Assignment No.: 06

Title: Use Business intelligence and analytics tools to recommend the combination of share purchases and sales for maximizing the profit.

Aim: Use Business intelligence and analytics tools to recommend the combination of share purchases and sales for maximizing the profit.Use Business intelligence and analytics tools to recommend the combination of share purchases and sales for maximizing the profit.

Objectives:

- To study the Business intelligence.
- To study the analytics tools.

Theory:

Go to the Fact Orders sheet of the Northwind Traders data workbook. Individually select all values in the columns OrderDate, RequiredDate and ShippedDateand paste them in one single column in a new sheet. The below 2

snapshots will assist you in doing the same.

	OrderID	CustomerSK	EmployeeSK	OrderDate	RequiredDate	ShippedDate	ShipperSK	Freight	ShipName	ShipAddress
1940	10999	42	6	4/3/1998 0:00	5/1/1998 0:00	4/10/1998 0:00	2	96.35	Ottilies Käseladen	Mehrheimerstr. 369
1941	10999	42	6	4/3/1998 0:00	5/1/1998 0:00	4/10/1998 0:00	2	96.35	Ottilies Käseladen	Mehrheimerstr. 369
1942	11000	79	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	3	55.12	Rattlesnake Canyon Grocery	2817 Milton Dr.
1943	11000	79	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	3	55.12	Rattlesnake Canyon Grocery	2817 Milton Dr.
1944	11000	79	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	3	55.12	Rattlesnake Canyon Grocery	2817 Milton Dr.
1945	11001	38	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	2	197.3	Folk och fä HB	Åkergatan 24
1946	11001	38	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	2	197.3	Folk och fä HB	Åkergatan 24
1947	11001	38	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	2	197.3	Folk och fä HB	Åkergatan 24
1948	11001	38	2	4/6/1998 0:00	5/4/1998 0:00	4/14/1998 0:00	2	197.3	Folk och fä HB	Åkergatan 24
1949	11002	83	4	4/6/1998 0:00	5/4/1998 0:00	4/16/1998 0:00	1	141.16	Save-a-lot Markets	187 Suffolk Ln.
1950	11002	83	4	4/6/1998 0:00	5/4/1998 0:00	4/16/1998 0:00	1	141.16	Save-a-lot Markets	187 Suffolk Ln.
1951	11002	83	4	4/6/1998 0:00	5/4/1998 0:00	4/16/1998 0:00	1	141.16	Save-a-lot Markets	187 Suffolk Ln.
1952	11002	83	4	4/6/1998 0:00	5/4/1998 0:00	4/16/1998 0:00	1	141.16	Save-a-lot Markets	187 Suffolk Ln.
1953	11003	29	3	4/6/1998 0:00	5/4/1998 0:00	4/8/1998 0:00	3	14.91	The Cracker Box	55 Grizzly Peak Rd.
1954	11003	29	3	4/6/1998 0:00	5/4/1998 0:00	4/8/1998 0:00	3	14.91	The Cracker Box	55 Grizzly Peak Rd.
1955	11003	29	3	4/6/1998 0:00	5/4/1998 0:00	4/8/1998 0:00	3	14.91	The Cracker Box	55 Grizzly Peak Rd.
1956	11004	71	3	4/7/1998 0:00	5/5/1998 0:00	4/20/1998 0:00	1	44.84	Maison Dewey	Rue Joseph-Bens 532
1957	11004	71	3	4/7/1998 0:00	5/5/1998 0:00	4/20/1998 0:00	1	44.84	Maison Dewey	Rue Joseph-Bens 532
1958	11005	31	2	4/7/1998 0:00	5/5/1998 0:00	4/10/1998 0:00	1	0.75	Wilman Kala	Keskuskatu 45
1959	11005	31	2	4/7/1998 0:00	5/5/1998 0:00	4/10/1998 0:00	1	0.75	Wilman Kala	Keskuskatu 45
1960	11006	19	3	4/7/1998 0:00	5/5/1998 0:00	4/15/1998 0:00	2	25.19	Great Lakes Food Market	2732 Baker Blvd.
1961	11006	19	3	4/7/1998 0:00	5/5/1998 0:00	4/15/1998 0:00	2	25.19	Great Lakes Food Market	2732 Baker Blvd.
1962	11007	77	8	4/8/1998 0:00	5/6/1998 0:00	4/13/1998 0:00	2	202.24	Princesa Isabel Vinhos	Estrada da saúde n. 58
1963	11007	77	8	4/8/1998 0:00	5/6/1998 0:00	4/13/1998 0:00	2	202.24	Princesa Isabel Vinhos	Estrada da saúde n. 58
1964	11007	77	8	4/8/1998 0:00	5/6/1998 0:00	4/13/1998 0:00	2	202.24	Princesa Isabel Vinhos	Estrada da saúde n. 58

Orders | Customer | Employee | Product | Shipper | Time | Fact Orders | Sheet1

Figure 1: Output

Once all the dates are copied, select the data tab, select the Remove Duplicates option and click OK twice. Use the Month and Year Excel functions to fetch the corresponding month numbers and years from the dates. Make sure all the dates have the respective month numbers and years in the adjacent columns as shown below in the 2 snapshots.

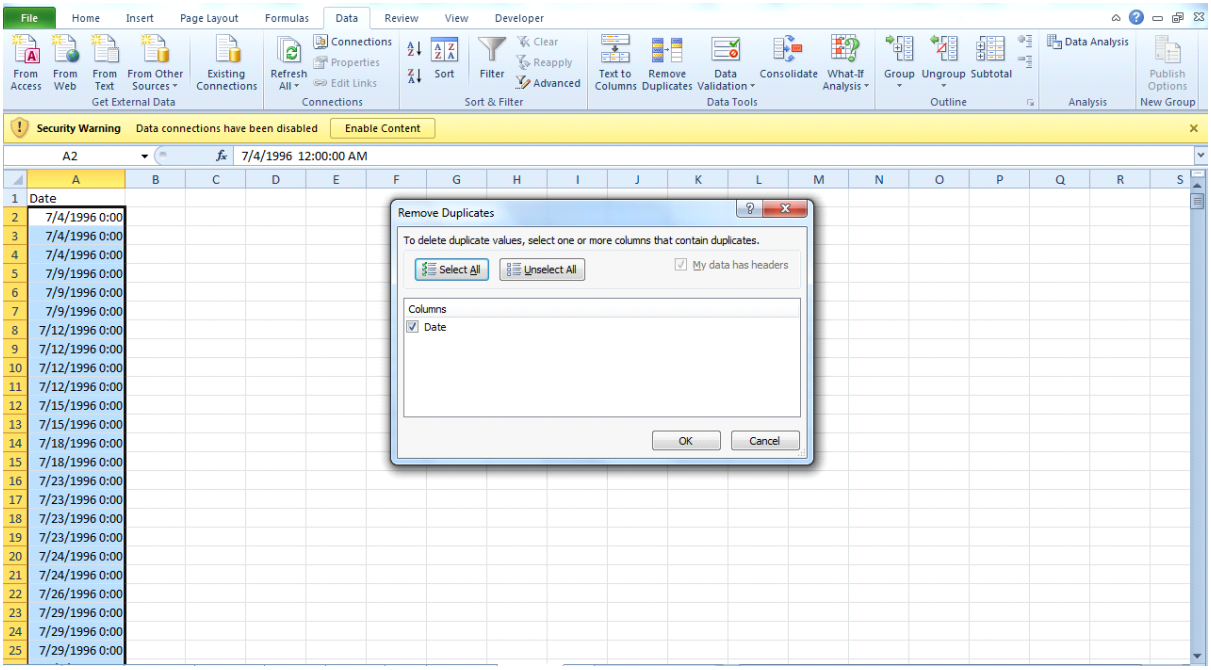
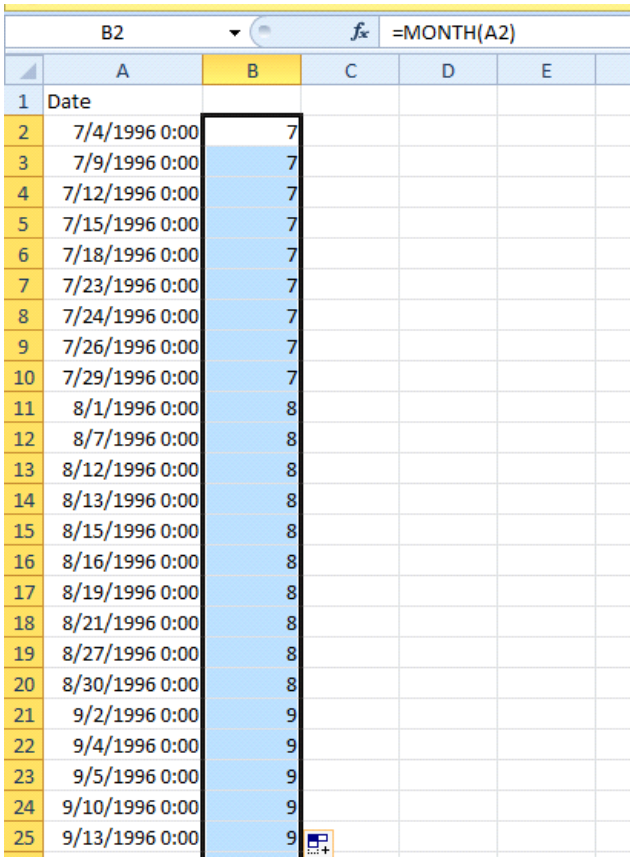


Figure 2:Output



	A	B
1	Date	
2	7/4/1996 0:00	7
3	7/9/1996 0:00	7
4	7/12/1996 0:00	7
5	7/15/1996 0:00	7
6	7/18/1996 0:00	7
7	7/23/1996 0:00	7
8	7/24/1996 0:00	7
9	7/26/1996 0:00	7
10	7/29/1996 0:00	7
11	8/1/1996 0:00	8
12	8/7/1996 0:00	8
13	8/12/1996 0:00	8
14	8/13/1996 0:00	8
15	8/15/1996 0:00	8
16	8/16/1996 0:00	8
17	8/19/1996 0:00	8
18	8/21/1996 0:00	8
19	8/27/1996 0:00	8
20	8/30/1996 0:00	8
21	9/2/1996 0:00	9
22	9/4/1996 0:00	9
23	9/5/1996 0:00	9
24	9/10/1996 0:00	9
25	9/13/1996 0:00	9

Figure 3: Output

C2 =YEAR(A2)

	A	B	C	D
1	Date	Month Number	Year	
2	7/4/1996 0:00	7	1996	
3	7/9/1996 0:00	7	1996	
4	7/12/1996 0:00	7	1996	
5	7/15/1996 0:00	7	1996	
6	7/18/1996 0:00	7	1996	
7	7/23/1996 0:00	7	1996	
8	7/24/1996 0:00	7	1996	
9	7/26/1996 0:00	7	1996	
10	7/29/1996 0:00	7	1996	
11	8/1/1996 0:00	8	1996	
12	8/7/1996 0:00	8	1996	
13	8/12/1996 0:00	8	1996	
14	8/13/1996 0:00	8	1996	
15	8/15/1996 0:00	8	1996	
16	8/16/1996 0:00	8	1996	
17	8/19/1996 0:00	8	1996	
18	8/21/1996 0:00	8	1996	
19	8/27/1996 0:00	8	1996	
20	8/30/1996 0:00	8	1996	
21	9/2/1996 0:00	9	1996	
22	9/4/1996 0:00	9	1996	
23	9/5/1996 0:00	9	1996	
24	9/10/1996 0:00	9	1996	
25	9/13/1996 0:00	9	1996	

Figure 4: Output

Create a dataset in a new excel sheet as shown below:

	Month Number of year	Month Name	Calendar Quarter
2	1	January	Quarter 1
3	2	February	Quarter 1
4	3	March	Quarter 1
5	4	April	Quarter 2
6	5	May	Quarter 2
7	6	June	Quarter 2
8	7	July	Quarter 3
9	8	August	Quarter 3
10	9	September	Quarter 3
11	10	October	Quarter 4
12	11	November	Quarter 4
13	12	December	Quarter 4
14			

Figure 5: Output

Select the entire dataset and name it as?Time in the Name Box as shownbelow. Do not forget to hit Enter once name is typed in the name box.

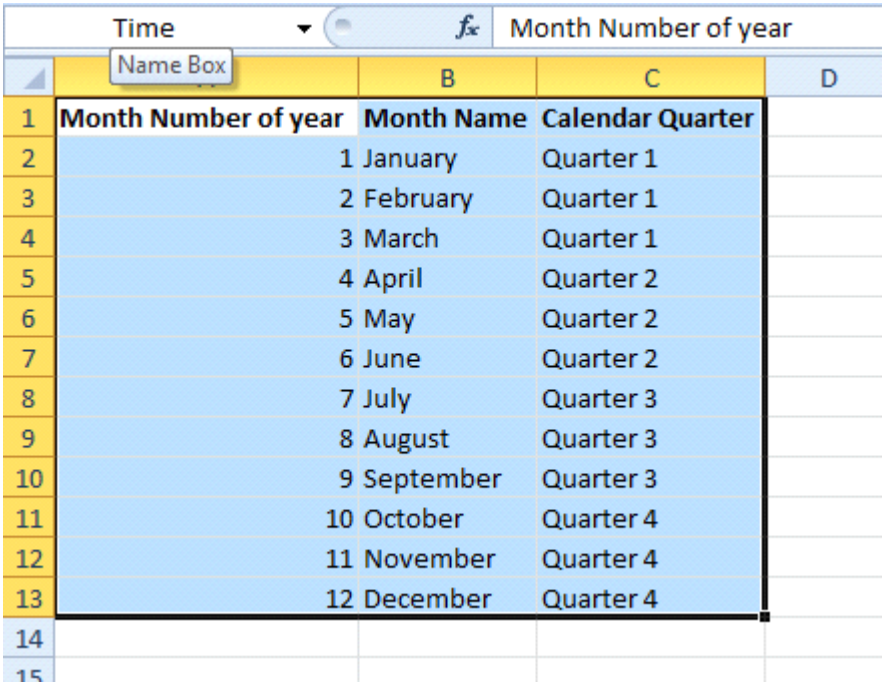


Figure 6: Output

In the sheet where we have the Date, Month Number and Year, add a newcolumn ? ?Month Name? and type the vlookup formula as shown below;

	Date	Month Number	Year	Month Name	Calendar Quarter
2	7/4/1996 0:00	7	1996	=VLOOKUP(	
3	7/9/1996 0:00	7	1996	J	
4	7/12/1996 0:00	7	1996	July	Quarter 3
5	7/15/1996 0:00	7	1996	July	Quarter 3

VLOOKUP(**lookup_value**, table_array, col_index_num, [range_lookup])

Figure 7: Output

Follow the same procedure for Calendar Quarter and use the formula=vlookup(B2,Time,3,False).

Organizing and Analyzing the Data When we have a large amount of data,we want to organize it, analyze it, get summary information and then graph it.We need analytical tools for this, and the PivotTable and PivotChart tools in Microsoft Excel are some of the most popular tools. The data does not need tobe in one workbook. We may analyze data from multiple workbooks withouttoo much trouble.

Basics of PivotTables Pivot Tables allow us to consolidate huge amounts of data with similar fields and analyze the consolidated data or just make asummary of the consolidated data. The PivotTable in Excel gives us a simpleway to create a PivotTable for our data. Please note that the data should haveat least 1 field in common, or else the consolidation will not work and any spelling error in the data will produce incorrect PivotTables. PivotTables inExcel are synonymous to Cubes in other analytical tools.Basics of Charts are used to graphically represent data. The PivotChart tool in Excel provides a simple way to create a PivotTable and anaccompanying chart. Remember, a chart is only as good as the data or thesummary table (PivotTable). If we try to cram too many fields into a chart,we will end up with a non-informative chart. We must always try and keep itsimple and informative.Let us see some scenarios which explore the different ways of analyzing theNorthwind data.

Scenario 1: Graph the percentage sales over time to see the trends.

Here is the answer:

Sum of Quantity	Column Labels								
Row Labels	Beverages	Condiments	Confections	Dairy Products	Grains/Cereals	Meat/Poultry	Produce	Seafood	Grand Total
Calendar 1996	20.85%	11.69%	15.00%	18.78%	6.30%	8.88%	5.02%	13.49%	100.00%
Calendar 1997	15.80%	11.02%	15.90%	18.23%	10.18%	8.68%	5.76%	14.43%	100.00%
Calendar 1998	21.15%	9.05%	14.96%	17.17%	7.76%	7.45%	5.76%	16.70%	100.00%
Grand Total	**18.38%**	**10.45%**	**15.45%**	**17.95%**	**8.78%**	**8.29%**	**5.65%**	**15.07%**	**100.00%**

Figure 8: Output

Creating a PivotTable and PivotChart

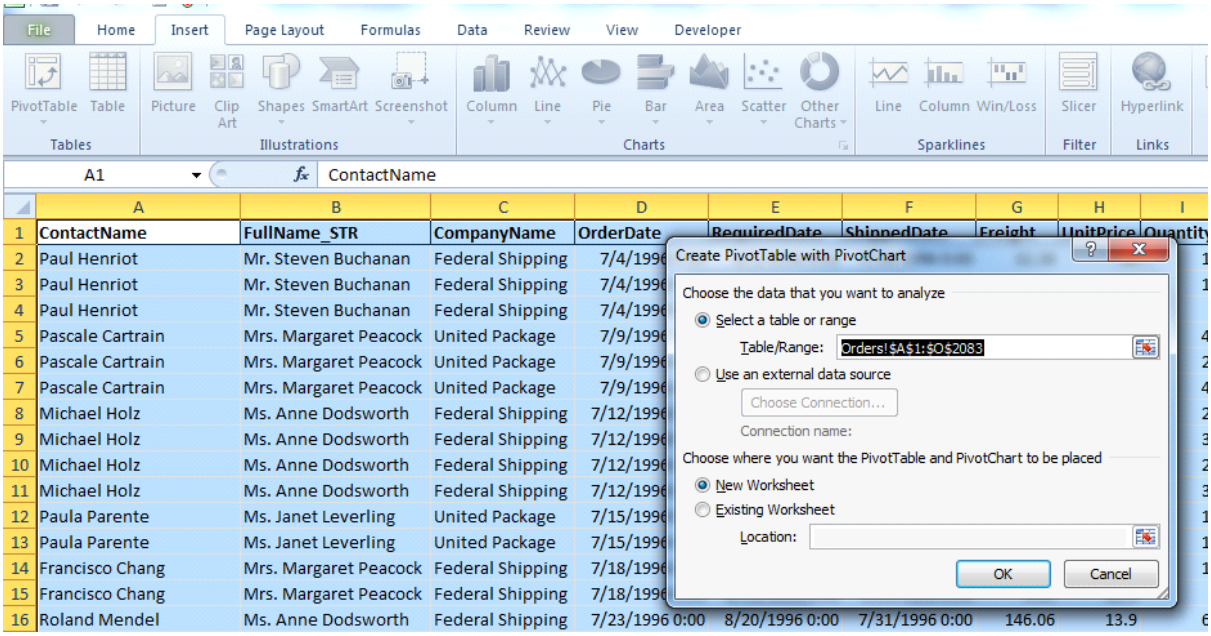
1. Open the Northwind Traders data.xlsx workbook.

2. Go to the Insert tab on the ribbon.

3. Look for the Tables group, and select PivotTable. Choose PivotChart

from the drop-down options.

4. You should now see the Create PivotTable with PivotChart dialog box.



	A	B	C	D	E	F	G	H	I
1	ContactName	FullName_STR	CompanyName	OrderDate	RequiredDate	ShippedDate	Freight	UnitPrice	Quantity
2	Paul Henriot	Mr. Steven Buchanan	Federal Shipping	7/4/1996					1
3	Paul Henriot	Mr. Steven Buchanan	Federal Shipping	7/4/1996					1
4	Paul Henriot	Mr. Steven Buchanan	Federal Shipping	7/4/1996					
5	Pascale Cartrain	Mrs. Margaret Peacock	United Package	7/9/1996					4
6	Pascale Cartrain	Mrs. Margaret Peacock	United Package	7/9/1996					2
7	Pascale Cartrain	Mrs. Margaret Peacock	United Package	7/9/1996					4
8	Michael Holz	Ms. Anne Dodsworth	Federal Shipping	7/12/1996					2
9	Michael Holz	Ms. Anne Dodsworth	Federal Shipping	7/12/1996					3
10	Michael Holz	Ms. Anne Dodsworth	Federal Shipping	7/12/1996					2
11	Michael Holz	Ms. Anne Dodsworth	Federal Shipping	7/12/1996					3
12	Paula Parente	Ms. Janet Leverling	United Package	7/15/1996					1
13	Paula Parente	Ms. Janet Leverling	United Package	7/15/1996					1
14	Francisco Chang	Mrs. Margaret Peacock	Federal Shipping	7/18/1996					1
15	Francisco Chang	Mrs. Margaret Peacock	Federal Shipping	7/18/1996					
16	Roland Mendel	Ms. Anne Dodsworth	Federal Shipping	7/23/1996 0:00	8/20/1996 0:00	7/31/1996 0:00	146.06	13.9	6

Figure 9: Output

5. There are a couple of things you?ll need to de_ne in order to create yourPivotTable. First, you need to tell Excel where to get the data from. Inthe Choose the data you want to analyze section of the dialog box, youwill define where Excel is going to get the data for the PivotTable from.

Since the data for this example is within the workbook, we will chooseSelect a table or range.

(a) Under Table/Range, Excel might be smart enough to automaticallyselect the proper range of data from the worksheet.

(b) If it does not, click on the little button on the right of the range box.Select the range of data. In the example, we have data in cells A1 toO2083. This means that we have selected fifteen columns (A throughO) and 2083 rows.

6. In the Choose where you want the PivotTable and PivotChart to be placedsection of the dialog box, you can choose to either create the PivotTableand the accompanying PivotChart on a new worksheet in the Excel work-book, or you can place both on the current worksheet. For this exercise, wewill choose to create a new worksheet for the PivotTable and PivotChart.To do this, select New Worksheet, and click OK. You should now be takento the new worksheet.

1. While on the new worksheet, you should see four new tabs on the ribbon:

(a) Design, Layout, Format, and Analyze.

(b) You should also see the PivotTable Field List and the PivotChartFilter Pane (if you dont see the panes, click on the Analyze tab inthe ribbon, and, in the Show/Hide group, make sure that at leastField List is selected).

2. You now need to set up the PivotTable so that you can get the data summary you desire. The new tabs, as well as the two panes, will be used tohelp format your PivotTable and PivotChart to do the necessary analysis.For this exercise, let‟s see the total number of products sold by category ineach year. In the PivotTable Field List, select Quantity, Year and CategoryName to add to the PivotTable report. Place the CategoryName in the Legends field, Year in the Axis Field and Quantity in the Value field. Youshould see the PivotTable and PivotChart update appropriately. Selectthe chart type as Stacked List to get the chart as shown below

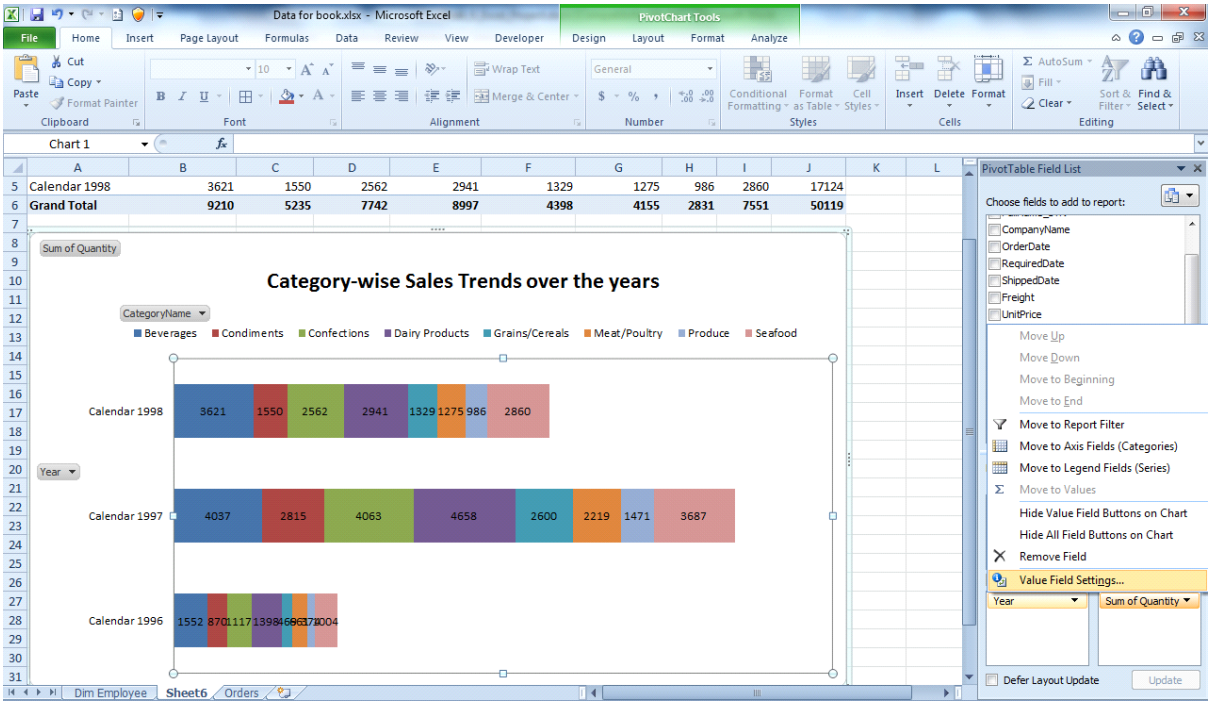
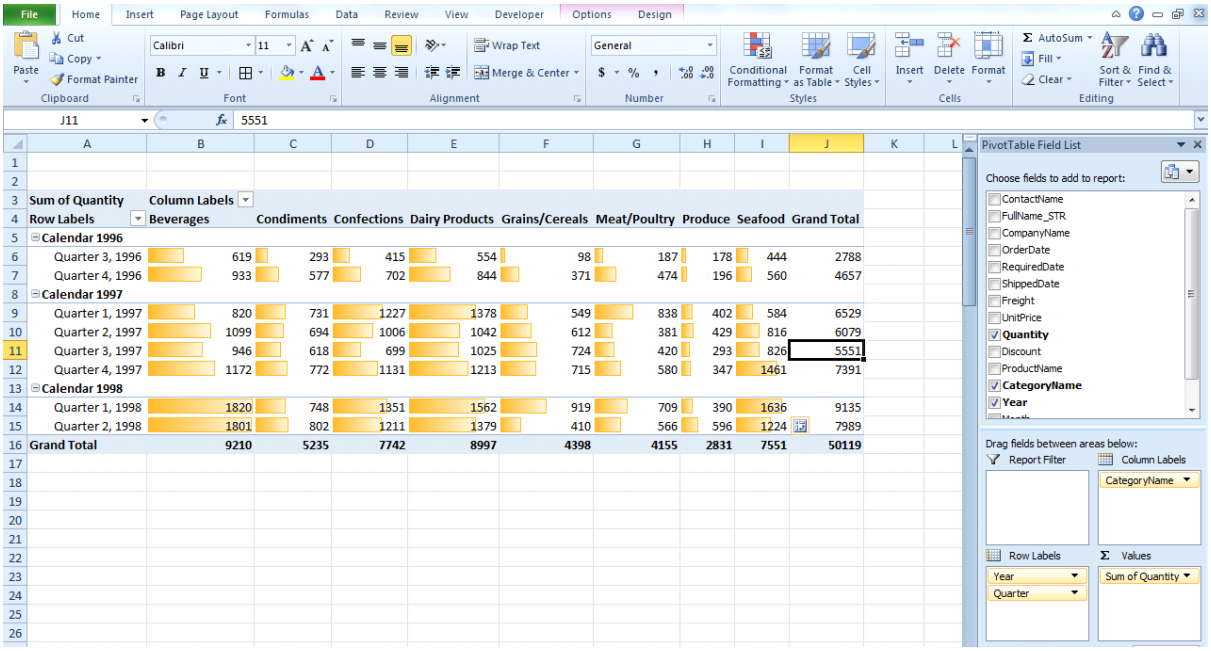


Figure 10: Output

You can use di_erent functions on the _eld placed under Values. For example, if you wanted to see average quantity for each category, you would click on Sum of Quantity and choose Value Field Settings. In the Value Field Settings dialog box, choose the ?Show Values As? tab and select the % of Row Total function to apply to Sum of Quantity (see the screenshot below). A number ofothe functions are available here to use in your PivotTable.

Scenario 2: Pivot the data to see total sales by quarter and category. Arethere any highs? Are there any lows that need to be addressed? Here is the solution:



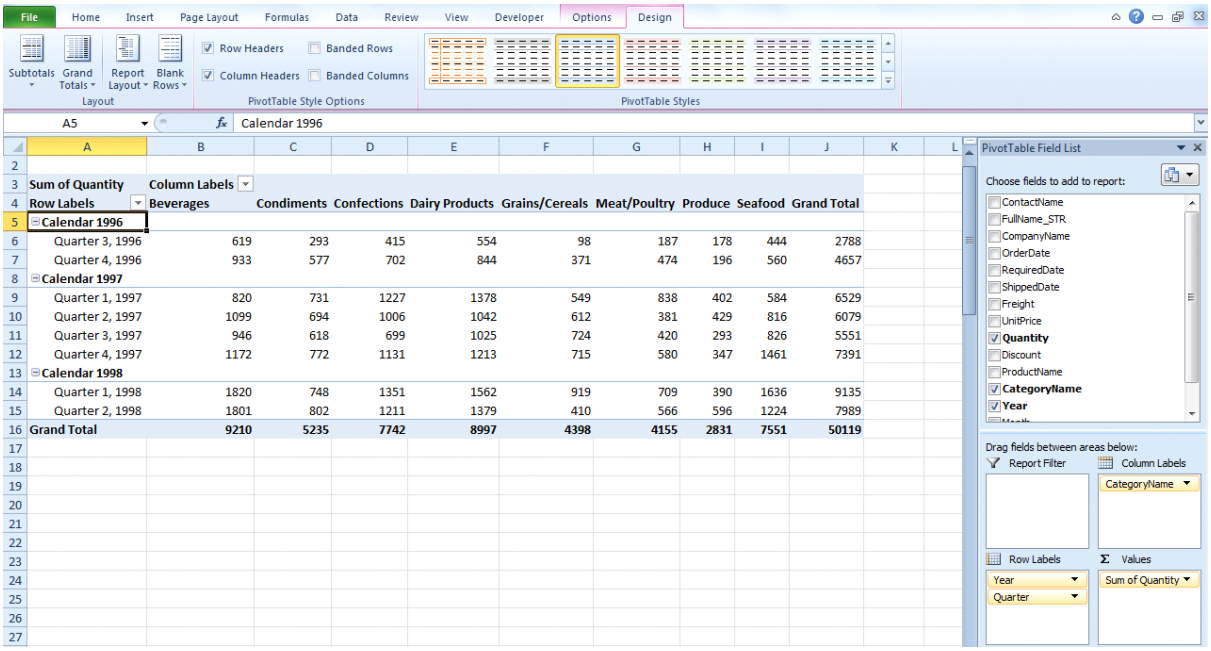
Sum of Quantity	Column Labels								
Row Labels	Beverages	Condiments	Confections	Dairy Products	Grains/Cereals	Meat/Poultry	Produce	Seafood	Grand Total
Calendar 1996									
Quarter 3, 1996	619	293	415	554	98	187	178	444	2788
Quarter 4, 1996	933	577	702	844	371	474	196	560	4657
Calendar 1997									
Quarter 1, 1997	820	731	1227	1378	549	838	402	584	6529
Quarter 2, 1997	1099	694	1006	1042	612	381	429	816	6079
Quarter 3, 1997	946	618	699	1025	724	420	293	826	5551
Quarter 4, 1997	1172	772	1131	1213	715	580	347	1461	7391
Calendar 1998									
Quarter 1, 1998	1820	748	1351	1562	919	709	390	1636	9135
Quarter 2, 1998	1801	802	1211	1379	410	566	596	1224	7989
Grand Total	9210	5235	7742	8997	4398	4155	2831	7551	50119

Figure 11: Output

Here is how we do it:

1. Select the the entire table in the Orders worksheet.

2. Go to the Insert menu, select PivotTable.



Sum of Quantity	Column Labels								
Row Labels	Beverages	Condiments	Confections	Dairy Products	Grains/Cereals	Meat/Poultry	Produce	Seafood	Grand Total
Calendar 1996									
Quarter 3, 1996	619	293	415	554	98	187	178	444	2788
Quarter 4, 1996	933	577	702	844	371	474	196	560	4657
Calendar 1997									
Quarter 1, 1997	820	731	1227	1378	549	838	402	584	6529
Quarter 2, 1997	1099	694	1006	1042	612	381	429	816	6079
Quarter 3, 1997	946	618	699	1025	724	420	293	826	5551
Quarter 4, 1997	1172	772	1131	1213	715	580	347	1461	7391
Calendar 1998									
Quarter 1, 1998	1820	748	1351	1562	919	709	390	1636	9135
Quarter 2, 1998	1801	802	1211	1379	410	566	596	1224	7989
Grand Total	9210	5235	7742	8997	4398	4155	2831	7551	50119

Figure 12: Output

3. Select the columns as highlighted in the circle below (make sure Quantityis represented as Sum of Quantity. Else use the previously used ValueField Settings option to sum it).

4. Select the data as shown in the screenshot below

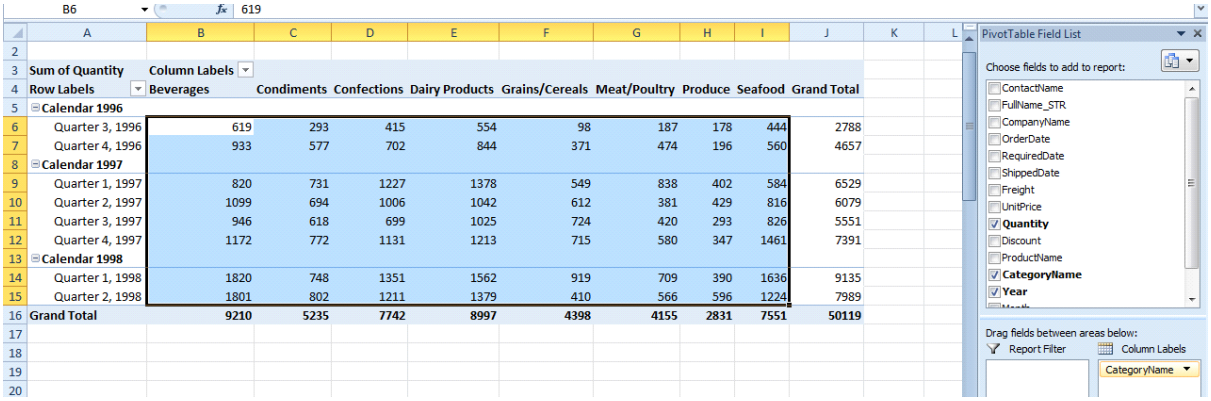


Figure 13: Output

5. Apply the conditional formatting as shown below. (Make sure you are inthe Home menu to view the Conditional Formatting tab)

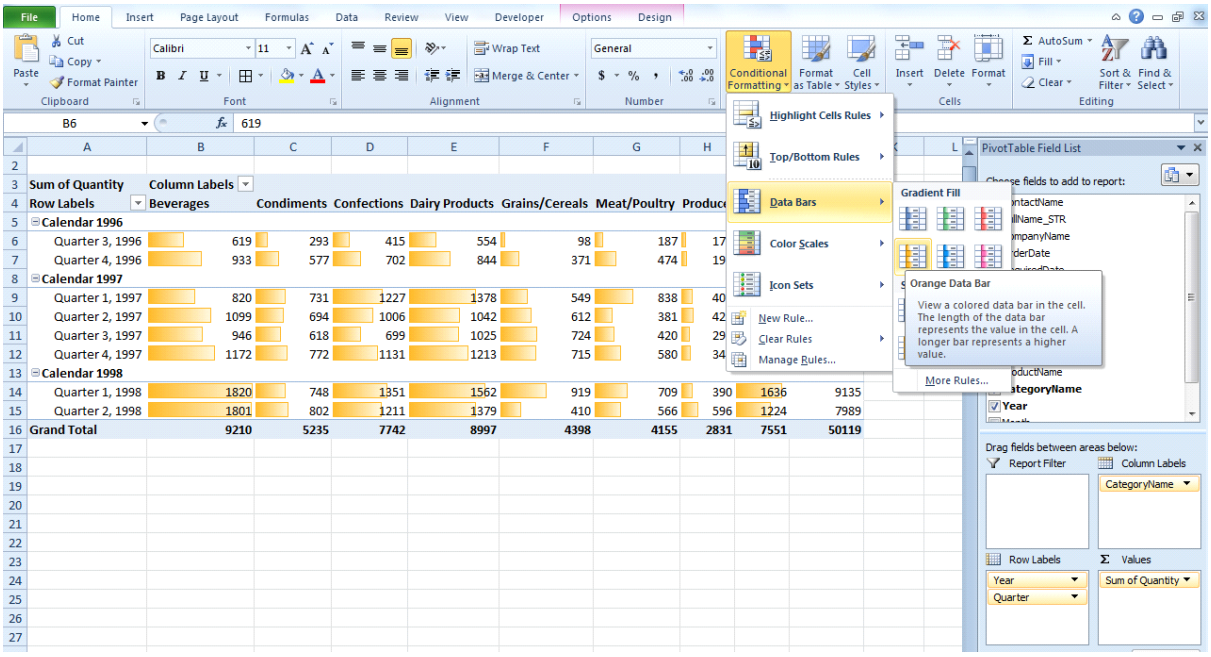
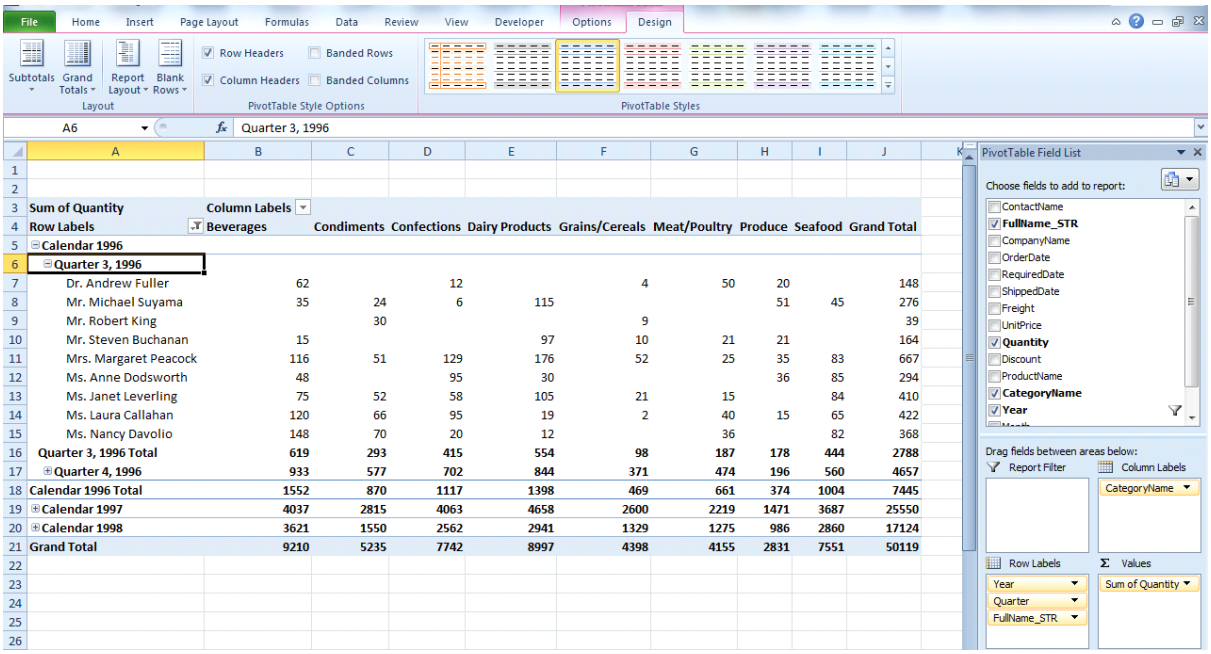


Figure 14: Output

By applying conditional formatting we are able to achieve better visualisationof data. It can be observed that the 2nd quarter of 1998 had the highest totalsales and also the beverages category had the highest total sales for all years,closely followed by dairy products.

Scenario 3: How are quarterly sales totals by salesperson? Subtotal thedata. Here is the answer:

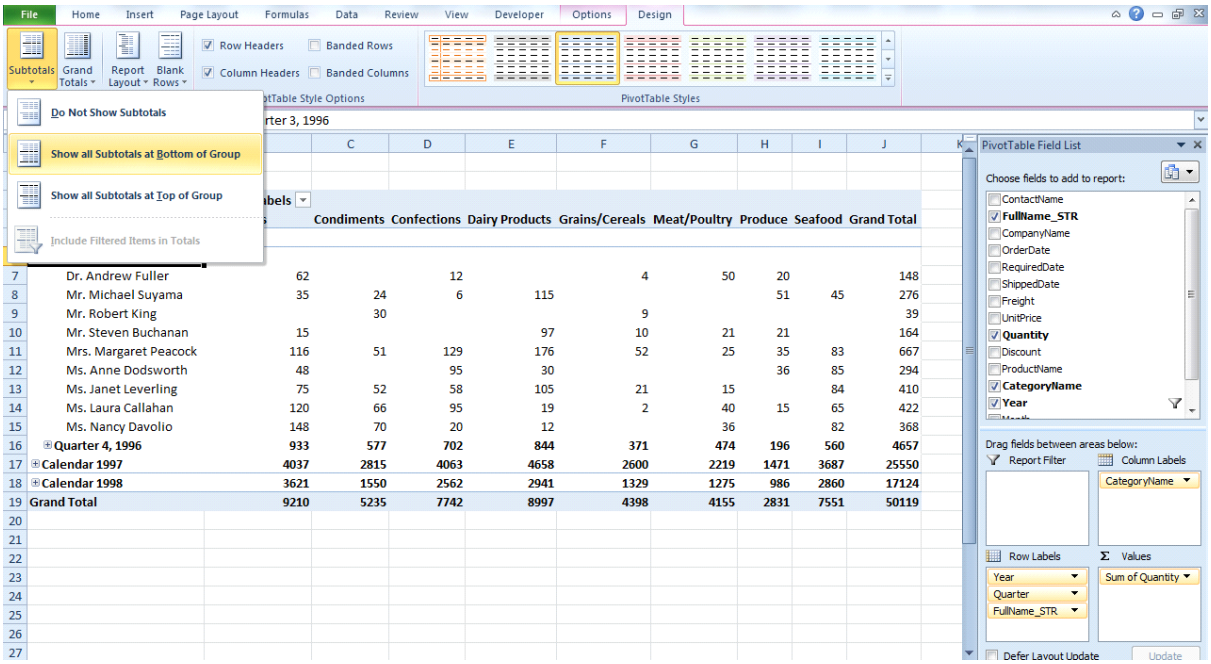


Sum of Quantity	Column Labels								
Row Labels	Beverages	Condiments	Confections	Dairy Products	Grains/Cereals	Meat/Poultry	Produce	Seafood	Grand Total
Calendar 1996									
Quarter 3, 1996									
Dr. Andrew Fuller	62		12		4	50	20		148
Mr. Michael Suyama	35	24	6	115			51	45	276
Mr. Robert King		30			9				39
Mr. Steven Buchanan	15			97	10	21	21		164
Mrs. Margaret Peacock	116	51	129	176	52	25	35	83	667
Ms. Anne Dodsworth	48		95	30			36	85	294
Ms. Janet Leverling	75	52	58	105	21	15		84	410
Ms. Laura Callahan	120	66	95	19	2	40	15	65	422
Ms. Nancy Davolio	148	70	20	12		36		82	368
Quarter 3, 1996 Total	619	293	415	554	98	187	178	444	2788
Quarter 4, 1996	933	577	702	844	371	474	196	560	4657
Calendar 1996 Total	1552	870	1117	1398	469	661	374	1004	7445
Calendar 1997	4037	2815	4063	4658	2600	2219	1471	3687	25550
Calendar 1998	3621	1550	2562	2941	1329	1275	986	2860	17124
Grand Total	9210	5235	7742	8997	4398	4155	2831	7551	50119

Figure 15: Output

Here is how it is done:

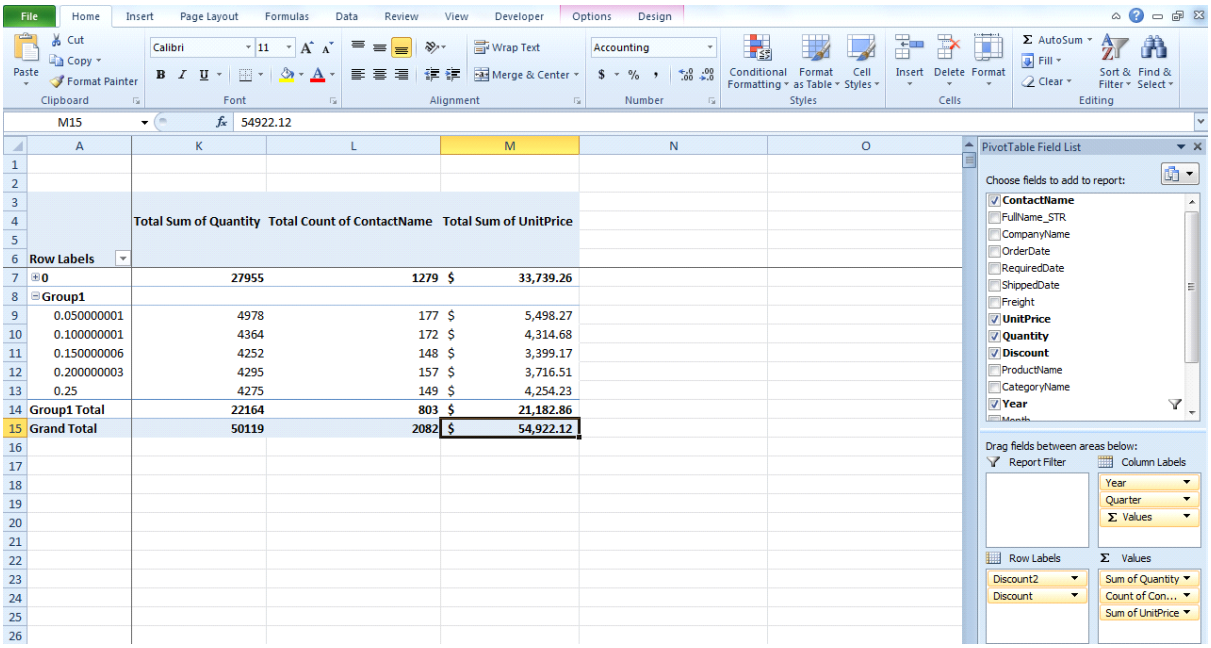
Just drag and drop FullName STR (Name of the salesperson) to the Row Label.Then, in the PivotTable tools, select the Design menu, in the Design menu selectthe Subtotals tab and then select the option-Show all Subtotals at Bottom of Group as shown below.



	Condiments	Confections	Dairy Products	Grains/Cereals	Meat/Poultry	Produce	Seafood	Grand Total
Dr. Andrew Fuller	62	12		4	50	20		148
Mr. Michael Suyama	35	24	6	115		51	45	276
Mr. Robert King		30			9			39
Mr. Steven Buchanan	15			97	10	21	21	164
Mrs. Margaret Peacock	116	51	129	176	52	25	35	83	667
Ms. Anne Dodsworth	48		95	30			36	85	294
Ms. Janet Leverling	75	52	58	105	21	15		84	410
Ms. Laura Callahan	120	66	95	19	2	40	15	65	422
Ms. Nancy Davolio	148	70	20	12		36		82	368
Quarter 4, 1996	933	577	702	844	371	474	196	560	4657
Calendar 1997	4037	2815	4063	4658	2600	2219	1471	3687	25550
Calendar 1998	3621	1550	2562	2941	1329	1275	986	2860	17124
Grand Total	9210	5235	7742	8997	4398	4155	2831	7551	50119

Figure 16: Output

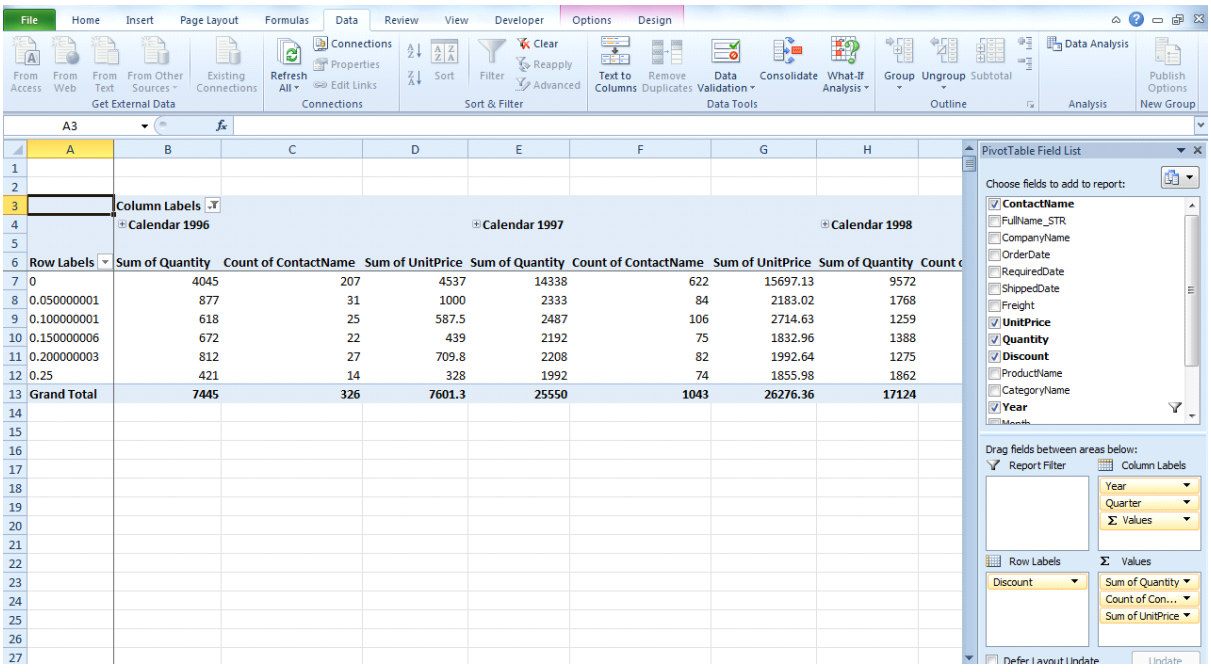
Scenario 4: Is there any increase in sales when the products are sold ata discounted rate? Here is the answer: In the Pivot Table, drag the Year and



Row Labels	Total Sum of Quantity	Total Count of ContactName	Total Sum of UnitPrice
0	27955	1279	$ 33,739.26
Group1			
0.050000001	4978	177	$ 5,498.27
0.100000001	4364	172	$ 4,314.68
0.150000006	4252	148	$ 3,399.17
0.200000003	4295	157	$ 3,716.51
0.25	4275	149	$ 4,254.23
Group1 Total	22164	803	$ 21,182.86
Grand Total	50119	2082	$ 54,922.12

Figure 17: Output

the Quarter as Column Labels, Discount as the Row Labels and Quantity andUnit Price as Values. To see how many customers bought something at differentdiscount rates drag the ContactName to Values. You will see the ContactNameautomatically changing to Count of ContactName. The screenshot is shownbelow for reference.



Row Labels	Calendar 1996 Sum of Quantity	Calendar 1996 Count of ContactName	Calendar 1996 Sum of UnitPrice	Calendar 1997 Sum of Quantity	Calendar 1997 Count of ContactName	Calendar 1997 Sum of UnitPrice	Calendar 1998 Sum of Quantity	Calendar 1998 Count
0	4045	207	4537	14338	622	15697.13	9572	
0.050000001	877	31	1000	2333	84	2183.02	1768	
0.100000001	618	25	587.5	2487	106	2714.63	1259	
0.150000006	672	22	439	2192	75	1832.96	1388	
0.200000003	812	27	709.8	2208	82	1992.64	1275	
0.25	421	14	328	1992	74	1855.98	1862	
Grand Total	7445	326	7601.3	25550	1043	26276.36	17124	

Figure 18: Output

Except for 0, ctrl select the row label and right click. You will see an optioncalled Group in the menu that appears. Select that option as shown below.Once it is selected, you will be able to see the performance of products with and without discounts.

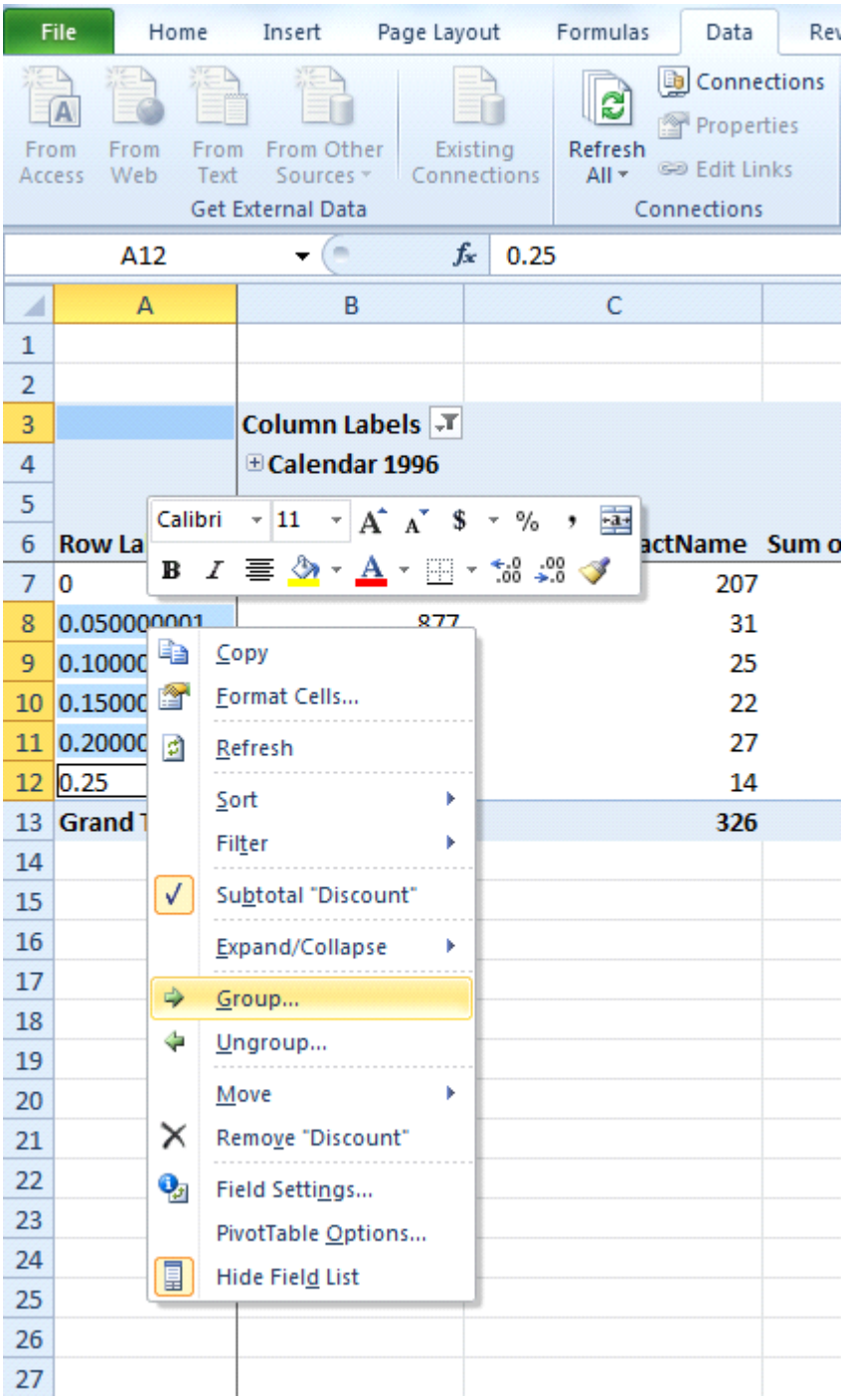
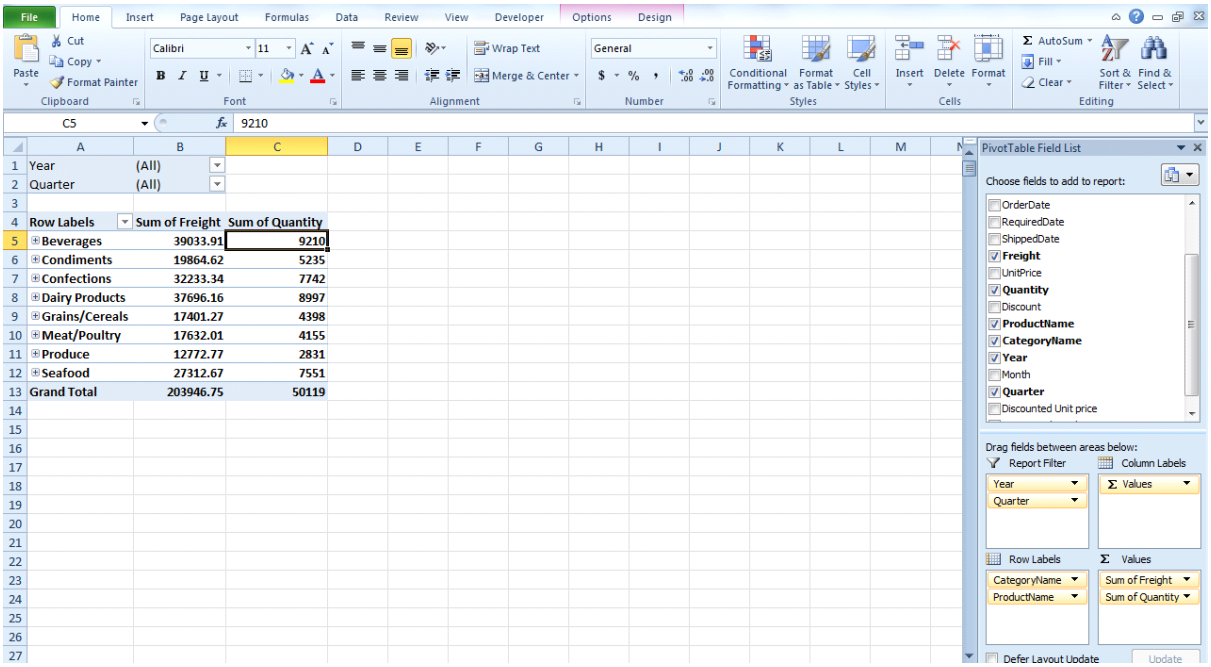


Figure 19: Output

Scenario 5: Report the sales by category and the corresponding freightcharges. Filtering should be enabled in the Year and Quarter columns, and theselected Year and Quarter need to be visible.We will take a slightly different approach to

solve this scenario. Please take alook at the below screenshot. To see the individual Years and Quarters, theconcept of slicers is used.



	A	B	C
1	Year	(All)	
2	Quarter	(All)	
3			
4	Row Labels	Sum of Freight	Sum of Quantity
5	Beverages	39033.91	9210
6	Condiments	19864.62	5235
7	Confections	32233.34	7742
8	Dairy Products	37696.16	8997
9	Grains/Cereals	17401.27	4398
10	Meat/Poultry	17632.01	4155
11	Produce	12772.77	2831
12	Seafood	27312.67	7551
13	Grand Total	203946.75	50119

Figure 20: Output

Let"s see how it is done: Click on the Options menuwhich gets highlighted under PivotTable Options. Click on the Insert Slicer.You will get to see the Insert Slicers window as shown. Select the Year andQuarter and click OK.

Scenario 6: Sort the Sales data in terms of Year, Quarter and Month.

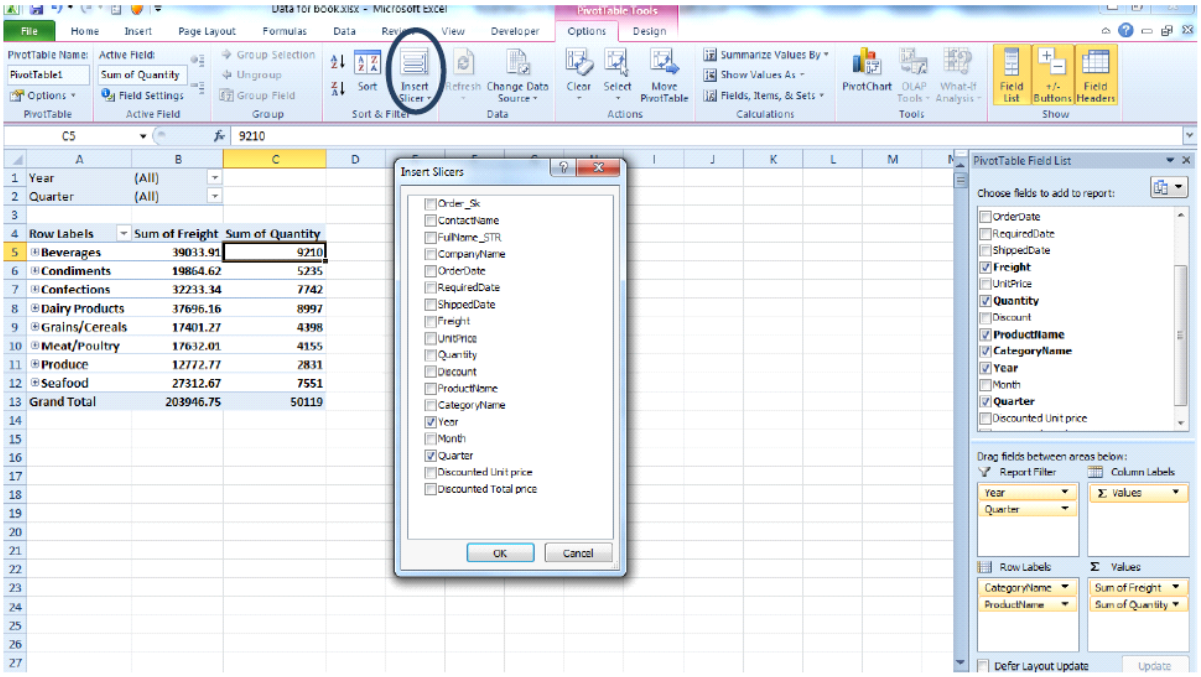


Figure 21: Output

While splitting the components of a cell make sure that the Quarter columnis cut and pasted in the neighboring column because the two outputs of thesplit will occupy the adjacent columns and if the Quarter column is not moved as described, it will be overwritten by the data as shown.

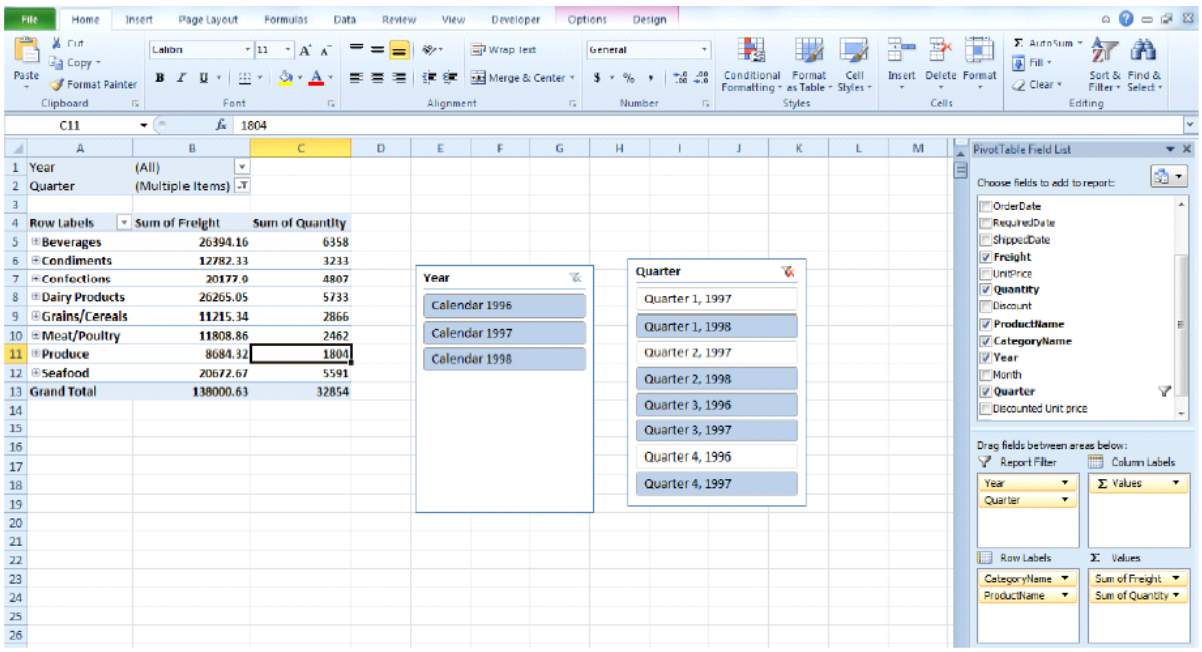
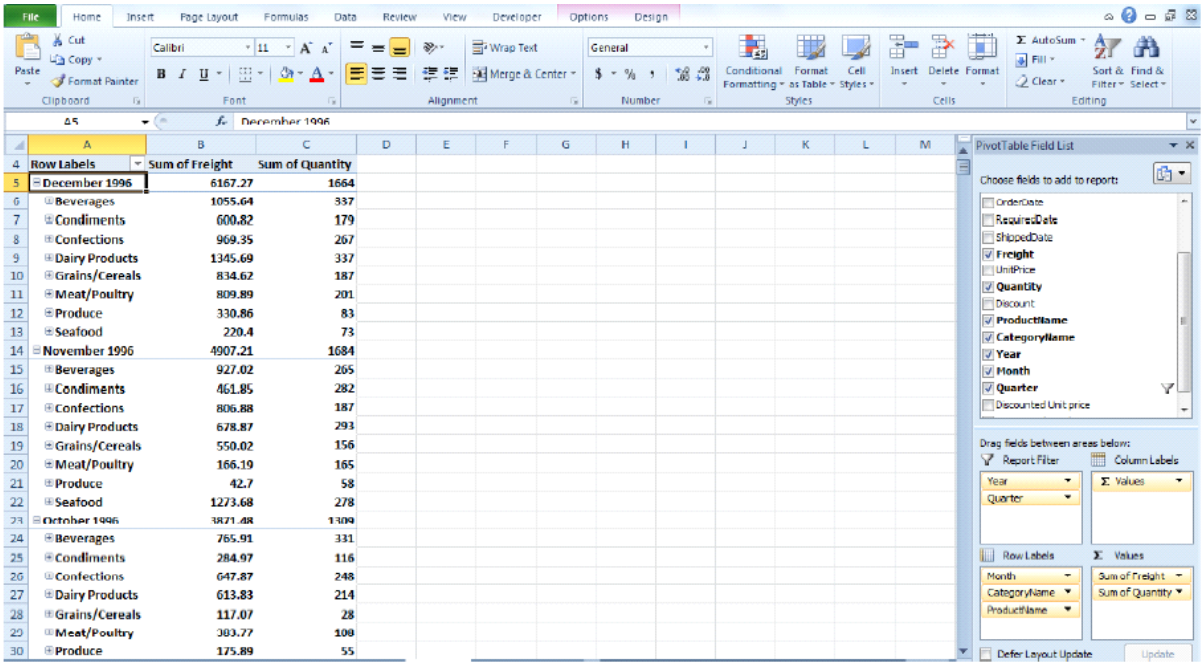


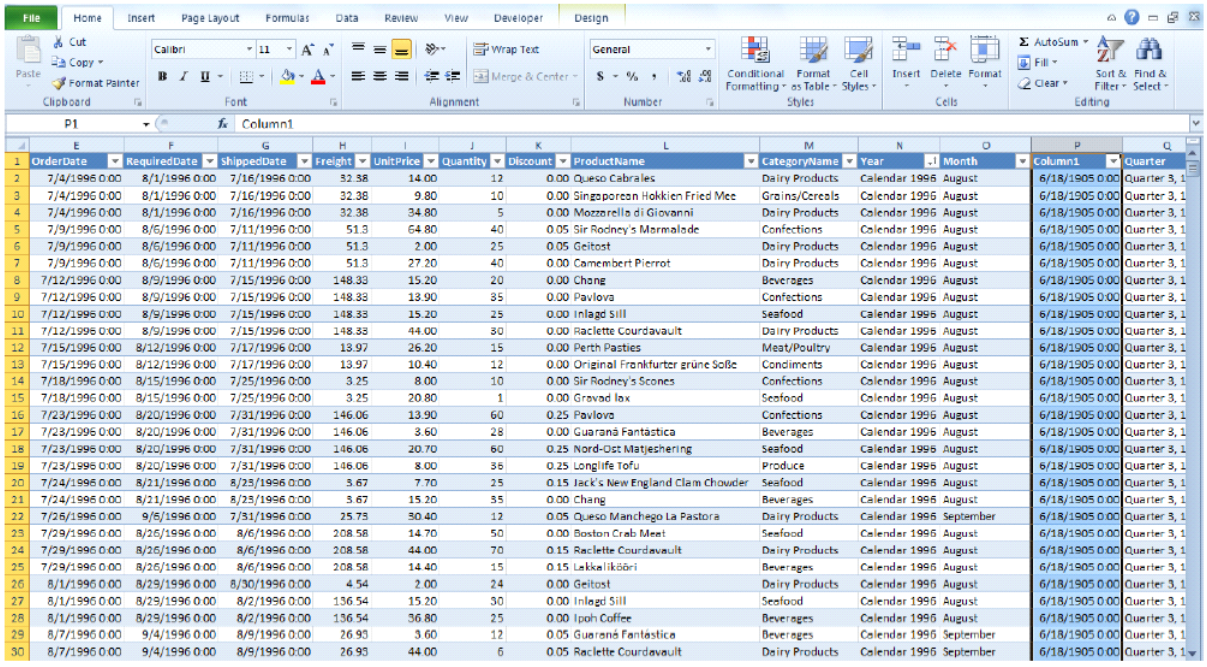
Figure 22: Output

Once the above steps are achieved, sort the Month column by Month first as shown below.



Row Labels	Sum of Freight	Sum of Quantity
December 1996	6167.27	1664
Beverages	1055.64	337
Condiments	600.82	179
Confections	969.35	267
Dairy Products	1345.69	337
Grains/Cereals	834.62	187
Meat/Poultry	809.89	201
Produce	330.86	83
Seafood	220.4	73
November 1996	4907.21	1684
Beverages	927.02	265
Condiments	461.85	282
Confections	806.88	187
Dairy Products	678.87	293
Grains/Cereals	550.02	156
Meat/Poultry	166.19	165
Produce	42.7	58
Seafood	1273.68	278
October 1996	3871.48	1309
Beverages	765.91	331
Condiments	284.97	116
Confections	647.87	248
Dairy Products	613.83	214
Grains/Cereals	117.07	28
Meat/Poultry	303.77	100
Produce	175.89	55

Figure 23: Output



OrderDate	RequiredDate	ShippedDate	Freight	UnitPrice	Quantity	Discount	ProductName	CategoryName	Year	Month	Column1	Quarter
7/4/1996 0:00	8/1/1996 0:00	7/16/1996 0:00	32.38	14.00	12	0.00	Queso Cabrales	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/4/1996 0:00	8/1/1996 0:00	7/16/1996 0:00	32.38	9.80	10	0.00	Singaporean Hokkien Fried Mee	Grains/Cereals	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/4/1996 0:00	8/1/1996 0:00	7/16/1996 0:00	32.38	34.80	5	0.00	Mozzarella di Giovanni	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/9/1996 0:00	8/6/1996 0:00	7/11/1996 0:00	51.3	64.80	40	0.05	Sir Rodney's Marmalade	Confections	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/9/1996 0:00	8/6/1996 0:00	7/11/1996 0:00	51.3	2.00	25	0.05	Geitost	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/9/1996 0:00	8/6/1996 0:00	7/11/1996 0:00	51.3	27.20	40	0.00	Camembert Pierrot	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/12/1996 0:00	8/9/1996 0:00	7/15/1996 0:00	148.33	15.20	20	0.00	Chang	Beverages	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/12/1996 0:00	8/9/1996 0:00	7/15/1996 0:00	148.33	13.90	35	0.00	Pavlova	Confections	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/12/1996 0:00	8/9/1996 0:00	7/15/1996 0:00	148.33	15.20	25	0.00	Inlagd Sill	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/12/1996 0:00	8/9/1996 0:00	7/15/1996 0:00	148.33	44.00	30	0.00	Raclette Courdavault	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/15/1996 0:00	8/12/1996 0:00	7/17/1996 0:00	13.97	26.20	15	0.00	Perth Pasties	Meat/Poultry	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/15/1996 0:00	8/12/1996 0:00	7/17/1996 0:00	13.97	10.40	12	0.00	Original Frankfurter grüne Soße	Condiments	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/18/1996 0:00	8/15/1996 0:00	7/25/1996 0:00	3.25	8.00	10	0.00	Sir Rodney's Scones	Confections	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/18/1996 0:00	8/15/1996 0:00	7/25/1996 0:00	3.25	20.80	1	0.00	Gravad lax	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/23/1996 0:00	8/20/1996 0:00	7/31/1996 0:00	146.06	13.90	60	0.25	Pavlova	Confections	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/23/1996 0:00	8/20/1996 0:00	7/31/1996 0:00	146.06	3.60	28	0.00	Guaraná Fantástica	Beverages	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/23/1996 0:00	8/20/1996 0:00	7/31/1996 0:00	146.06	20.70	60	0.25	Nord-Ost Matjeshering	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/23/1996 0:00	8/20/1996 0:00	7/31/1996 0:00	146.06	8.00	36	0.25	Longlife Tofu	Produce	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/24/1996 0:00	8/21/1996 0:00	8/23/1996 0:00	3.67	7.70	25	0.15	Jack's New England Clam Chowder	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/24/1996 0:00	8/21/1996 0:00	8/23/1996 0:00	3.67	15.20	35	0.00	Chang	Beverages	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/26/1996 0:00	9/6/1996 0:00	7/31/1996 0:00	25.73	30.40	12	0.05	Queso Manchego La Pastora	Dairy Products	Calendar 1996	September	6/18/1905 0:00	Quarter 3, 1
7/29/1996 0:00	8/26/1996 0:00	8/6/1996 0:00	208.58	14.70	50	0.00	Boston Crab Meat	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/29/1996 0:00	8/26/1996 0:00	8/6/1996 0:00	208.58	44.00	70	0.15	Raclette Courdavault	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
7/29/1996 0:00	8/26/1996 0:00	8/6/1996 0:00	208.58	14.40	15	0.15	Lakkalikööri	Beverages	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
8/1/1996 0:00	8/29/1996 0:00	8/30/1996 0:00	4.54	2.00	24	0.00	Geitost	Dairy Products	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
8/1/1996 0:00	8/29/1996 0:00	8/2/1996 0:00	136.54	15.20	30	0.00	Inlagd Sill	Seafood	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
8/1/1996 0:00	8/29/1996 0:00	8/2/1996 0:00	136.54	36.80	25	0.00	Ipoh Coffee	Beverages	Calendar 1996	August	6/18/1905 0:00	Quarter 3, 1
8/7/1996 0:00	9/4/1996 0:00	8/9/1996 0:00	26.93	3.60	12	0.05	Guaraná Fantástica	Beverages	Calendar 1996	September	6/18/1905 0:00	Quarter 3, 1
8/7/1996 0:00	9/4/1996 0:00	8/9/1996 0:00	26.93	44.00	6	0.05	Raclette Courdavault	Dairy Products	Calendar 1996	September	6/18/1905 0:00	Quarter 3, 1

Figure 24: Output

If analysis based on the discounts is required, add 2 columns as explained below and create a new Pivot Table on this sheet. First go to the Orderssheet and create 2 new columns as shown:

Column 1: Discounted Unit Price:This column will contain the unit prices after discount. So the formula wouldbe (1-Discount)(Unit Price). In terms of excel columns the formula would be (1-J2)*(H2).

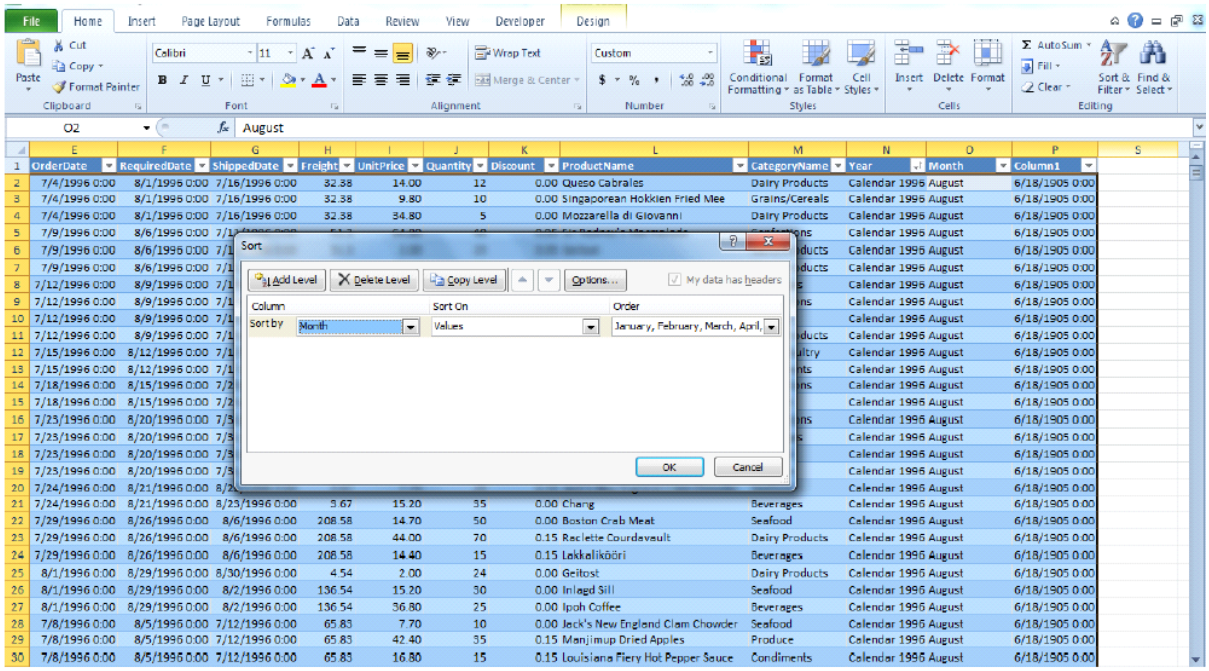
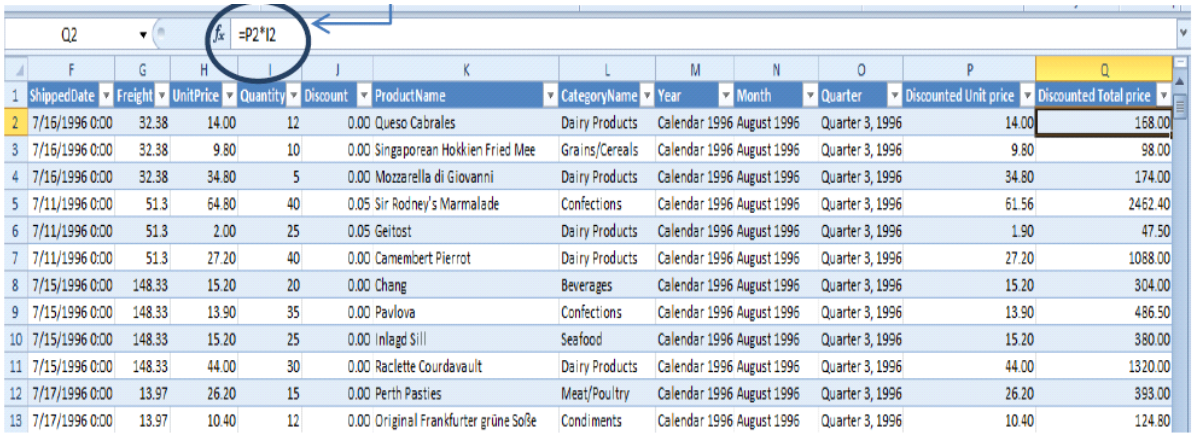


Figure 25: Output

Column 2: Discounted Total Price: This column would containdiscounted unit price multiplied by quantity. In terms of excel columns, it wouldbe P2*I2.



	F	G	H	I	J	K	L	M	N	O	P	Q
1	ShippedDate	Freight	UnitPrice	Quantity	Discount	ProductName	CategoryName	Year	Month	Quarter	Discounted Unit price	Discounted Total price
2	7/16/1996 0:00	32.38	14.00	12	0.00	Queso Cabrales	Dairy Products	Calendar 1996	August 1996	Quarter 3, 1996	14.00	168.00
3	7/16/1996 0:00	32.38	9.80	10	0.00	Singaporean Hokkien Fried Mee	Grains/Cereals	Calendar 1996	August 1996	Quarter 3, 1996	9.80	98.00
4	7/16/1996 0:00	32.38	34.80	5	0.00	Mozzarella di Giovanni	Dairy Products	Calendar 1996	August 1996	Quarter 3, 1996	34.80	174.00
5	7/11/1996 0:00	51.3	64.80	40	0.05	Sir Rodney's Marmalade	Confections	Calendar 1996	August 1996	Quarter 3, 1996	61.56	2462.40
6	7/11/1996 0:00	51.3	2.00	25	0.05	Geitost	Dairy Products	Calendar 1996	August 1996	Quarter 3, 1996	1.90	47.50
7	7/11/1996 0:00	51.3	27.20	40	0.00	Camembert Pierrot	Dairy Products	Calendar 1996	August 1996	Quarter 3, 1996	27.20	1088.00
8	7/15/1996 0:00	148.33	15.20	20	0.00	Chang	Beverages	Calendar 1996	August 1996	Quarter 3, 1996	15.20	304.00
9	7/15/1996 0:00	148.33	13.90	35	0.00	Pavlova	Confections	Calendar 1996	August 1996	Quarter 3, 1996	13.90	486.50
10	7/15/1996 0:00	148.33	15.20	25	0.00	Inlagd Sill	Seafood	Calendar 1996	August 1996	Quarter 3, 1996	15.20	380.00
11	7/15/1996 0:00	148.33	44.00	30	0.00	Raclette Courdavault	Dairy Products	Calendar 1996	August 1996	Quarter 3, 1996	44.00	1320.00
12	7/17/1996 0:00	13.97	26.20	15	0.00	Perth Pasties	Meat/Poultry	Calendar 1996	August 1996	Quarter 3, 1996	26.20	393.00
13	7/17/1996 0:00	13.97	10.40	12	0.00	Original Frankfurter grüne Soße	Condiments	Calendar 1996	August 1996	Quarter 3, 1996	10.40	124.80

Figure 26: Output

Conclusion:

We have successfully studied the tool used for business intelligence and analytics tools to recommend the combination of share purchases and sales for maximizing the profit