “Region Sales Map”
2. Drag Country Region to Filters and select United States of America
3. Double click on State
4. Drag KPI – Profit Ratio to Color
5. Drag the Four Highest Sales Categories to the Filters Shelf
6. Drag Region to Label

Crosstabs + KPI Story (start with two blue things and a green thing) + Parameters

1. Duplicate Sheet “Region Sales Map” to a new Sheet named “Region Sales Map 2”
2. On the Dimensions Tab click on the menu and select “Create Parameter” and name it “KPI Low”
3. Click on Range
4. Set Minimum to 0, Maximum to 0.1, and Step size to 0.01
5. Duplicate this Parameter, name it “KPI Medium” and set Minimum to 0.1, Maximum to 0.2, and Step size to 0.01
6. Duplicate KPI – Profit Ratio to KPR – Profit Ratio (copy) and Edit it
7. Rename it to KPI – Profit Ratio Low to High and enter the following calculation,

```
IF sum([Profit])/sum([Sales]) <= [KPI Low] THEN "Low”
ELSEIF sum([Profit])/sum([Sales]) <= [KPI Medium] THEN "Medium”
ELSE "High”
END
```

8. Remove KPI – Profit Ratio from Color and replace it with KPI – Profit Ratio Low to High
9. Click on the menu for each Parameter and select Show Parameter Control
10. Adjust Parameter settings as desired.

Crosstabs + KPI Story (start with two blue things and a green thing) + Hierarchies

1. On the Marks Card, click on the + sign on the left side of the State Pill

How might you use what you've just seen on your project?

Barcharts Story (start with a blue thing and a green thing)

1. Open Super Store Orders Extract.tde
2. Rename Sheet 1 Barchart
3. Drag Sales to Columns
4. Drag Category and Region to Rows
5. Drag Region onto Filters and select East, West, and South
6. Click on the Analytics Tab
7. Click on Average Line, drag it a bit and then select Pane
8. Click on one of the Average lines and Edit it – change the Label to Value
9. Click on one of the Averages lines and select Format
10. A Format Pane shows up on the left.
11. On this Pane select Numbers -> Currency(Custom)
12. Change Decimal Places to 0
13. Click on the bottom Axis and select Format
14. A Format Pane shows up on the left.
15. On this Pane select Numbers -> Currency(Custom)
16. Change Decimal Places to 0

Barcharts Story (start with a blue thing and a green thing) +
Table Calculations

1. Duplicate the Barchart Sheet to a Table Calculations Sheet.
2. Right click on the View and select View Data – notice there is no column named "Calculated Difference from Average".
3. Create a Calculated Field named "Calculated Difference from Average" as **SUM([Sales])-WINDOW_AVG(sum([Sales]))**
4. Drag "Calculated Difference from Average" onto Label.
5. Right click on the View and select View Data – notice there is not a column named "Calculated Difference from Average" as there would be for a simple Calculated Field.
6. Hold command (on Mac) down and drag SUM(Sales) from Columns to Label. This will copy SUM(Sales) to Label.
7. Drag "Calculated Difference from Average" onto Color.

Barcharts Story (start with a blue thing and a green thing) +
ID Sets

1. Create a new Sheet named ID Sets
2. Drag Order Id onto Columns
3. Drag Discount onto Rows
4. Set the View to be Entire View
5. Highlight all lines between 0.40 and 0.30 by dragging a box over them
6. Hover over a highlighted line, select the Set icon and click on Create Set
7. Name the Set High Discount Orders
8. Drag the Set onto Pages and click the play button so that the status shows Out
9. Highlight all lines between 0.30 and 0.20 by dragging a box over them
10. Hover over a highlighted line, select the Set icon and click on Create Set
11. Name the Set Medium Discount Orders

Barcharts Story (start with a blue thing and a green thing) +
ID Sets

1. Create a new Sheet named ID Sets on a Map
2. Double click State
3. Highlight the United States with the Zoom Area tool
4. Drag the 2 Sets to Pages
5. Drag Customer Name to Color
6. Drag Customer Names to Detail
7. Drag City to Detail
8. Change the Marks to Circle
9. Click the Pages slider and hover over a Circle to see the Details

Barcharts Story (start with a blue thing and a green thing) +
ID Sets Part 2

1. Create a new Sheet named High Sales Customers
2. Drag Customer Id onto Columns
3. Drag Sales onto Rows
4. Set the View to be Entire View
5. Highlight select Customers with Sales > $100k
6. Drag High Discount Orders onto Filters
7. Drag Profit on top of Sales on Rows

How might you use what you've just seen on your project?

Joining Tables:

1. Open Super Store Orders Extract.tde
2. Open US Super Store Quota.tde
3. You should see the following on the connections page::

4. Click on the "Join" icon, i.e., the icon with the blue and white circles.
5. Fill in the Join as follows, i.e., select "Inner" and set State = US_STATE

6. Inspect the data and notice only the US States appear.

SUPERSTORE_... Row Id	SUPERSTOR... Sales	SUPERSTORE_SALES_O... Shipping Cost	SUPERSTORE_SALES_... Ship Date	SUPERSTORE_SALES_O... Ship Mode	SUPERSTORE_S... State	SUPERSTORE_SAL... Unit Price	US_SUPERSTOR... QUOTA	US_SUPERSTORE_QUO... US_STATE
130.00	552.00	47.000	2010-01-11	Delivery Truck	Michigan	71.000	335,000.00	Michigan
497.00	4,911.00	75.000	2010-02-16	Delivery Truck	Indiana	417.000	220,000.00	Indiana
2120.00	5,768.00	154.000	2010-08-11	Delivery Truck	Minnesota	296.000	175,000.00	Minnesota
7186.00	896.00	80.000	2011-12-25	Delivery Truck	Missouri	146.000	100,000.00	Missouri
3874.00	1,353.00	28.000	2011-02-14	Delivery Truck	Indiana	227.000	220,000.00	Indiana
3293.00	2,027.00	70.000	2010-12-15	Delivery Truck	Minnesota	123.000	175,000.00	Minnesota
11378.00	180.00	53.000	2013-01-07	Delivery Truck	Texas	21.000	700,000.00	Texas
7670.00	5,456.00	126.000	2012-02-07	Delivery Truck	Wisconsin	501.000	150,000.00	Wisconsin
10028.00	125.00	45.000	2012-09-12	Delivery Truck	Wisconsin	101.000	150,000.00	Wisconsin

7. This shows that in an Inner Join, only rows that meet the join criteria are retained in the resulting table.

Joining Tables continued:

1. Change the Join to be Left

2. Inspect the data and notice that US States appear with a QUOTA and non-US States appear with null for their QUOTA.

Sort fields Data source order | Show aliases | Show hidden fields | 1,000 rows

w Id	Sales	Shipping Cost	Ship Date	Ship Mode	State	Unit Price	QUOTA	US_STATE
2240.00	3,596.00	60.000	2010-08-22	Delivery Truck	Maine	151.000	90,000.00	Maine
156.00	3,902.00	30.000	2010-01-15	Delivery Truck	Maryland	351.000	115,000.00	Maryland
5448.00	489.00	30.000	2011-07-24	Delivery Truck	New Jersey	121.000	138,000.00	New Jersey
2829.00	29,719.00	56.000	2010-10-26	Delivery Truck	New York	501.000	1,200,000....	New York
3301.00	4,252.00	36.000	2010-12-17	Delivery Truck	Tokyo	141.000	null	null
9735.00	6,326.00	59.000	2012-08-16	Delivery Truck	Soul	115.000	null	null
12136.00	16,887.00	86.000	2013-03-01	Delivery Truck	Beijing	376.000	null	null
4375.00	1,835.00	16.000	2011-04-07	Delivery Truck	Sichuan Sheng	151.000	null	null
2112.00	22,784.00	154.000	2010-08-11	Delivery Truck	National Capital Terr...	296.000	null	null

3. This shows that in a Left Join, all of the rows in the Left table appear at least once in the resulting table even if their value needs to be set to null.

Joining Tables continued:

1. Open Sheet 1 and notice there are Dimensions and Measures for both tables.

How might you use what you've just seen on your project?

Blending Data:

1. Open Super Store Orders Extract.tde.
2. Drag Sales onto Columns and Region onto Rows.
3. Add Coffee Chain extract as a new data source by choosing:

4. Try to add coffee sales to Columns, you should get the following warning:

5. Under Data go to Edit Relationships.
6. Do a Custom edit and add Region from Super Store and Market from Coffee Chain:

7. Now you should be able to drag Coffee Sale to Columns.

How might you use what you've just seen on your project?