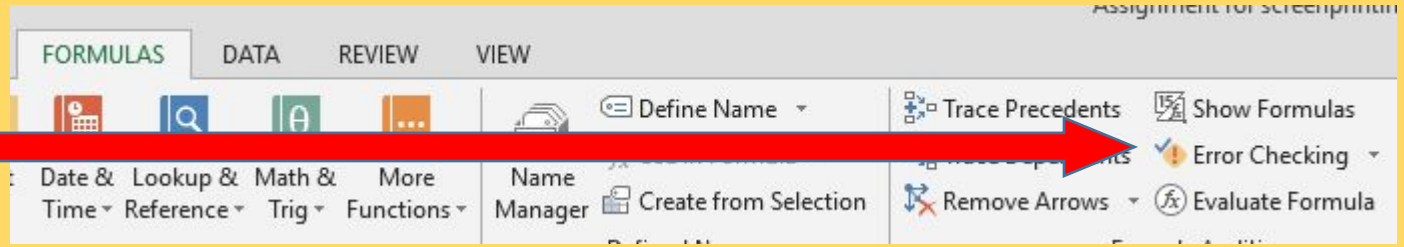
Finding and Sorting errors with Microsoft Excel Formulas

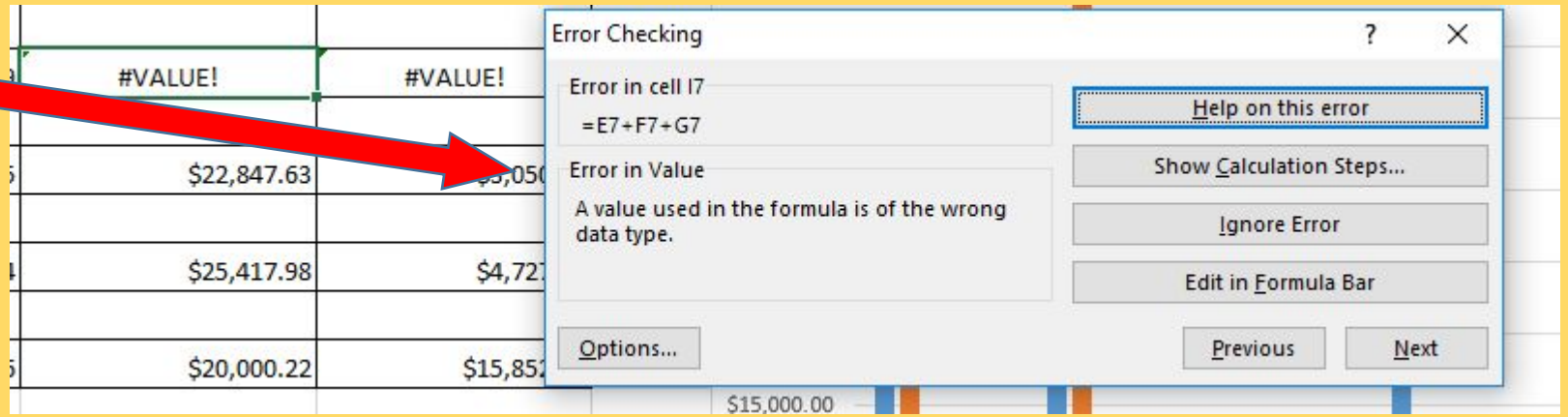
A Guide For The Rest Of Us!

INTRODUCTION

Hi! Welcome to a guide specifically written for people who are new to using Microsoft Excel. It is a powerful program capable of many things, but it only works when given correct information or instructions. When something goes wrong, it throws up an error, and the name of that error can help us to understand what has gone wrong and where. In this guide you will find eight error types. For each of these types will be screenshots showing what the error displays as, and what has caused it. This guide works on the basis of showing a common mistake that a new user will likely have made which has caused the error, so that you know if you make the same mistake, you will know what you need to undo so that the error goes away

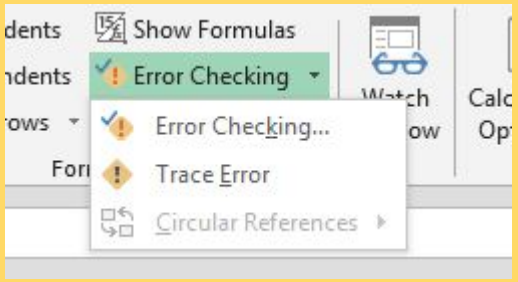
So just how do you find errors? Well quite handily, Excel has a button just for that purpose! By clicking on the 'Formulas' tab and then the 'Error Checking' button, Excel will highlight errors that are on your selected tab and even make suggestions for how to fix them

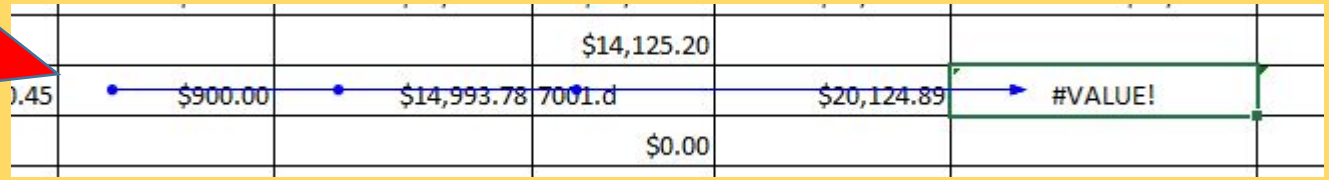




INTRODUCTION cont…

Clicking on the small drop-down arrow on the right side of the 'Error Checking' button and selecting 'Trace Error' will show you with thin blue lines and connected dots what other cells that a cell containing an error is referring to for it's values, to give you an easier time when trying to find the source of an error





Near the top of every page you will two sentences, one in a dark blue colour and the other in red. The dark blue sentence is a technical description of the error, which may make sense to experienced users, but not much to us who are new to the Excel party, so the red sentence will give a plain English explanation of what the error means

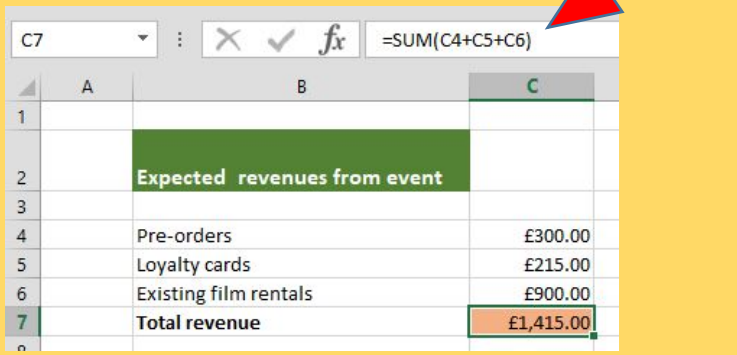
Technical meaning: You specified an intersection of two cell ranges whose cells don't actually intersect

Meaning for the rest of us: If you are asking excel to do something with values in two separate cells, then a symbol is required to tell Excel what you want it to do with the values, rather than leaving a blank space

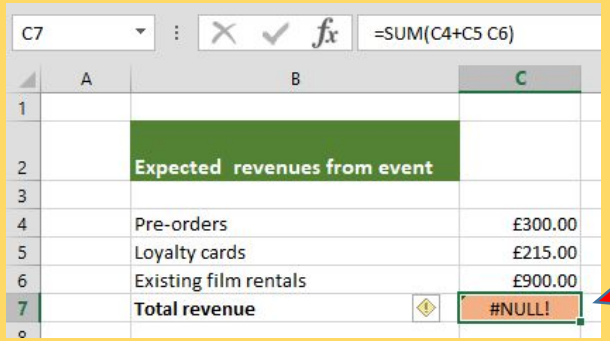
1. #NULL!

Technical meaning: You specified an intersection of two cell ranges whose cells don't actually intersect

Meaning for the rest of us: If you are asking excel to do something with values in two separate cells, then a symbol is required to tell Excel what you want it to do with the values, rather than leaving a blank space



On the left in the formula bar is a formula the sum (=SUM) of the value in cell C4 added to the value in cell C5 added to the value in cell C6. The result of the equation will go into cell C7. Notice there are plus symbols between the cell references

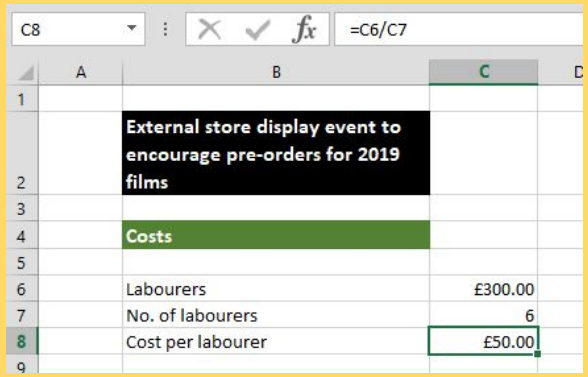


In the formula bar there is now just a gap between cell references C5 and C6. Because Excel now doesn't know what it is supposed to do with the empty space, the result in cell C7 is a null as there is no logical result to give

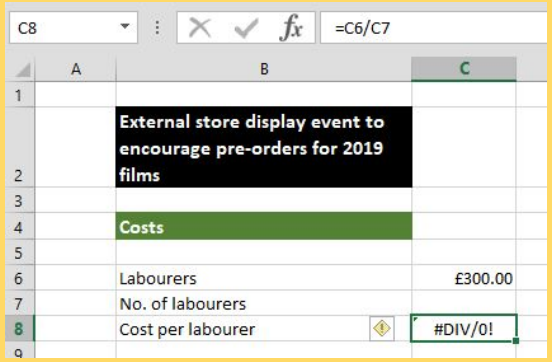
2. #DIV/0!

Technical meaning: Division by zero or blank cell

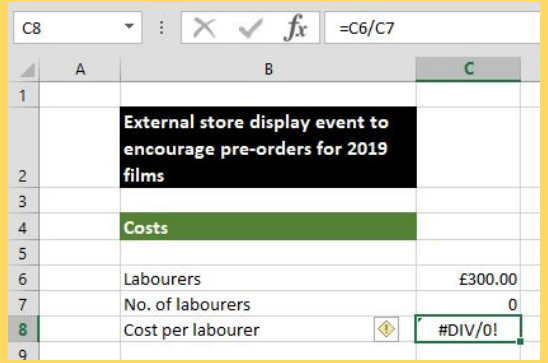
Meaning for the rest of us: If somewhere you are using division, then this error occurs when you are asking Excel to divide something by zero or the cell you are asking to divide by is blank



In this example we have been have been given a quote of £300 for hiring six labourers for a day and so we have a created a simple formula that will show how much each labourer ends up costing us. Cell C8 shows the result of £300 (cell C6) divided by 6 (cell C7) which gives us an amount of £50 per labourer



What if the quote we had been given did not state the number of labourers though? It would be tempting to leave the cell with the number of labourers (C7) blank as we wouldn't know the number, but this means that we are asking Excel to divide £300 by, well, nothing, so a result cannot be given and so Excel throws up the #DIV/0! Error message

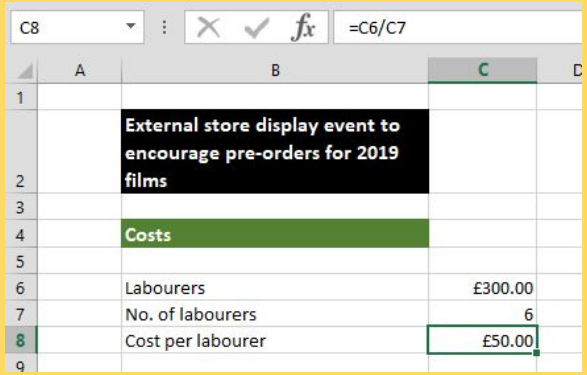


How about instead then we just put a zero instead of just leaving the cell blank, as well still don't know the number of labourers in this example. Well, again, a number divided by nothing is still nothing, so we will still get the error because that you are asking for something to be divided by zero, or #DIVision /by 0!

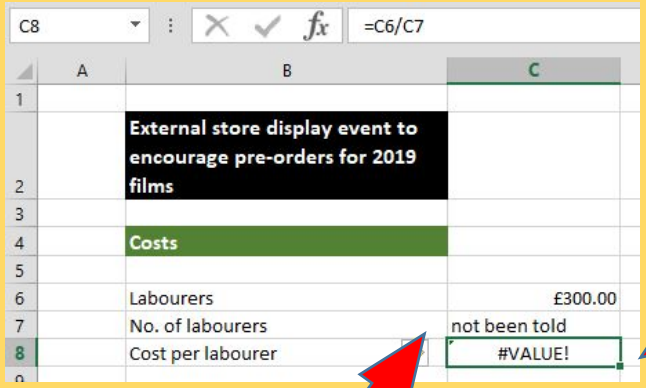
3. #VALUE!

Technical meaning: Wrong type of argument in a function or wrong type of operator

Meaning for the rest of us: Simply put, it is most likely you are trying to create a mathematical formula that refers to cells that have text in them instead of numbers



Remember the example from the previous page, where we worked out the cost per labourer from a quote we were given? Before, we ran into trouble because we were asking Excel to essentially work with nothing and yet somehow divide £300 by that big solid nothing, naada, nowt



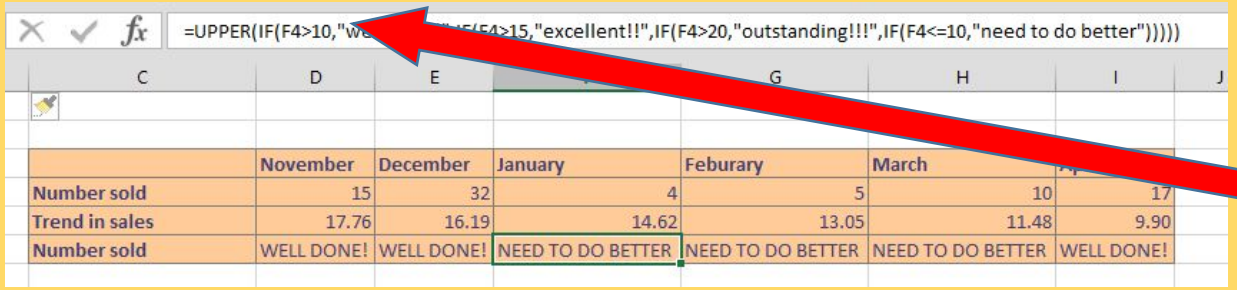
The labourer providers can't seem to tell us yet, so we decided to just type in 'not been told' so management can see that maybe we need to work with a different provider next time

What's this? Perhaps by typing in 'not been told' we have managed to enter a secret code and somehow we have got loads of labourers at a small price that is terrific value for money, and so we can go on twitter to tell the world using hashtag VALUE! That would be the dream, but all it really means is that we are asking Excel to divide £300 by not numbers, but by some text, which it cannot do, and so just gives up and shouts "#VALUE!" at us

4. #REF!

Technical meaning: Invalid cell reference

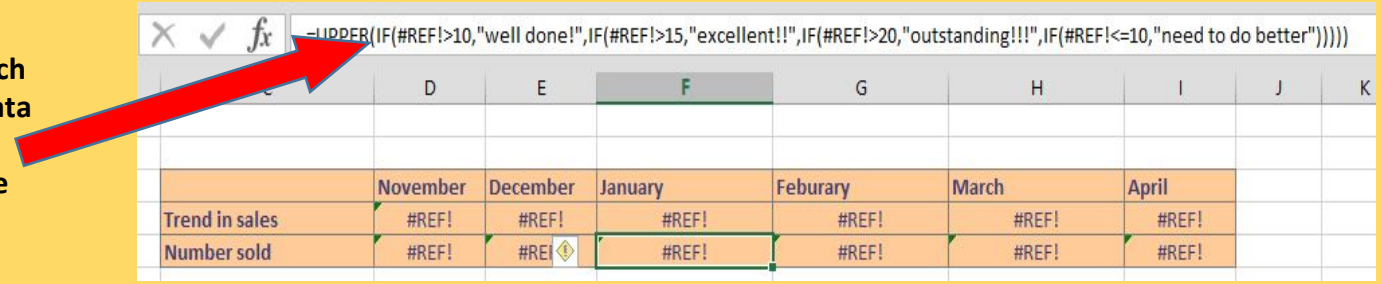
Meaning for the rest of us: You had a super-duper formula that was previously working fine, but by accident you have deleted a cell (or cells) referred to in that super-duper formula or pasted cells over the ones you had referred to in that formula



	November	December	January	Feburary	March	
Number sold	15	32	4	5	10	17
Trend in sales	17.76	16.19	14.62	13.05	11.48	9.90
Number sold	WELL DONE!	WELL DONE!	NEED TO DO BETTER	NEED TO DO BETTER	NEED TO DO BETTER	WELL DONE!

Don't worry about the length of the formula in this example, it's basically telling us that we need to do better at selling loyalty cards in January, February and March. The important part here is that the formula works based on knowing how many loyalty cards were sold, because if we have sold more than 10, we get a different message to if we had sold less than 10

Well, if I accidentally delete the row containing the number of loyalty cards sold I'm sure it won't do much ha….. Oh dear. As the cells containing some of the data that the formula is reliant on have literally just disappeared and so cannot be referred to, we get the "#REF!" error

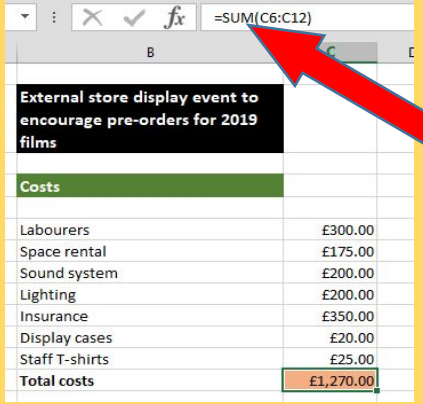


	November	December	January	Feburary	March	April
Trend in sales	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
Number sold	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

5. #NAME?

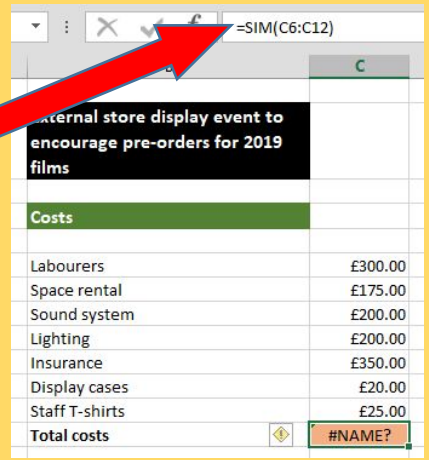
Technical meaning: Excel doesn't recognise a name

Meaning for the rest of us: Excel can't recognise the text entered in formula, and so doesn't know what it is supposed to do



Here we are using the store display data that was referred to earlier but now we have some additional costs input. In the formula bar we have a simple formula that adds together all the numbers in the cells between the costs of the labourers and the staff T-shirts. Excel knows to do this because SUM is a word it recognises. It likes SUM. It knows what it is supposed to when =SUM is input. It knows to add together the values it is presented with in order to give an answer

If we make just one alteration and change the =SUM to =SIM, where there was previously £1270.00, there is now "#NAME?". It is not being super friendly and asking you what your name is, it is instead saying it doesn't recognise what 'SIM' is or what it is supposed to do when 'SIM' is entered



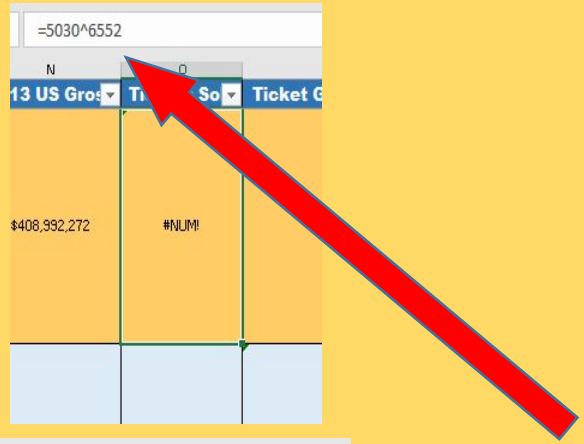
6. #NUM!

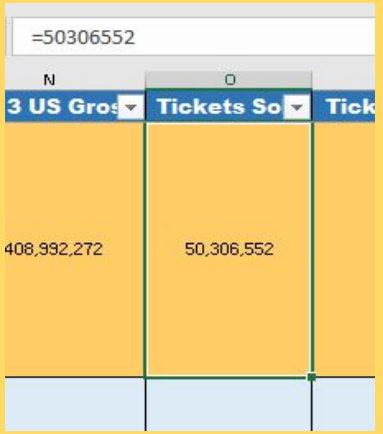
Technical meaning: Problem with a number in the formula

Meaning for the rest of us: You are asking Excel to do something not possible in maths or your answer is a *very* large number

At this point we are entering data about the films to be used by management to possibly be used when working out which films will be in highest demand for rental. This film sold a lot of tickets, so we are entering a large number

What's this error about? Surely Excel can handle a number that runs into the tens of millions? Well, just one mistype has caused a *big* error. You may have been typing in the number using the numbers along the top of the keyboard and accidentally pressed 'Shift' and '6' instead of just '6'. This means Excel is trying to work out 5030 *to the power of* 6552, which is a *very big* number that Excel cannot display, and means that instead it simply displays the #NUM! error



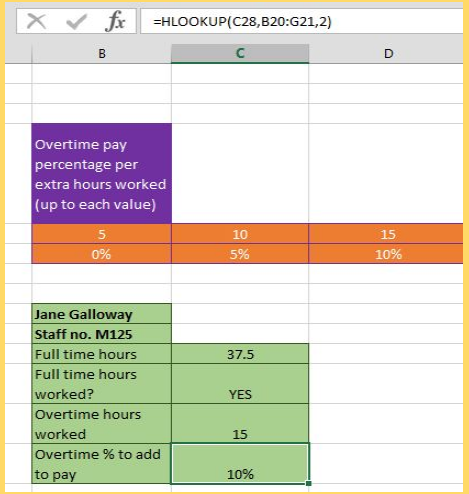


Take the errant ^ symbol out and there will go, Excel is playing nicely again

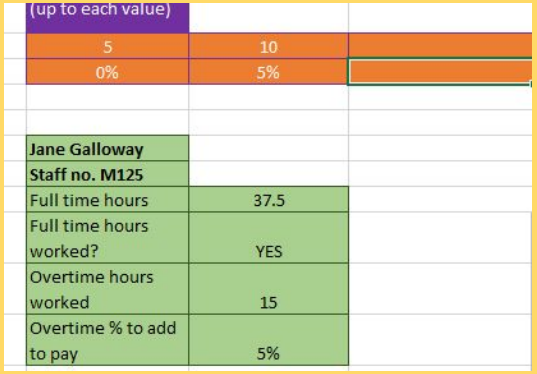
7. #N/A

Technical meaning: No value available

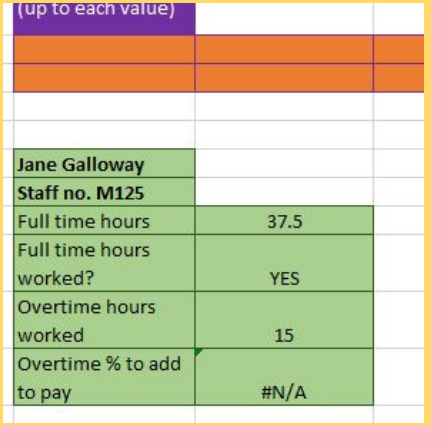
Meaning for the rest of us: A value used in a formula is not available e.g. missing values in a HLOOKUP or VLOOKUP



In this example here we have used HLOOKUP to help us determine how much overtime percentage pay to include based on the extra hours worked by Jane. Obviously the formula here is reliant here on the data that has been entered in the orange coloured cells so that we can find out what extra pay Jane is entitled to



If the data for 15 hours overtime is removed, there are still values available for the HLOOKUP to refer to, and so it refers to the next available number

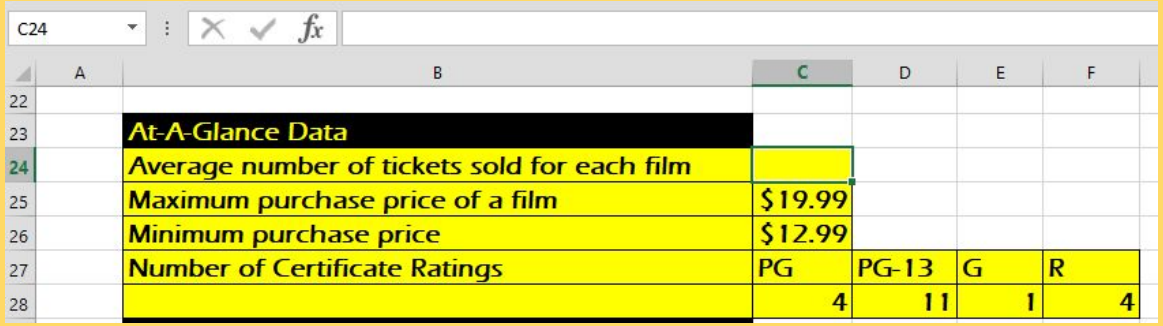


Remove *all* the data however, and we come across the #N/A error. The HLOOKUP now has *no values available* to refer to, and so the formula is no longer capable of producing a result

##########

Technical meaning: Result of formula too long to fit in the cell

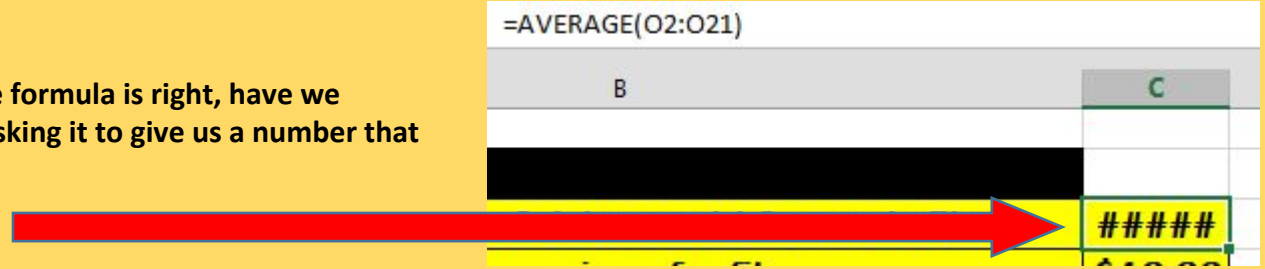
Meaning for the rest of us: Your formula is fine. The cells you have referenced are fine. The result is just too darn big to fit in a cell (that is, until we make a small adjustment). Since this is not a formula error this would be classed as a display error instead

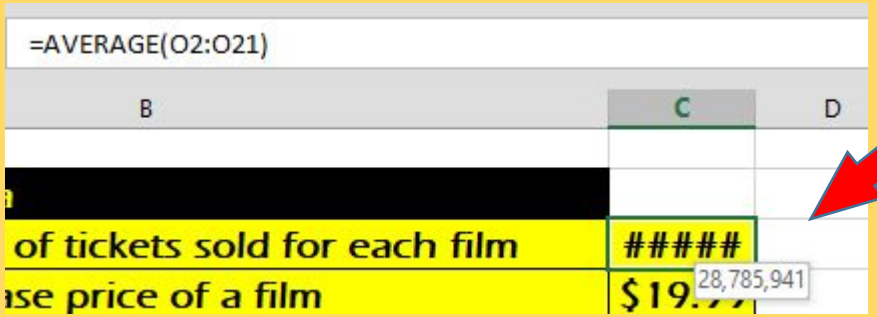


Management have asked to see some basic information quickly put together for a meeting. Among the items asked for, they would like to see the average number of tickets sold for each film in our list of 20 films

No problem, we can just enter a formula giving us the average number referencing the 20 cells that will have the tickets sold for the 20 films. These films were big sellers, so the ticket sales will be in the tens of millions. Sure it will be a big number, but Excel is a smart cookie and will be handle the pressure, right?

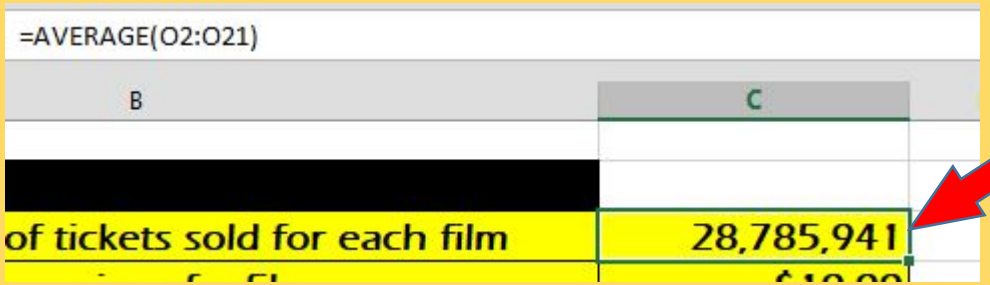
Oh No! What just happened? We know the formula is right, have we perhaps broken the computer? We were asking it to give us a number that would be in the tens of millions, after all





Even stranger still, if we hover the mouse curser over the cell, the result of the formula shows, so know we have not made any errors when inputting the formula, so what is going on here? Well, Excel is just trying to tell us that the number is too large to show in the cell *as it is*

All we have to do to correct this is expand the cell so that it is able to show the number. Put the curser on the right side of the cell column to be expanded (in this case, the curser would be placed on right line of the C column) and the icon should change, then either drag across or double click so it auto-widens and there you go!



The column is now wide enough to fit the whole number and calm is restored