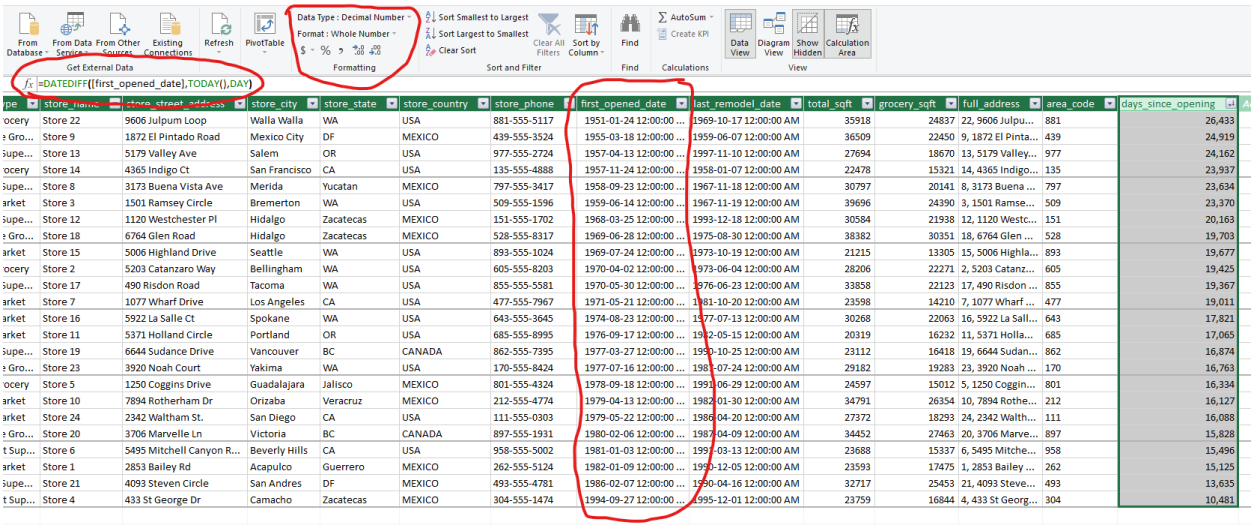
Project Analyzing Data with Power Pivot & DAX

1) In the **Store_Lookup** table, create a new calculated column named *days_since_opening* to calculate the number of days since the store opened (***hint:*** *use the TODAY() function and subtract the date from the* ***first_opened_date*** *column*)

- Use the formatting tools in the **Home** tab to format as a whole number, with a thousands separator (***Data Type:*** *Decimal Number,* ***Format:*** *Whole number*)

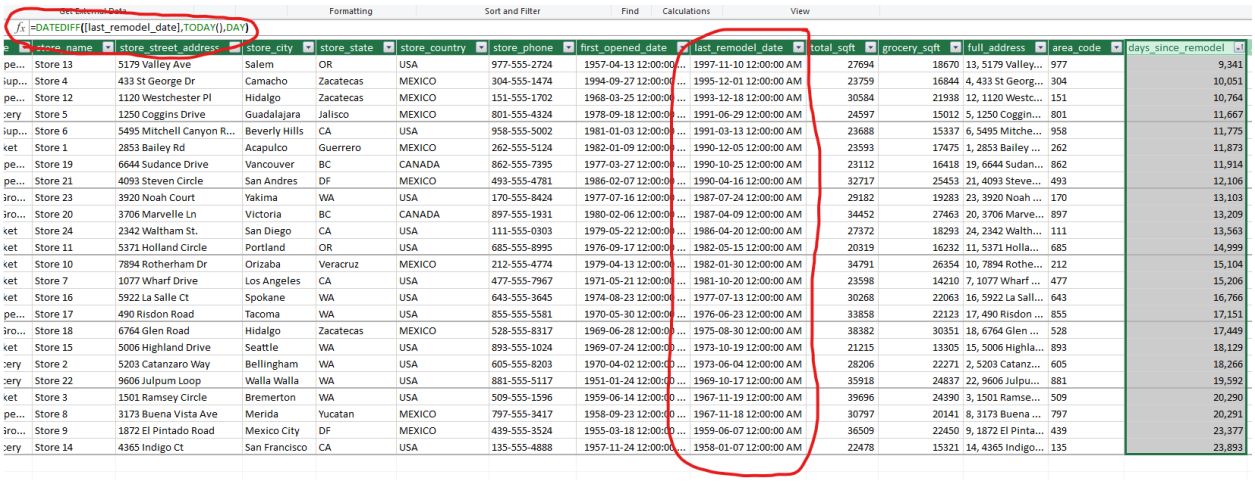


store_name	store_street_address	store_city	store_state	store_country	store_phone	first_opened_date	last_remodel_date	total_sqft	grocery_sqft	full_address	area_code	days_since_opening
Store 22	9606 Julpum Loop	Walla Walla	WA	USA	881-555-5117	1951-01-24 12:00:00 ...	1969-10-17 12:00:00 AM	35918	24837	22, 9606 Julpu...	881	26,433
Store 9	1872 El Pintado Road	Mexico City	DF	MEXICO	439-555-3524	1955-03-18 12:00:00 ...	1959-06-07 12:00:00 AM	36509	22450	9, 1872 El Pinta...	439	24,919
Store 13	5179 Valley Ave	Salem	OR	USA	977-555-2724	1957-04-13 12:00:00 ...	1997-11-10 12:00:00 AM	27694	18670	13, 5179 Valley...	977	24,162
Store 14	4365 Indigo Ct	San Francisco	CA	USA	135-555-4888	1957-11-24 12:00:00 ...	1958-01-07 12:00:00 AM	22478	15321	14, 4365 Indigo...	135	23,937
Store 8	3173 Buena Vista Ave	Merida	Yucatan	MEXICO	797-555-3417	1958-09-23 12:00:00 ...	1967-11-18 12:00:00 AM	30797	20141	8, 3173 Buena ...	797	23,634
Store 3	1501 Ramsey Circle	Bremerton	WA	USA	509-555-1596	1959-06-14 12:00:00 ...	1967-11-19 12:00:00 AM	39696	24390	3, 1501 Ramse...	509	23,370
Store 12	1120 Westchester Pl	Hidalgo	Zacatecas	MEXICO	151-555-1702	1968-03-25 12:00:00 ...	1993-12-18 12:00:00 AM	30584	21938	12, 1120 Westc...	151	20,163
Store 18	6764 Glen Road	Hidalgo	Zacatecas	MEXICO	528-555-8317	1969-06-28 12:00:00 ...	1975-08-30 12:00:00 AM	38382	30351	18, 6764 Glen ...	528	19,703
Store 15	5006 Highland Drive	Seattle	WA	USA	893-555-1024	1969-07-24 12:00:00 ...	1973-10-19 12:00:00 AM	21215	13305	15, 5006 Highla...	893	19,677
Store 2	5203 Catanzaro Way	Bellingham	WA	USA	605-555-8203	1970-04-02 12:00:00 ...	1973-06-04 12:00:00 AM	28206	22271	2, 5203 Catanz...	605	19,425
Store 17	490 Risdon Road	Tacoma	WA	USA	855-555-5581	1970-05-30 12:00:00 ...	1976-06-23 12:00:00 AM	33858	22123	17, 490 Risdon ...	855	19,367
Store 7	1077 Wharf Drive	Los Angeles	CA	USA	477-555-7967	1971-05-21 12:00:00 ...	1981-10-20 12:00:00 AM	23598	14210	7, 1077 Wharf ...	477	19,011
Store 16	5922 La Salle Ct	Spokane	WA	USA	643-555-3645	1974-08-23 12:00:00 ...	1977-07-13 12:00:00 AM	30268	22063	16, 5922 La Sall...	643	17,821
Store 11	5371 Holland Circle	Portland	OR	USA	685-555-8995	1976-09-17 12:00:00 ...	1992-05-15 12:00:00 AM	20319	16232	11, 5371 Holla...	685	17,065
Store 19	6644 Sudance Drive	Vancouver	BC	CANADA	862-555-7395	1977-03-27 12:00:00 ...	1990-10-25 12:00:00 AM	23112	16418	19, 6644 Sudan...	862	16,874
Store 23	3920 Noah Court	Yakima	WA	USA	170-555-8424	1977-07-16 12:00:00 ...	1987-07-24 12:00:00 AM	29182	19283	23, 3920 Noah ...	170	16,763
Store 5	1250 Coggins Drive	Guadalajara	Jalisco	MEXICO	801-555-4324	1978-09-18 12:00:00 ...	1991-06-29 12:00:00 AM	24597	15012	5, 1250 Coggin...	801	16,334
Store 10	7894 Rotherham Dr	Orizaba	Veracruz	MEXICO	212-555-4774	1979-04-13 12:00:00 ...	1982-01-30 12:00:00 AM	34791	26354	10, 7894 Rothe...	212	16,127
Store 24	2342 Waltham St.	San Diego	CA	USA	111-555-0303	1979-05-22 12:00:00 ...	1986-04-20 12:00:00 AM	27372	18293	24, 2342 Walth...	111	16,088
Store 20	3706 Marvelle Ln	Victoria	BC	CANADA	897-555-1931	1980-02-06 12:00:00 ...	1987-04-09 12:00:00 AM	34452	27463	20, 3706 Marve...	897	15,828
Store 6	5495 Mitchell Canyon R...	Beverly Hills	CA	USA	958-555-5002	1981-01-03 12:00:00 ...	1991-03-13 12:00:00 AM	23688	15337	6, 5495 Mitche...	958	15,496
Store 1	2853 Bailey Rd	Acapulco	Guerrero	MEXICO	262-555-5124	1982-01-09 12:00:00 ...	1990-12-05 12:00:00 AM	23593	17475	1, 2853 Bailey ...	262	15,125
Store 21	4093 Steven Circle	San Andres	DF	MEXICO	493-555-4781	1986-02-07 12:00:00 ...	1990-04-16 12:00:00 AM	32717	25453	21, 4093 Steve...	493	13,635
Store 4	433 St George Dr	Camacho	Zacatecas	MEXICO	304-555-1474	1994-09-27 12:00:00 ...	1995-12-01 12:00:00 AM	23759	16844	4, 433 St Georg...	304	10,481

- Which store opened first? Which opened most recently?

→ Store 22 *(Walla Walla, WA) opened first,* ***Store #4*** *(Camacho, Zacatecas) opened most recently*

2) Update the formula in #1 to calculate the number of days since the last remodel date, rather than the store opening date, and rename the column *days_since_remodel*.

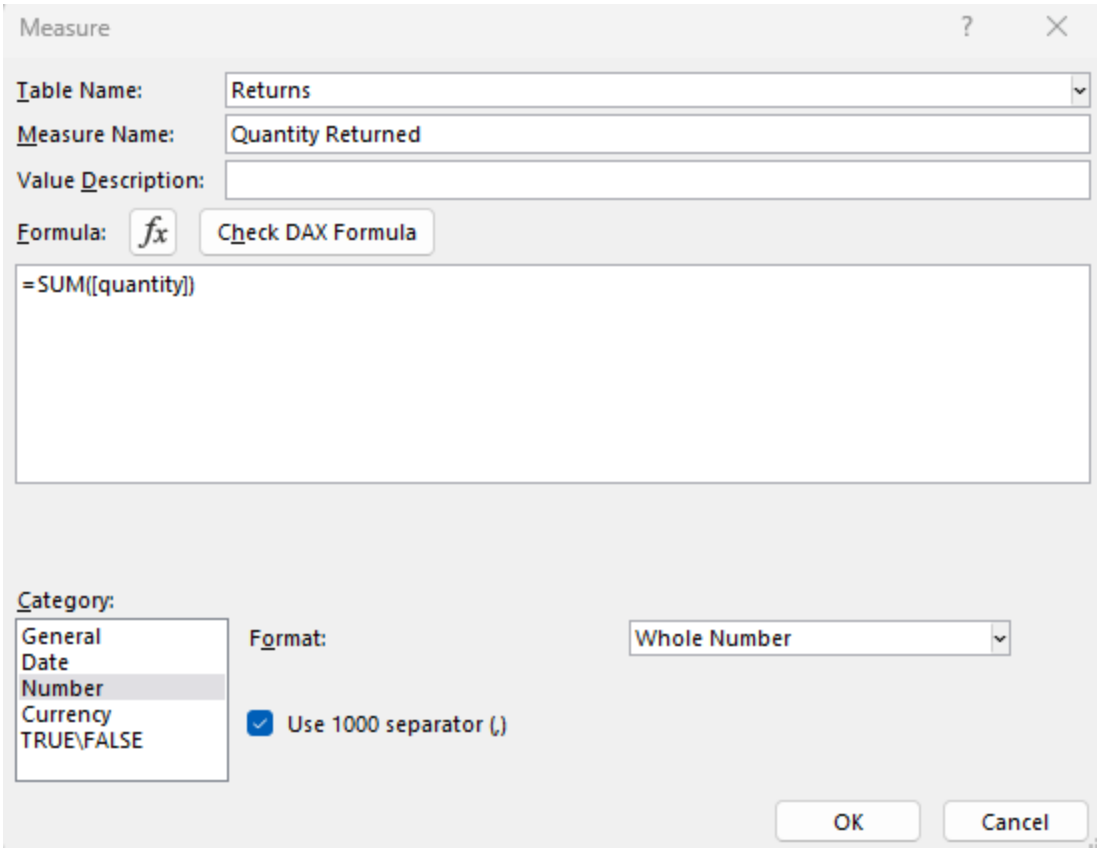


store_name	store_street_address	store_city	store_state	store_country	store_phone	first_opened_date	last_remodel_date	total_sqft	grocery_sqft	full_address	area_code	days_since_remodel
Store 13	5179 Valley Ave	Salem	OR	USA	977-555-2724	1957-04-13 12:00:00 ...	1997-11-10 12:00:00 AM	27694	18670	13, 5179 Valley...	977	9,341
Store 4	433 St George Dr	Camacho	Zacatecas	MEXICO	304-555-1474	1994-09-27 12:00:00 ...	1995-12-01 12:00:00 AM	23759	16844	4, 433 St Georg...	304	10,051
Store 12	1120 Westchester Pl	Hidalgo	Zacatecas	MEXICO	151-555-1702	1968-03-25 12:00:00 ...	1993-12-18 12:00:00 AM	30584	21938	12, 1120 Westc...	151	10,764
Store 5	1250 Coggins Drive	Guadalajara	Jalisco	MEXICO	801-555-4324	1978-09-18 12:00:00 ...	1991-06-29 12:00:00 AM	24597	15012	5, 1250 Coggin...	801	11,667
Store 6	5495 Mitchell Canyon R...	Beverly Hills	CA	USA	958-555-5002	1981-01-03 12:00:00 ...	1991-03-13 12:00:00 AM	23688	15337	6, 5495 Mitche...	958	11,775
Store 1	2853 Bailey Rd	Acapulco	Guerrero	MEXICO	262-555-5124	1982-01-09 12:00:00 ...	1990-12-05 12:00:00 AM	23593	17475	1, 2853 Bailey ...	262	11,873
Store 19	6644 Sudance Drive	Vancouver	BC	CANADA	862-555-7395	1977-03-27 12:00:00 ...	1990-10-25 12:00:00 AM	23112	16418	19, 6644 Sudan...	862	11,914
Store 21	4093 Steven Circle	San Andres	DF	MEXICO	493-555-4781	1986-02-07 12:00:00 ...	1990-04-16 12:00:00 AM	32717	25453	21, 4093 Steve...	493	12,106
Store 23	3920 Noah Court	Yakima	WA	USA	170-555-8424	1977-07-16 12:00:00 ...	1987-07-24 12:00:00 AM	29182	19283	23, 3920 Noah ...	170	13,103
Store 20	3706 Marvelle Ln	Victoria	BC	CANADA	897-555-1931	1980-02-06 12:00:00 ...	1987-04-09 12:00:00 AM	34452	27463	20, 3706 Marve...	897	13,209
Store 24	2342 Waltham St.	San Diego	CA	USA	111-555-0303	1979-05-22 12:00:00 ...	1986-04-20 12:00:00 AM	27372	18293	24, 2342 Walth...	111	13,563
Store 11	5371 Holland Circle	Portland	OR	USA	685-555-8995	1976-09-17 12:00:00 ...	1982-05-15 12:00:00 AM	20319	16232	11, 5371 Holla...	685	14,999
Store 10	7894 Rotherham Dr	Orizaba	Veracruz	MEXICO	212-555-4774	1979-04-13 12:00:00 ...	1982-01-30 12:00:00 AM	34791	26354	10, 7894 Rothe...	212	15,104
Store 7	1077 Wharf Drive	Los Angeles	CA	USA	477-555-7967	1971-05-21 12:00:00 ...	1981-10-20 12:00:00 AM	23598	14210	7, 1077 Wharf ...	477	15,206
Store 16	5922 La Salle Ct	Spokane	WA	USA	643-555-3645	1974-08-23 12:00:00 ...	1977-07-13 12:00:00 AM	30268	22063	16, 5922 La Sall...	643	16,766
Store 17	490 Risdon Road	Tacoma	WA	USA	855-555-5581	1970-05-30 12:00:00 ...	1976-06-23 12:00:00 AM	33858	22123	17, 490 Risdon ...	855	17,151
Store 18	6764 Glen Road	Hidalgo	Zacatecas	MEXICO	528-555-8317	1969-06-28 12:00:00 ...	1975-08-30 12:00:00 AM	38382	30351	18, 6764 Glen ...	528	17,449
Store 15	5006 Highland Drive	Seattle	WA	USA	893-555-1024	1969-07-24 12:00:00 ...	1973-10-19 12:00:00 AM	21215	13305	15, 5006 Highla...	893	18,129
Store 2	5203 Catanzaro Way	Bellingham	WA	USA	605-555-8203	1970-04-02 12:00:00 ...	1973-06-04 12:00:00 AM	28206	22271	2, 5203 Catanz...	605	18,266
Store 22	9606 Julpum Loop	Walla Walla	WA	USA	881-555-5117	1951-01-24 12:00:00 ...	1969-10-17 12:00:00 AM	35918	24837	22, 9606 Julpu...	881	19,592
Store 3	1501 Ramsey Circle	Bremerton	WA	USA	509-555-1596	1959-06-14 12:00:00 ...	1967-11-19 12:00:00 AM	39696	24390	3, 1501 Ramse...	509	20,290
Store 8	3173 Buena Vista Ave	Merida	Yucatan	MEXICO	797-555-3417	1958-09-23 12:00:00 ...	1967-11-18 12:00:00 AM	30797	20141	8, 3173 Buena ...	797	20,291
Store 9	1872 El Pintado Road	Mexico City	DF	MEXICO	439-555-3524	1955-03-18 12:00:00 ...	1959-06-07 12:00:00 AM	36509	22450	9, 1872 El Pinta...	439	23,377
Store 14	4365 Indigo Ct	San Francisco	CA	USA	135-555-4888	1957-11-24 12:00:00 ...	1958-01-07 12:00:00 AM	22478	15321	14, 4365 Indigo...	135	23,893

- Which store was remodeled most recently?

→ Store 13 Salem, OR

3) From the Power Pivot tab, create a new measure assigned to the **Returns** table named **Quantity Returned**, which sums the *quantity* column from the **Returns** data table (*format as whole number, with thousands separator*)



- Update the PivotTable layout to show **Quantity Returned** by *store_country* as **row labels**. What was the total quantity of returned products from stores in Canada?

→ 541

store_country	Quantity Returned
⊞CANADA	541
⊞MEXICO	2,317
⊞USA	5,431
Grand Total	**8,289**

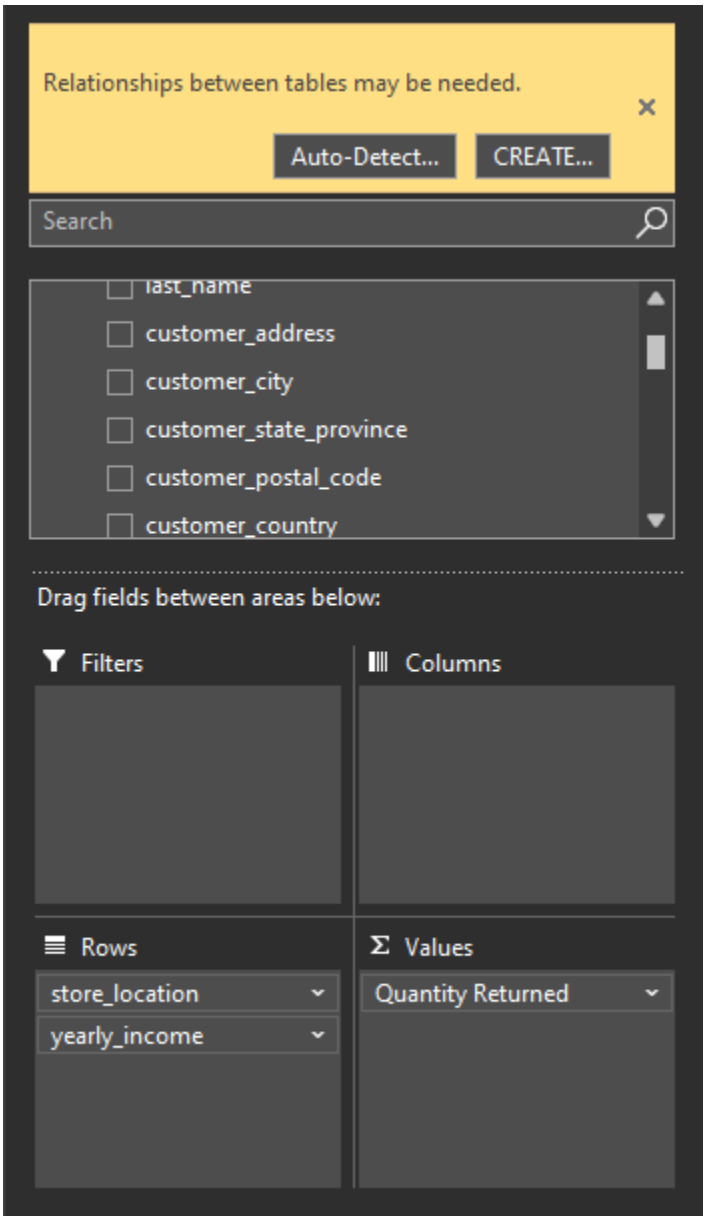
- Pull *product_brand* into the pivot as additional **row labels**. What was the total quantity of "Best Choice" products returned in stores from Mexico?

⊞Carlson	39
⊞Best Choice	39
⊞BBB Best	39
⊞CDR	42
⊞Big Time	43
⊞High Quality	43
⊞Denny	44
⊞Carrington	45

→ Best Choice ,39

- Replace *product_brand* with *yearly_income* from the **Customer_Lookup** table. What do you notice about the **Quantity Returned** values? Why is that happening?

→ *The Quantity Returned measure returns repeating values for every row, because there is no relationship between the* ***Returns*** *data table and the* ***Customer_Lookup*** *table*

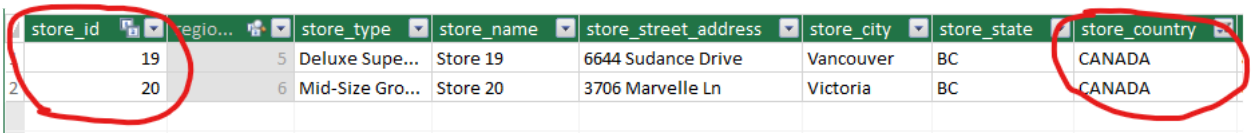


4) Update the PivotTable layout to just show **Quantity Returned** by *product_brand* (as row labels), and add a filter for ***store_country* = Canada**

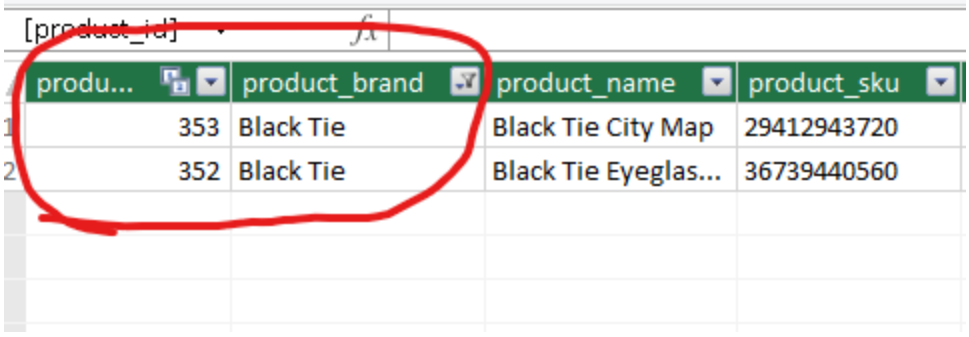
- You should see a **Quantity Returned** value of **3** for "Black Tie" products in Canada

store_location	CANADA
product_brand	Quantity Returned
American	5
Applause	2
Atomic	2
BBB Best	10
Best Choice	13
Better	8
Big Time	19
Bird Call	4
Black Tie	3
Blue Label	8
Blue Medal	1
Booker	6
Bravo	5
Carlson	7
Carrington	8
CDR	7

- **Replicate each step of the measure calculation** for that cell by actually filtering the related tables in the data model, and confirm that the value shown in the Data View calculation pane matches the pivot

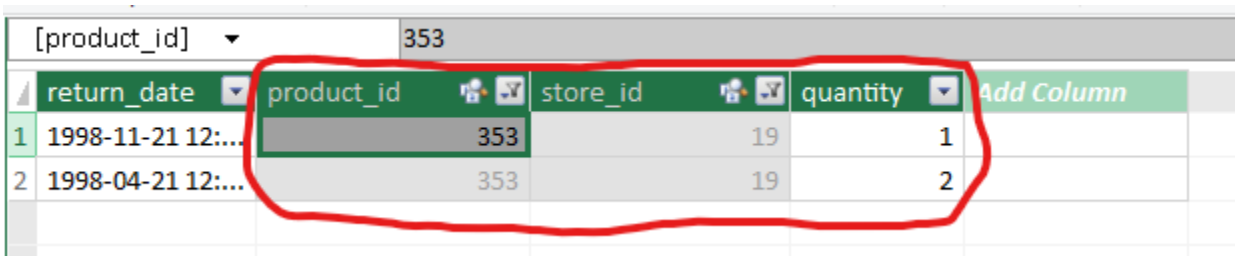


	store_id	regio...	store_type	store_name	store_street_address	store_city	store_state	store_country
1	19	5	Deluxe Supe...	Store 19	6644 Sudance Drive	Vancouver	BC	CANADA
2	20	6	Mid-Size Gro...	Store 20	3706 Marvelle Ln	Victoria	BC	CANADA



[product_id]

	produ...	product_brand	product_name	product_sku
1	353	Black Tie	Black Tie City Map	29412943720
2	352	Black Tie	Black Tie Eyeglas...	36739440560



[product_id]	353			
	return_date	product_id	store_id	quantity
1	1998-11-21 12:...	353	19	1
2	1998-04-21 12:...	353	19	2