

Easy Way



Teach yourself...
PivotTables and PivotCharts
with
Microsoft Excel 2010

- ☒ Easy to follow
- ☒ Step-by-step instructions
- ☒ Written in plain English

A Cheryl Price Publication

Easy Way – PivotTables and PivotCharts (Excel 2010)

This book is designed to teach the PivotTables and PivotCharts features of Excel 2010. It contains simple step-by-step exercises to guide you through the learning process.

There are many exercises including consolidation exercises, both theory and practical at the end of each section.

The process of consolidation and accumulation of learning is unique to the Cheryl Price books.

Retrievable exercise files are used with this book. These are available for free download from our web site at www.cherylprice.co.nz. Instructions for downloading are included on the next page.

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Downloading Exercise Files

Exercise files can be downloaded from the Cheryl Price web site as follows:


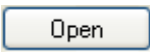




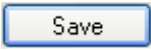
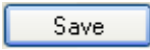
1	In your web browser, type: www.cherylprice.co.nz
2	Press Enter on the keyboard to display the Cheryl Price website.
3	Click on the Resources tab as shown at the right. 
4	Click on <u>Easy Way – PivotTables and PivotCharts</u>
5	Under the Exercise Files heading click on the underlined blue hyperlink , ie PivotTables and PivotCharts Excel 2010 <u>Free Download</u> The File Download dialog box will display.
6	If you have Winzip use the following instructions otherwise move to step 7.
	a Click on  .
	b Click on the  of the  button.
	c If My Documents folder is not displayed click on Set default unzip folder at the bottom of the list. Ensure My Documents is selected then click on Select Folder .
	d Click on the  of the  button and click on the My Documents folder. The files will be unzipped.
7	Click on  and ensure My Documents folder is displayed. Click on 
8	Click on Open Folder which will display My Documents folder. Right click on the zipped exercise file and select Extract All. Click on Extract. A folder will be created containing the exercise files. You will need to double click on this folder to use the exercise files in this book.

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Sample Document

Exercise Files used in this book

(Instructions are at the front of this book for downloading retrievable files from our web site.)

Names of files	
Cavanagh Industries	Organic Foods Co 3
Home Ideas (Categories) 2	PC Sales – PivotChart 2
Home Ideas (Categories)	PC Sales – PivotChart
Home Ideas	PC Sales 2
Mykas – Adelaide	PC Sales
Mykas – Brisbane	PivotChart 2
Mykas – Melbourne	PivotTables
Mykas – Sydney	Real Estate Sales
Organic Foods Co 2	Rep Sales

Learning Outcomes

At the end of this section you should be able to -

- ☐ Summarise data with PivotTables
- ☐ Understand the Pivot Cache
- ☐ Group and Ungroup data in a PivotTable
- ☐ Change the values calculated in a PivotTable
- ☐ Use a PivotTable for data consolidation
- ☐ Choose and apply a Style to a PivotTable
- ☐ Change the PivotTable Layout

PivotTables

A PivotTable is an interactive worksheet table that provides a method of summarising and grouping large amounts of data from an Excel List. Data can be formatted, and summarised using various calculations. A PivotTable is also referred to as a PivotTable Report.

PivotTables are so called because row and column headings can be rotated around the data area to allow different views of the source data to be displayed. The fields from the list are placed around the PivotTable skeleton to define how the summarised information is shown and calculated.

When source data changes, the PivotTable can be updated.

Excel List

For the best results when creating a PivotTable your Excel List should have the following characteristics.

- The first row contains the headers that identify the data in each column.
- Each column (field) contains unique data.
- Each row (record) contains one set of data for a single item.
- There should be no blank cells in the list.

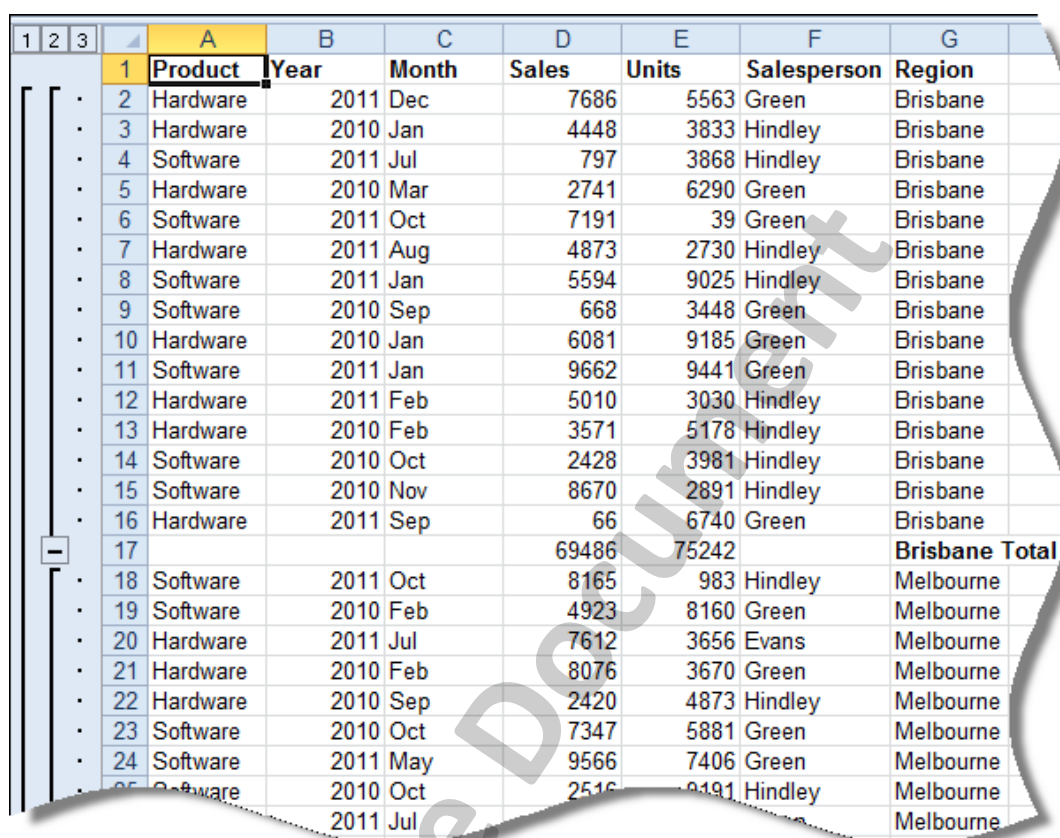
The PC Sales workbook (which you will be using in the first exercise), is a good example of such a list.

	A	B	C	D	E	F	G
1	Product	Year	Month	Sales	Units	Salesperson	Region
2	Hardware	2011	Dec	7686	5563	Green	Brisbane
3	Software	2010	Sep	2956	1242	Hindley	Sydney
4	Software	2011	Oct	8165	983	Hindley	Melbourne
5	Hardware	2010	Jan	4448	3833	Hindley	Brisbane
6	Hardware	2010	Sep	75	3216	Hindley	Perth
7	Software	2010	Feb	4923	8160	Green	Melbourne
8	Hardware	2010	Dec	2733	2790	Green	Sydney
9	Software	2010	Apr	450	9265	Green	Perth
10	Software	2011	Jul	797	3868	Hindley	Brisbane
11	Hardware	2010	Mar	8751	1773	Hindley	Sydney
12	Hardware	2010	Mar	2741	6290	Green	Brisbane
13	Software	2010	Dec	7047	9888	Evans	Sydney
14	Software	2011	Oct	7191	39	Green	Brisbane
15	Hardware	2011	Jun	5575	9970	Green	Perth
16	Hardware	2011	Jul	7612	3656	Evans	Melbourne
17	Hardware	2011	Aug	4873	2730	Hindley	Brisbane
18	Hardware	2010	Feb	8076	3670	Green	Melbourne
19	Hardware	2011	Oct	3338	1695	Green	Sydney
20	Hardware	2010	Jan	6544	9550	Green	Sydney
21	Software	2010	Oct	6955	8722	Hindley	Perth
22	Software	2010	Feb	4138	4661	Green	Perth
23		2011	Aug	8165	983	Hindley	Perth
24		2010	May				Sydney

Why Create a PivotTable?

If you want to summarise data from an Excel List you could possibly use the automatic Subtotals feature. For example, in the PC Sales workbook you could display Sales subtotals for each Region.

You would first have to sort the data by Region, then apply the Subtotal feature (Data Tab, Outline Group).



	A	B	C	D	E	F	G
1	Product	Year	Month	Sales	Units	Salesperson	Region
2	Hardware	2011	Dec	7686	5563	Green	Brisbane
3	Hardware	2010	Jan	4448	3833	Hindley	Brisbane
4	Software	2011	Jul	797	3868	Hindley	Brisbane
5	Hardware	2010	Mar	2741	6290	Green	Brisbane
6	Software	2011	Oct	7191	39	Green	Brisbane
7	Hardware	2011	Aug	4873	2730	Hindley	Brisbane
8	Software	2011	Jan	5594	9025	Hindley	Brisbane
9	Software	2010	Sep	668	3448	Green	Brisbane
10	Hardware	2010	Jan	6081	9185	Green	Brisbane
11	Software	2011	Jan	9662	9441	Green	Brisbane
12	Hardware	2011	Feb	5010	3030	Hindley	Brisbane
13	Hardware	2010	Feb	3571	5178	Hindley	Brisbane
14	Software	2010	Oct	2428	3981	Hindley	Brisbane
15	Software	2010	Nov	8670	2891	Hindley	Brisbane
16	Hardware	2011	Sep	66	6740	Green	Brisbane
17				69486	75242		Brisbane Total
18	Software	2011	Oct	8165	983	Hindley	Melbourne
19	Software	2010	Feb	4923	8160	Green	Melbourne
20	Hardware	2011	Jul	7612	3656	Evans	Melbourne
21	Hardware	2010	Feb	8076	3670	Green	Melbourne
22	Hardware	2010	Sep	2420	4873	Hindley	Melbourne
23	Software	2010	Oct	7347	5881	Green	Melbourne
24	Software	2011	May	9566	7406	Green	Melbourne
25	Software	2010	Oct	2516	9191	Hindley	Melbourne
26		2011	Jul				Melbourne

Using the automatically applied Outline you could show or hide data levels, but if you required subtotals based on other fields you would have to re-sort the list and apply the Subtotal feature again.

When you summarise your data in a PivotTable, you can take different views of the data without having to recreate the table each time.

Creating a PivotTable


The Pivot Cache

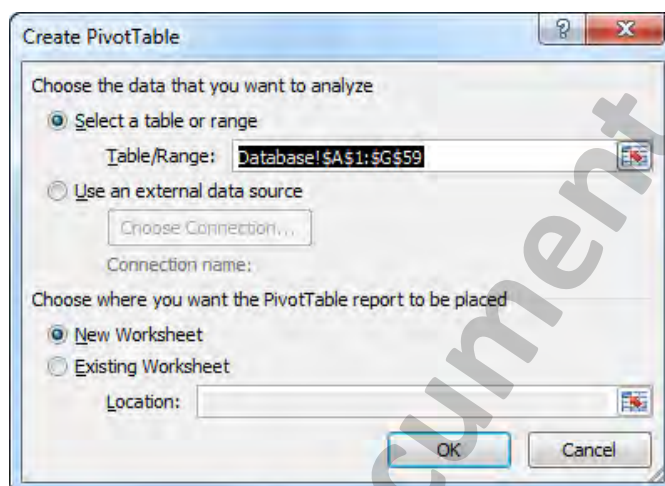
It is important to understand that when a PivotTable is created it is not directly linked to the data source. This is because when you begin the process, the first step that Excel takes is to create a duplicate copy of the data source and store it in a *Pivot Cache*. This occurs every time you create a PivotTable from a data source, which automatically increases the file size and the amount of memory being used.

When you make changes to the data source, this is not automatically reflected in the PivotTable. This is easily managed by refreshing the data.

Efficient use of the pivot cache and how to refresh data is covered later in this section.

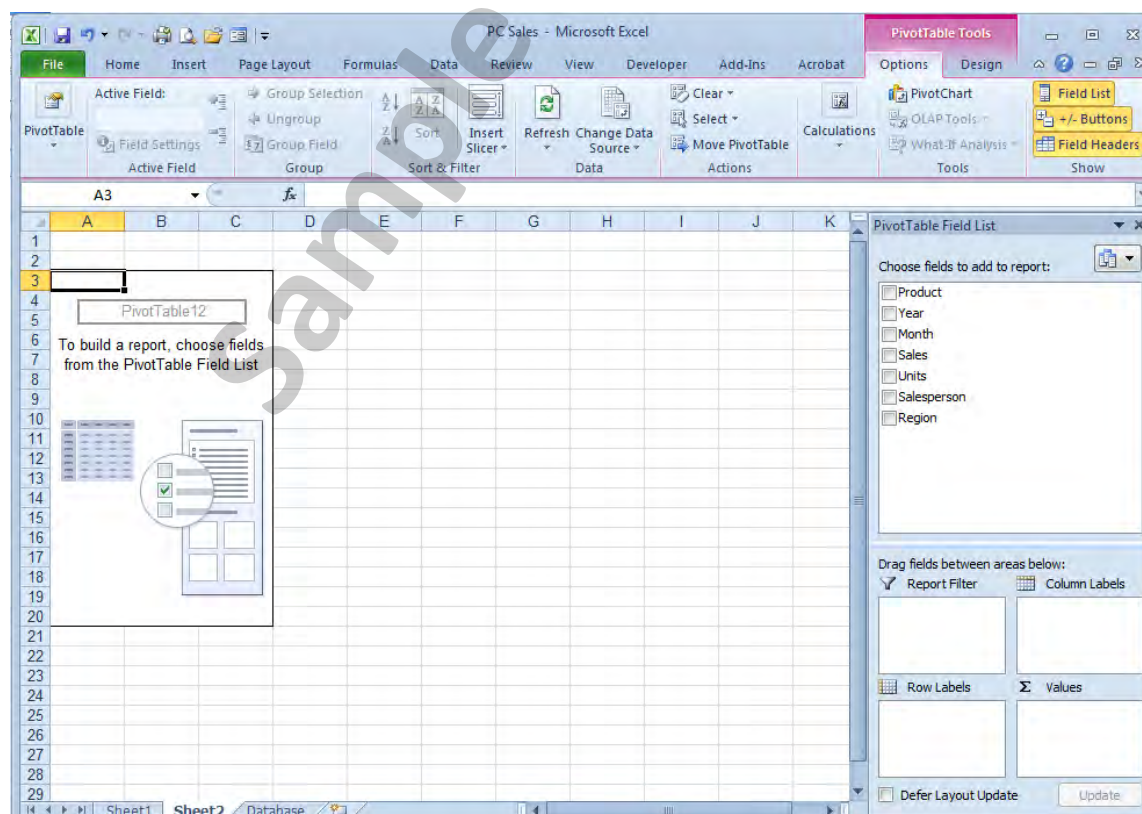
Exercise 1

- 1 Open the workbook called **PC Sales**.
- 2 Ensure the **Database** worksheet is displayed.
- 3 With the cursor anywhere within the list, click on the Insert tab then on . The Create PivotTable dialog box is displayed.
- 4 Ensure Select a table or range and New Worksheet options are selected and that the Table/Range is as shown below.



- 5 Click on OK.

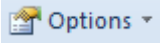
A new sheet is inserted to the left of the Database worksheet (Sheet1); a PivotTable area is displayed, together with the PivotTable Field List Task Pane (at the right) and the PivotTable Tools, Options and Design tabs as shown below.



There are two ways in which a PivotTable can be used and manipulated, ie -

- *Normal Layout* as shown on the previous page.
- *Classic PivotTable Layout* which displays a grid – fields displayed in the PivotTable Field List can be dragged onto the grid (see capture on next page).

5 Change the PivotTable layout view to Classic PivotTable Layout as follows:

- a On the PivotTable Tools, Options tab click on .
- b Click on the Display tab.
- c Ensure a tick is displayed in this option: ☒ Classic PivotTable layout (enables dragging of fields in the grid)
- d Click on OK.

Notes

This applies the Classic PivotTable layout to the current PivotTable only.

The PivotTable area is displayed showing all the field areas in the PivotTable.

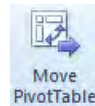
The fields in the database are listed in the PivotTable Field List Task Pane at the right of the screen.

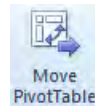
PivotTable Location Notes

When creating a PivotTable you specify where you want it located in the Create PivotTable dialog box. The usual recommendation (which is the default option in the Create PivotTable dialog box) is that it is placed on a new worksheet.

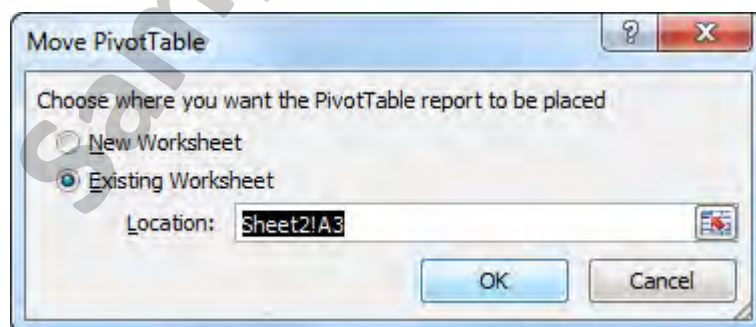
If you decide later that you want to move a PivotTable to a different location, follow these steps:

- 1 Select a cell in the PivotTable.



- 2 On the PivotTable Tools, Options tab click on .

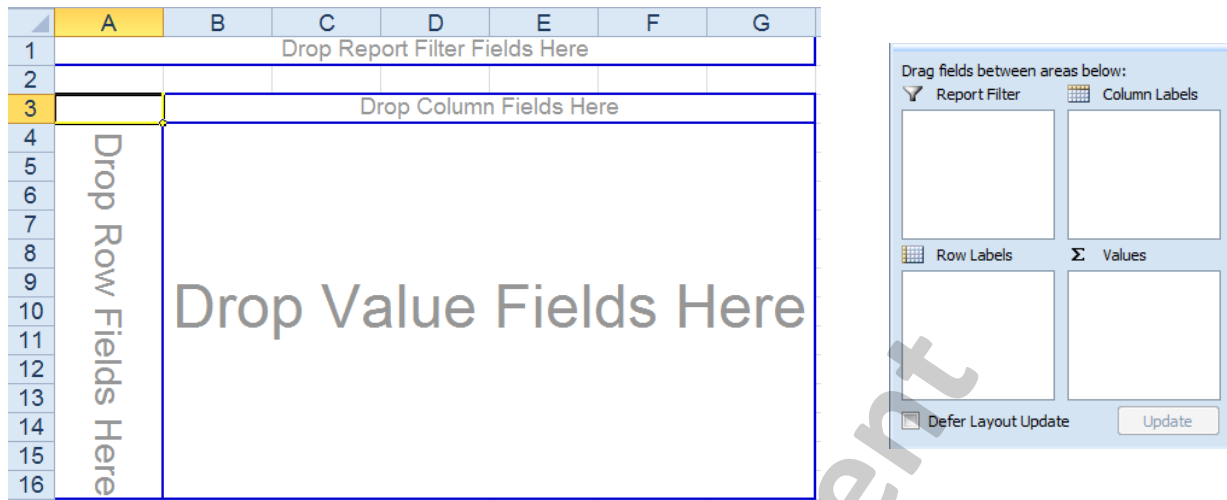
The Move PivotTable dialog box is displayed.



- 3 Specify where you want the PivotTable moved to, then click on OK.

PivotTable Organisation

You specify the fields you want to include in the PivotTable by either dragging them to the appropriate area in the lower half of the Task Pane OR to the PivotTable area itself.



The four areas that make up a PivotTable are described below (these are shown in the PivotTable area and also in the lower half of the PivotTable field list:

Report Filter

This contains the field(s) that control how the data is presented and how it can be filtered. In effect, individual PivotTables are created for each possible value in the Report Filter Field as well as for all the values.

For example, in **PC Sales** the Report Filter Field could be **Year**, which would produce three pivot tables: one for 2010, one for 2011, and one for both years combined. Only one of these PivotTables is displayed at any given time, depending on which Report Filter Field value is selected.

Similarly, if **Region** were specified as the Report Filter Field, the data for all regions or for individual regions could be displayed.

Column Labels (Fields)

Column Fields are used to create the horizontal axis of the PivotTable. If more than one field is placed in the Column Labels area you should place them in descending order of importance. For example, you would place **Month** below **Year** in the Column Labels box in the PivotTable Field List so that sub-totals for each month within each year could be created.

Row Labels (Fields)

Row Fields are used to create the Vertical Axis of the PivotTable. You can place more than one field in the Row Labels area using the same method as described above for placing multiple Column Fields.

Value Fields

Field(s) placed in the Values area contain the data to be summarised using any of the available functions such as Sum, Average, etc. A PivotTable must have at least one Values field.

Totals and Subtotals

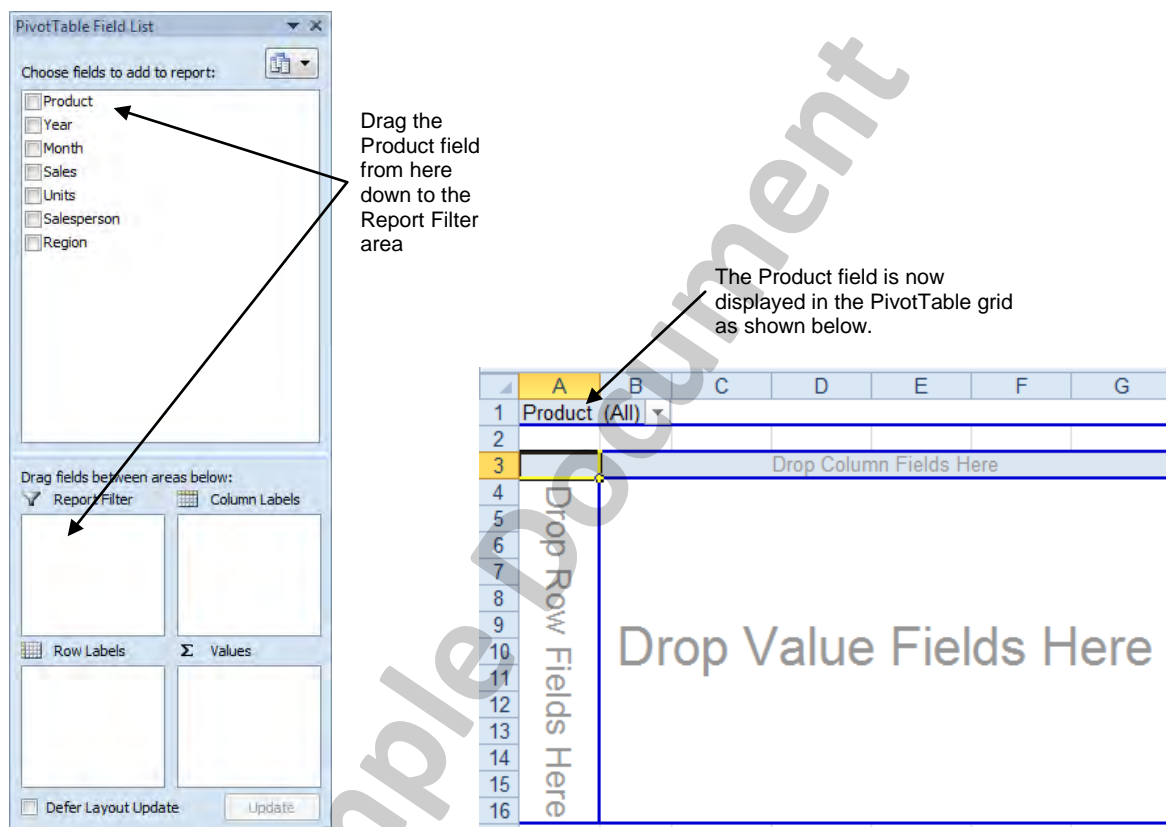
When a PivotTable is created, subtotals and grand totals are automatically generated. These can be deleted or hidden if required.

Because these totals are produced based on the data in the List, you should ensure that the List does not contain subtotals.

Exercise 2

The PivotTable will initially be set up to display the sales for all products for each salesperson within each region.

- 1 Drag the **Product** field to the Report Filter area as shown below.



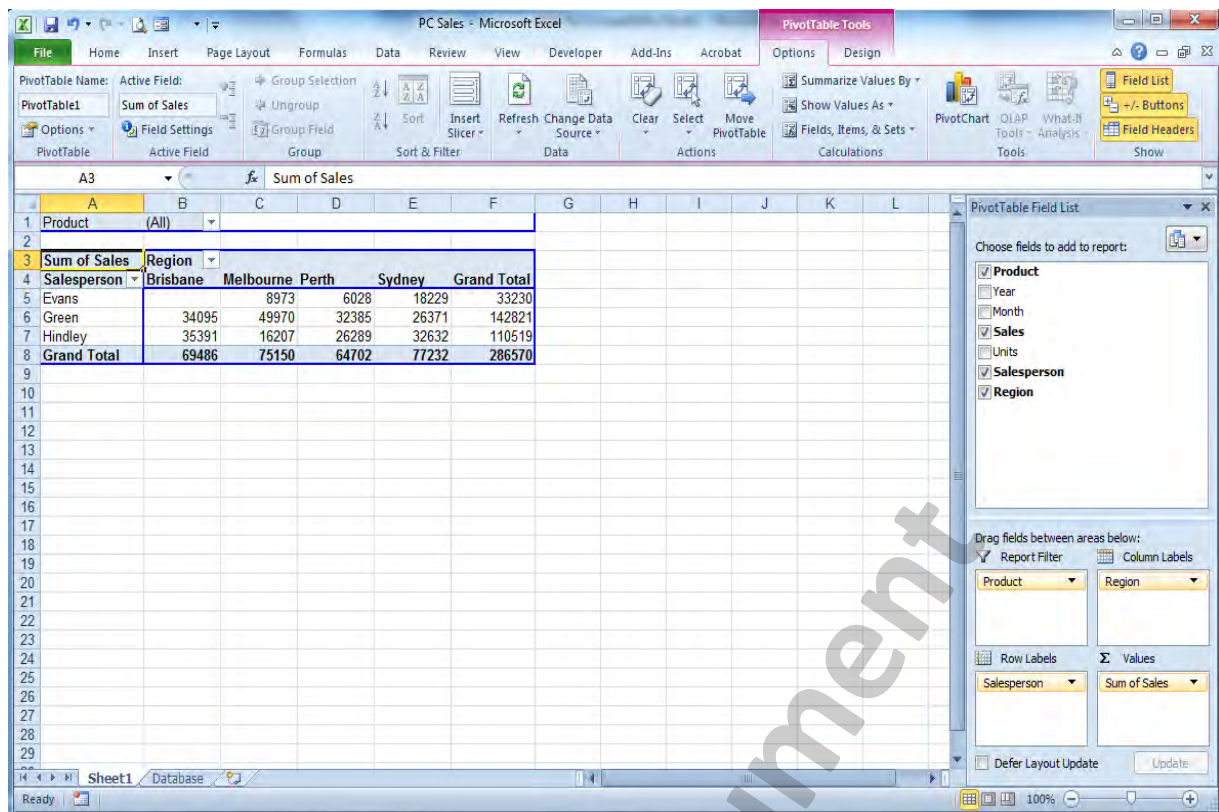
- 2 Drag the **Salesperson** field to the Row Labels area.
- 3 Drag the **Region** field to the Column Labels area.
- 4 Drag the **Sales** field to the Values area. This will be labelled *Sum of Sales* – Sum is the default function.

The fields are also displayed in the actual PivotTable area on your worksheet.

If you are using the Classic PivotTable layout you can also drag the fields onto the appropriate section of the PivotTable area.

If you place a field in the wrong area, simply drag it to the correct area.

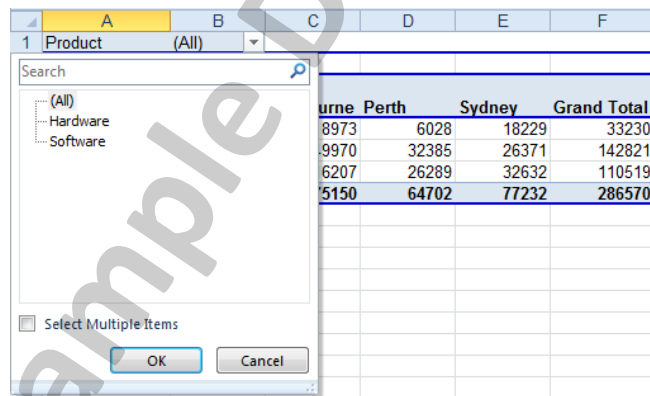
The PivotTable is displayed as shown on the next page.



5 Rename the worksheet **PivotTable 1**.


6 Click on the Product (All)  in cell B1.


The options shown below will be displayed.



7 Select Hardware to view all hardware sales. Click on OK.

Product	Hardware				
Sum of Sales	Region				
Salesperson	Brisbane	Melbourne	Perth	Sydney	Grand Total
Evans		7612	6028	8516	22156
Green	16574	28134	22077	12615	79400
Hindley	17902	2420	10858	22746	53926
Grand Total	34476	38166	38963	43877	155482

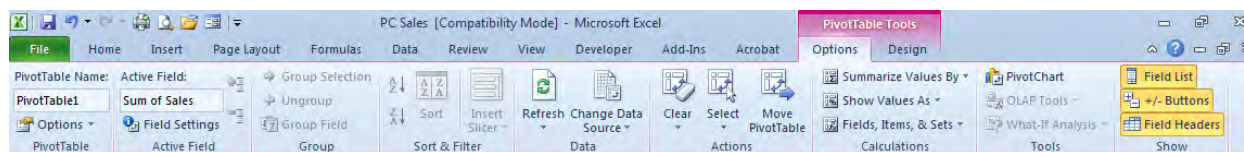
Notice that the down arrow button now shows as , indicating that the PivotTable is filtered.

8 Click on the Product , select Software, and click on OK.

PivotTable Tools Contextual Tab

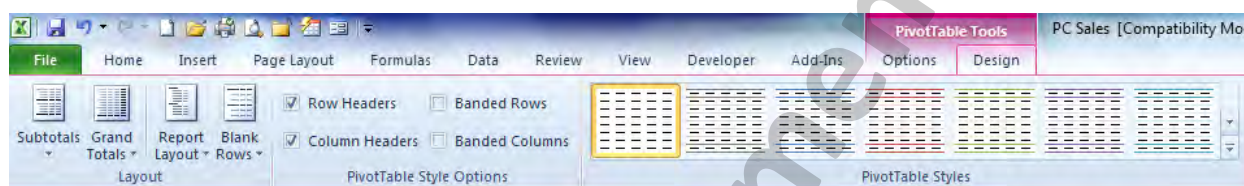
When you select any cell in a PivotTable, the PivotTable Tools contextual tab is displayed on the ribbon. It includes two tabs – **Options** and **Design**.

The Options Tab



The Options tab includes a wide range of options that allow you to modify calculations, apply sorting and filtering, update the table data, etc.

The Design Tab



The Design tab allows you to adjust the layout of the table, apply preset styles to the table, etc.

The PivotTable Field List is also displayed whenever your active cell is within the PivotTable.




Exercise 3

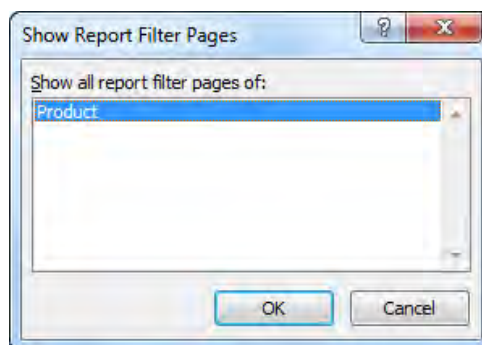
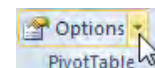
- Click outside the PivotTable. The PivotTable Tools contextual tab and the PivotTable Field List are hidden.

Displaying Report Filter Pages

Individual PivotTables for each unique value in the report filter field can be created on separate sheets (pages) in the workbook.

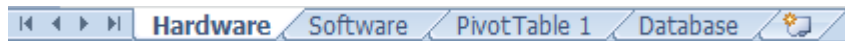
Exercise 4

- 1 Select a cell in the table, click on the Product  in cell B1 and select (All).
- 2 Click on OK.
- 3 On the PivotTable Tools, Options tab, click on the  of the Options button in the PivotTable group. Select  **Show Report Filter Pages...**



- 4 Click on OK.

Two new worksheets will be inserted into the workbook, one for each Product category.



- Review the Hardware and Software worksheets, and then return to PivotTable 1.

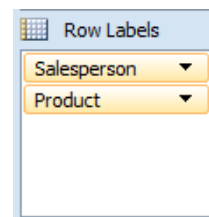
Changing the Layout

In the following exercise the PivotTable layout will be changed to display the product sales for each salesperson with a subtotal for each salesperson.

Exercise 5

The lower half of the PivotTable Field List to reorganise the fields by dragging them from one box to another.

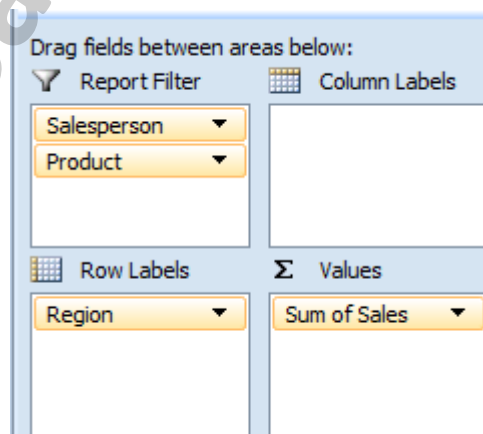
- Drag the Product field which is in the Report Filter box so it is under the Salesperson field in the Row Labels section of the Field List as shown at the right.



The table will be displayed as follows.



	A	B	C	D	E	F	G
1	Drop Report Filter Fields Here						
2							
3	Sum of Sales		Region				
4	Salesperson	Product	Brisbane	Melbourne	Perth	Sydney	Grand Total
5	Evans	Hardware		7612	6028	8516	22156
6		Software		1361		9713	11074
7	Evans Total			8973	6028	18229	33230
8	Green	Hardware	16574	28134	22077	12615	79400
9		Software	17521	21836	10308	13756	63421
10	Green Total		34095	49970	32385	26371	142821
11	Hindley	Hardware	17902	2420	10858	22746	53926
12		Software	17489	13787	15431	9886	56593
13	Hindley Total		35391	16207	26289	32632	110519
14	Grand Total		69486	75150	64702	77232	286570

- Rearrange the fields as shown below.



The PivotTable is now displayed as shown on the next page.

	A	B
1	Salesperson	(All)
2	Product	(All)
3		
4	Sum of Sales	
5	Region	Total
6	Brisbane	69486
7	Melbourne	75150
8	Perth	64702
9	Sydney	77232
10	Grand Total	286570

- 3 Click on the Salesperson (All) , select Evans, then click on OK.
- 4 Click on the Product (All) , select Software, then click on OK.

	A	B
1	Salesperson	Evans
2	Product	Software
3		
4	Sum of Sales	
5	Region	Total
6	Melbourne	1361
7	Sydney	9713
8	Grand Total	11074

- 5 For Salesperson and Product, select (All) then click on OK to display the report filter fields as shown below.

	A	B
1	Salesperson	(All)
2	Product	(All)

- 6 If necessary, click in the PivotTable to show the PivotTable Field List.
- 7 Rearrange the PivotTable as shown below.

See if you can do this on your own – then look at the next page to see how the fields are positioned in each field box.

	A	B	C	D	E	F	G
1							
2	Salesperson	(All)					
3							
4	Sum of Sales		Region				
5	Product	Year	Brisbane	Melbourne	Perth	Sydney	Grand Total
6	Hardware	2010	16841	17525	16783	32947	84096
7		2011	17635	20641	22180	10930	71386
8	Hardware Total		34476	38166	38963	43877	155482
9	Software	2010	11766	14786	11543	19144	57239
10		2011	23244	22198	14196	14211	73849
11	Software Total		35010	36984	25739	33355	131088
12	Grand Total		69486	75150	64702	77232	286570

Report Filter

Salesperson

Column Labels

Region

Row Labels

Product

Year

Values

Sum of Sales

Removing a Field from a PivotTable

Exercise 6

- Click on **Year** and drag it outside the table area until the pointer displays as



	A	B	C	D	E	F	G
1							
2	Salesperson	(All)					
3							
4	Sum of Sales		Region				
5	Product	Year	Brisbane	Melbourne	Perth	Sydney	Grand Total
6	Hardware	2010	16841	17525	16783	32947	84096
7		2011	17635	20641	22180	10930	71386
8	Hardware Total		34476	38166	38963	43877	155482
9	Software	2010	11766	14786	11543	19144	57239
10		2011	23244	22198	14196	14211	73849
11	Software Total		35010	36984	25739	33355	131088
12	Grand Total		69486	75150	64702	77232	286570
13							
14							
15							

When the mouse button is released the field and all its information will be removed.

Note Alternative methods include unchecking the Year field in the PivotTable Field List OR clicking on the field name in the Row Labels box and selecting Remove Field as shown at the right.



Viewing Detailed Data

A PivotTable is a summary of information contained in a list. However, there may be times when you wish to view the individual values that contribute to a particular total.

Exercise 7

- Click on the Hardware sheet tab. Ensure fields are displayed as shown at the right.
- Double click on cell C6 - Melbourne sales for Green. The following data is displayed on a new sheet.

	A	B	C	D	E	F	G
1	Product	Year	Month	Sales	Units	Salesperson	Region
2	Hardware	2010	Jul	7029	6853	Green	Melbourne
3	Hardware	2011	Sep	3947	9132	Green	Melbourne
4	Hardware	2011	Jul	9082	8966	Green	Melbourne
5	Hardware	2010	Feb	8076	3670	Green	Melbourne

Report Filter

Product

Column Labels

Region

Row Labels

Salesperson

Values

Sum of Sales

- Delete the new sheet.