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Excel is an **electronic spreadsheet program** that allows you to **store**, **organize**, and **analyze information**. Excel can be used from simple tasks such as creating a shopping list or an invoice/budget to analyzing a complicated data set. **Note:** It is recommended that knowing where these keys are on your keyboard (**Tab, Esc, Ctrl, Enter, Home, End, Backspace, arrow keys,** and **Number keypads)** will help.

Click on Excel App on your computer. The following screen shows upon clicking the Excel 2016.
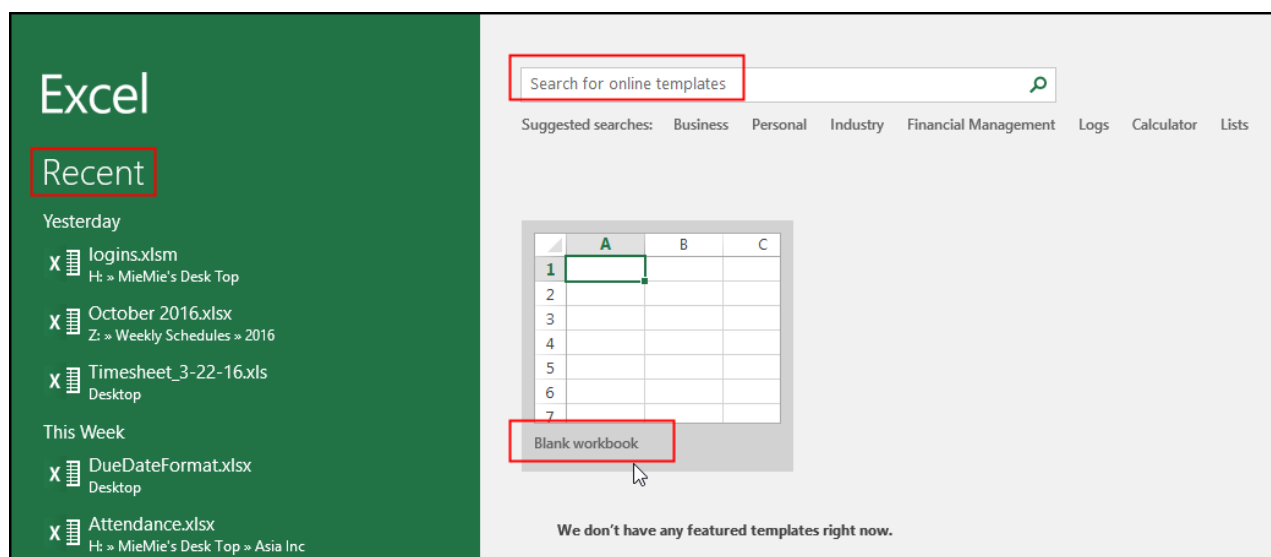
- You will see the recently opened workbooks on the left pane; latest on the top chronologically.
- You can search for online templates in the search box so that you do not have to create a workbook from scratch; for example, looking for a sample on Home Budget examples. Templates often include custom formatting and predefined formulas, so they can save you a lot of time and effort when starting a new project.
- Or you can click on the *Blank workbook* to open a brand new workbook. Close the program.
- For our class, please open *ExcelPart1.xlsx* workbook to explore.

Mouse Pointers in Excel

| Shape	Implication	Action
⊹	The default pointer shape.	Moves cell pointer or selects a range of cells.
↨	Appears when the pointer is on a border (column, row, or window). When adjusting row height, the arrows point up and down. When adjusting column width, the arrows point right to left.	Adjusts the column width, row height or window size.
I	Appears when you are editing the contents of a cell.	Moves the insertion point within the cell.

	Appears when you have a graphic that may be moved. This pointer also appears when you point to the border of a cell.	Moves the selected graphic or cell to the new location.
	Appears when you are at the "fill corner" of a cell or range of cells.	AutoFills other cells with similar information.

Definitions:

Workbook - A file in a spreadsheet program.

Worksheet - A smaller section of a workbook file designated by sheet tabs. A workbook can have multiple worksheets.

The Home Tab: The principal commands in Excel are gathered on the first tab, the **Home** tab. The commands on this tab are those that Microsoft has identified as the most commonly used such as paste, cut, and copy when people do basic tasks with worksheets.
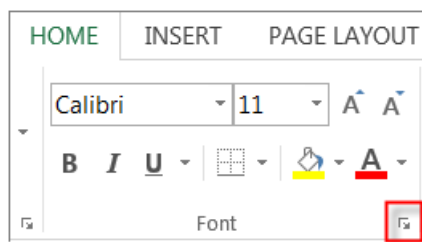

When you see this arrow ⊡ (called the Dialog Box Launcher) in the lower-right corner of a group, there are more options available for the group. Click the arrow, and you'll see a dialog box or a task pane.

Sheet Tabs (on the bottom left):
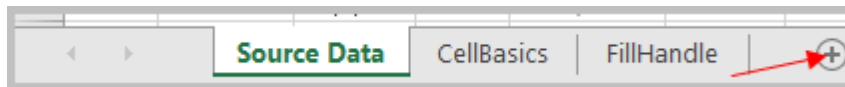
You will also notice a few instant buttons on the bottom of the main screen. For example, a plus sign next to the sheet tabs will insert a new worksheet by one click. The left arrow will navigate among your sheets one sheet to the left one sheet at a time, while holding down **Control** button and left arrow will take you to the furthest left. Opposite will work for the right arrow key.

By pointing with your mouse to the left side area will bring up the menu shown on the right will pop-up.
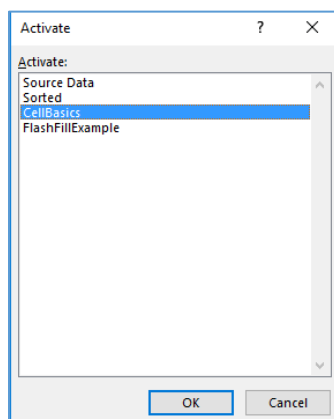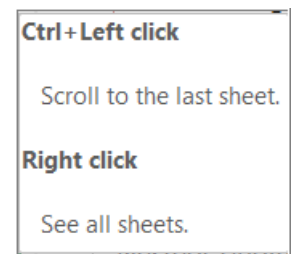
By right-clicking on the left area will list all sheets. Then you can select to go directly to the sheet of your choice.
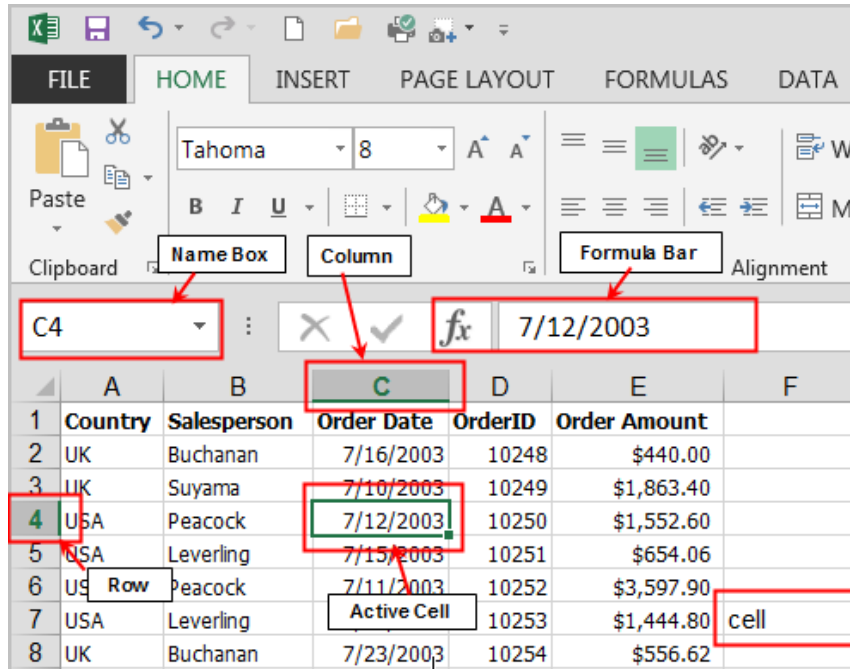
     MS2016-ExcelPart1 MMS 9/1/2020

View Buttons (on the bottomright):
There are also buttons to view normal, page layout, or page break views; and to zoom in or out for easy reading.
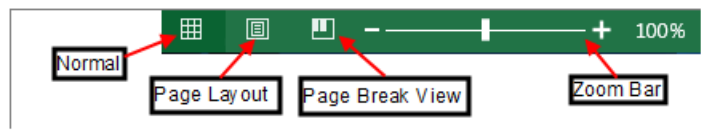
Exercise: Explore an Existing Workbook
- From *ExcelPart1.xlsx* workbook, let's examine *Source Data worksheet*.

Understanding Cells:

Cell: Every worksheet is made up of thousands of rectangles, which are called **cells**. A **cell** is the intersection of a row and a column. Just click on it to select a cell.

Active Cell: The **active cell** is the cell currently selected with the outline surrounding the cell and in the lower right corner, there will be a **fill handle**. In this example, the **active cell** is Cell C4. The **active cell** can be a blank cell where data will be inputted when a user is typing.

Columns: Columns are identified by letters (A, B, C). There are 16,384 columns in Excel 2016.

Rows: The name assigned to each horizontal line in a spreadsheet. Rows are identified by numbers (1, 2, 3). There are 1,048,576 rows in Excel 2016.

Fill Handle: A special box found in the lower right corner of the active cell or selected area. It can be used as a shortcut to copy data or formulas to adjacent cells or to add lists of pre-set data such as the days of the week or the months of the year to a worksheet.

Formula Bar: The **Formula Bar** shows the cells contents whether it is a mathematical equations used to compute something within the worksheet or a string of text or a fixed number.
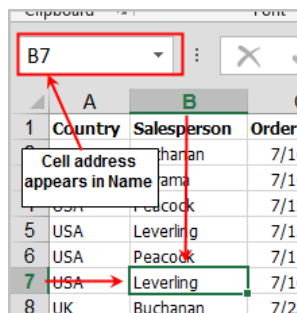
Name Box: cell address appears in the **Name Box**. A user may decide to name a cell or a group of cells (Cell Range) of a spreadsheet. The most useful function of naming cell(s) is to incorporate the name in formulas.

Selecting the Active Cell:

Mouse: You can simply point your mouse to the area you want to move the active cell to and press or click the left mouse button.

Selecting Multiple Cells: You can also select **multiple cells** at the same time. A group of cells is known as a **cell range**. Rather than a single cell address, you will refer to a cell range using the cell addresses of the **first** and **last** cells in the cell range, separated by a **colon**. For example, a cell range that included cells A1, A2, A3, A4, and A5 would be written as **A1:A5**. Click, hold, and drag the mouse until all of the **adjoining cells** you wish to select are **highlighted**. Release the mouse to **select** the desired cell range. The cells will remain **selected** until you click another cell in the worksheet.

Note: You must have your mouse in this mode ⬚ to select multiple cells.

In the images below, two different cell ranges are selected:

Cell range **A1:A8**

Cell range **A1:B8**

Selecting Entire Rows or Columns:

- Click on a column name (A,B,C..) to select an entire column.

- Click on a row number (1,2,3..) to select an entire row

Selecting Multiple Columns or Rows:

- *Using Mouse*: Select an entire column or row first; hold down the left mouse button and drag your mouse to the right to select adjacent columns on the right; to the left to select adjacent columns on the left. Similarly, drag your mouse down to select adjacent rows on the bottom; up to select adjacent rows above.

- *Using the Shift Key*: Select an entire column or row first; hold down the **Shift** key; then select the last column or row. Let the **Shift** key go. All the columns or rows between the first and the last column or row of your selection will be selected.

Selecting Specific Columns or Rows:

- *Using the Control Key*: Select an entire column or row first; hold down the **Control** key; then click and select any column or row of your choice that may or may not be adjacent to the first one. Once all selected, let the **Control** key go.

Selecting an Entire Worksheet:

- If you want to apply a particular format to the entire worksheet, you can do so by selecting the entire worksheet first. Click on the rectangular area on the top left corner of a worksheet, left of Column A and right above Row 1. See picture. Click again in any cell to *de-select* the entire sheet.
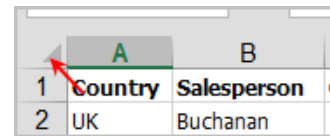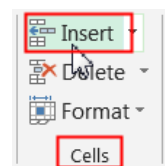
Modifying Columns, Rows and Cells:

Inserting New Rows or Columns: You can insert a column/row or more than one column/row at any given time. If you select more than one column/row, the same numbers of columns/rows will be inserted.
Exercise: In the same workbook *ExcelPart1.xlsx,* select *Source Data* worksheet.

Columns: Select the **column heading** to the right of where you want the new column to appear. The following example shows inserting a new column *before* Column A. (For example, if you want to insert a column between columns D and E, select column E.) Then, click on **Insert** function in the **Cells Group** under the **Home** tab.

- Insert a new column *before* column A.

Rows: Inserting a new row or rows should work similarly. Select an entire row or a group of rows first; click on **Insert** function in the **Cells Group** under the **Home** tab. A new row or rows should be inserted above the selected row(s).

**Resizing Rows & Columns:** There are 3 ways to do this.

1) To resize a row or a column:
   - Select the entire Column A or any cell in the Column A. Change the Column width by using **Home>Format>Column Width** functions under the **Cells Group.** Type in the width "15".
   - Click **OK** or press **Enter**.

2) Place the mouse between the row numbers or column letters. (The white cross will become a black line with arrows pointing up and down or sideways). Drag your mouse to the right or left to resize the column width, up or down to resize the row height.

Resizing Rows   Resizing Columns
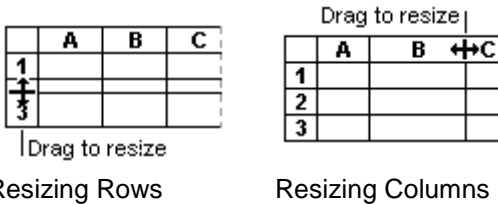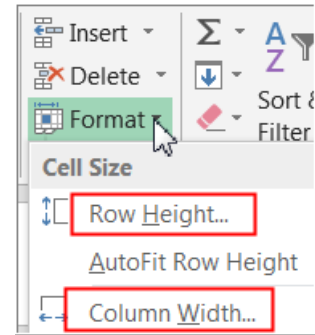
3) Place your mouse between the row numbers or column letters. When the symbol is present, **double-click** and Excel will resize the row or column for you.

Note: Rather than resizing rows and columns individually, you can modify the height and width of every row and column at the same time. This method allows you to set a uniform size for every row and column in your worksheet. To do this:

- Locate and click the **Select All** button; just below the **name box** to select every cell in the worksheet.
- Position the mouse over a **row line** or **Column line** so the **white cross** becomes a **double arrow**.
- Click, hold, and drag the mouse to **increase** or **decrease** the row height or column width.
- Release the mouse when you are satisfied with the **new row height** or **column width** for the worksheet. See example below.
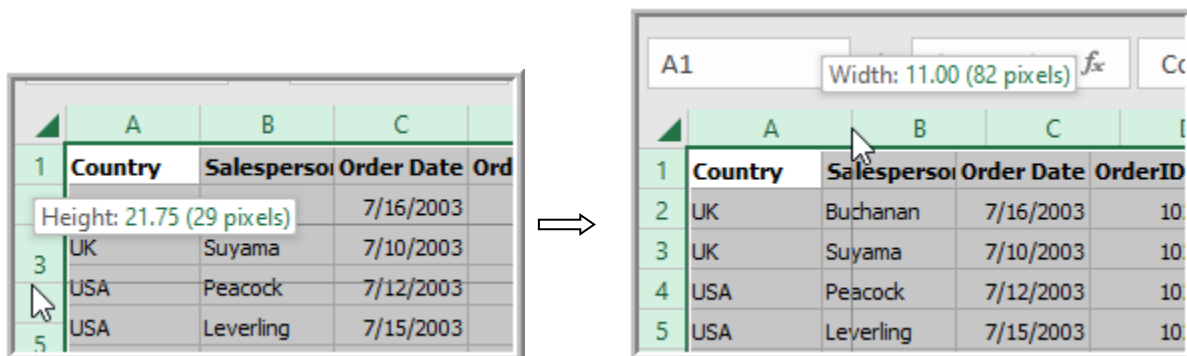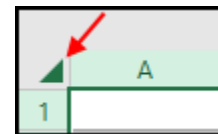
Moving Columns or Rows:

If you want to move your entire row(s) or column(s) to re-arrange your data on your worksheet, you can do so. **Exercise:** We will move a column, but you can move a row in the same way. Use *Source Data* worksheet from *ExcelPart1.xlsx* workbook.

- Select the desired **column heading** (*entire column A*) for the column you wish to move, then click the **Cut** command on the **Home** tab OR by selecting from a right-click menu OR press **Ctrl+X** on your keyboard.
- Select the **column heading** to the right of where you want to move the column. For example, if you want to move a column between columns B and C, select column C. The following example shows to move column A between columns B and C.
- Click the **Insert** command on the **Home** tab, then select **Insert Cut Cells** from the drop-down menu.
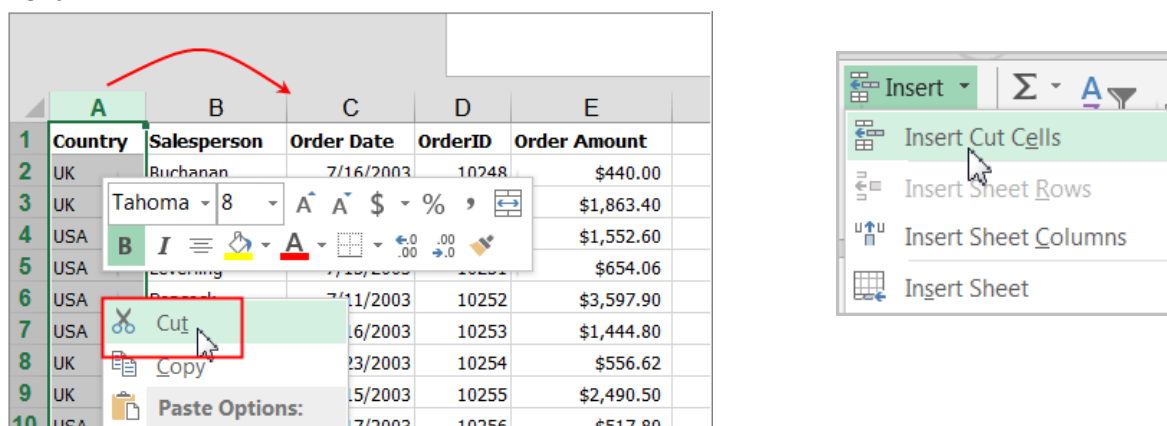
- The column will be **moved** to the selected location, and the columns to the right will **shift right**. See right as *Country* column heading now appears before *Order Date* column heading.


To hide and unhide a row or column:

At times, you may want to **compare** certain rows or columns without changing the organization of your worksheet. Excel allows you to **hide** rows and columns as needed.
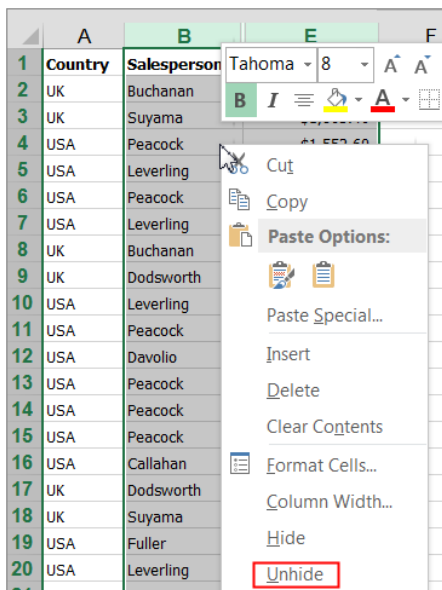
Exercise: Use the same worksheet opened above. In our exercise, we'll hide columns C and D to make it easier to compare columns A, B, and E.

- Select the **column(s)** you wish to **hide** (Columns C and D), right-click the mouse, then select **Hide** from the **formatting** menu. The columns will be **hidden**. The **green column line** indicates the location of the hidden columns.
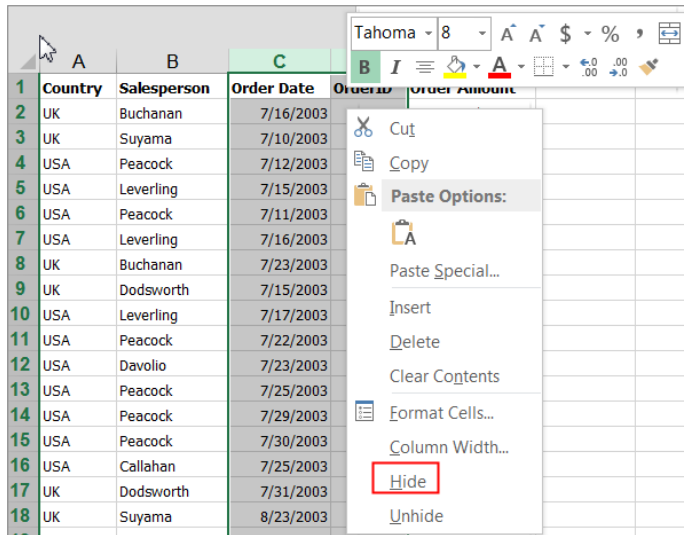
▪To **unhide** the columns, select the columns to the **left** and **right** of the hidden columns (in other words, the columns on **both sides** of the hidden columns). In our example, we'll select columns **B** and **E**. Right-click the mouse, then select **Unhide** from the **formatting** menu. The hidden columns will reappear.

Keyboard: There are several keyboard combinations that one may use to move the active cell quickly without using the mouse. See below.

- **Enter** - Moves the active cell down one cell and accepts that data entered into the cell.
- **Tab** - Moves the active cell right one cell and accepts that data entered into the cell.
- **Left or Right Arrow** - Moves the active cell one cell at a time, left or right.
- **Up or Down Arrow Keys** – Moves the active cell one cell at a time, up or down.
- **Ctrl + Left or Right Arrow Keys** - Moves the active cell left or right to the beginning or end of an area that contains data. If no data is in a cell, then it goes to the first or last column of the worksheet.
- **Ctrl + Up or Down Arrow Keys** - Moves the active cell up or down to the beginning or end of an area that contains data. If no data is in a cell, then it goes to the first or last row of the worksheet.

- • **Page Down** - Moves the active cell down to the next page of the worksheet.
- • **Page Up** - Moves the active cell up to the previous page of the worksheet.
- • **Ctrl + Page Down** - Makes the next worksheet active (right).
- • **Ctrl + Page Up** - Makes the previous worksheet active (left).
- • **Home** - Moves the active cell to column A.
- • **Ctrl + Home** - Moves the active cell to cell A1.
- • **Ctrl + End**- Moves the active cell to the last cell with data in it.

Cell Content:

Any information you enter into a spreadsheet will be stored in a cell. Each cell can contain several different kinds of content, including text, formatting, formulas, and functions. Text cells can contain text, such as letters, numbers, and dates. Let's follow steps below to practice.

Exercise: Entering Data in a new Workbook and editing cell content

- ▪ **Step 1:** Open a new worksheet by clicking on the + sign on sheet tab area. Type in the information in 2 columns: A and B as shown below on the left. Just Type **content** into the selected cell, then press **Tab key** on your keyboard. The content will appear in the **cell** and the **formula bar**. You can also input and edit cell content directly in the formula bar. (Be sure to use either the **Tab** key or right-arrow key on your keyboard as you type data across the columns in your worksheet. After typing the last cell in Column B, hit **Enter** key to start from the next row in Column A.) Do not worry about content not fitting in the column yet.

Options Entering and Editing Data: After typing in your data in a cell:
- ▪ Use **Enter** key to move the active cell to the cell right below
- ▪ Use **Tab** key to move the active cell across on the same row
- ▪ Use **Esc** key if you decide that you do not want the data to be accepted **OR** click on the "X" next to the formula bar area
- ▪ You can edit your data by clicking directly in the **formula bar** area then use the **backspace** button to edit your data OR select the cell with the data and simply start typing new information in it.

Deleting Data or Clearing Cell Content:

- Select the **cell** with content you wish to delete.
- Press the **Delete** or **Backspace** key on your keyboard. The cell's contents will be deleted. **OR**
- You can also delete or clear the cell contents by using the **Clear** function in the **Editing Group** under the **Home** tab. Excel will simply clear the contents, comments, formats, hyperlinks, or all and leave the original cell blank without shifting the cells around the cleared cell. **OR**
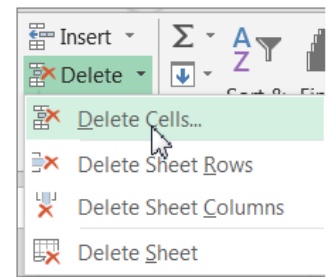- Right-click on the selected cell and select **Clear Contents.**
  - **Step 2:** Clear the content of Cell A5 "Income 3" by using **Home>Clear Contents** in the **Editing Group** OR using the **Delete** key on your keyboard. Enter the new data "Junior's Income" in Cell A5. (**Note:** You can also overtype the new information without clearing the existing content.)
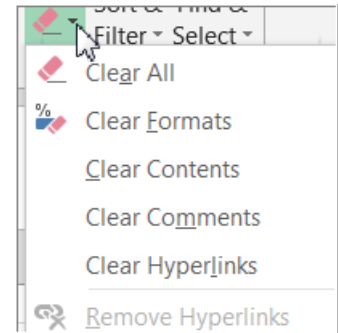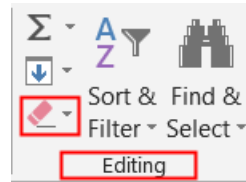
Deleting Cells:

There is an important difference between **clearing the content of a cell** and **deleting the cell itself**. If you delete the entire cell using the **Home>Delete Cells** function, the cells below the deleted cell will **shift up** and replace the deleted cells. In this example below, by deleting the cell A5 shifted up Cell A6 creating an incorrect data alignment. **Undo the last step.**

Spreadsheet data is normally arranged so all relevant information exists on each row or column. To avoid mishaps shown in the above example, it is recommended if an entire row or column needs to be deleted, select that entire row or column *first* then hit the **Delete** function in the **Cells Group** under the **Home Ribbon.** See below.

Step 1) Select the entire row

Step 2) Select either **Delete** or **Delete Sheet Rows** in the **Cell Group** under the **Home Tab.**
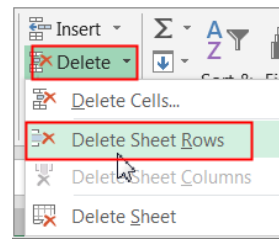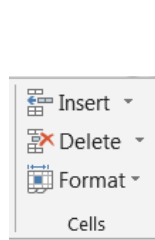
- **Step 3:** Select the entire Row 5. Use the **Delete Command** in the **Cells Group** to delete the entire row 5. Watch the row below with *Other* data will shift one row up to take the deleted row.

Deleting Columns: Works the same way. Select the columns(s) you want to delete and use **Delete** or **Delete Sheet Columns** in the **Cell Group** under the **Home Tab**.

To copy and paste cell content:

Excel allows you to copy content that is already entered into your spreadsheet and paste that content to other cells, which can save you time and effort.

Exercise: Open the *ExcelPart1.xlsx* and select *CellBasics* worksheet and follow the instructions below.

- Select the cell(s) you wish to copy. Cell A1.
- Click the **Copy** command on the **Home** tab, or press **Ctrl+C** on your keyboard or right-click on the cell and select **Copy**. The copied cells will now have a dashed box around them.
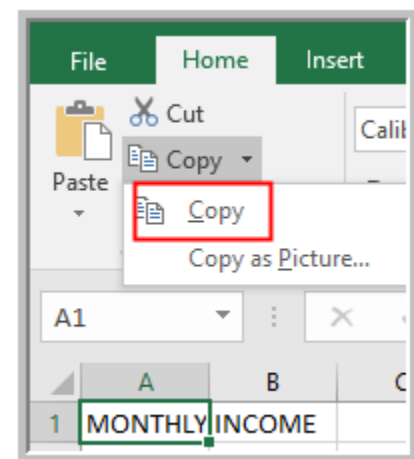
- Select the **empty cell(s)** where you wish to **paste** the content. Select Cell A8.
- Click the **Paste** command on the **Home** tab, or press **Ctrl+V** on your keyboard.
- The content will be **pasted** into the selected cells. Hit **Esc** key on your keyboard to deactivate dashed box around Cell A1.
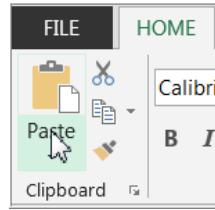
- Select the entire Row 8 and use **Delete Cells** function from the **Cells Group** under the **Home** tab to prepare for the next exercise. Keep the workbook open.

Additional Paste Options:

There are also other paste options you can explore. Click the drop-down arrow under Paste Command after copying cell(s). They are especially convenient when working with cells that contain **formulas or formatting**.

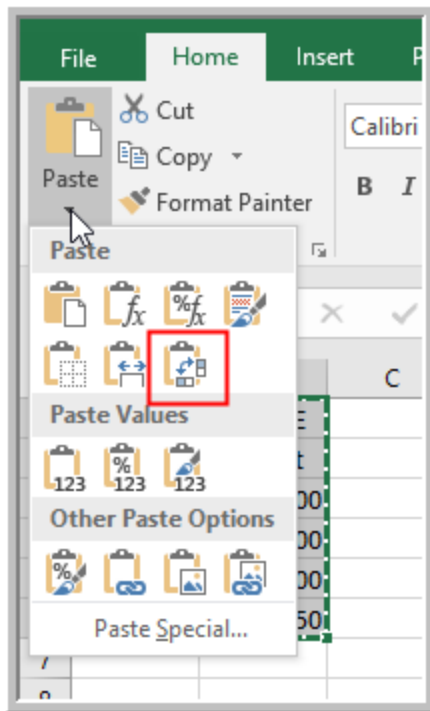One useful option is "Transpose" where you can switch row and column data into an opposite structure.

Exercise: Use the already opened worksheet *CellBasics*.

- Click the cell(s) you want to transpose. Cells A1:B6.
- Click the **Copy** button. The copied cells will now have a dashed box around them.
- Click the first cell of the new column or row (Make sure you paste into blank cells). Select Cell A8.
- Click the **Transpose** command under paste option. Now you have your row and column data switched.
- Click on the **Undo** button on **Quick Access Toolbar** and **Esc** button to undo and clear what you have just done to practice the next topic.

To cut and paste cell content:

Unlike copying and pasting, which **duplicates** cell content, **cutting** allows you to **move** content between cells.
Exercise: Use the already opened worksheet, *CellBasics*.

- Select the **cell(s)** you wish to **cut**. Select Cell A1:A6.
- Click the **Cut** command on the **Home** tab, or press **Ctrl+X** on your keyboard. The cut cells will now have a **dashed box** around them.
- Select the cells where you wish to **paste** the content. Select Cell D1.
- Click the **Paste** command on the **Home** tab, or press **Ctrl+V** on your keyboard.
- The cut content will be **removed** from the original cells and **pasted** into the selected cells.

Click on the **Undo** button on **Quick Access Toolbar** and **Esc** button to undo and clear what you have just done to practice the next topic.
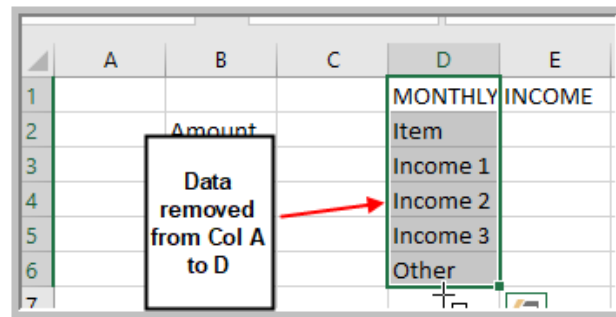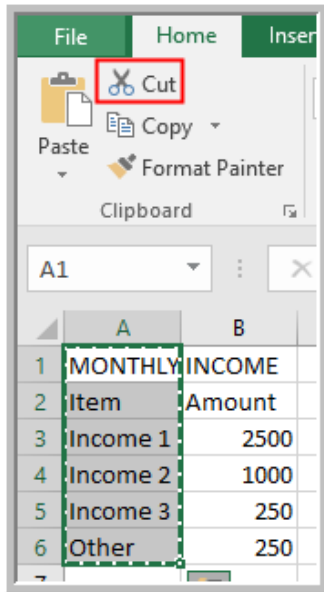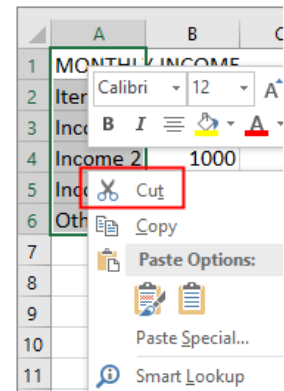
Right-click Option: Rather than choosing commands from the **Ribbon**, you can access commands quickly by right-clicking. Simply select the cell(s) you wish to format, then right-click the mouse. A drop-down menu will appear, where you'll find several commands that are also located on the Ribbon.

To drag and drop cells:

Rather than cutting, copying, and pasting, you can drag and drop cells to move their contents.

- Select the cell(s) you wish to move.
- Hover the mouse over the underlined border of the selected cell(s) until the cursor changes from a white cross ✚ to a black cross with four arrows ✛.
- Click, hold, and drag the cells to the **desired location**.
- Release the mouse, and the cells will be **dropped** in the selected location. See the steps below.

	1			2			3	
	F	**G**		**F**	**G**		**F**	**G**
	Friday, March 1, 2013	Friday, March 8, 2013		Friday, March 1, 2013	Friday, March 8, 2013		Friday, March 1, 2013	Friday, March 8, 2013
	x			x			x	
	x			x			x	
		x			x			x
		x			x			x
	x			x (F4:F5)			x	
	x			x			x	
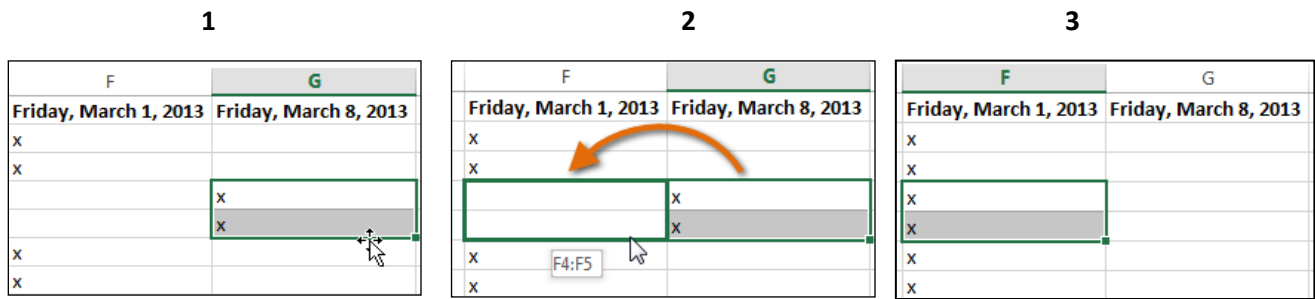
More on Fill Handle: You can use the **fill handle** to quickly copy and paste content to **adjacent cells** in the same row or column. To do this:

- Select the **cell(s)** containing the content you wish to use. The **fill handle** will appear as a small square in the bottom-right corner of the selected cell(s). Click, hold, and drag the **fill handle** until all of the cells you wish to fill are **selected**. Release the mouse to **fill** the selected cells. **OR**
- Point to the **fill handle** and double-click your mouse. The same content will copy to the last row of your entire worksheet.

Using Fill Handle to fill the series: The fill handle can also be used to continue a series. Whenever the content of a row or column follows a sequential order, like numbers (**1, 2, 3**) or days (**Monday, Tuesday, Wednesday**), the fill handle can guess what should come next in the series. In many cases, you may need to select multiple cells before using the fill handle to help Excel determine the series order. If used on cells that contain text or fixed number, Fill Handle will just copy the content of cells below.

	A	B	C	D	E	F
1	Country	Salesperso	Order Date	OrderID	Order Amount	
2	UK	Buchanan	7/16/2003	10248	$440.00	
3	UK	Suyama	7/10/2003	10249	$1,863.40	
4	USA	Peacock	7/12/2003	10250	$1,552.60	
5	USA	Leverling	7/15/2003	10251	$654.06	
6	USA	Peacock	7/11/2003	10252	$3,597.90	
7	USA	Leverling	7/16/2003	10253	$1,444.80	
8			7/17/2003			
9						

Exercise: In *FillHandle* worksheet,

1) select Cell A7 and use the fill handle to copy the content to a few cells below.

2) Do the same thing on Cell B7. Both cells A7 and B7 contain text, so Fill Handle simple copy the contents of the cell when used.

3) Select Cell C7 and use Fill Handle to extend a series of dates below.

4) Save the workbook on your desktop; rename the workbook by using your first name.

5) Close the Excel Program.