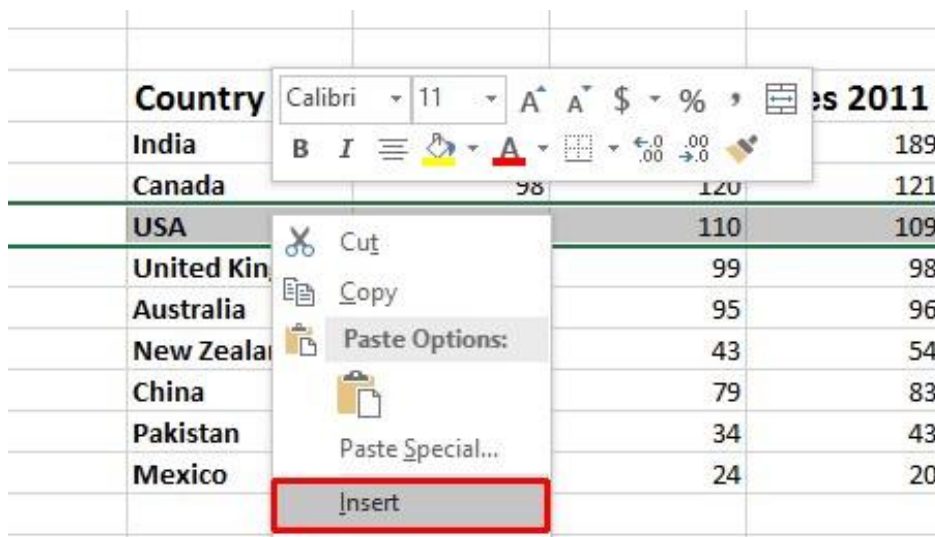# Lecture 4:

Manipulating rows and columns within Excel 2019

Inserting rows into a worksheet

- Open a workbook called **Rows and columns**. We need to insert a row for **Japan** between the row for **Canada** and the row for the **USA**. Select the row for the **USA**, as illustrated.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
6		USA	109	110	109	102	94
7		United Kingdom	92	99	98	95	85
8		Australia	92	95	96	92	93
9		New Zealand	32	43	54	74	84
10		China	67	79	83	88	93
11		Pakistan	24	34	43	54	73
12		Mexico	12	24	20	23	32

- Right click over the selected row and from the popup menu displayed select the **Insert** command.

Country	Calibri ▾ 11 ▾ A˄ A˅ $ ▾ % , ▦	es 2011
India	B I ≡ ◇▾ A▾ ▦▾ ←.0 .00	189
Canada	98	120	121
USA	✂ Cut	110	109
United Kin		99	98
Australia	▤ Copy	95	96
New Zeala	▭ Paste Options:	43	54
China	▭	79	83
Pakistan	Paste Special...	34	43
Mexico		24	20
	Insert	

- The table will now look like this.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
6							
7		USA	109	110	109	102	94
8		United Kingdom	92	99	98	95	85
9		Australia	92	95	96	92	93
10		New Zealand	32	43	54	74	84
11		China	67	79	83	88	93
12		Pakistan	24	34	43	54	73
13		Mexico	12	24	20	23	32

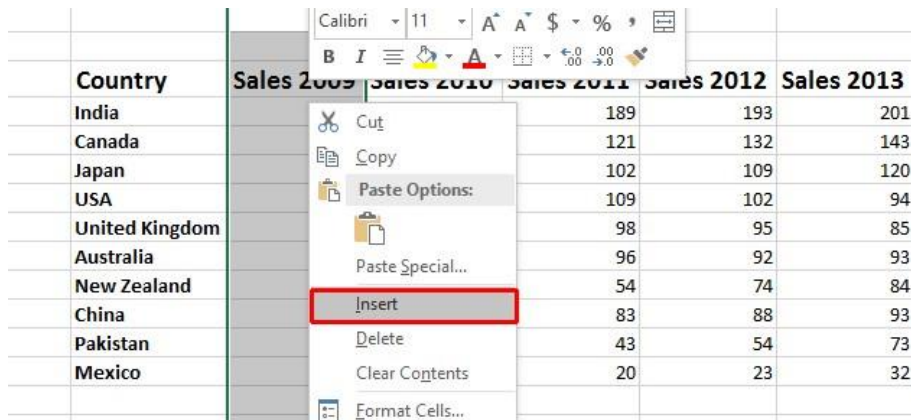- Click on cell **B6** and type in the word '**Japan**'. Enter the following sales figures for **Japan**.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
6		Japan	89	93	102	109	120
7		USA	109	110	109	102	94
8		United Kingdom	92	99	98	95	85
9		Australia	92	95	96	92	93
10		New Zealand	32	43	54	74	84
11		China	67	79	83	88	93
12		Pakistan	24	34	43	54	73
13		Mexico	12	24	20	23	32

Inserting columns into a worksheet

- We want to insert a column for sales figures in 2008, which needs to be inserted before the **2009** column. Select the column relating to **2009**, as illustrated.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	102	129	189	193	201
5		Canada	98	120	121	132	143
6		Japan	89	93	102	109	120
7		USA	109	110	109	102	94
8		United Kingdom	92	99	98	95	85
9		Australia	92	95	96	92	93
10		New Zealand	32	43	54	74	84
11		China	67	79	83	88	93
12		Pakistan	24	34	43	54	73
13		Mexico	12	24	20	23	32

- Right click over the selected column and from the popup menu displayed select the **Insert** command.

			Calibri ▾ 11 ▾ A˄ A˅ $ ▾ % ＇ ⊞			
			B I ≡ ◇ ▾ A ▾ ⊞ ▾ ←.0 .00 ❤			
	Country	Sales 2009	Sales 2010 Sales 2011 Sales 2012	Sales 2013		
	India		✂ Cut	189	193	201
	Canada			121	132	143
	Japan		▣ Copy	102	109	120
	USA		▣ Paste Options:	109	102	94
	United Kingdom		▣	98	95	85
	Australia			96	92	93
	New Zealand		Paste Special...	54	74	84
	China		Insert	83	88	93
	Pakistan		Delete	43	54	73
	Mexico		Clear Contents	20	23	32
			▦ Format Cells...			

- The column will be inserted, as illustrated.

	A	B	C	D	E	F	G	H
1				⚿				
2								
3		Country		Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India		102	129	189	193	201
5		Canada		98	120	121	132	143
6		Japan		89	93	102	109	120
7		USA		109	110	109	102	94
8		United Kingdom		92	99	98	95	85
9		Australia		92	95	96	92	93
10		New Zealand		32	43	54	74	84
11		China		67	79	83	88	93
12		Pakistan		24	34	43	54	73
13		Mexico		12	24	20	23	32

- Enter the following data into the column.

Deleting rows within a worksheet

- Select the row relating to **Canada**.

- Right click over the selected row and from the popup menu displayed select the **Delete** command.

- The row is deleted without any additional warning.

	A	B	C	D	E	F	G	H
1								
2								
3		Country	Sales 2008	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	93	102	129	189	193	201
5		Japan	50	89	93	102	109	120
6		USA	120	109	110	109	102	94
7		United Kingdom	93	92	99	98	95	85
8		Australia	25	92	95	96	92	93
9		New Zealand	105	32	43	54	74	84
10		China	92	67	79	83	88	93
11		Pakistan	56	24	34	43	54	73
12		Mexico	82	12	24	20	23	32

TIP: To delete multiple connected rows, use the **Shift** key trick to select multiple rows and then right click to delete the rows. To delete multiple non-connected rows, use the **Ctrl** key trick to select the multiple rows and then right click to delete the rows.

Deleting columns within a worksheet

- Select the column relating to **Sales 2013**.

	A	B	C	D	E	F	G	H
1								
2								
3		Country	Sales 2008	Sales 2009	Sales 2010	Sales 2011	Sales 2012	Sales 2013
4		India	93	102	129	189	193	201
5		Japan	50	89	93	102	109	120
6		USA	120	109	110	109	102	94
7		United Kingdom	93	92	99	98	95	85
8		Australia	25	92	95	96	92	93
9		New Zealand	105	32	43	54	74	84
10		China	92	67	79	83	88	93
11		Pakistan	56	24	34	43	54	73
12		Mexico	82	12	24	20	23	32

- Right click over the selected column and from the popup menu displayed select the **Delete** command.

- The column is deleted without any additional warning.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2008	Sales 2009	Sales 2010	Sales 2011	Sales 2012
4		India	93	102	129	189	193
5		Japan	50	89	93	102	109
6		USA	120	109	110	109	102
7		United Kingdom	93	92	99	98	95
8		Australia	25	92	95	96	92
9		New Zealand	105	32	43	54	74
10		China	92	67	79	83	88
11		Pakistan	56	24	34	43	54
12		Mexico	82	12	24	20	23

TIP: To delete multiple connected columns, use the **Shift** key trick to select multiple columns and then right click to delete the columns. To delete multiple non-connected columns, use the **Ctrl** key trick to select the multiple columns and then right click to delete the columns.

Modifying column widths

- Select a column, such as the **Sales 2010** column. Right click over the selected column and from the popup menu displayed select the **Column Width** command.
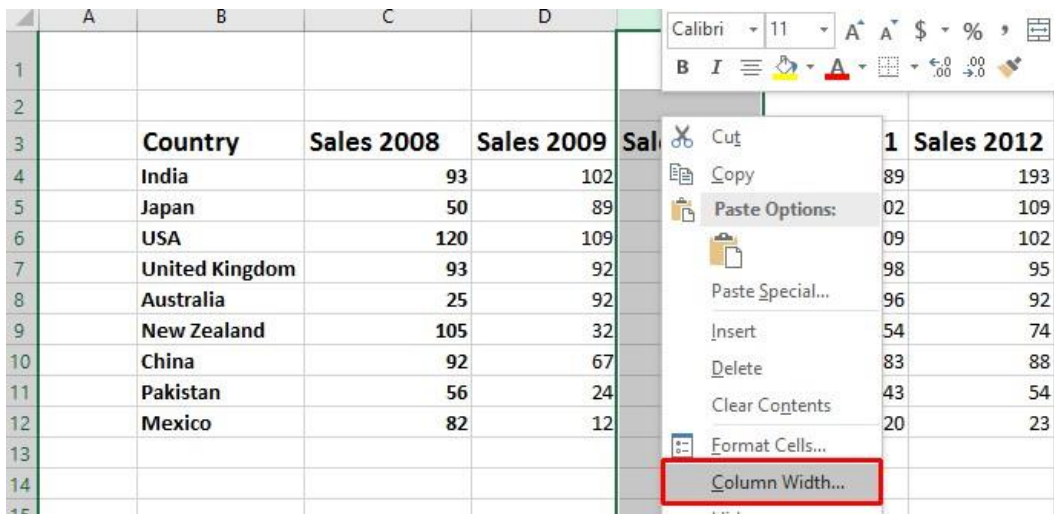
- The **Column Width** dialog box is displayed which allows you to set the column width. Within the dialog box displayed, enter a slightly larger value for the column width and then click on the **OK** button.
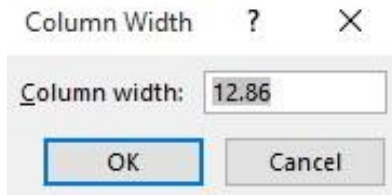
Modifying column widths using 'drag and drop'

- Move the mouse pointer to the line between the header for **column B** and **column C**, as illustrated below.

- Press the mouse button and keep it pressed.

The pointer changes to a black cross with double arrows when placed on the line between two columns.

- Move the mouse pointer left or right to make the column narrower or wider.
  Release the mouse button and the column width will change as required.

Automatically resizing the column width to fit contents

- Resize all the columns so that they are too narrow to properly display the data contained within the columns. Your screen will look similar to the illustration below.

	A	B	C	D	E	F	G	
1								Sa
2								
3		Country	Sales 200	Sales 2	Sales :	Sales 20	Sales 2012	
4		India	93	102	129	189	193	
5		Japan	50	89	93	102	109	
6		USA	120	109	110	109	102	
7		United Kingdom	93	92	99	98	95	
8		Australia	25	92	95	96	92	
9		New Zealand	105	32	43	54	74	
10		China	92	67	79	83	88	
11		Pakistan	56	24	34	43	54	
12		Mexico	82	12	24	20	23	

- To automatically resize each column width to fit the contents, select all the columns containing data (i.e. column **B** to column **G**).

	A	B	C	D	E	F	G	
1								Sa
2								
3		Country	Sales 200	Sales 2	Sales :	Sales 20	Sales 2012	
4		India	93	102	129	189	193	
5		Japan	50	89	93	102	109	
6		USA	120	109	110	109	102	
7		United Kingdom	93	92	99	98	95	
8		Australia	25	92	95	96	92	
9		New Zealand	105	32	43	54	74	
10		China	92	67	79	83	88	
11		Pakistan	56	24	34	43	54	
12		Mexico	82	12	24	20	23	

- Double click on the junction between one of the column headers within the selected columns.

A	B	C		D	E	F	G
Country		Sales 200	Sales 2	Sales ∶	Sales 2(	Sales 20	
India		93	102	129	189	193	
Japan		50	89	93	102	109	
USA		120	109	110	109	102	
United Kingdom		93	92	99	98	95	

- The columns will automatically resize to accommodate the data within each column.

	A	B	C	D	E	F	G
1							
2							
3		Country	Sales 2008	Sales 2009	Sales 2010	Sales 2011	Sales 2012
4		India	93	102	129	189	193
5		Japan	50	89	93	102	109
6		USA	120	109	110	109	102
7		United Kingdom	93	92	99	98	95
8		Australia	25	92	95	96	92
9		New Zealand	105	32	43	54	74
10		China	92	67	79	83	88
11		Pakistan	56	24	34	43	54
12		Mexico	82	12	24	20	23

Modifying row heights

- Select one or more rows and then right click over the selected row(s). From the popup menu displayed select the **Row Height** command.
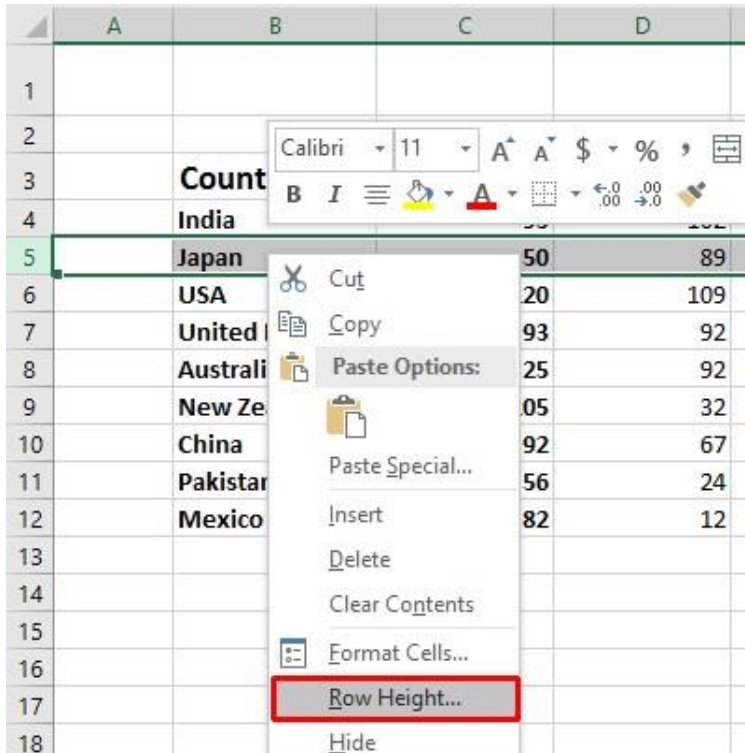
- The **Row Height** dialog is displayed allowing you to set the exact row height, as required.
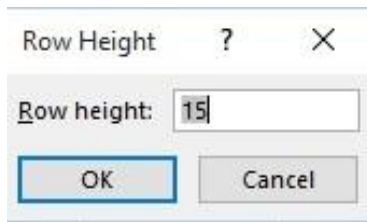
TIP: If you click between any two row headers, you can drag the row height up or down as required, to modify the row height.

- Save your changes and close the workbook.

Manipulating cells and cell content within Excel 2019

Copying a cell or range contents within a workbook
- Open a workbook called **Copying moving and deleting**.

- Select a cell, range, row or column to copy. In this case select the range **B4** to **E4**.

  TIP: A range like this is often written as **B4:E4**.

  Your screen will look something like this:

▲	A	B	C	D	E
1	**Stock Levels**				
2					
3					
4		Component number	Number in stock	Value each item	Total value in stock
5		100846	2	56.99	113.98
6		100332	0	28.38	0
7		100622	5	12.74	63.7
8		100847	2	32.99	65.98
9		100743	5	18.99	94.95
10		100934	1	12.99	12.99

- Press **Ctrl+C** to copy the selected range to the Clipboard.

  TIP: To copy a selected item to the Clipboard using the Ribbon, click on the **Home** tab and then click on the **Copy** icon in the **Clipboard** group on the **Ribbon**.
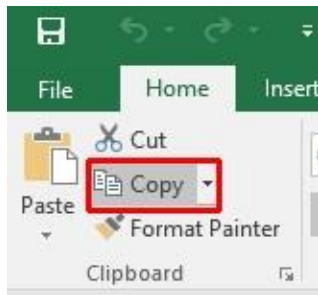
- Click at the location you wish to paste the data to. In this case click on cell **B14** and press the **Ctrl+V** keys to paste the data from the Clipboard.

  TIP: To paste an item from the Clipboard using the Ribbon, click on the **Home** tab and then click on the **Paste** icon, in the **Clipboard** group on the **Ribbon**.
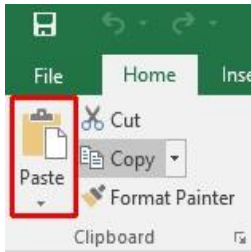
- Your data will now look like this.

Stock Levels			
Component number	Number in stock	Value each item	Total value in stock
100846	2	56.99	113.98
100332	0	28.38	0
100622	5	12.74	63.7
100847	2	32.99	65.98
100743	5	18.99	94.95
100934	1	12.99	12.99
Component number	Number in stock	Value each item	Total value in stock

TIP: You can use the same technique to copy entire rows or columns. Pressing **Ctrl+A** will select everything within a worksheet and allow you to copy the entire worksheet contents to the Clipboard when you press **Ctrl+C.**

Deleting cell contents

- Select the range that you wish to delete the contents of. In this case select the range **B10:E10**, as illustrated.

	A	B	C	D	E
	Stock Levels				
		Component number	Number in stock	Value each item	Total value in stock
		100846	2	56.99	113.98
		100332	0	28.38	0
		100622	5	12.74	63.7
		100847	2	32.99	65.98
		100743	5	18.99	94.95
		100934	1	12.99	12.99

- Press the **Del** key and the cell contents will be deleted.

  TIP: You can use the same technique to delete entire rows or column contents. Pressing **Ctrl+A** will select everything within a worksheet and allow you to delete the entire worksheet contents when you press the **Del** key.

Moving the contents of a cell or range within a workbook

- Select the range you wish to move and then cut it to the Clipboard. In this case select the data, as illustrated. This is referred to as the range **B5:E9**.

	A	B	C	D	E
1	Stock Levels				
2					
3					
4		Component number	Number in stock	Value each item	Total value in stock
5		100846	2	56.99	113.98
6		100332	0	28.38	0
7		100622	5	12.74	63.7
8		100847	2	32.99	65.98
9		100743	5	18.99	94.95

- Press the **Ctrl+X** keys to cut the selected data to the Clipboard.
- Click at the location you wish to move the selected data to, in this case click in cell **B15**, and press **Ctrl+V**, to paste the data.

	A	B	C	D	E
1	Stock Levels				
2					
3					
4		Component number	Number in stock	Value each item	Total value in stock
5					
6					
7					
8					
9					
10					
11					
12					
13		Component number	Number in stock	Value each item	Total value in stock
14		100846	2	56.99	113.98
15		100332	0	28.38	0
16		100622	5	12.74	63.7
17		100847	2	32.99	65.98
18		100743	5	18.99	94.95

TIP: You can use the same technique to move entire rows or columns.

- Save your changes and close the workbook.

Editing cell content

- It is easy to edit existing data within a cell or to replace existing data within a cell. Open a workbook called **Editing**.
- Click on cell **B3**. Double click in front of the word '**Region**' and insert the word '**Sales**' followed by a space. Press the **Enter** key to commit your changes to the cell.

	A	B	C	D
1				
2				
3		Sales Region	2012	2013
4		North	3847	4382
5		South	2847	3847
6		East	5437	6349
7		West	1847	2746

- Click on cell **B7**. Double click on the word '**West**', to select it and then over type the selected word with the word '**Central**'. Press the **Enter** key to commit your changes to the cell.

	A	B	C	D
1				
2				
3		Sales Region	2012	2013
4		North	3847	4382
5		South	2847	3847
6		East	5437	6349
7		Central	1847	2746

Undo and Redo

- Click on the **Undo** icon (top-left of your screen) to reverse the last action. Try it now.

- Click on the **Redo** icon (top-left of your screen) to reapply the last action. Try it now.

- Save your changes and close the workbook.

Copying data between worksheets (within the same workbook)

- Open a workbook called **Worksheet manipulation**.
- Select a cell, range, row or column to copy. In this case select the range **B3:C8**. Your screen will look something like this:

- Press **Ctrl+C** to copy the selected range to the Clipboard. Click on the second worksheet tab (called **Projections**).

You will now see the contents of the second, empty worksheet displayed.

- Click at the location you wish to paste the data to. In this case click on cell **C4** and press the **Ctrl+V** keys to paste the data from the Clipboard. You have successfully copied selected data from one worksheet to another worksheet within the same workbook.

BEFORE CONTINUING: Click on the **Undo** icon to undo this copy.

The **Undo** icon is displayed towards the top-left of your screen.

Leave the workbook open and carry on to the next section.

Moving data between worksheets (within the same workbook)

- Switch back to the first worksheet within the workbook called **Worksheet manipulation**.
- Select a cell, range, row or column to move. In this case select the range **B3:C8**. Your screen will look something like this:

- Press **Ctrl+X** to cut (move) the selected range to the Clipboard.
- Click on the second worksheet tab (called **Projections**).

You will now see the contents of the second, empty worksheet displayed.

- Click at the location you wish to paste the data to. In this case click on cell **C4** and press the **Ctrl+V** keys to paste the data from the Clipboard. You have successfully moved selected data from one worksheet to another worksheet within the same workbook.

- Save your changes and close the workbook.

Moving data worksheets (between different workbooks)

- Open a workbook called **Between workbooks 1**.
- Open a second workbook called **Between workbooks 2**.
- Display the contents of the **Between workbooks 1** workbook.

    NOTE: To switch between multiple open workbooks, click on the **Excel** icon displayed within the Taskbar at the bottom of the screen and click on **Between Workbooks 1**.
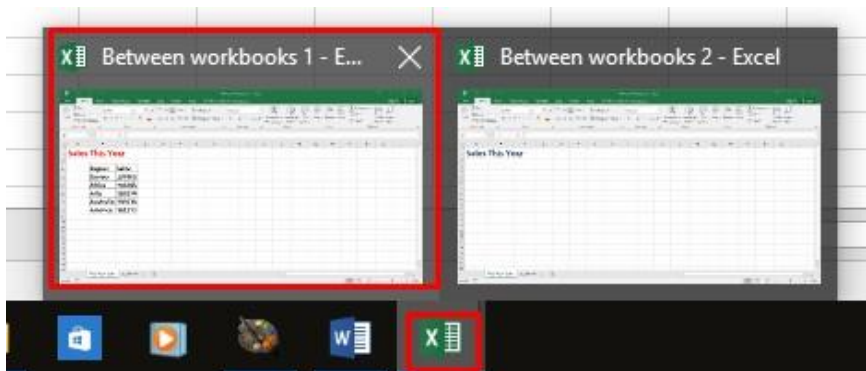
- Within the **Between workbooks 1** workbook, select a cell, range, row or column to move. In this case select the range **B3:C8**. Your screen will look something like this:

- Press **Ctrl+X** to cut (move) the selected range to the Clipboard.

- Switch to the second workbook (called **Between workbooks 2**).
- Click at the location you wish to paste the data to. In this case click on cell **C4** and press the **Ctrl+V** keys to paste the data from the Clipboard. You have successfully moved selected data from one workbook to another workbook.

  NOTE: You could have selected a different worksheet within the second workbook if you wanted.

  Leave the workbook open and carry on to the next exercise.

Copying data between worksheets (in different workbooks)

- Select the data in the second workbook.
- Press **Ctrl+C** to copy the selected data to the Clipboard.
- Switch back to the first workbook.
- Click where you wish to paste the data to.
- Press **Ctrl+V** to paste the data from the Clipboard.

  You have now copied selected data from one workbook to another workbook.

- Close any open workbooks and save your changes.

AutoFill

- Open a workbook called **AutoFill**.
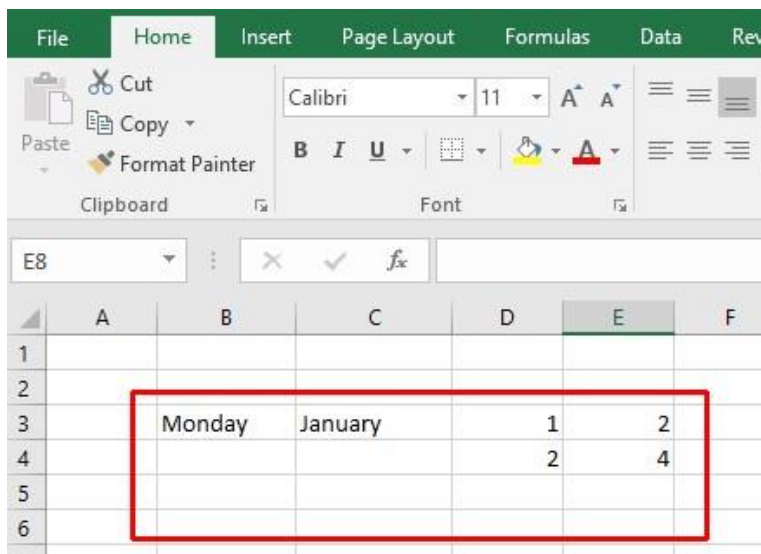
- Click on cell **B3** which contains the word **Monday**.
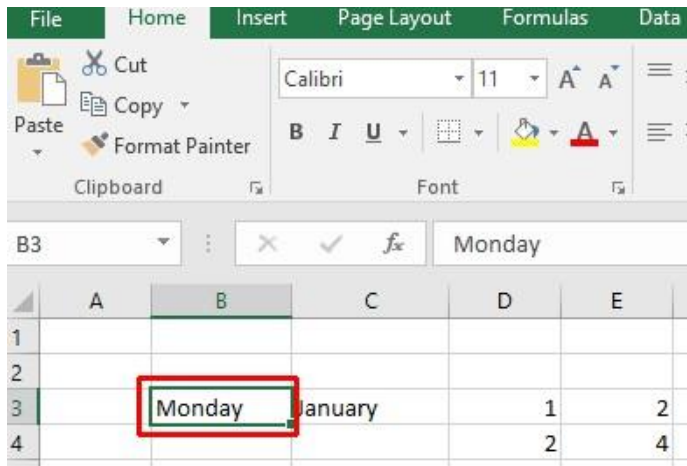
- Move the mouse pointer to the bottom-right corner of this cell and the mouse pointer shape will change to the shape of a small black cross.
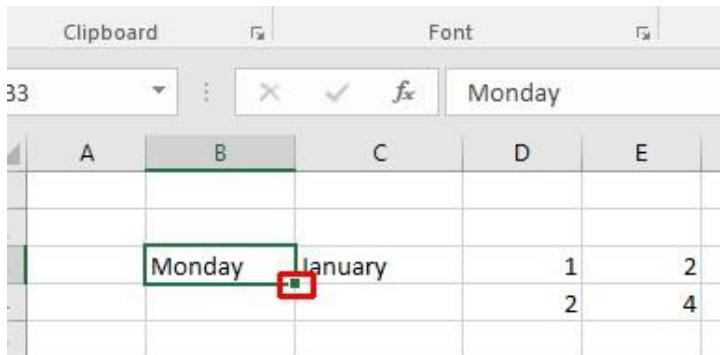
When the mouse pointer changes shape, press the mouse button down, and while keeping it pressed move slowly down the page to cell **B7**. When you release the mouse button you will see that Excel has 'AutoFilled' the range you dragged across with days of the week.
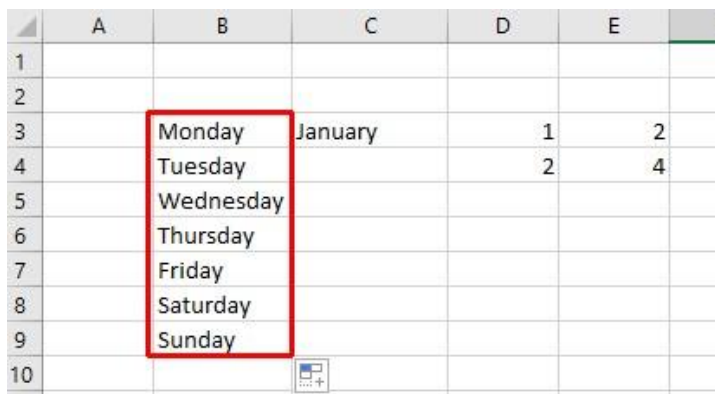
- Click on cell **C3** which contains the word **January**.
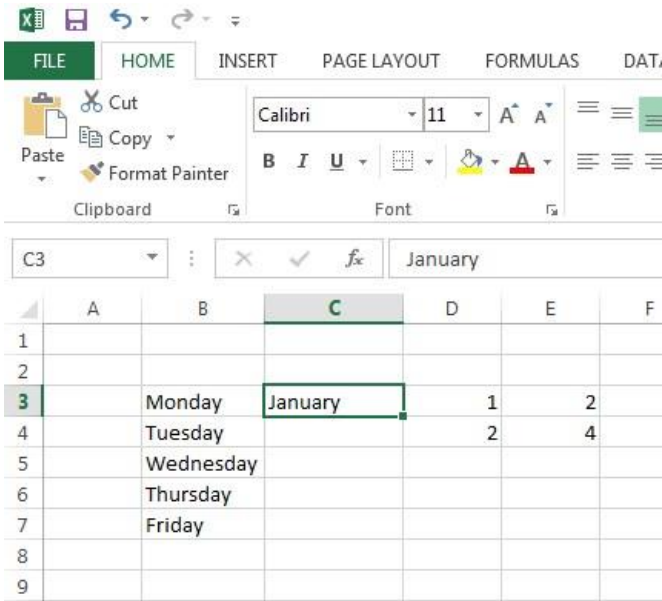
- Use the AutoFill feature to automatically create a column containing all the months of the year.
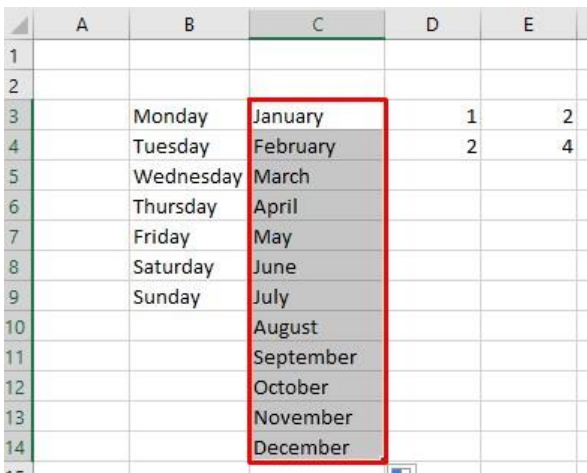
- Select the cell range **D3:D4**.

	A	B	C	D	E	F
1						
2						
3		Monday	January	1	2	
4		Tuesday	February	2	4	
5		Wednesday	March			
6		Thursday	April			
7		Friday	May			
8		Saturday	June			
9		Sunday	July			

- Use **AutoFill** to extend the series down the page. As you will see the series becomes **1,2,3,4,5,6,7** etc.

	A	B	C	D	E	F
1						
2						
3		Monday	January	1	2	
4		Tuesday	February	2	4	
5		Wednesday	March	3		
6		Thursday	April	4		
7		Friday	May	5		
8		Saturday	June	6		
9		Sunday	July	7		
10			August	8		
11			September	9		
12			October	10		
13			November	11		
14			December	12		

- Select the cell range **E3:E4**.

	A	B	C	D	E
1					
2					
3		Monday	January	1	2
4		Tuesday	February	2	4
5		Wednesday	March	3	

- Use **AutoFill** to extend the series down the page. As you will see the series becomes **2,4,6,8,10** etc.

	A	B	C	D	E
1					
2					
3		Monday	January	1	2
4		Tuesday	February	2	4
5		Wednesday	March	3	6
6		Thursday	April	4	8
7		Friday	May	5	10
8		Saturday	June	6	12
9		Sunday	July	7	14
10			August	8	16
11			September	9	18
12			October	10	20
13			November	11	22
14			December	12	24

- Save your changes and close the workbook.

Copying a data range using AutoFill

- Open a workbook called **AutoFill a data range**.
- Select the range **B2:B24**.

- Move the mouse pointer to the bottom-right corner of this range and the mouse pointer shape will change to the shape of a small black cross.
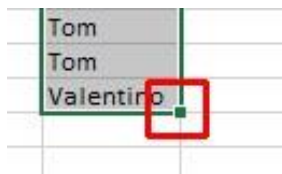
When the mouse pointer changes shape, press the mouse button down, and while keeping it pressed move slowly to the right, by two columns.

When you release the mouse button you will see that Excel has 'AutoFilled' the range you dragged across with data, as illustrated below.

- Save your changes and close the workbook.

Sorting a cell range

- Open a workbook called **Sorting**.

- The data within column **B** consists of text, while the data in column **C** consists of numbers.
- Click within the data contained within column **B** (for instance click on cell **B7**).
- Click on the **Home** tab and from within the **Editing** group click on the **Sort & Filter** button.
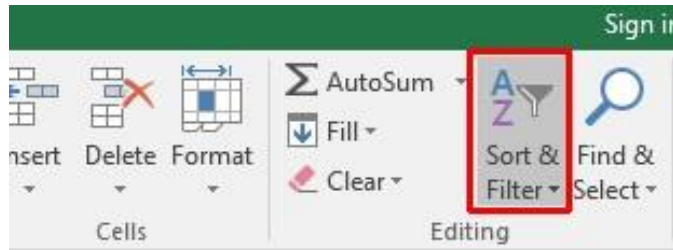
- Click on the **Sort A to Z** option.

- The data will be displayed as illustrated.

- Click on the **'Sort Z to A'** option under the **Sort & Filter** button.

- The data will be displayed as illustrated.

- Click within the data contained in column **C** (for instance click on cell **C8**).
- Click on the **Home** tab, and from within the **Editing** group click on the **Sort & Filter** button. From the drop down list displayed, click on the **Sort Smallest to Largest** option.

The data will be displayed as illustrated.

Countries	Value of Sales
New Zealand	1019483
Pakistan	1281637
India	1846276
United Kingdom	2093627
Canada	2183721
China	2917438
Ireland	2948183
Australia	3281746
USA	4817423

- Click on the **'Sort Largest to Smallest'** option.
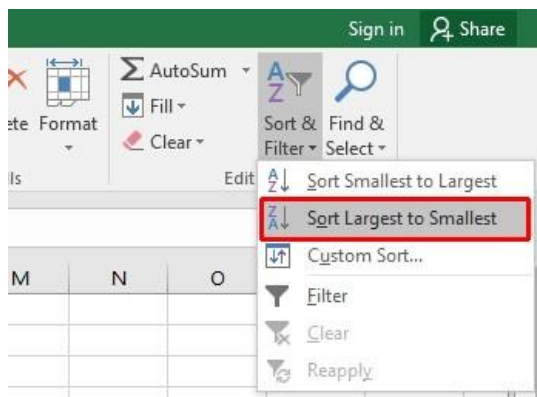
The data will be displayed as illustrated.

Countries	Value of Sales
USA	4817423
Australia	3281746
Ireland	2948183
China	2917438
Canada	2183721
United Kingdom	2093627
India	1846276
Pakistan	1281637
New Zealand	1019483

- Save your changes and close the workbook.

Searching and replacing data

- Open a workbook called **Search and replace**.
- Press **Ctrl+F** to start the **Search** utility (or click on the **Home** tab, then click on the **Find & Select** icon, from the menu displayed select the **Find** command).

  This will display the **Find and Replace** dialog box, as illustrated.
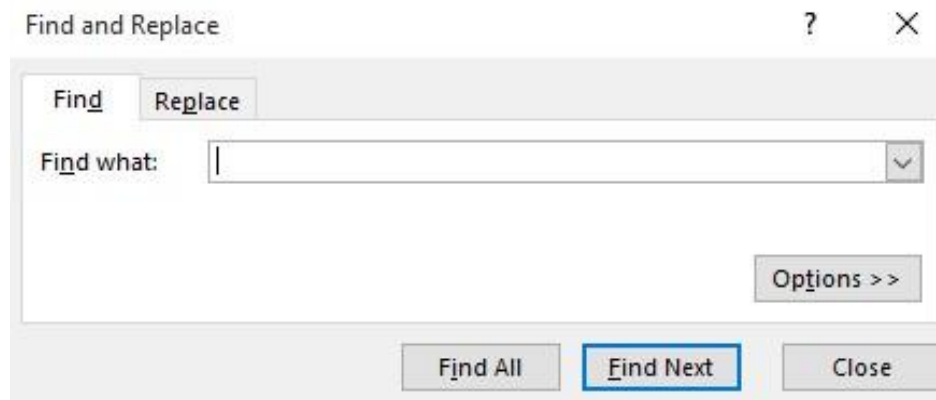
- Within the **Find what** section of the dialog box, enter the word '**Blue**'. Click on the **Find Next** button and you will find the next occurrence of the word Blue. Keep pressing on this button to find all occurrences within the worksheet.
- Click on the **Replace** tab within the **Find and Replace** dialog box.

  TIP: Or use the keyboard shortcut **Ctrl+H**.
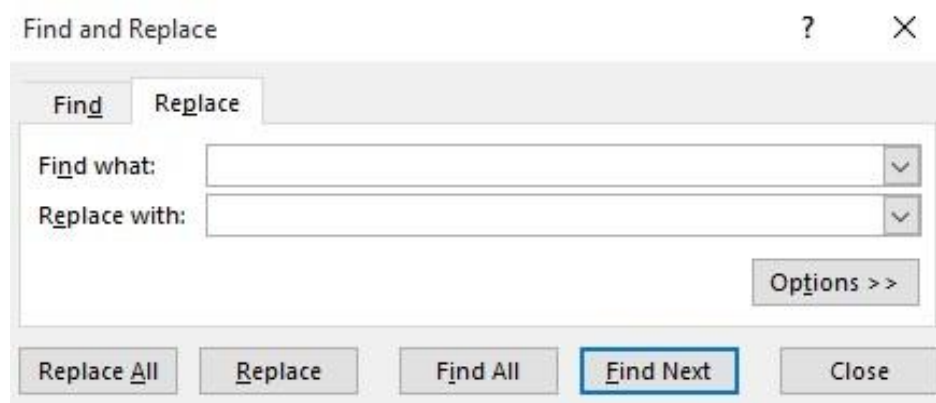
- Within the **Find what** section type in the word '**Blue**'.
- Within the **Replace with** section type in the word '**Purple**'.

- Click on the **Find Next** button and once found click on the **Replace** button. Carry on replacing all occurrence of the word **Blue** with the word **Purple**.
- Close the **Find and Replace** dialog box.

- Press **Ctrl+H** to display the **Find and Replace** dialog box, with the **Replace** tab already selected for you.
- Within the **Find what** section type in the word '**Red**'.
- Within the **Replace with** section type in the word '**Orange**'.
- Click on the **Replace All** button and all occurrences of the word **Red** will immediately be replaced by the word **Orange**.

- Save your changes and close the workbook.

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