



DIGITAL SKILLS

Microsoft Excel essentials

Last updated 6 SEPTEMBER 2021

This document covers some of the key features of Microsoft Excel. Note that some of the instructions provided may differ slightly for different versions of the software, so for detailed instructions on any of the concepts covered for a different version of Excel (or for anything else), you may like to try searching the name of the concept using your preferred search engine.

1. Creating a new workbook

When you open up Excel you will see that you have a range of preformatted documents to choose from. A blank workbook will likely be the most common template that you will use; however, you may like to experiment with other types as you continue using the software (note: a **workbook** refers to the whole Excel file/document, and **sheets** are the separate pages you can use within that document).

In this document we will be using an existing workbook, called **Party_Budget** (note there are two versions, Workbook_1 and Workbook_2, depending on whether you want to apply the formatting covered in Section 2 yourself or not). The Party_Budget spreadsheet has been organised so that each column represents a **field** (category of information; in this case name and type of item, supplier, cost and date paid) and each row represents a **record** (collection of information about a particular person, place, event or thing; in this case party expense). Where possible, you should ensure that you organise your data in the same way.

2. Formatting your workbook

When you create a new Excel workbook, or when you inherit one, there are a few things you might want to do in terms of formatting the document to make the data easier to interpret and understand. This section details a few of the key types of formatting you may wish to do, and which you should work through if you are using Party_Budget_Workbook_1 (which has very little formatting!).

2.1 Adding headers

The data in the Party_Budget sheet currently does not have any headings. Let's add some so we can easily tell what data we are looking at. Firstly, we will need to insert a new row. To do this, right click on the number 1 of your spreadsheet, and click **Insert** (you can also find insert options in the **Cells** section of the **Home** tab). Now that you have a new row, we can add our headings. From left to right, in separate cells, type the following:

ITEM
TYPE
SUPPLIER
AMOUNT_PAID
DATE_PAID
AMOUNT_OWING

Press the tab key or the left and right arrow keys to quickly move between cells. Your spreadsheet should now look like this:

	A	B	C	D	E	F
1	ITEM	TYPE	SUPPLIER	AMOUNT_PAID	DATE_PAID	AMOUNT_OWING
2	Venue hire	Venue	Local hall	50	12/01/2019	50
3	DJ	Entertainment	Perth DJs	150	5/02/2019	150
4	Cake	Food	Perth Cake Exp	50	1/03/2019	79.5

You can format these headings so that they stand out from the rest of the data, by changing the style (e.g. bold, italic), colour, and background fill. These options can all be found in the **Font** section of the **Home** tab. Play around with them to get your sheet looking how you want it.

At this point it is worth noting that many of these formatting changes will only be recognised by humans, and that there are limits to what Excel will pick up on. For example, while you can sort or filter your data according to cell or font colour, it is usually quite difficult to write formulas that take into account these things. Hence while it is fine to format your sheets to make them nicer for humans to look at, just make sure that anything that needs to be machine readable (i.e. understood by Excel or other software) is (for example, by including separate columns for each field as in the Party_Budget spreadsheet as needed, rather than just colour coding the items).

Machine readability is also the reason the headings used above have underscores in them rather than spaces, as some software does not recognise these. If the data is just for use in Excel then there is no need to be so concerned about this, but if there is a chance your data may eventually be used in other software then you should follow the convention of using only letters, numbers, underscores and dashes in any file, field or header names you create.

2.2 Formatting cells

You can format cells depending on what type of information they contain or will contain. For instance, in columns D and F are a list of prices to one decimal place. To format these as currency select both columns by holding down the **Ctrl** button and clicking on the **D** and **F** at the same time. Then right-click anywhere in either of the columns and select **Format Cells**. You will then see a list of options to choose from, including General, Number, Currency, and so on. Select **Currency** and click **OK**. The numbers in both lists will now be formatted as dollar amounts to two decimal places.

2.3 Freezing panes

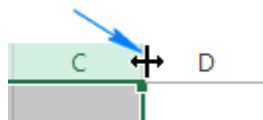
Sometimes, when you're working with a large data set, it's useful to be able to keep the category or heading panes in view as you navigate the set. To do this you will need to "freeze" the panes, which you can do by going to the **View** tab, selecting **Freeze Panes** and then **Freeze top row**. You will also see options there for if you wanted to freeze a selected section of cells, or freeze the first column.


2.4 Resizing cells and wrapping text

You will notice that some of the data in the sheet appears to be cut-off:

Cake	Food	Perth Cake Exp	\$50.00	1/03/2019	\$79.50
------	------	----------------	---------	-----------	---------

There are a few ways to expand the columns so that the text fits. The first is to hover over the line between the column your text is in and the one after it (C and D in this case, as pictured below), and double-click when the two-way arrow comes up:




This will expand the C column to the width of the largest piece of data (e.g. "Perth Cake Experts"). You can also click and drag on the two-way arrow to adjust the column to the width you want. If you have multiple columns that need resizing you can do them at the same time by highlighting all the relevant column headers (do this using **Ctrl** if they are not adjacent), then hovering over the end of one of the columns so that the two-way arrow appears and double-clicking or dragging to the desired width. You can even do this for every column in the sheet at once, by selecting the little triangle  in the top left hand corner of the sheet first. Alternatively, you can use the **Format** menu in the **Home** tab for resizing columns (and rows).

Another option you can choose to display your text is to **wrap** it. To do this select the cells, rows or columns you want to wrap, go to the **Home** tab and in the **Alignment** section select **Wrap Text**. Now if you add more text to a cell it will stay at the width you have selected, but will be shown on a new line within the same cell, rather than being cut off/hidden.

3. Autofill, flash fill and text to columns

Excel can help save you time in many ways, including by picking up on patterns and automating processes for you. This section details three common ways of doing this.

3.1 AutoFill

When using Excel, you may be working with data in some kind of sequence (such as counting numbers, days of the week, dates, etc.). You can use AutoFill to save time entering each item in the sequence into your spreadsheet. Test this by first adding a new sheet in the Party_Budget Excel workbook, by pressing the  symbol at the bottom of the screen. Double-click on the new sheet name to change it (e.g. to **Party_Guests**).

On the new sheet, enter the numbers 1 and 2 in cells **A1** and **A2**, respectively. **Highlight both cells**, and hover your mouse over the bottom-right corner of the “2” cell. When the black + symbol shows, click and drag downwards to row 20. The cells will automatically be filled with the numbers 3–20.

Note that this works for any sequence that Excel can distinguish in the data you have already entered (if you just enter a single value, it will repeat it in all the other rows). Note also that if you already have data entered in a certain number of rows for a column adjacent to the one you want to use AutoFill in, you can simply double click when you see the black + symbol rather than dragging downwards. The data will then be populated in the same number of rows as you have data in the adjacent column.

3.2 Flash Fill

Flash Fill is handy when you want to combine existing data to work with it more efficiently. To try this, type the first and last names of at least five guests you would like to invite to your party in columns B and C of the Party Guest sheet. Example:

Tracy	Piper
Claire	Hulcup
Party	Pooper

Now, in column D, type the first AND last name of the first person you are inviting (e.g. Tracy Piper) in the same row (e.g. row 1). Press **Enter**, and start doing the same for the second person in your list. As you begin typing the second name you should see the rest of the names automatically filled in for you in the remaining cells; press the **Enter** again and Excel will fill in the cells for you. It should look something like this:


Tracy	Piper	Tracy Piper
Claire	Hulcup	Claire Hulcup
Party	Pooper	Party Pooper
John	McClane	John McClane

If it *does not* automatically fill in the cells for you, go to the **Data** tab and select **Flash Fill** in the **Data Tools** section to use Flash Fill instead.

You can use Flash Fill any time you want to combine data in this way, or when you want to make the same change to all data in a column (e.g. appending the same text to each entry).

3.3 Splitting a single column into multiple columns

Sometimes you may want to do essentially the opposite of the above, and split a single column into multiple columns. For example you might already have a column containing both first and last names that you want to split into a column of first names and a column of last names, or you may have dates that you want to split into three separate columns for day, month and year. We will do the latter now, but first we will make a copy of the Party_Budget sheet to do it in.

To do this right click on the **Party_Budget** tab at the bottom of the screen and select **Move or Copy...**, click on **(move to end)**, tick **Create a copy** and select **OK**, then rename the copy **Party_Budget_Copy**. Now click in this sheet and highlight cells **E2 to E19** (i.e. the dates), then select the **Data** tab and choose **Text to Columns**. The **Convert Text to Columns Wizard** will appear, where you need to specify things such as the type of data, how it has been separated in the current column, and where you want to place the new data. For this example, keep the data type as **Delimited** and click **Next**, then from the list of Delimiters choose **Other** and type the / symbol; the data preview should now show that the dates have been separated into three columns. Now click **Next** and choose the Destination for the new columns; click on the  icon and highlight cells **G2 to I19** for example, then click the icon again to select this as the

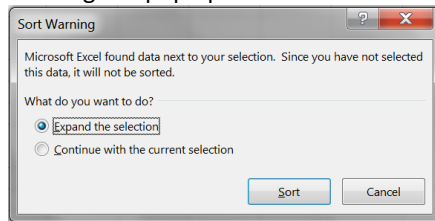
destination. Finally, click **Finish** and the dates should be separated into three columns in columns G, H, I, which you can give the headings of **DAY**, **MONTH** and **YEAR** respectively. Once you have done this, return to the original **Party_Budget** sheet.

4. Sorting and filtering

Two common ways you can organise your data are through sorting and filtering, as detailed in this section.

4.1 Sorting

Sorting your data is useful when you want to look at your data in a particular way, such as chronological or alphabetical order. Try this by selecting the **ITEM** column (**A**) and clicking **Sort & Filter** → **Sort A to Z**. This warning will pop up:



Make sure you select **Expand the selection**, so that your data remains aligned with its associated variables (you would only 'Continue with the current selection' if you wanted to sort a single column and leave the data in any columns around it unsorted - which is not the case here). Then click **Sort**. The data should now be shown in alphabetical order. To put it back in chronological order by purchase date (as it was previously) do the same again, this time selecting the **DATE_PAID** column (**E**) and clicking **Sort & Filter** → **Sort Oldest to Newest**.

4.2 Filtering

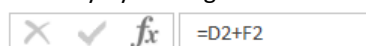
Filtering your data is a simple way to look at similar records in your data set at the same time. You can do this if you have more than one record with a value the same as another (e.g. multiple items purchased from Woolworths). To filter your data select the column or row you want to filter by, the **SUPPLIER** column (**C**) for example, and in the **Home** tab select **Sort & Filter** and **Filter**. You should now see a little arrow next to the **SUPPLIER** cell. If you click on this you will be able to filter your data by the different suppliers you have purchased from, by checking and unchecking the options available. When you have finished, make sure you check (**Select All**) again.

5. Formulas and simple functions

When you want to perform calculations involving your data, you will need to make use of formulas. This section details how you can create your own simple formulas, as well as how you can make use of Excel's in-built functions. It also covers the different types of cell references used in formulas and functions.

5.1 Formulas

You can create formulas in Excel to perform calculations, typically by referring to values in cells in your workbook. For example, we can add together the amounts paid and amounts owing to find the total cost of each item in the **Party_Budget** spreadsheet using formulas. We will do this in **column G**, which you should first give the heading **TOTAL_COST**. Now click on **cell G2** and type the = sign, then either select cell **D2** or type **D2**, type the + sign and finally either select cell **F2** or type **F2**. Pressing **Enter** should then give you the total cost, which is \$100 in this case. If it doesn't, check that you have entered the formula correctly by clicking on the cell where you entered it (i.e. **G2**) and looking at the formula bar:



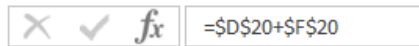
You can always make edits to the formula in the formula bar if you need to.

5.2 Reference types

Something important to note when creating formulas in Excel is the different **reference types**. The default in Excel is a **relative reference**, meaning that any references to cells you make in your formula are relative to the location of the cell where the formula is. For example, the formula that we have just written is a

formula that refers to the cells three places and one place to the left of it respectively. If we **copy and paste the formula in cell G3**, for example, the formula adds together the values in cells D3 and F3 instead to give a total cost of \$300. This is very useful in instances such as this, when we are wanting to perform the same operation for different sets of cells. Indeed, we can now copy the formula to the rest of the cells in the TOTAL_COST column to find the total cost of the remaining items by clicking on cell **G3**, hovering the mouse over the bottom-right corner of the cell until the black + symbol shows, and double clicking.

Alternatively, if you want the formula to remain exactly the same in the new cell you are copying it to you need an **absolute reference**. You can convert to this reference type by either manually **adding \$ signs** to the front of all the column and row references in the formula bar, or by **highlighting it in the formula bar and clicking F4**. Try doing this to the formula in cell **G20**:



If you then **press Enter** and **copy and paste the formula in cell I2**, for example, the result should be the same total of \$213 (delete the value in cell I2 when you have confirmed this).

Finally, you might sometimes want to use a **mixed reference** to keep either the row or the column absolute, but the other relative. You can do this by typing the \$ sign only in front of either the row or the column reference as appropriate, or by highlighting the formula and pressing F4 until you have the desired result.

5.3 Some common functions

For anything beyond the simple calculations described above, making use of Excel's built-in functions in your formulas is a must. The following sub-sections outline a few of the most commonly used ones, but there are hundreds to choose from. You can find them by going to the **Formulas** tab and browsing through the lists of functions grouped into various categories, or by selecting **Insert Function** and searching for a function using a brief description. Either way, you can see details of the pieces of information (known as **arguments**) that are required to be entered as part of the function, and can click on **Help on this Function** for a detailed description of it if required. Alternatively, if you are not sure of the exact name of a function but know what it starts with you can type the = sign in a cell and then start typing to see a list of functions, which you can then select from by double clicking. You can also find a list of all functions, along with detailed descriptions, here:

<https://support.office.com/en-us/article/excel-functions-alphabetical-b3944572-255d-4efb-bb96-c6d90033e188>

5.3.1 AVERAGE, COUNT, SUM functions

The AVERAGE, COUNT and SUM functions are three commonly used functions when working with numbers. They are as follows:

AVERAGE finds the average (mean) of values. It takes up to 255 arguments, which can be numbers, cell references or ranges.

COUNT counts how many values are numbers. It takes up to 255 arguments, which can be items, cell references or ranges.

SUM adds values together. It takes up to 255 arguments, which can be numbers, cell references or ranges. Each of these functions can be performed by typing the function as part of a formula, or by using **AutoSum** or **Quick Analysis**. To type the AVERAGE function to average all the amounts paid, for example, first select the cell where you want the average displayed. Do this **in cell D21** by typing the following (or at least start typing it, then double-click on the name of the function when it appears):

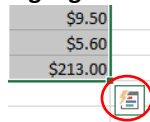
=AVERAGE(

You can then average the values in the column either by entering all the cell references as individual arguments or, more efficiently, by entering the range of cell references as a single argument (recommended). To do the latter either type **D2:D20** or highlight the relevant cells; either way, the result when you press **Enter** should be \$31.75 and the formula should look like this:



To use AutoSum to perform the COUNT function to count of the number of items that still have amounts owing, for example, **highlight cells F2 to F20** then click on the **Formulas** tab, select **AutoSum** and choose **Count Numbers**. A count of the total number of numbers in the highlighted cells will appear in cell F21, although as this entire column was previously formatted as currency it appears as \$4.00. To change the value to 4, which is the number of items still requiring some payment, simply **reformat the cell as General** using the method described previously.

To use Quick Analysis to perform the SUM function to add together all of the total costs, for example, **highlight cells G2 to G20** then **click on the Quick Analysis icon** in the bottom right hand corner:



Select the **Totals** tab and choose **Sum**, and the sum of \$1095.70 should appear in cell G21. You can edit any formulas created using AutoSum or Quick Analysis in the formula bar if needed.

5.3.2 AND, IF, OR functions

Logical functions, which check conditions and return results accordingly, are further examples of commonly used functions in Excel. Three examples of such functions are AND, IF and OR, which are often used together. Each function is as follows:

AND checks multiple conditions at the same time. It takes up to 255 arguments, which are the conditions, and returns TRUE if they are all true and FALSE if they are not.

IF makes a logical comparison and returns a value depending on the result. It takes three arguments; the logical expression to be evaluated (which can include AND, OR functions), the value to return when the expression is TRUE, and the value to return when the expression is FALSE.

OR checks multiple conditions at the same time. It takes up to 255 arguments, which are the conditions, and returns TRUE if any of them are true and FALSE if they are not.

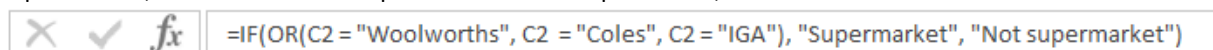
As an example of using the IF and OR functions together, consider that we want to categorise the items in the list to see which ones were purchased from a supermarket and which were not. We will do this in **column H**, which you should first give the heading **SUPPLIER_TYPE**. Now click on **cell H2** and type the following (or at least start typing it, then double-click on the name of the function when it appears):

=IF(

You then need to enter three arguments, the first of which is the logical test. In this case this requires use of the OR function, as you need to check whether the supplier is Woolworths or Coles or IGA (i.e. if it is any of the supermarkets). So the first argument, which you can create by typing or by a combination of typing and selecting cell C2, should be as follows:

OR(C2 = "Woolworths", C2 = "Coles", C2 = "IGA")

The second and third arguments of the IF function will then be the values you wish to return if this is TRUE or FALSE respectively (it will be TRUE if any of the three conditions are TRUE, and FALSE if they aren't). So enter a comma and a space after your previous argument and then type **"Supermarket"**, a comma and a space, and **"Not supermarket"**, for example. When you **press Enter** the value in the cell should read 'Not supermarket', as this item was not purchased from a supermarket, and the formula should look like this:



Copy this relative reference to the rest of the cells in the Supplier Type column to find the supplier type of the remaining items by clicking on cell **H2**, hovering the mouse over the bottom-right corner of the cell until the black + symbol shows, and double clicking.

As another example, consider that you can use the AND and IF functions together to indicate which supermarket items cost more than \$20. Do this in **cell I2** by typing the following formula, which checks whether an item was purchased from a supermarket (using the new value in cell H2) and cost more than \$20 (using the total cost in cell G2), and returns text if it was and no text if it wasn't:

=IF(AND(H2= "Supermarket", G2 > 20), "Supermarket item more than \$20", "")


Again, you can copy this relative reference to the rest of the cells in column I to see the result for all items in the list.

Finally, three variations of the IF function that may be of interest are the **AVERAGEIF**, **COUNTIF** and **SUMIF** functions. Each of these functions test if cells in a certain range (the function's first argument) meet a set criteria (the function's second argument) and average, count or sum, respectively, those that do. For example, typing the following formula in cell **B21** will count the number of items in the list that have been categorised as Food in the TYPE column:

=COUNTIF(B2:B20, "Food")

This formula should give the result of 8.

6. Transposing data

Occasionally you might find that you wish to transpose your data; that is, change the columns of your spreadsheet to rows and vice versa. To do this, highlight the data you would like to transpose, (e.g. all of the **Party_Budget data**), and copy it (by right-clicking and selecting **Copy** or by pressing **Ctrl + C**). Next, choose where you would like to paste the transposed data (try adding a new sheet and renaming it, e.g. to **Transposed_Data**), then right-click on the cell in the top left-hand corner of where you would like to paste it (the A1 cell in your new sheet for example) and choose **Transpose (T)**  from the **Paste Options**. Your data will be transposed, with the columns as rows and the rows as columns. You just may need to resize the columns to fit the data, in particular to view the dates in this example (don't worry too much about formatting this spreadsheet now though as we will continue to use the original Party_Budget sheet for the remainder of the session, so ensure you have selected it again).

7. VLOOKUP

This function can be useful when you want to look things up in a spreadsheet arranged as per the Party_Budget spreadsheet (i.e. with columns representing fields and rows representing records; for data arranged the other way around, you will need to either transpose it or to use HLOOKUP). As an example, consider that we want to find out the date we paid for fruit for the party. To use VLOOKUP for this we first need to choose the cell where the result is to be displayed. Use **B22** for example, although note you should **format this cell as a Date**, using the method described previously, to ensure that the value displays correctly for this particular example. You may also want to **type the word Fruit in cell A22**, to show that this is the item the date refers to (you can also use this to help in step 1 below). Now **click in cell B22** and type the following (or at least start typing it, then double-click on the name of the function when it appears):


=VLOOKUP(

You will then be prompted to enter four arguments as follows:


1. **lookup_value**: this is, as the name suggests, the value you want to look up. In this case we want to find out the date we paid for the fruit, so "Fruit" is our look_up value. We can enter it like this (i.e. in quotes), or if you have typed Fruit in cell A22 then just click on that cell and the cell reference will appear as part of the function.
2. **table_array**: this is the range of cells that make up the search area. This needs to include both the column that the function will search in for the lookup_value (column A in this case), and the columns to the right of it where you want it to search for the value it will return (note that VLOOKUP only searches columns to the right, so you will need to rearrange your data if you wish to search in a column to the left). Since the dates are in column E we can just use the data up to and including this column, and all rows from 2 to 20 (we don't want to search our heading row) as our table_array. To tell Excel this, first enter a comma and a space after your previous argument ("Fruit" or A22), then either type A2:E20, or highlight the relevant part of the table and again the array will appear as part of the function for you.
3. **col_index_num**: this is the column you want the function to search in for the result. The columns are numbered from left to right with the first column in the table_array being column 1, so since you want the function to search the fifth column in this case (the **DATE_PAID** column), you should enter a comma and a space after your previous argument (A2:E20) and then type the number 5.
4. **range_lookup**: this argument specifies whether you want the VLOOKUP function to find an exact match for your lookup_value, or just the closest match. The default (if you don't enter anything for

this argument, or if you type TRUE or 1) is for it to find the closest match, which is sometimes helpful in the case of numbers, but which won't work for a text lookup_value (as in this case) unless your data is sorted properly in ascending order by lookup_value. Much easier is to ensure it searches for an exact match instead, by entering a comma and a space after your previous argument (5), and then typing the word FALSE.

Now **press Enter**, and your VLOOKUP should return the result; 21/03/2019 as the date the fruit was paid for in this case. If it doesn't, check that your formula looks like this:

 `=VLOOKUP(A22,A2:E20, 5, FALSE)`

or like this:

 `=VLOOKUP("Fruit",A2:E20, 5, FALSE)`

Note that a limitation of VLOOKUP is that if the look_up value occurs more than once, a result is only returned for the first occurrence. For example, typing the following formula in **cell B23** will only return Coles as the supplier for the soft drinks, as this is the value associated with the first occurrence, even though they were also supplied by IGA:

=VLOOKUP("Soft drinks", A2:E20, 3, FALSE)

Another limitation is that VLOOKUP only searches for values in columns to the right of the look_up value; so we couldn't look up the name of the item that cost \$23.40, for example. However this issue can be resolved by rearranging the columns as required.

8. PivotTables

Another way you can summarise and analyse your data, this time without changing your source data, is through the use of **PivotTables**. To create a pivot table first highlight the data you wish to use; in this case we will **highlight all data from cells A1 to F20** (alternatively, if your spreadsheet contains only source data, which it may in this case if you haven't done any of the previous examples in this session, then you can click on any individual cell that contains data). Once you have done this, go to the **Insert** tab. You then have the option of creating a Table out of your data first before creating a PivotTable, which you should do if you plan to add more data later and you want to be able to automatically refresh your PivotTable afterwards (once you have a PivotTable you can do this by going to the **Analyze** tab, in **PivotTable Tools**, and choosing **Refresh**). If you do want to allow for this possibility, select **Table** and make sure the appropriate range of cells is selected, then click **OK**. You would then proceed to create a PivotTable using the instructions that follow.

Since we are not going to be adding to our data we will instead go straight to **PivotTable**, where again you need to make sure that the appropriate range of cells is selected. You can also choose whether you want to create the PivotTable in a new worksheet or in a specified location in the existing worksheet; we will do the former, so there is no need to change the default. Instead simply select **OK**, and then rename the new worksheet **Item_Types**.

We will first create a simple PivotTable in this worksheet listing all of the item types. To do this **select TYPE** from the list of fields on the PivotTable Fields pane on the right hand side of the worksheet (click in the specified area of the worksheet first if this pane is not displayed) and **drag it to the ROWS** area. The resulting PivotTable should be as follows:



Row Labels
Decorations
Drink
Entertainment
Food
Other
Venue
Grand Total

To add a count of the number of items of each type to this PivotTable, **select TYPE** again and **drag it to the VALUES** area; a new column should be created in the PivotTable showing how many items were purchased of each type. You may also want to add a column that displays these values as a percentage; to do this **select TYPE** and **drag it to the VALUES** area once again, and this time **right click on one of the values** in the new column. Then choose **Show Values As → % of Grand Total**. The values will now display as percentages (alternatively, rather than adding a new column we could have just adjusted the original count column in this way to show percentages instead).

At this point you might also want to rename the column headings so that they are more meaningful. You can do this by simply replacing the current headings with new headings of your choice manually, or you can switch to different automated headings by going to the **Design** tab (in **PivotTable Tools**), clicking on **Report Layout** and choosing either to **Show in Outline Form** or **Show in Tabular Form**. Do this now, and then also manually change the **Count of TYPE2** heading to **Percentage of TYPE**. The resulting PivotTable should look as follows:

TYPE	Count of TYPE	Percentage of TYPE
Decorations	2	10.53%
Drink	4	21.05%
Entertainment	1	5.26%
Food	8	42.11%
Other	3	15.79%
Venue	1	5.26%
Grand Total	19	100.00%

Once you have created your PivotTable you can use it for further analysis if required. For example, you can filter the PivotTable to show the same information but for selected Suppliers; to do this **select SUPPLIER** and **drag it to the FILTERS** area. Then **click the drop down arrow** next to (All) and select one or multiple items to filter by (tick the **Select Multiple Items** box as required); try ticking **Coles** and **Woolworths**, for example, and check you get the following:

TYPE	Count of TYPE	Percentage of TYPE
Decorations	2	18.18%
Drink	3	27.27%
Food	3	27.27%
Other	3	27.27%
Grand Total	11	100.00%

Once you have confirmed this, change the filter back to (All) again.

Alternatively, we can alter the PivotTable to show how many of each type of item come from each supplier by having the suppliers in the columns of the table. Before we do this, first remove the percentage column from the table by clicking the drop down arrow for the **Percentage of TYPE** field in the **VALUES** area of the PivotTable Fields pane, and selecting **Remove Field**. Now **drag the SUPPLIERS** field from the **FILTERS** area to the **COLUMNS** area, and the resulting PivotTable should look as follows:

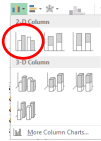
Count of TYPE	SUPPLIER							
TYPE	Coles	Crust Pizza	IGA	Local hall	Perth Cake Experts	Perth DJs	Woolworths	Grand Total
Decorations	2							2
Drink	3		1					4
Entertainment						1		1
Food	1	1	3		1		2	8
Other							3	3
Venue				1				1
Grand Total	6	1	4	1	1	1	5	19

You can see the details of all items included in a particular count (or percentage) by double clicking on the count (or percentage) in the PivotTable. **Double click on the count of 2** for Decorations, for example, and a new worksheet should be created showing the details of the two decorations (i.e. Streamers and Balloons).

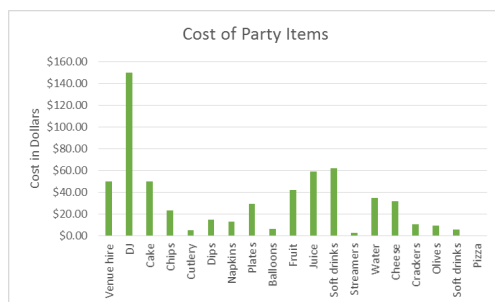
Finally, note that you can also create PivotTables using Quick Analysis by highlighting the data in a column or columns (excluding the header row), selecting the **Tables** tab and choosing an appropriate PivotTable. When you have finished creating PivotTables, navigate back to the Party_Budget sheet.

9. Creating charts

You can create charts in Excel in a few different ways. As one example, suppose you wish to create a column chart to show the amount paid for each item. To do this first **highlight cells A1 to A20** (i.e. the item names), **hold down Ctrl** and **highlight cells D1 to D20** (i.e. the amounts paid), then go to the **Insert** tab and select a chart. Choose the first 2D column chart for example:



A column chart will be created in the current worksheet; you can drag it somewhere else in the worksheet or cut and paste it in another worksheet or document if required. You will also probably need to format the chart; for example you can edit the title by clicking on the current title and typing a new title (**Cost of Party Items**, for example), and you can add a title to the vertical axis by clicking somewhere on the chart, **clicking the plus sign** that appears in the top right hand corner, **hovering over Axis Titles**, **clicking on the triangle** that appears and **selecting Primary Vertical**. Again, rename the title by clicking on it and typing a new title (i.e. **Cost in Dollars**). Finally, you can play around with other changes to the graph by clicking on the **Chart Elements**, **Chart Styles** and **Chart Filters** icons, or by going to the **Chart tools** tab if desired. Your graph should look something like this:

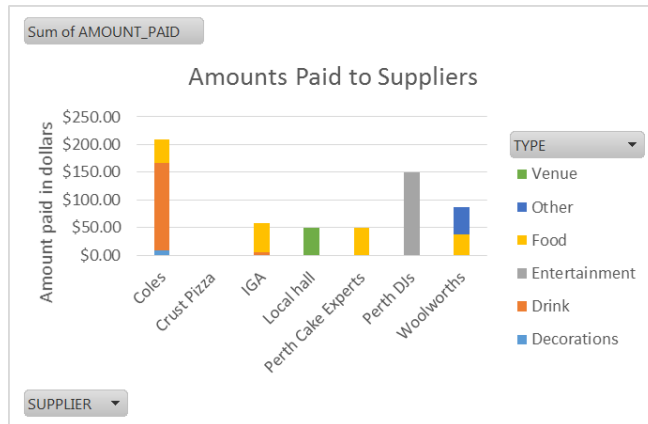


You can also create charts using Quick Analysis. For example, suppose you wish to create another column chart to show the amounts paid to the different suppliers. To do this first **highlight cells C2 to D20** (i.e. the suppliers and amounts paid), then **click on the Quick Analysis icon** in the bottom right hand corner, select the **Charts** tab and click on the preview of a **column chart**. A column chart will be created that you can format in the same way; the only problem is that due to the nature of the data in our worksheet, the different suppliers have not been grouped together. To do this, we can create a **PivotChart** instead.

To create a PivotChart **highlight all data from cells A1 to F20** as we did previously, go to the **Insert** tab and select **PivotChart** and **PivotChart** again. Check that the Table/Range is as required, and then select **OK**. Then drag the appropriate fields to the areas in the PivotChart Fields pane; in this case, drag **SUPPLIER** to the **AXIS** area and **AMOUNT_PAID** to the **VALUES** area. A graph should appear which displays the amount paid to each supplier; you can edit it as per the previous graph, and you should also **reformat the values in the PivotTable as Currency** so that the values appear as dollar amounts on the vertical axis. Your graph should look something like this:



Finally, if you wish to turn this chart into a stacked bar chart instead, to show the breakdown of item types for each supplier, first click on the **Design** tab in **PIVOTCHART TOOLS**, select **Change Chart Type**, choose a **Stacked Column Chart** and select **OK**. Then drag the **TYPE** field to the **LEGEND** area on the PivotChart Fields pane. To display this legend on the chart click somewhere on the chart, **click the plus sign** that appears in the top right hand corner and select **Legend**. The graph should look something like this:




Note that you can create different kinds of charts, from pie charts to scatter plots and line graphs, in any of the aforementioned ways, as well as directly from an existing PivotTable by going to the **Analyze** tab in **PivotTable Tools** and selecting **PivotChart**.

10. Handy Hints and Shortcuts (for PC)

For a complete list of shortcuts (and Mac equivalents) go to <https://exceljet.net/keyboard-shortcuts>

Format Painter

Format painter is a handy tool that allows you to “paint” a section of text with the same formatting as another. The icon looks like this:  **Format Painter** in the HOME tab.

Undo last action: Ctrl Z

If you make a mistake, press Ctrl + Z.

Redo OR repeat last action: Ctrl Y

If you want to redo something you have just undone, press Ctrl + Y. You will be taken a step forward.

Insert hyperlink: Ctrl K

The dialogue box will pop up and you can add your hyperlink as desired.

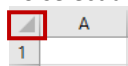
Save workbook: Ctrl S

Save As: F12

This will allow you to easily save your document under a different name or in another folder.

Select all cells: Ctrl A

To select all cells in your spreadsheet, press Ctrl + A, or click on the “select all” icon, as shown below:



Copy selected cells or text: Ctrl C

Select the text you want to copy, and press Ctrl + C.

Paste selected cells or text: Ctrl V

Select the area you want to paste your text or object into, then press Ctrl + V.



Cut selected cells or text: Ctrl X

You can cut the cells using Ctrl + X and then paste them to a new location using Ctrl + V

Print file: Ctrl P

Find a word or phrase: Ctrl F

Press Ctrl + F. You will then be able to type in the word or phrase into the search box, and replace it if desired.

Enter text to a new line within the same cell: Alt Enter

The best tip I have found – allows you to have multiple lines of text entered within the same cell.

Enter the current date: Ctrl ;

Select the cell you want to enter today's date into and press Ctrl + ;

Move to last row: Ctrl ↓

Move to top row: Ctrl ↑