Annotated Screens Of Multiple Functions

Highlighting the use and purpose

Action	Shortcut	Type
Copy	Ctrl + c	Copy & Paste
Paste	Ctrl + v	
Paste Special	Ctrl + Alt + v	
Select Row	Shift + Space	Select & Navigate
Select Column	Ctrl + Space	
Jump to End	Ctrl + Arrow	
Mark + Jump to End	Shift + Ctrl + Arrow	
Group	Alt + Shift + Arrow right	Group & Ungroup
Ungroup	Alt + Shift + Arrow left	
Add $ in Formula	F4 (in Cell)	In Cell
Line break within Cell	Alt + Enter (in Cell)	

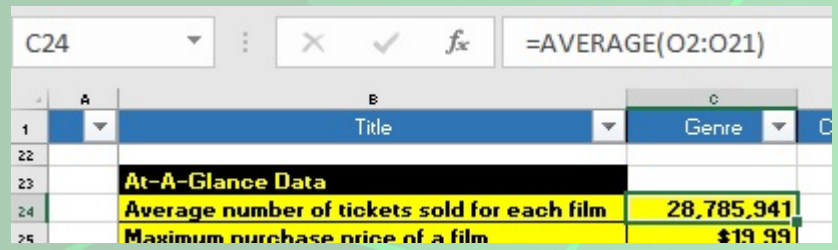
Action	Shortcut	Type
Cell Format	Ctrl + 1	Cell Format
Format as %	Ctrl + %	
Format as Number	Ctrl + !	
Clear Filter	Alt → a → c	Filter
Show Dropdown List	Alt + Arrow down	
Hide Sheet	Alt → o → h → h	Worksheet functions
Unhide Sheet	Alt → o → h → u	
Rename Sheet	Alt → o → h → r	
Insert new Worksheet	Alt + Shift + F1	
Go to next/ previous Sheet	Ctrl + Page up/ Page down	

Action	Shortcut	Type
Calculate worksheets	F9	Calculate
Calculate active worksheet	Shift + F9	
Force recalculate all	Ctrl + Alt + F9	
Go To Special	F5 → Alt + s	Search
Find	Ctrl + f	
Replace	Ctrl + h	
Delete/ insert Row/ Column	Ctrl + - / Ctrl + +	Others
Open Data Validation	Alt + d + l *("L")*	
Create Pivot Table	Alt → n → v	
Repeat last Action	F4 (not in Cell)	
Enter Cell	F2	

→ = press keys after each other + = press keys at the same time () = additional hint Note: Some shortcuts (such as "%" or "!") may require additional keys (such as "Shift")

AVERAGE

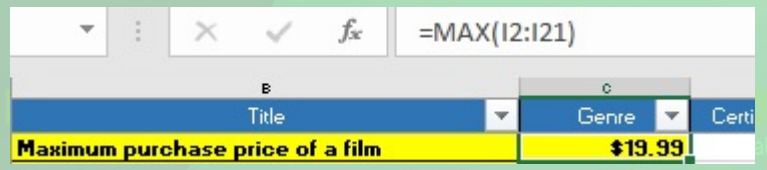
For the average (AVERAGE) function, I wanted to be able to show the average number of tickets sold for each film. When advertising would be created for the store that was proposed, we wanted a number that could be shown that would show how popular the top 20 films had been so that a figure could be used in marketing materials to catch attention



AVERAGE function input in formula bar and cells referenced

MAXIMUM

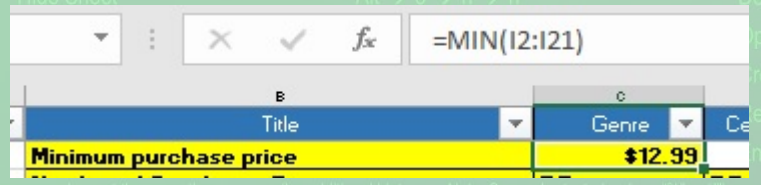
A MAX function was input here as I wanted to prevent over-charging on the store. The prices had been pre-set, so if I knew the maximum price that could be charged, this would give the store the ability to prevent erroneous large transactions that would have to be refunded



MAX function input in formula bar and cells referenced

MINIMUM

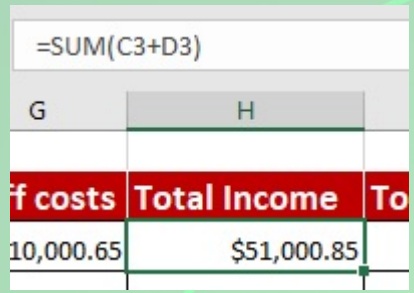
Likewise I wanted to use the same function but for the minimum (MIN) price, so that we could prevented a lower than intended price being accepted at checkout stage, thus costing the store money



MIN function input in formula bar and cells referenced

SUM

The SUM function was used here as reports were going to presented to management regarding running costs and profit. In this example I used the sum function to add together the values in two separate cells, representing the income from rental sales and purchase sales added together, so that we could see an initial pre-deduction profit

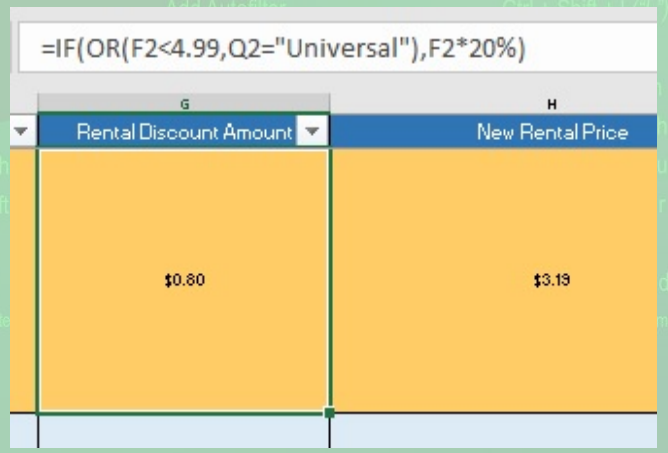


SUM function input in formula bar and cells referenced

IF, OR & LESS THAN

Multiple functions were used in this example, as multiple values need to be taken into account in a formula. I wanted to put an offer on film rentals to try and increase rental business. The distributor Universal had agreed to take part in the offer, and any film of theirs could be used in the offer regardless of the rental price, but for other distributors a 20% reduction could be applied only on any rental costing less than $4.99. To do this, a formula had to be input so that IF a film was LESS THAN(<) $4.99 to rent, OR the distributor was Universal, than the 20% reduction could be applied, and the cell the formula was used in would give the discount amount to be used at checkout

Formula starts with the IF part so that Excel knows a condition will be set



The '<' symbol is used in Excel to represent LESS THAN

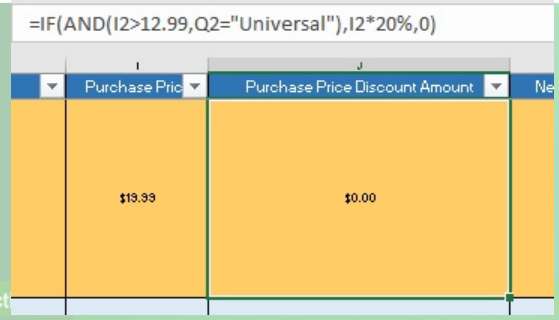
The left bracket is then input and OR is inserted to that multiple conditions will need to be taken into account

IF, AND & MORE THAN

Like the previous example, I wanted to use an offer to increase sales as well as rentals. Just like the rentals, 20% would be taken off the price of purchase, but this time the distributors were a lot less willing to take a hit on profits with this promotion. In the end, Universal were the only distributor who agreed to take part in this promotion, and the reduction could only be applied on films costing more than $12.99. So a formula was created that said IF a film was put through on checkout that was MORE THAN (>) $12.99 AND was distributed by Universal, than a 20% reduction could be applied

The '>' symbol is used in Excel to represent MORE THAN

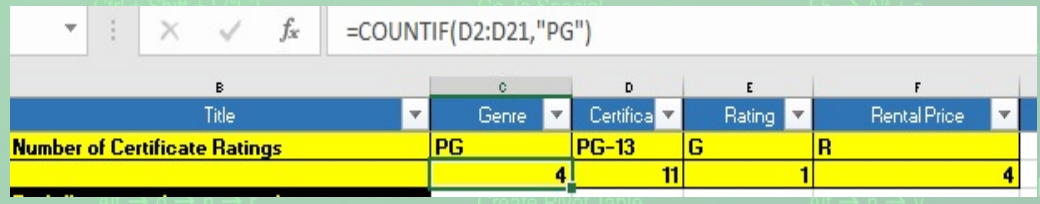
Formula starts with the IF part so that Excel knows a condition will be set



The left bracket is then input and AND is inserted to that multiple conditions will need to be met

COUNT

The COUNT function was used as management wanted to know how many of the films fell under which ratings, and this was for two reasons. Firstly, the higher the ratings, the less individuals there will be who are actually able to see the film, and so with higher ratings comes potentially less profit for a rental store, so this would need to be taken into account in accounting. Secondly, if there were a higher number of films with an 'R' rating, than a memo would need to go out to staff to be particularly vigilant to prevent any unauthorised rentals/sales

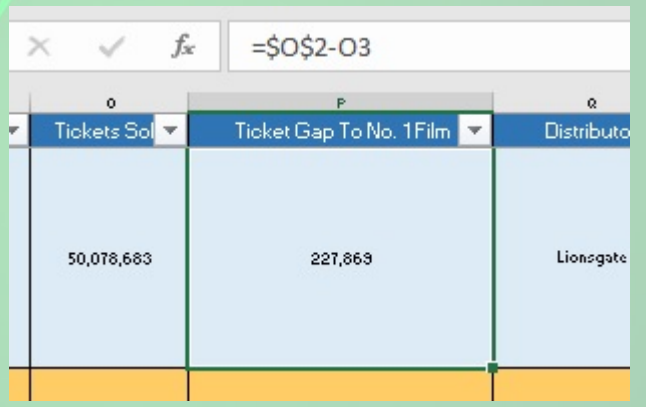


COUNT function input in formula bar and in brackets to the cells to be checked, and the value it will be counting

ABSOLUTE REFERENCING

Absolute referencing is used when the value in a specific cell is required in a formula, and that formula is then copied to multiple cells, but the reference cell needs to stay the same, rather than being changed to suit the location of the other cells the formula is being copied to. Management had requested information regarding the gaps of tickets sold at the cinemas against the number one film. The reason for this was that they wanted to know if the number one film sold more tickets than the others by a large majority. If so, advertised would be heavily focused around that, but if there were no large gaps in the tickets sold, then advertising would be spread more generally between the films. Therefore I had to make sure that the tickets sold for the number one film was the only cell referenced when working out the gap between the other films

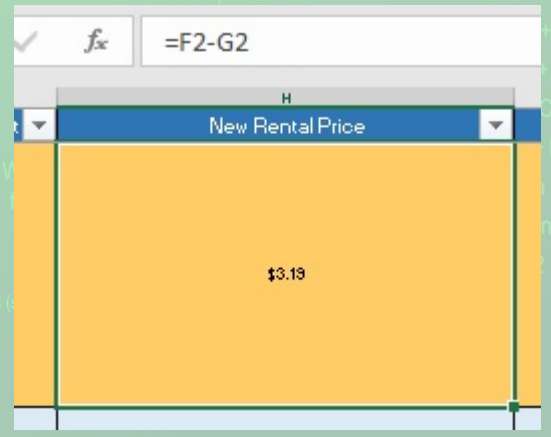
$ symbols used before the letter and number of the cell reference so tell Excel the cell is absolute



RELATIVE REFERENCING

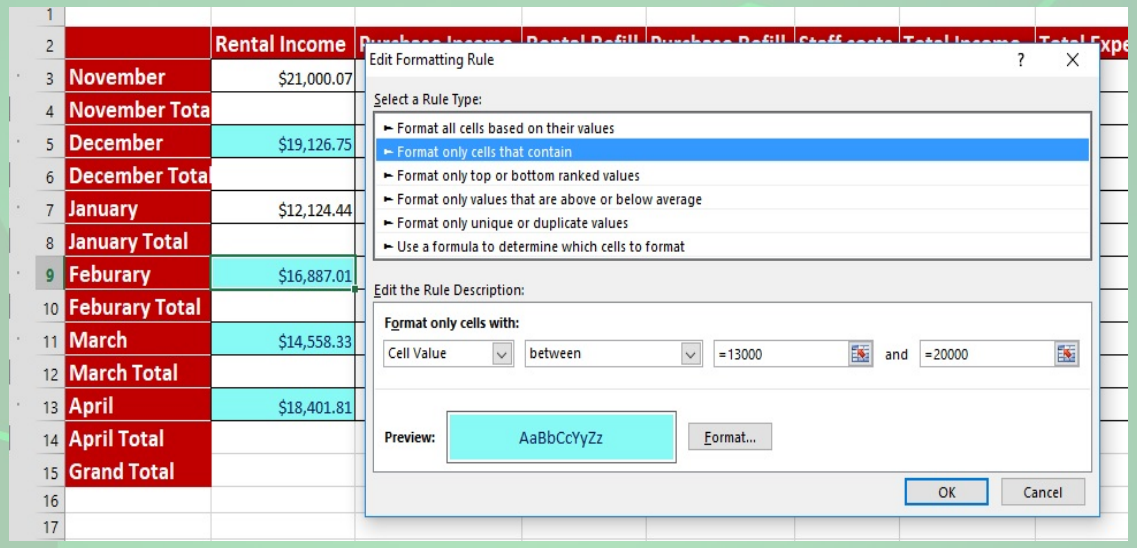
Referring back to the deduction on the rental price of a film if certain criteria were met, I needed a way that would work out the new rental price of a film for all 20 films without having to manually complete the process for each film. Excel has the ability to copy a formula and then change the reference cell in relation to what cell the formula was copied from, so that the value it used would go down a cell every time the formula was copied down a cell, as opposed to absolute referencing, where the value cell would stay the same

$ not used here so that when the formula is copied down to next cell, the formula changes so that reference cell also moves down one cell



CONDITIONAL FORMATTING

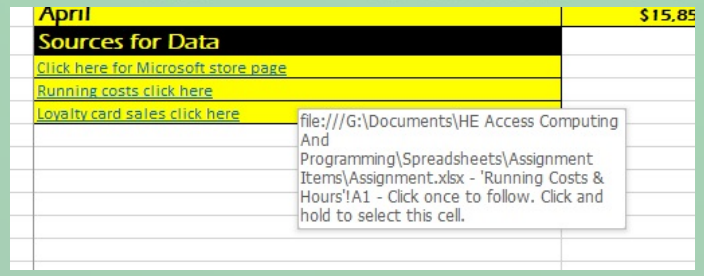
I wanted to use this feature so that information could be visually presented easier when showing figures to management. I wanted to highlight the occasions that rental income was between $13,000 and $20,000 as these would be the months used to cover any shortfall in profits from traditionally quieter months for rentals (e.g. January), so I used the tool that would highlight these cells in a different font and background colour so that management could easily see this information

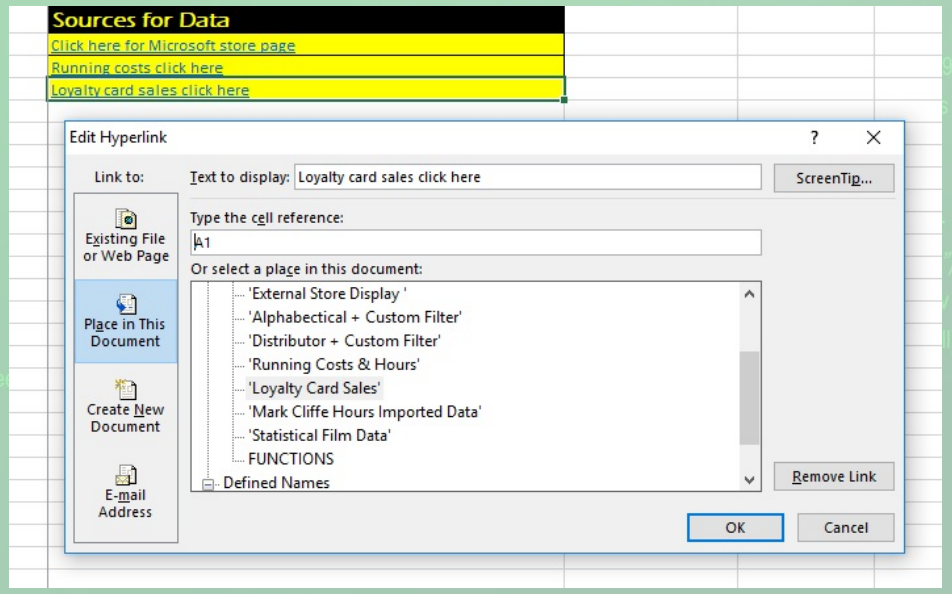


This comes up so that the conditions can be set and what the cell will look like when those conditions are met. In this, the cell value is between $13,000 and $20,000

LINKING TO OTHER SHEETS

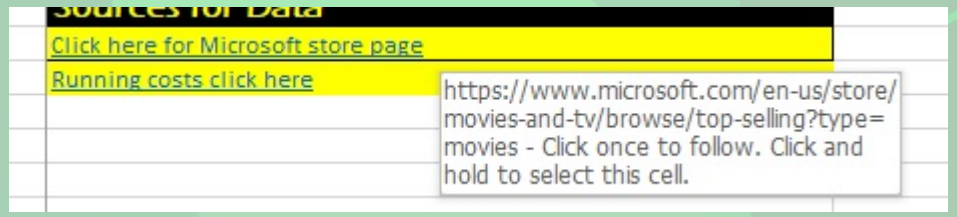
I wanted to be able to link sheets together as having multiple sheets in a workbook can be become time-consuming to navigate. Having created my at-a-glance section for management, I wanted to put a link in so that they could easily access the sheet that contained running costs, rather than having to manually find it, with the same function added for the sheet containing loyalty card sales

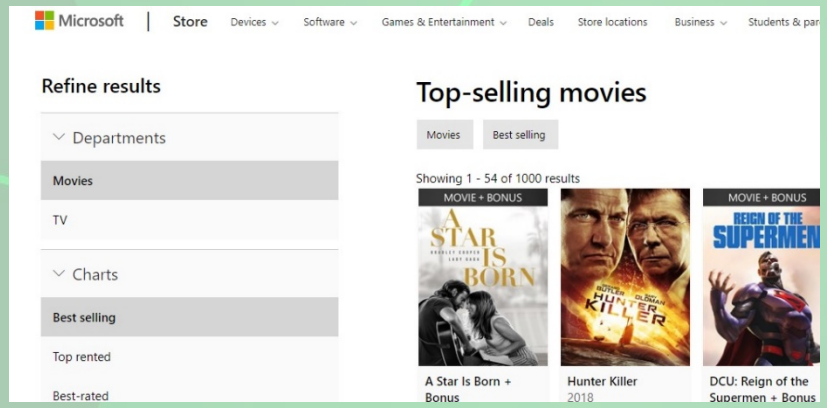




HYPERLINKS TO WEBSITES

I needed to insert a hyperlink to Microsoft's online film store as that is what the information that our store would use is based on, so I wanted management to easily access the store if they want to check if any of the information I gathered was incorrect or had changed





PIVOT TABLE

A pivot table can be very useful for the store when trying to see which distributors are useful for which categories. Management had wanted a table to be created that took into the distributors, the genres and the ratings of all the twenty films and present them in a way so that we could see what the strongest genres are for distributors. With the pivot table we were able to find out not only which genres had the most representation among the distributors (which helps with allocating space for genres in the store), but we could also see which distributor's films scored the highest star ratings in the genres, which would help when trying to work out which distributors we could trust the most for film quality, which is vital for the success of our store

Count of Rating	Column Labels				
Row Labels	1	2	3	4	Grand Total
Action		2	3		5
Paramount Pictures		1			1
Universal				1	1
Walt Disney				2	2
Warner Bros.		1			1
Adventure		2	5		7
20th Century Fox		1			1
Lionsgate				1	1
Paramount Pictures				1	1
Universal				1	1
Walt Disney			1	1	2
Warner Bros.				1	1
Comedy	2	1	1		4
20th Century Fox			1		1
Sony Pictures	1				1
Universal	1				1
Warner Bros.		1			1
Drama		1			1

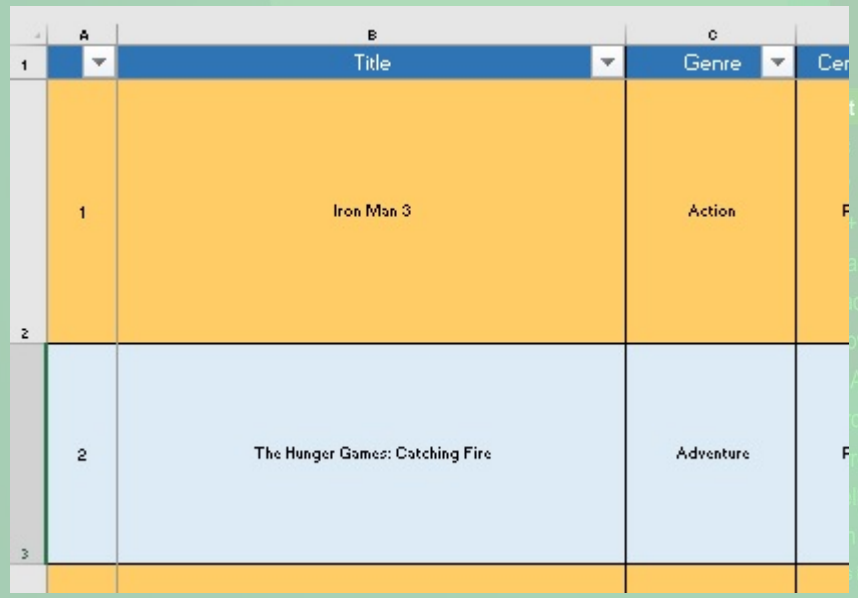
This table shows the star ratings along the top and how many of which film by which distributor in which genre got how many stars

FREEZE TITLES/FREEZE PANES

Some of the sheets in my workbook are quite large but require checking in a number of categories quite regularly. I wanted to be able to keep the column showing the position of the film (e.g. the highest selling film at number one and the 20th best selling film at number 20), while being able to scroll across different columns so that I could compare information. I used the Freeze tool for this so that number column would not move. I also though wanted the same ability for if I was scrolling down the sheet, so then I would always know the title of the column, so that I would still be able to know which category the values represented without having to scroll back up to the top of the sheet

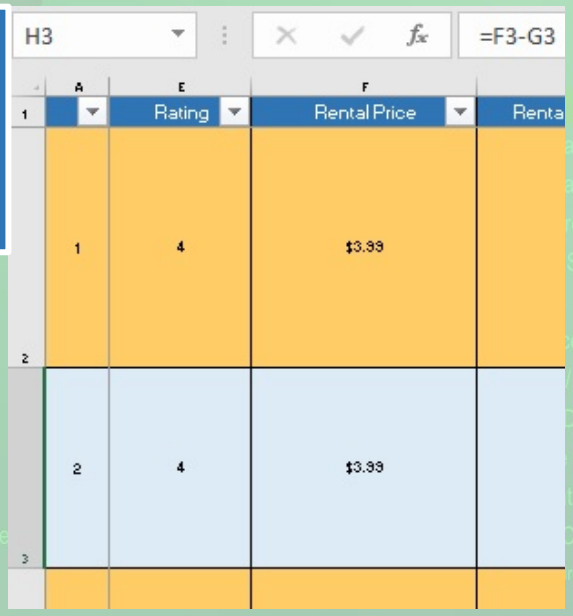
	A	G	H	I
1		Rental Discount Amoun	New Rental Price	Purchase Pric
8	7	$0.80	$3.19	$17.99

Scrolling down to the number seven film, but the titles move along with it so I know what the column is about



	A	B	C
1		Title	Genre
2	1	Iron Man 3	Action
3	2	The Hunger Games: Catching Fire	Adventure

The sheet keeps scrolling across, but the number column stays on the left but does not disappear from view

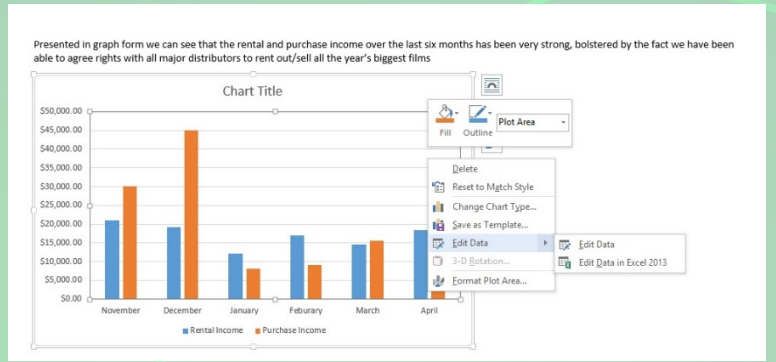


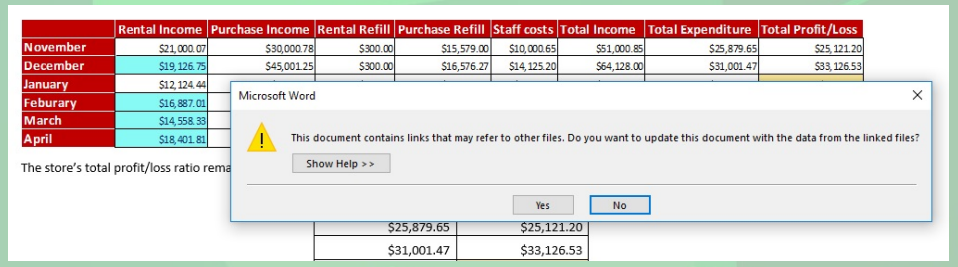
H3 =F3-G3

	A	E	F
1		Rating	Rental Price
2	1	4	$3.99
3	2	4	$3.99

OBJECT LINKING

As part of setting up a new store, printed sheets have to be prepared to give management six-monthly reports. Instead of trying to type up all the information in a Microsoft Word document, or trying to print off separate sheets from my workbook, it is simpler and looks more professional to embed the data from the workbook in the Word document. So using the Copy function in Excel and then using Paste and Paste special in Word, I am able to copy across the required tables and charts, and also have them update in the Word document when they are updated in the workbook

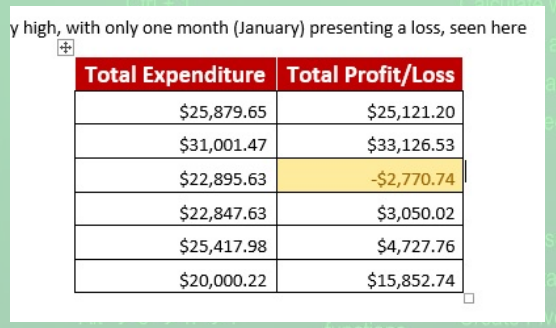


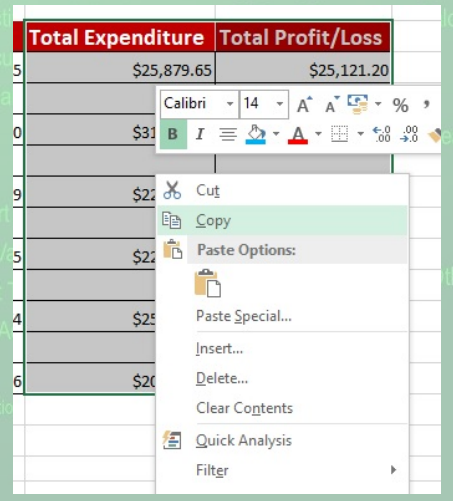


The Excel workbook has updated since the data was put into the Word doc, so Word asks if I want to update the data

EXPORTING DATA

Exporting data is useful for when I need to show data in the printed reports (like the Object Linking feature). Copying and pasting into the Word doc, I am able to highlight just the two columns I feel are most important when the producing the report showing over the last six months our total expenditure and total profit/loss

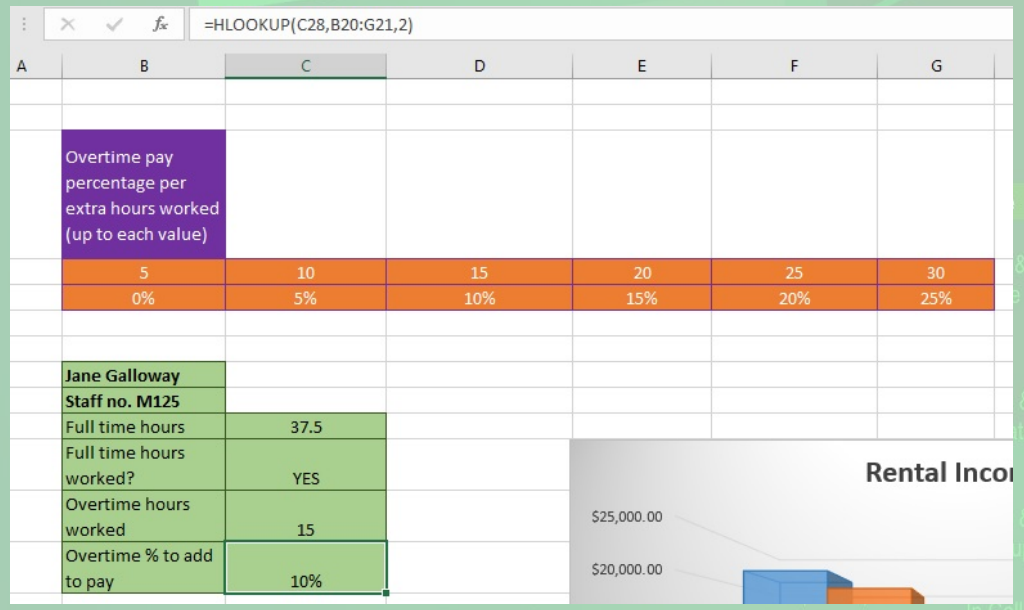




The two columns are copied and then pasted into a Word doc so that they can be printed along with text

HLOOKUP/VLOOKUP

The HLOOKUP and VLOOKUP functions are useful for when trying to work out overtime pay. The more overtime staff put in, the higher percentage increase of overtime pay they will receive. Rather than having to try and manually work out all the percentage increase overtime pay with a calculator, the HLOOKUP and VLOOKUP functions can be used to reference data running horizontally or vertically across set tables so overtime pay can be worked out much quicker

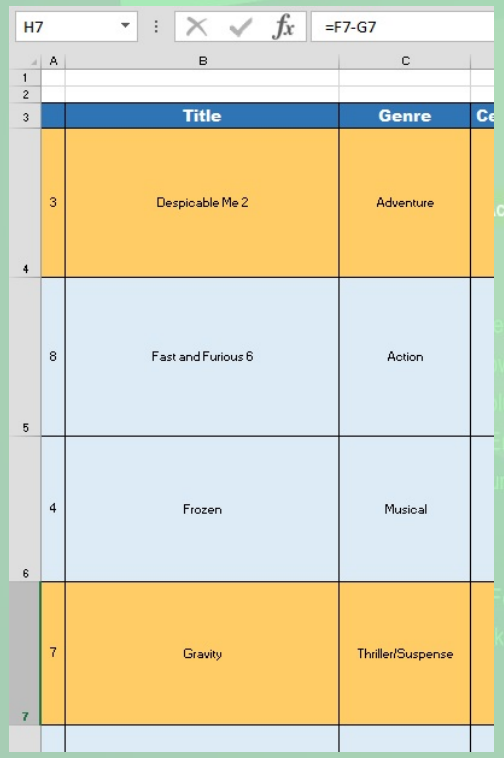


The VLOOKUP is using vertically aligned data to work out what overtime percentage pay the employee will receive

The HLOOKUP is using horizontally aligned data to work out what overtime percentage pay the employee will receive

SORTING

In the stock system, film titles needed to be arranged alphabetically to help locate files and stock when required. Trying to create a new sheet and manually workout the list would take too long, and would only have to be done again every time a new film was added. Using Excel's Sorting tool, this means the twenty film titles could easily be arranged in alphabetical order so that stock could be re-arranged straight away. The management also wanted this to be done by the names of distributors on a separate sheet to help when creating distributor-specific offers

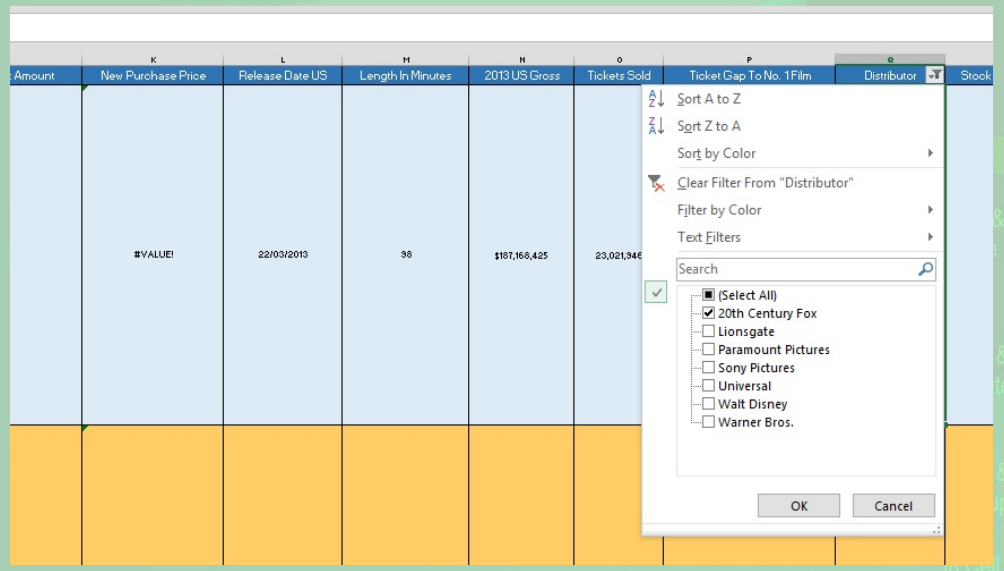


The films are sorted by film title alphabetically, so 'Despicable Me' starts at the top, but the number placement doesn't change and stays the same (it was the number three highest selling film)

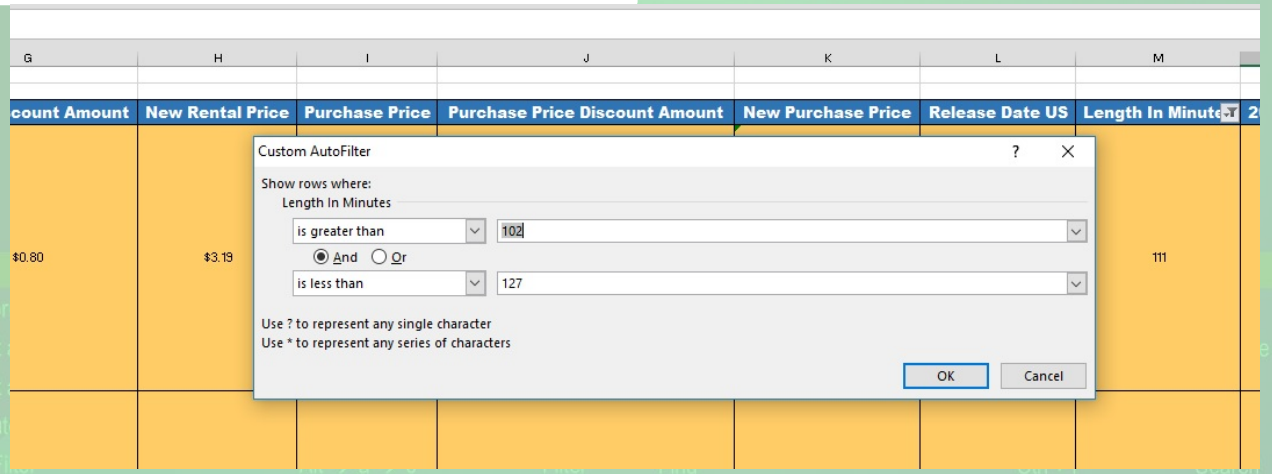
The films are sorted by distributor. As numbers come before letters in the system, 20th Century Fox films start at the top

FILTER & CUSTOM FILTER

Management had also requested specific information for getting ready to setup up the online store. In the first request, management wanted to be able to see which films were between 102 and 127 minutes in length, as this the server space (and therefore data amounts) films in this time range would take is where we could get the best server deals. Films longer or shorter than these set amounts would not represent good value when setting up the online store. Management had requested the alphabetical order of the film titles be kept, but with this new filter inserted. Management had also requested a separate filter to be inserted so that they could easily choose to see which of the twenty films had been supplied by specific distributors



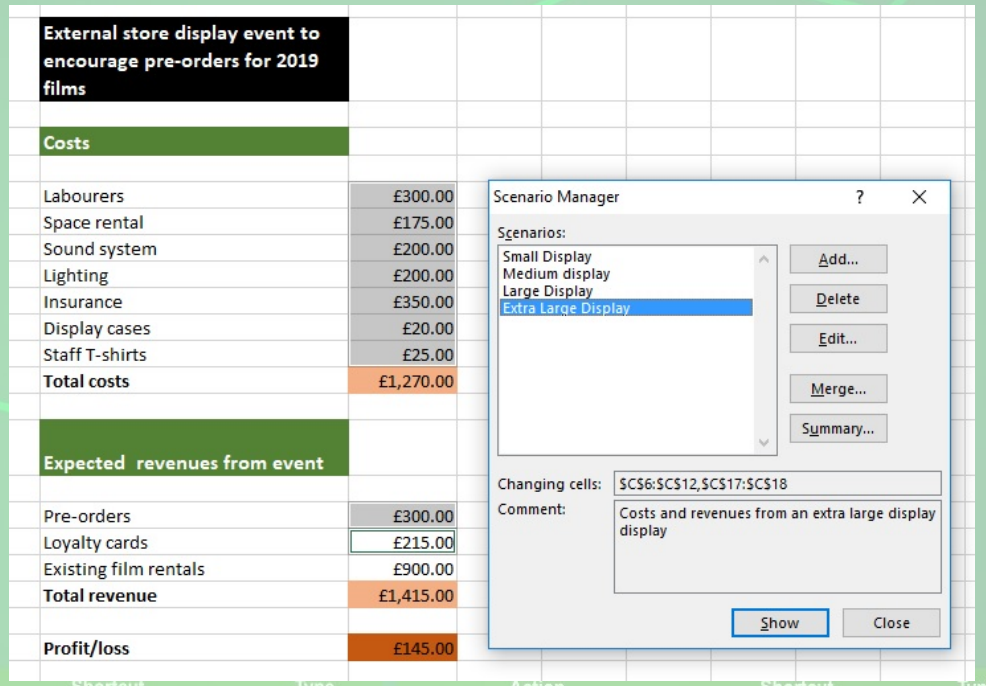
The films can now be viewed by certain distributors if chosen, or all can be selected



The data range set here is between 102 and 127 minutes, using the custom filter only films matching this criteria will be displayed

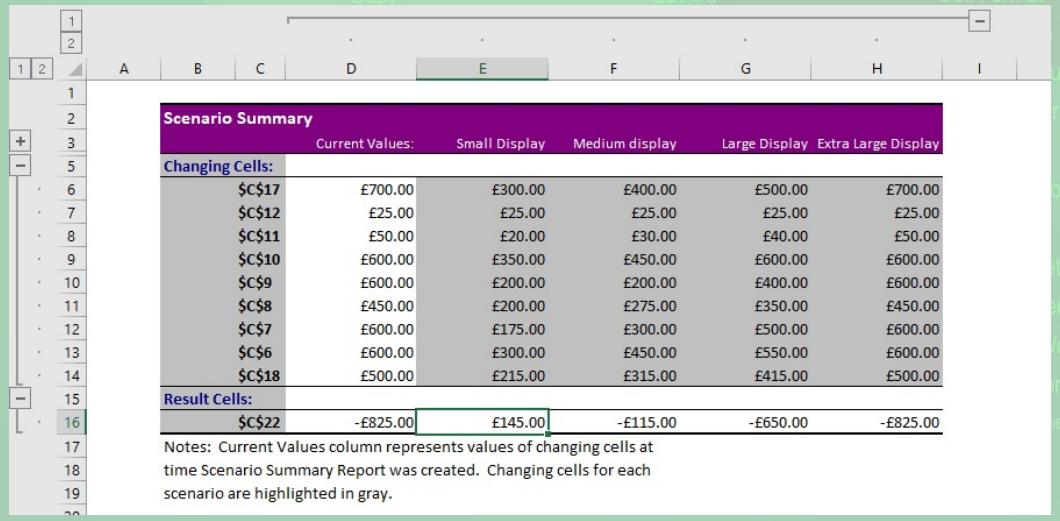
WHAT-IF?

I had wanted to create an external display that would go out on a pavement area to try and direct attention to our store and increase pre-order rental incomes. There were a number of displays I could choose from, ranging from small to extra large. With the different sizes would come different costs for things like insurance and labour, but would also present the opportunity for increased income based on how much attention the display would grab. I wanted to assess though which size display would present the opportunity for most profit, so I set up the What-If analysis to take into the account the different costs and potential incomes, which were the presented in a table format that I could easily show the comparison to management



External store display event to encourage pre-orders for 2019 films	
Costs	
Labourers	£300.00
Space rental	£175.00
Sound system	£200.00
Lighting	£200.00
Insurance	£350.00
Display cases	£20.00
Staff T-shirts	£25.00
Total costs	£1,270.00
Expected revenues from event	
Pre-orders	£300.00
Loyalty cards	£215.00
Existing film rentals	£900.00
Total revenue	£1,415.00
Profit/loss	£145.00

The scenarios are created individually with different values input



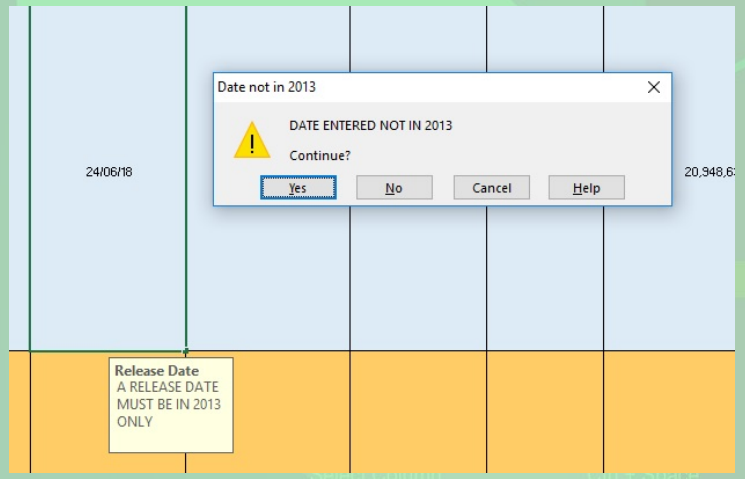
Scenario Summary	Current Values:	Small Display	Medium display	Large Display	Extra Large Display
Changing Cells:					
C17	£700.00	£300.00	£400.00	£500.00	£700.00
C12	£25.00	£25.00	£25.00	£25.00	£25.00
C11	£50.00	£20.00	£30.00	£40.00	£50.00
C10	£600.00	£350.00	£450.00	£600.00	£600.00
C9	£600.00	£200.00	£200.00	£400.00	£600.00
C8	£450.00	£200.00	£275.00	£350.00	£450.00
C7	£600.00	£175.00	£300.00	£500.00	£600.00
C6	£600.00	£300.00	£450.00	£550.00	£600.00
C18	£500.00	£215.00	£315.00	£415.00	£500.00
Result Cells:					
C22	-£825.00	£145.00	-£115.00	-£650.00	-£825.00

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

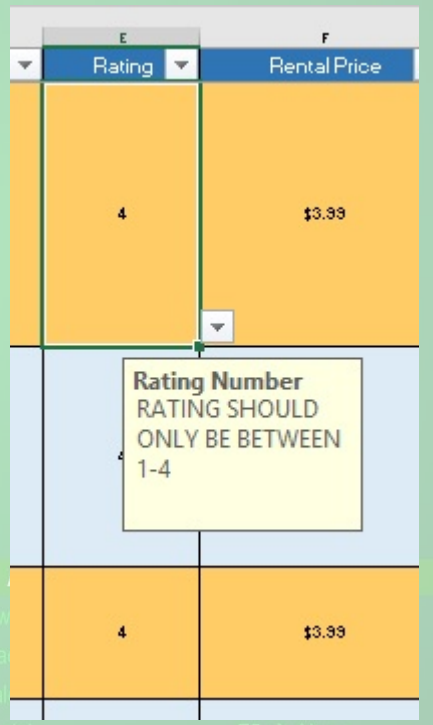
The results are then presented in a table in a scenario summary

DATA VALIDATION & DATA VALIDATION WITH DROP-DOWN LIST

When staff were entering the data about films into the workbook, I needed to make sure that limits were placed on the information entered. Since we were referring to films released in 2013, I needed to make sure staff only entered film release dates that could of occurred during 2013 so that none of the data was invalid. To do this, I setup validation to warn staff if they had entered a date that was not valid. I also wanted to setup a separate data validation with a drop-down list for the star ratings, as all the films had only scored between one and four stars, so I inserted the drop-down list so that staff could easily input a number that would not lead to invalid data



The validation will give a warning when an date not in 2013 is entered



The drop down list ensures only numbers between 1 and 4 can be input

Type	Action	Shortcut	Type		Type
Copy & Paste	Cell Format	Ctrl + 1	Filter	Find	Ctrl + f	Search
	Format as %	Ctrl + Shift + %		Replace	Ctrl + h	
	Format as Number	Ctrl + Shift + !		Delete/ insert Row/ Column	Ctrl + - / Ctrl + +	
	Add Autofilter	Alt → a → c		Open Data Validation	Alt + d + l ("L")	
Select & Navigate	Clear Filter	Alt → a → c		Create Pivot Table	Alt → n → v	Others
	Show Dropdown List	Alt + Arrow down		Repeat last Action	F4 (not in Cell)	
	Hide Sheet	Alt → o → h → h		Enter Cell	F2	
	Unhide Sheet	Alt → o → h → u				
Group & Ungroup	Rename Sheet	Alt → o → h → r	Worksheet functions			
	Insert new Worksheet	Alt + Shift + F1				
In Cell	Go to next/ previous Sheet	Ctrl + Page up/ Page down				

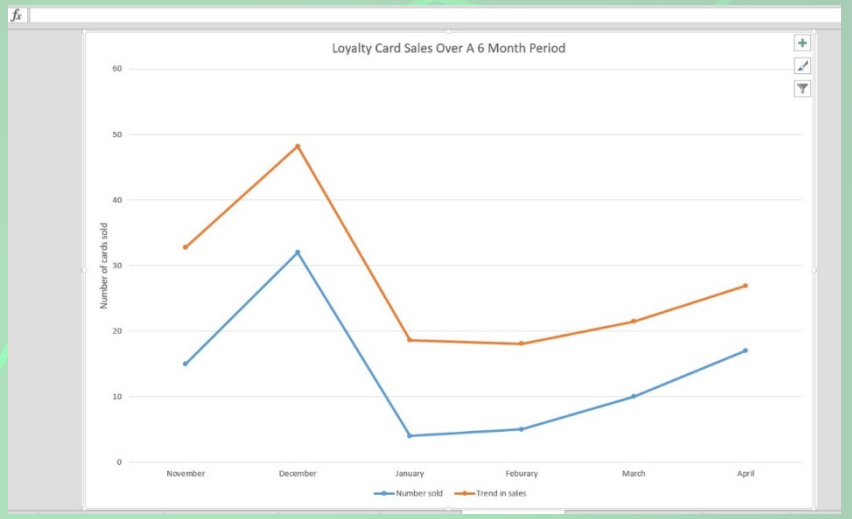
Select Column Ctrl + Space
Jump to End Ctrl + Arrow
Mark + Jump to End Shift + Ctrl + Arrow
Group Alt + Shift + Arrow right
Ungroup Alt + Shift + Arrow left
Add $ in Formula F4 (in Cell)
Line break within Cell Alt + Enter (in Cell)

→ = press keys after each other + = press keys at the same time () = additional hint Note: Some shortcuts (such as "%" or "!") may require additional keys (such as "Shift")

Calculate
F5 → Alt + s
To Special

CHARTS

Visually representing data is important when trying to show information to management when trying to persuade them to take a course of action. A number of charts and graphs are used in work book, tracking the changes of income from rentals and the sales of loyalty cards so that I could try and persuade management that the cards and rentals were worth persevering with enough if the figures had started out initially low, and I would not have been able to do this with visually flat numbers and cells alone



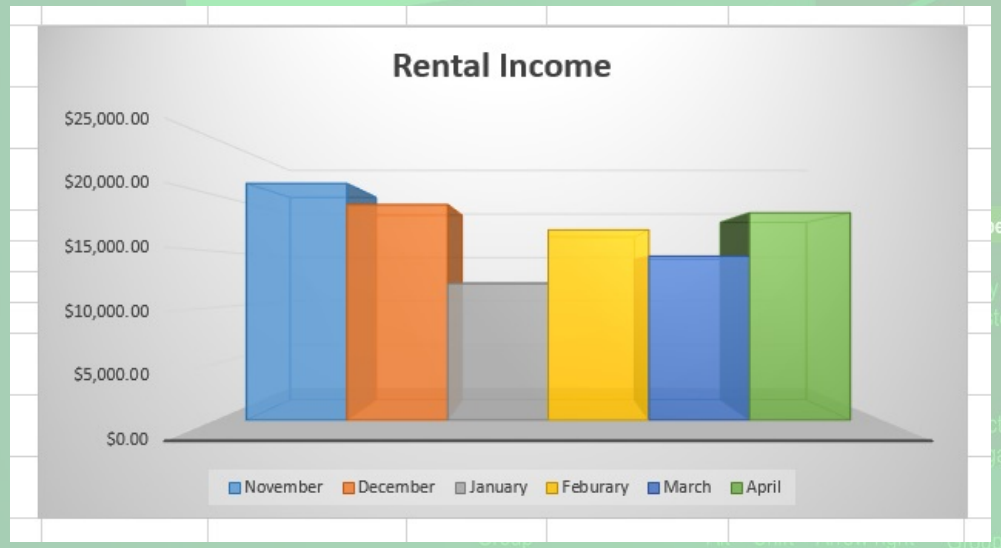


Chart showing just the rental income over the last six months

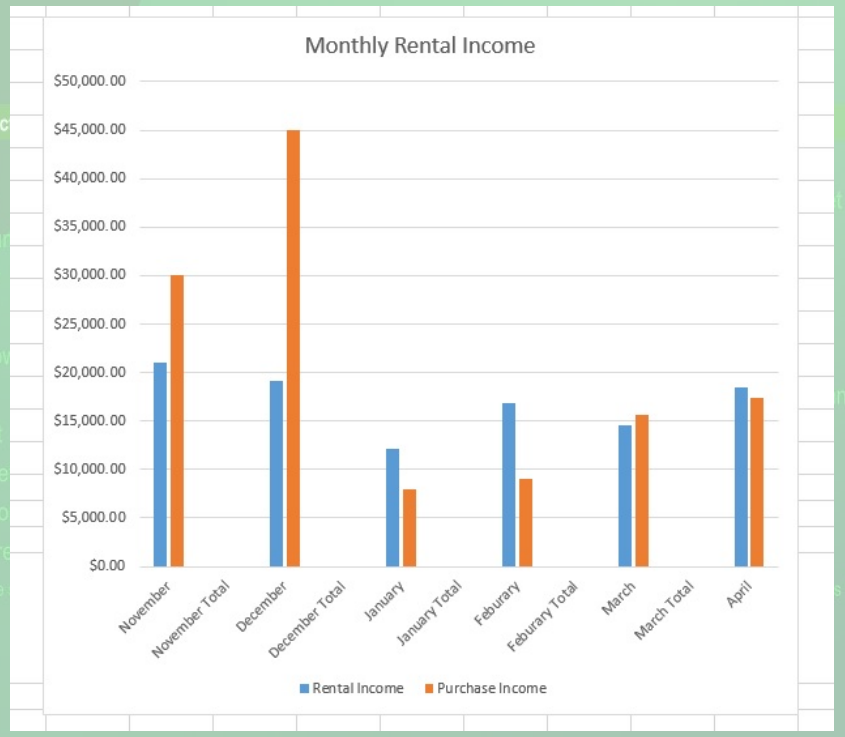
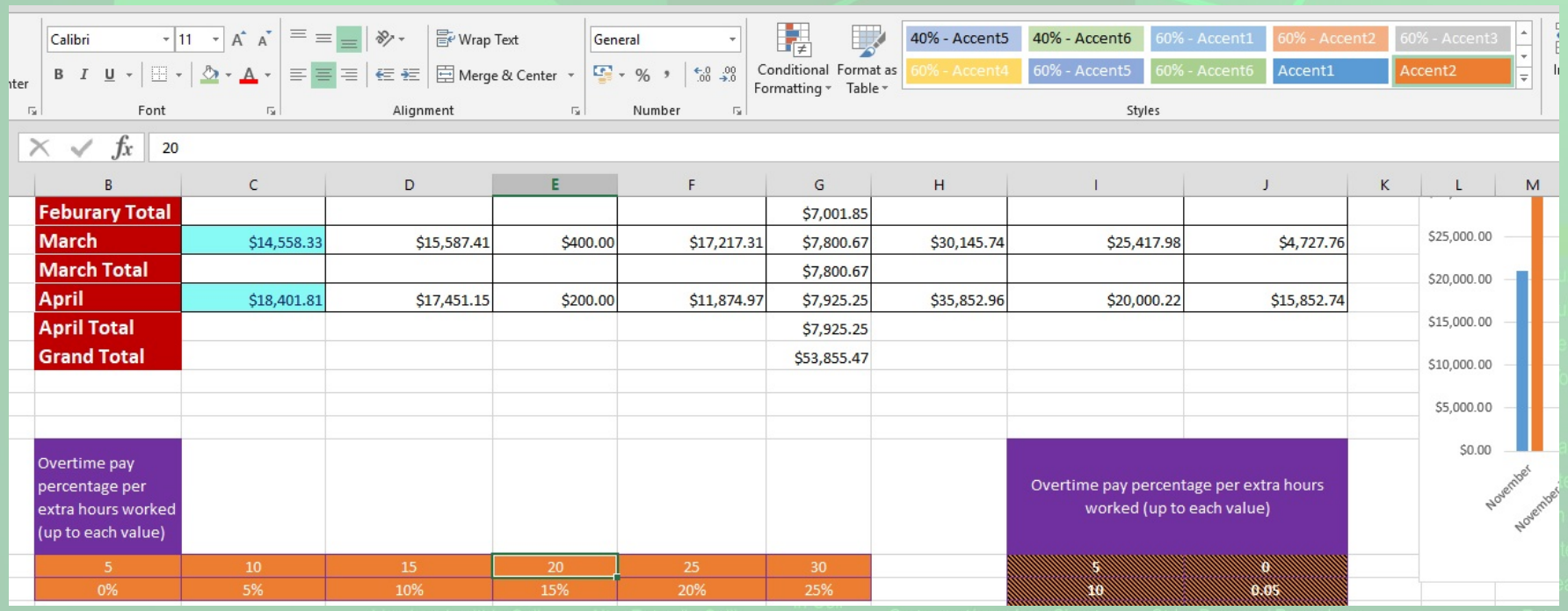


Chart the rental and sales income together in comparison

APPLY PRE-SET STYLE

When creating the data to be used for working out staff overtime percentage pay, I wanted to use a pre-set style, so that if any more tables needed to be created for overtime percentage, then admin staff could use the pre-set style for the table all the time. I thought the selected style was the best choice at the time



Feburary Total					$7,001.85				
March	$14,558.33	$15,587.41	$400.00	$17,217.31	$7,800.67	$30,145.74	$25,417.98	$4,727.76	
March Total					$7,800.67				
April	$18,401.81	$17,451.15	$200.00	$11,874.97	$7,925.25	$35,852.96	$20,000.22	$15,852.74	
April Total					$7,925.25				
Grand Total					$53,855.47				

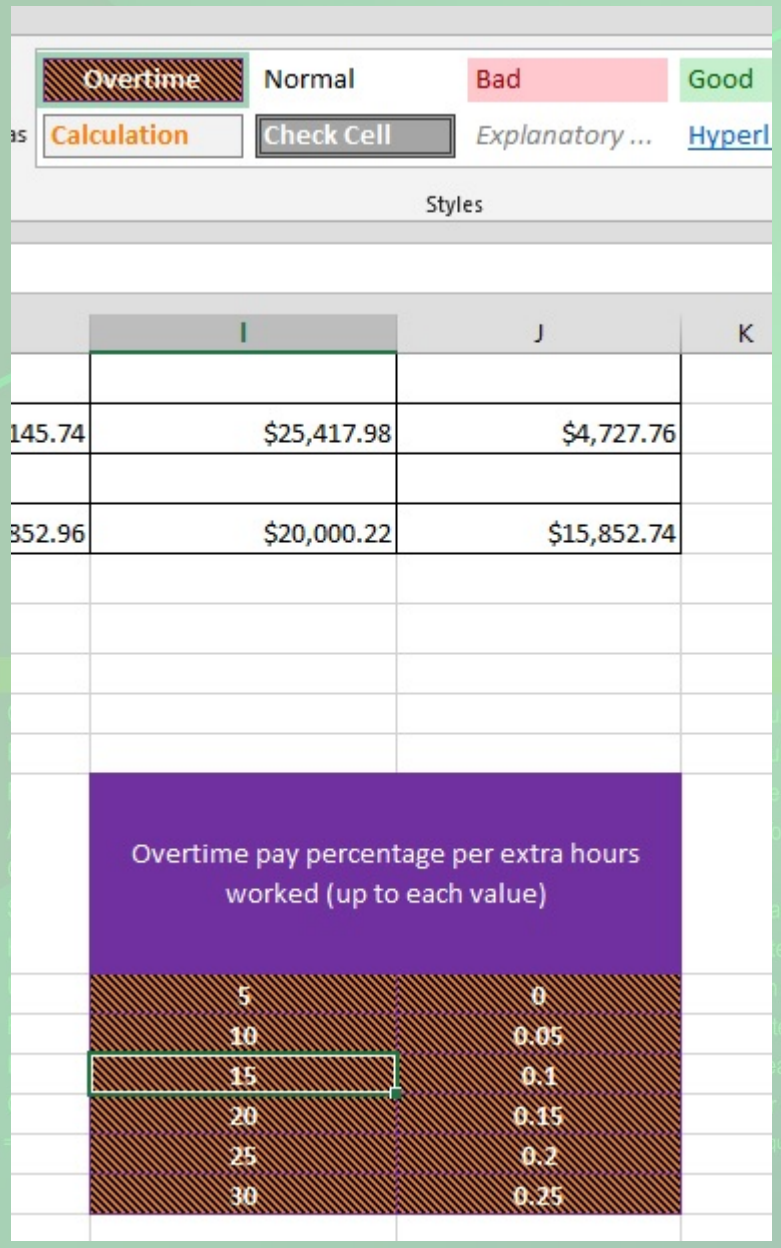
Overtime pay percentage per extra hours worked (up to each value)					
5	10	15	20	25	30
0%	5%	10%	15%	20%	25%

Overtime pay percentage per extra hours worked (up to each value)	
5	0
10	0.05

'Accent2' pre-set style used here for the table

APPLY USER-CREATED STYLE

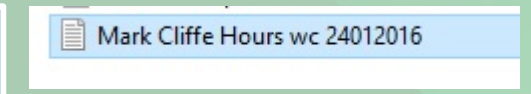
I had also wanted to create my own style, so that if admin had created a table for a different use but ended up using the same pre-set style, then my own created style could be used instead for the overtime percentage pay table



My own user-created style that I labelled 'Overtime' is used here

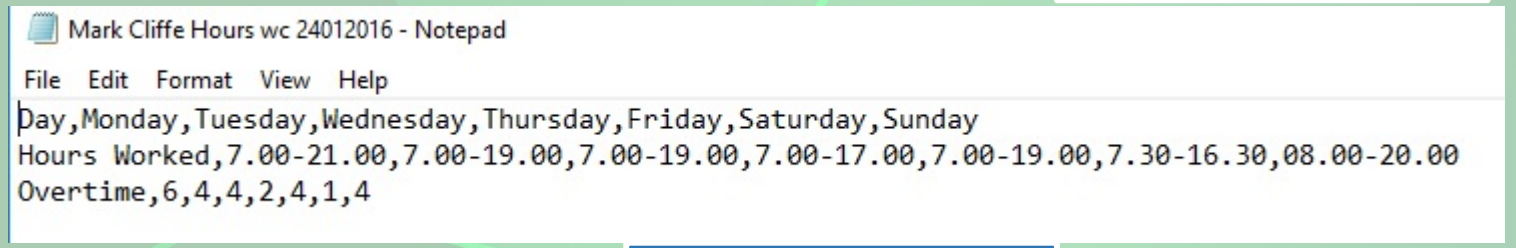
IMPORTING DATA

The use of data import has been required for when staff submit their hours worked via electronic format. Some choose to write down their hours worked, but a few send in the data of their hours worked in a text document via email. Whereas I have no option but to manually type in the hours from the hand written forms, I can import the data from the electronic text documents. In this example Mark has sent in his hours worked in a simple text document. Handily, mark has used a comma to separate the days, times and any overtime worked for me. This means that when I import the data from the text document, I can use the comma value as a separator between the fields, which makes the data readable and separated into cells in Excel for me

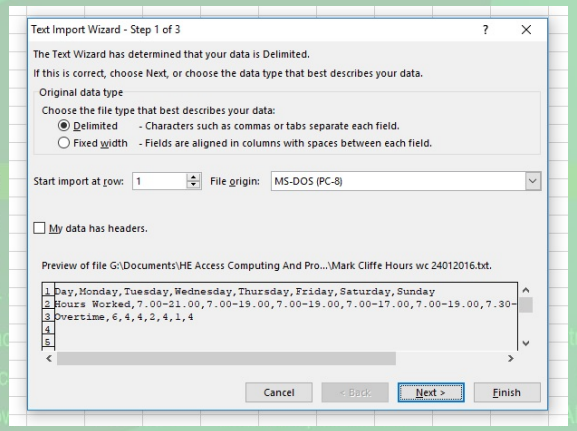


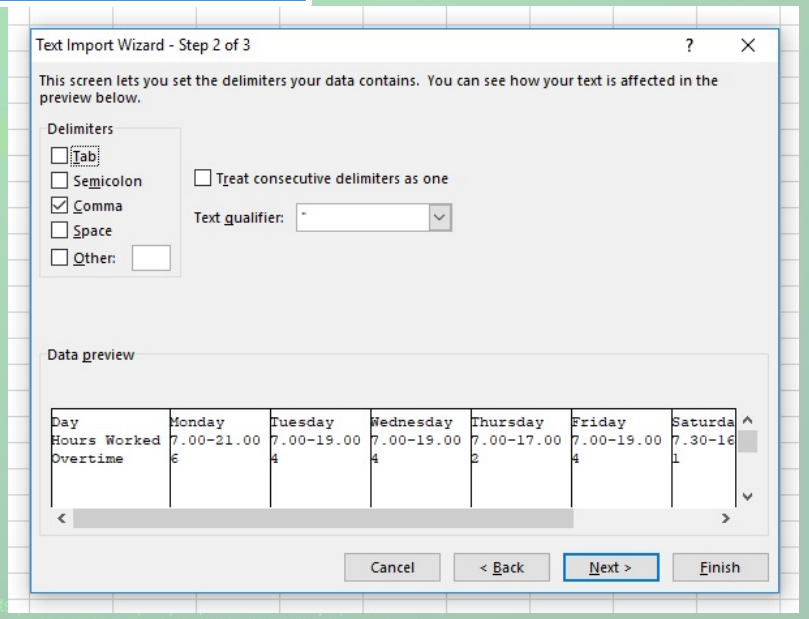
The file containing the text is sent to me

The data has been separated with commas



I then tell Excel to use those commas to separate the data





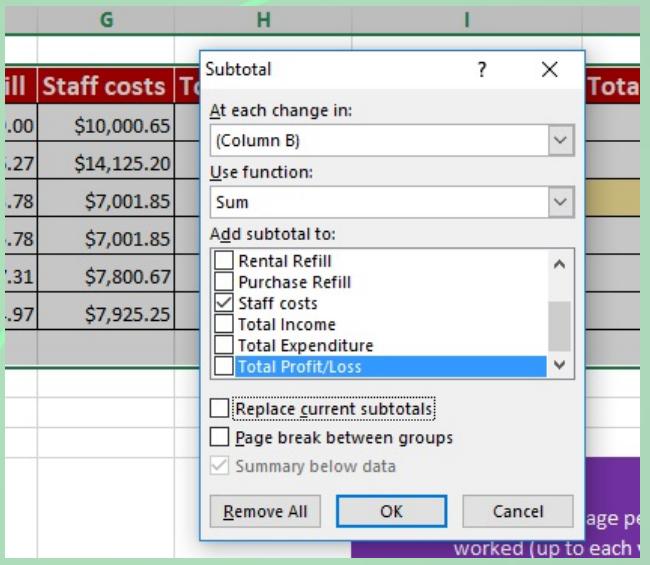
A	B	C	D	E	F	G	H	I	J
	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
	Hours Worked	7.00-21.00	7.00-19.00	7.00-19.00	7.00-17.00	7.00-19.00	7.30-16.30	08.00-20.00	
	Overtime	6	4	4	2	4	1	4	

Excel is then able to divide the data in separate cells so that they are immediately useable

SUBTOTAL & OUTLINE

The SUBTOTAL function has been useful for showing admin staff items like staff costs, as the function can create a line between each row and calculate the subtotal. In this example we are using it for giving us a subtotal between each month for the staff costs. This also adds an outline so that it so I can collapse specific months if I have already seen that data for the month

Excel is told which column to use for the automatic subtotals



The outlines are then created, each can be collapsed if required for easier viewing

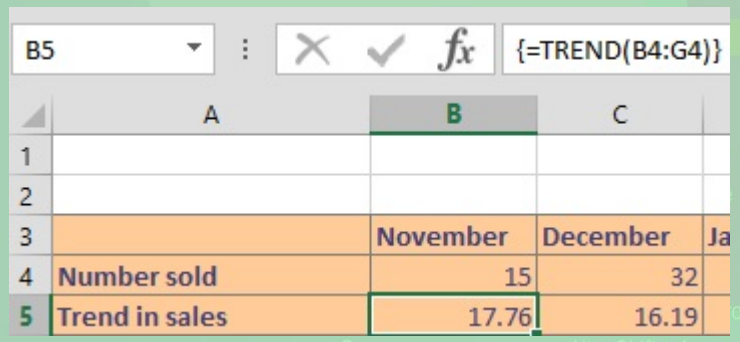
		Rental Income	Purchase Income	Rental Refill	Purch
3	November	$21,000.07	$30,000.78	$300.00	
4	November Tota				
5	December	$19,126.75	$45,001.25	$300.00	
6	December Total				
7	January	$12,124.44	$8,000.45	$900.00	
8	January Total				
9	Feburary	$16,887.01	$9,010.64	$320.00	
10	Feburary Total				
11	March	$14,558.33	$15,587.41	$400.00	
12	March Total				
13	April	$18,401.81	$17,451.15	$200.00	
14	April Total				
15	Grand Total				
16					

ARRAY FORMULA

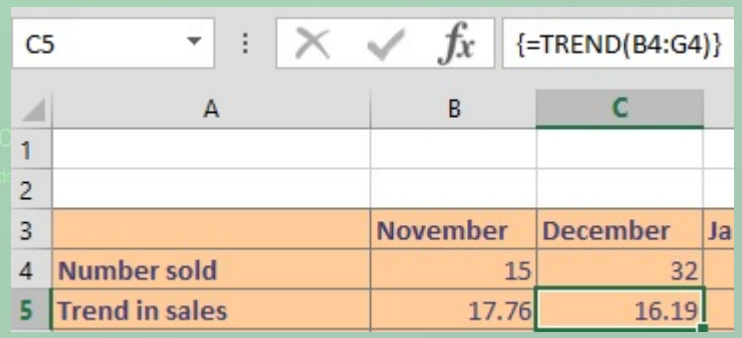
Management had been enquiring about the numbers of customers signing up for loyalty cards over the last six months, as there was debate about whether to keep offering incentives to sign up if the trend in sales was going down. I thought the best way to show this visually was using an Array Formula, as then I could use it to track the trends and work out if there was a best time to push the cards and when to hold back producing any more, depending on the month

I start off with the data of how many cards were sold in each month

1							
2							
3		November	December	January	Feburary	March	April
4	Number sold	15	32	4	5	10	17
5							



Cells B5 and C5 both contain the same data (the {} are automatically used in this TREND) so that Excel can work out the trend of sales



NESTED FUNCTIONS

When looking at the data for loyalty card sales, I wanted to use a simple message to reflect what had been happening with the card sales. Although staff could be presented with complex graphs and tables, I felt this may not have as much impact as just using a simple message. I used a nested function as I could use this to give clear message based on sales. I wanted to reflect that we would need to be better if we had sold below a certain number, but also say well done if the targets had been achieved, or even been exceeded. I used the basis of how many sales I thought would be a good total per month then created a simple message based on the actual numbers sold in relation to that

Different messages are used based on if more or less than 10 and 20 cards are sold

C6: `=UPPER(IF(C4>10,"well done!",IF(C4>15,"excellent!!",IF(C4>20,"outstanding!!!",IF(C4<=10,"need to do better")))))`

	A	B	C	D	E	F	G
3		November	December	January	Feburary	March	April
4	Number sold	15	32	4	5	10	17
5	Trend in sales	17.76	16.19	14.62	13.05	11.48	9.90
6	Number sold	WELL DONE!	WELL DONE!	NEED TO DO BETTER	NEED TO DO BETTER	NEED TO DO BETTER	WELL DONE!