Lesson 2-4: Formatting a spreadsheet
Quick calculations
Formula
Data representation

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Goals:

To build a data set in a spreadsheet

- I can choose an appropriate format for a cell
- I can apply an appropriate format to a cell
- Use basic formulas with cell references for calculations in a spreadsheet (+, -, *, /)
- Use the autofill tool to replicate cell data
- I can create a formula which includes a range of cells
- Use the functions SUM, MAX, MIN, and COUNTA in a spreadsheet
- Create appropriate charts in a spreadsheet

What is a data item?

Have a look at this part of a spreadsheet.

	A	B	C
1	Product	Quantity	Cost
2	Apples	3	£1.59
3	Bananas	4	£1.10
4	Oranges	1	£0.60
5	Lemons	6	£1.80

What is in cell A2?

What is in cell B5?

What is in cell C3?

What is in cell B1?

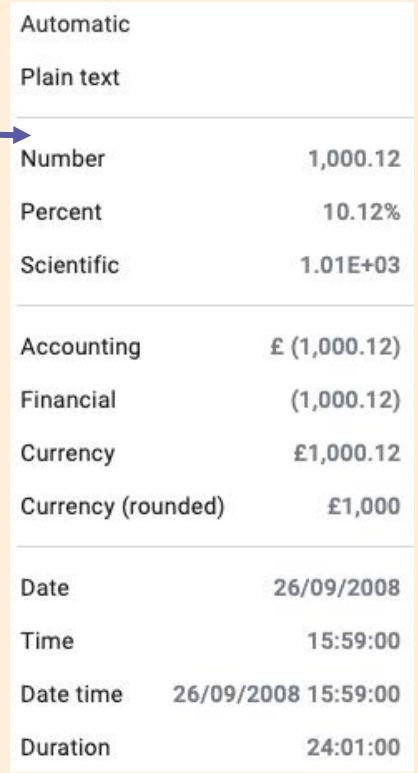
What do you notice?

Each cell contains one item of data. There can be many types of data items.

Which format?

- The common formats for spreadsheets are shown here.

- Which formats have been used on the table below.



	A	B	C	D	E	F	G	H
1	**Date of survey**	19/10/2021		**Name**	**Method of travel**	**Distance in miles**	**Duration of journey**	**Cost of journey**
2				Reina	Car	4.4	0:24:00	£2.60
3				David	Bus	6.2	0:30:00	£1.40
4				Yiannis	Bike	2.3	0:15:00	£0.00
5				Bob	Walking	0.8	0:21:00	£0.00
6				Amin	Bus	6.2	0:24:00	£1.40

Which format?

Number

Date

Currency

Duration

Plain text

	A	B	C	D	E	F	G	H
1	**Date of survey**	19/10/2021		**Name**	**Method of travel**	**Distance in miles**	**Duration of journey**	**Cost of journey**
2				Reina	Car	4.4	0:24:00	£2.60
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6				Amin	Bus	6.2	0:24:00	£1.40

Which format?

Plain text Date Plain text Number Duration Currency

	A	B	C	D	E	F	G	H
1	**Date of survey**	19/10/2021		**Name**	**Method of travel**	**Distance in miles**	**Duration of journey**	**Cost of journey**
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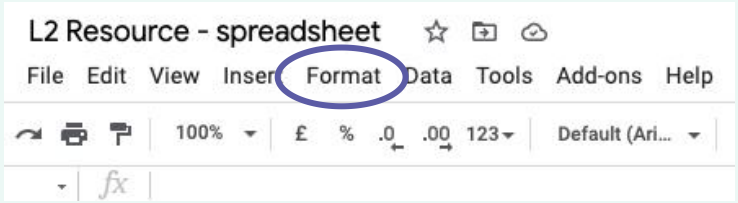
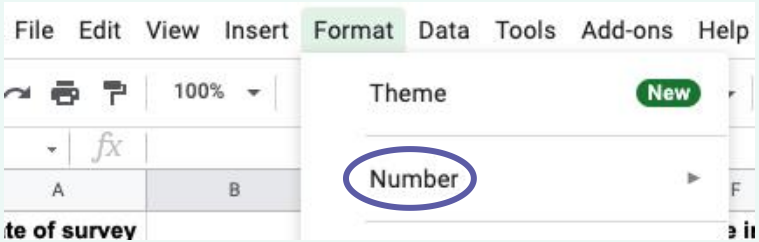
Applying number formats

1 Click on ‘format’



2 Hover over ‘Number’



3 Choose a format from the list

Why apply formatting?

Think, pair, share: Why is it a good idea to apply formatting to cells in spreadsheets?

It makes them easier to use

It makes them easier to read

It shows you what each cell contains

Formulas and functions

Formulas can be used to perform calculations, using:

- Multiplication
- Subtraction
- Division
- Addition

Functions can be used to complete more complex processes such as:

- Calculating average
- Finding the sum of multiple cells
- Counting a number of objects

Calculations in spreadsheets

You can perform common mathematical operations in a spreadsheet using the symbols below:

Add

Subtract

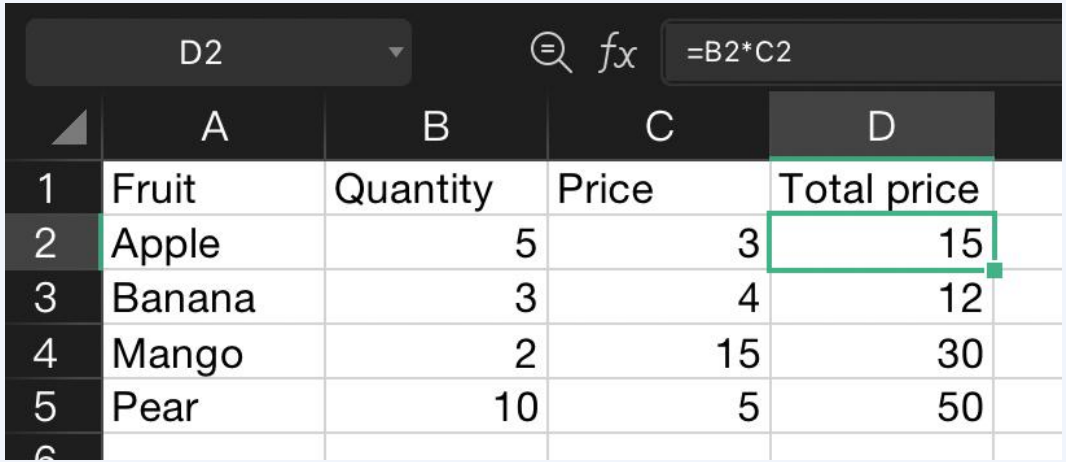
Multiply

Divide

Calculations in spreadsheets

Fruit	Quantity	Price	Total price
Apple	5	3	=B2*C2
Banana	3	4	
Mango	2	15	
Pear	10	5	

drag down to apply this formula to the other items



The SUM function

Superpower: superfast totals!

The SUM function

Superpower: superfast totals!

=SUM(D2:D5)

	A	B	C	D	E
1	Fruit	Quantity	Price	Total price	
2	Apple	5	3	15	
3	Banana	3	4	12	
4	Mango	2	15	30	
5	Pear	10	5	50	
6					
7				=sum(D2:D5	
8					
9					

SUM (**Number1** ,...)

The MAX function

Superpower: find the largest value with your eyes closed!

The MAX function

Superpower: find the largest value with your eyes closed!

=MAX(D2:D5)

	A	B	C	D	E
1	Fruit	Quantity	Price	Total price	
2	Apple	5	3	15	
3	Banana	3	4	12	
4	Mango	2	15	30	
5	Pear	10	5	50	
6					
7				=MAX(D2:D5	
8					
9					

MAX (**Number1** ,...)

The MIN function

Superpower: ???

The MIN function

Superpower: find the smallest value without looking!

The MIN function

Superpower: find the smallest value without looking!

=MIN(D2:D5)

	A	B	C	D	E
1	Fruit	Quantity	Price	Total price	
2	Apple	5	3	15	
3	Banana	3	4	12	
4	Mango	2	15	30	
5	Pear	10	5	50	
6					
7				=MIN(D2:D5)	
8					
9					

MIN (Number1 ,...)

The AVERAGE function

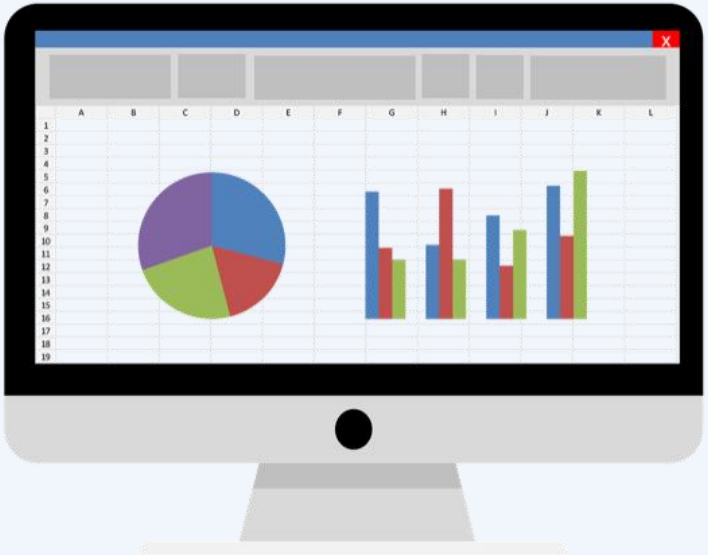
Superpower: calculate an average

	A	B	C	D	E
1	Fruit	Quantity	Price	Total price	
2	Apple	5	3	15	
3	Banana	3	4	12	
4	Mango	2	15	30	
5	Pear	10	5	50	
6					
7			=AVERAGE(C2:C5)		
8					
9					
10					

AVERAGE (**Number1** ,...)

Visualising data

- A **chart** represents data visually.
- With spreadsheets, you can create all kinds of charts in just a few clicks!



Task (duration: 1 lesson)

The following task will help you prepare for the last Test in our course. Therefore, you have to understand how to complete it. DON'T get distracted. First, listen to instructions! Read instructions carefully, ask questions - if not clear what to do.

以下任务将帮助你准备我们课程的最后一个测试。因此，你必须了解如何完成它。切勿分心。首先，听从指示！仔细阅读指示，如果不清楚该怎么做，请提出问题。

5 minutes to read and ask questions

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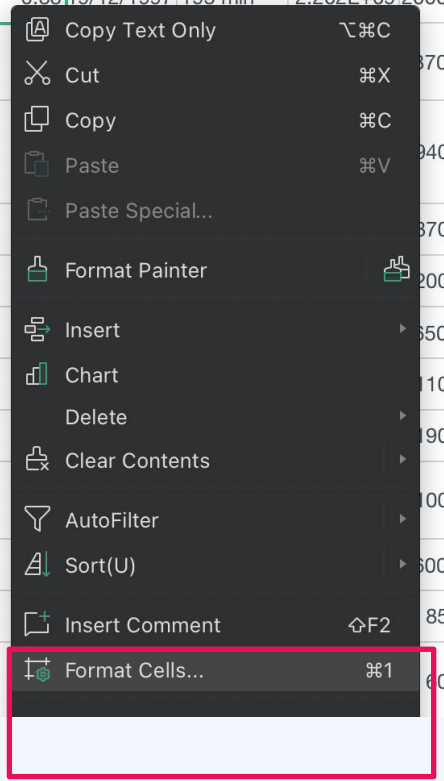
How to convert format? Q1-Q2

Movie	Category	IMDb Rating	Rotten Tomatoes Rating	Release Date	Duration	Box Office	Budg
Titanic	Drama/Romance	7.9	0.88	19/12/1997	195 min	2.202E+09	200000
Avatar	Sci-Fi/Adventure	7.9					37000
The Lord of the Rings: The Return of the King	Fantasy/Adventure	9					94000
Twilight	Fantasy/Romance	5.3					37000
Nezha	Animation/Action	7.5					20000
Interstellar	Sci-Fi/Drama	8.6					65000
Parasite	Drama/Thriller	8.5					11000
Spirited Away	Animation/Fantasy	8.6					19000
Amélie	Romance/Comedy	8.3					10000
Inception	Sci-Fi/Thriller	8.8					60000
Pulp Fiction	Crime/Drama	8.9					8500
The Godfather	Crime/Drama	9.2					6000



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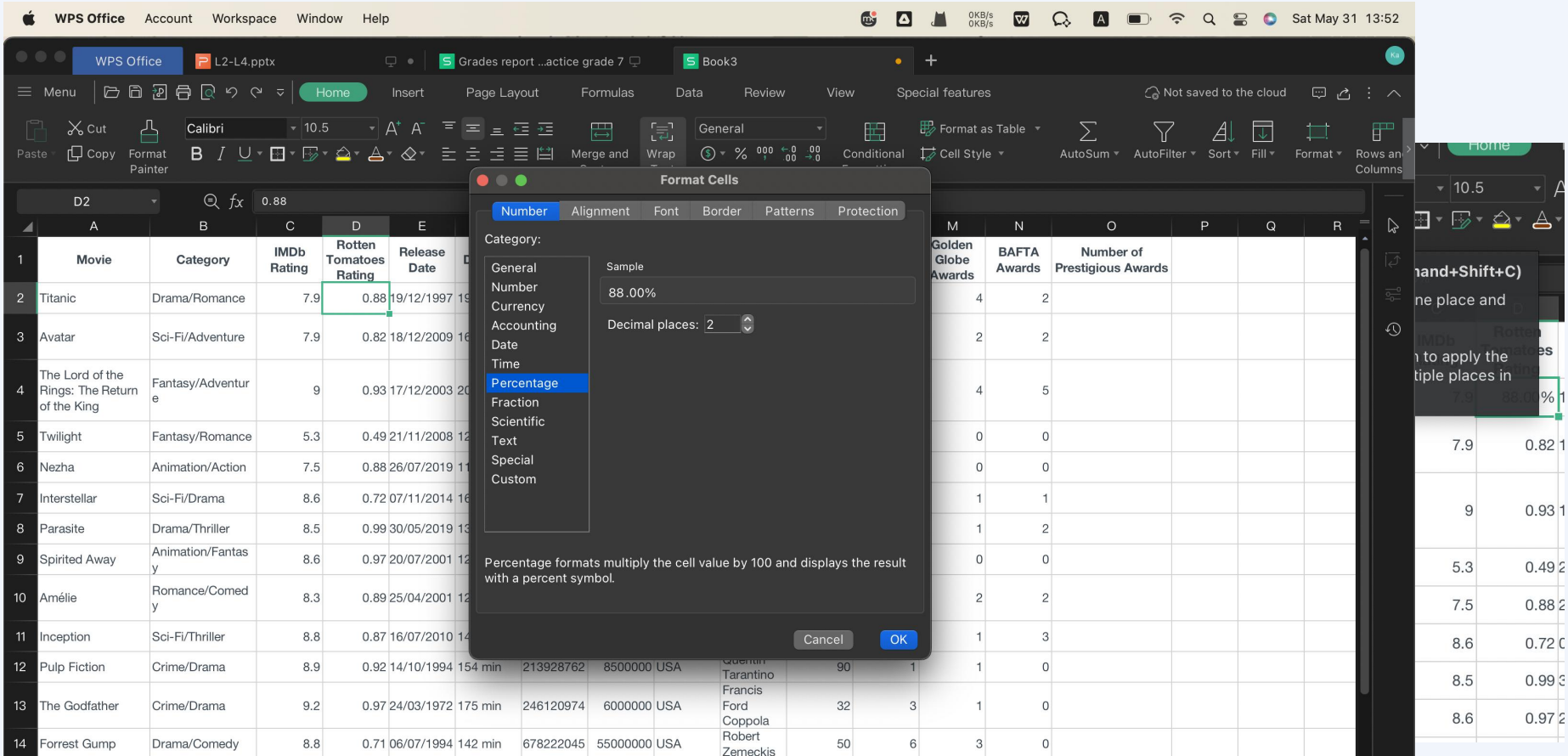
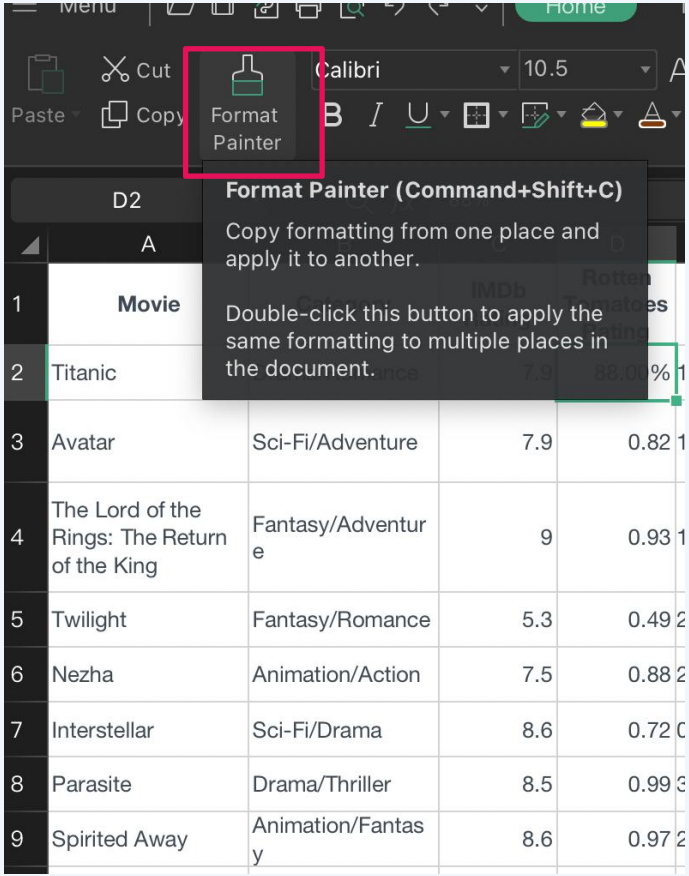
How to convert format? Q1-Q2



How to convert format? Q1-Q2



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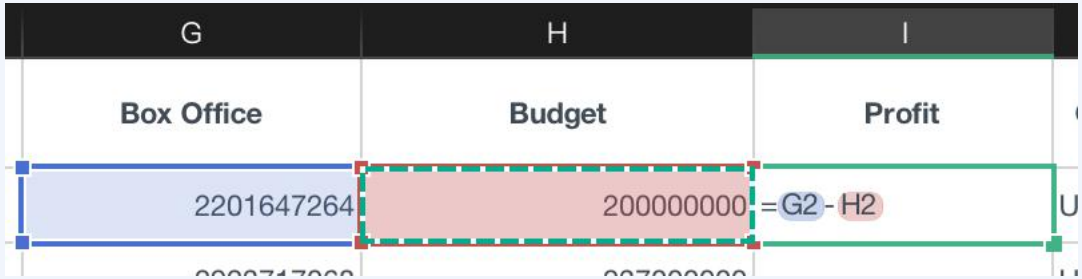
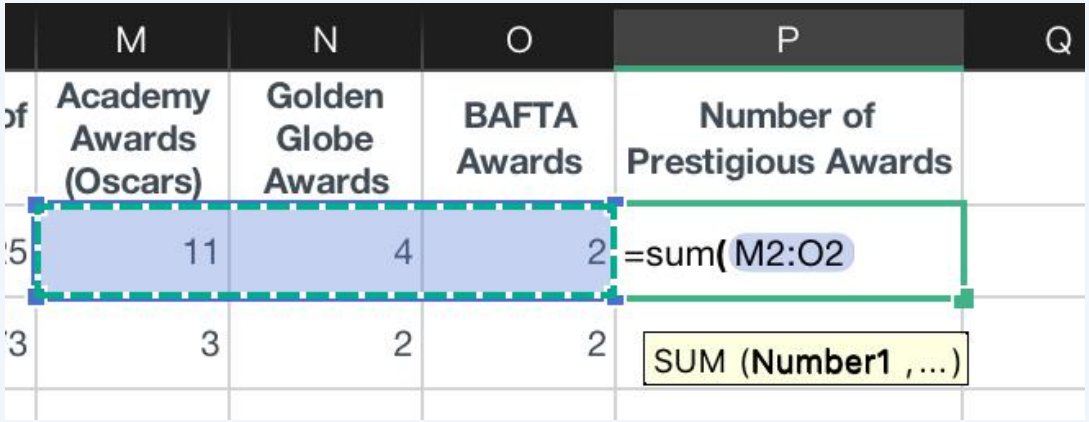
How to calculate profit? How to calculate number of prestigious awards?





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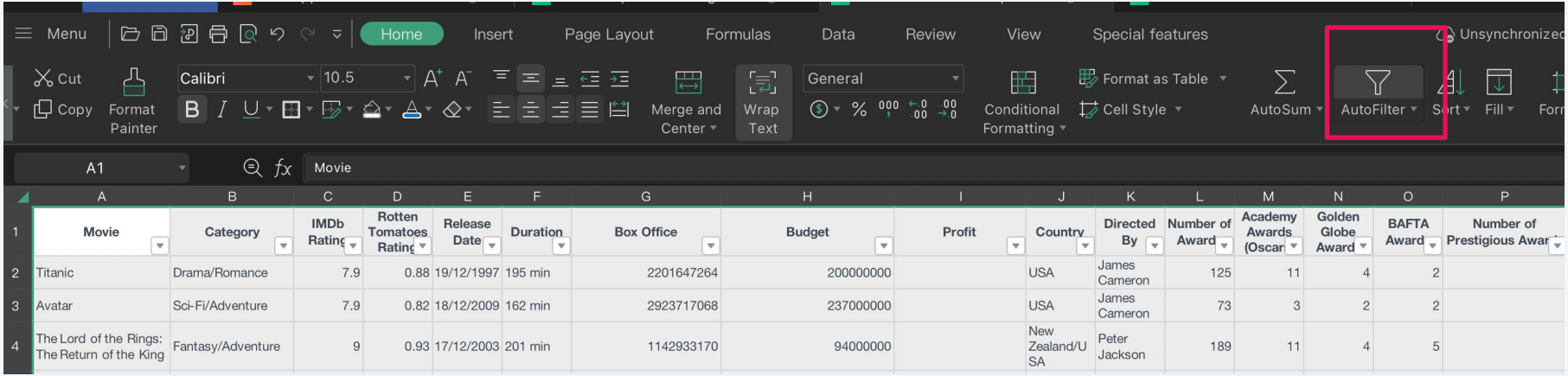
How to create a filter? How to sort?



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Movie	Category	IMDb Rating	Rotten Tomatoes Rating	Release Date	Duration	Box Office	Budget	Profit	Country	Directed By	Number of Award	Academy Awards (Oscar	Golden Globe Award	BAFTA Award	Number of Prestigious Awar
2	Titanic	Drama/Romance	7.9	0.88	19/12/1997	195 min	2201647264	200000000		USA	James Cameron	125	11	4	2	
3	Avatar	Sci-Fi/Adventure	7.9	0.82	18/12/2009	162 min	2923717068	237000000		USA	James Cameron	73	3	2	2	
4	The Lord of the Rings: The Return of the King	Fantasy/Adventure	9	0.93	17/12/2003	201 min	1142933170	94000000		New Zealand/USA	Peter Jackson	189	11	4	5	

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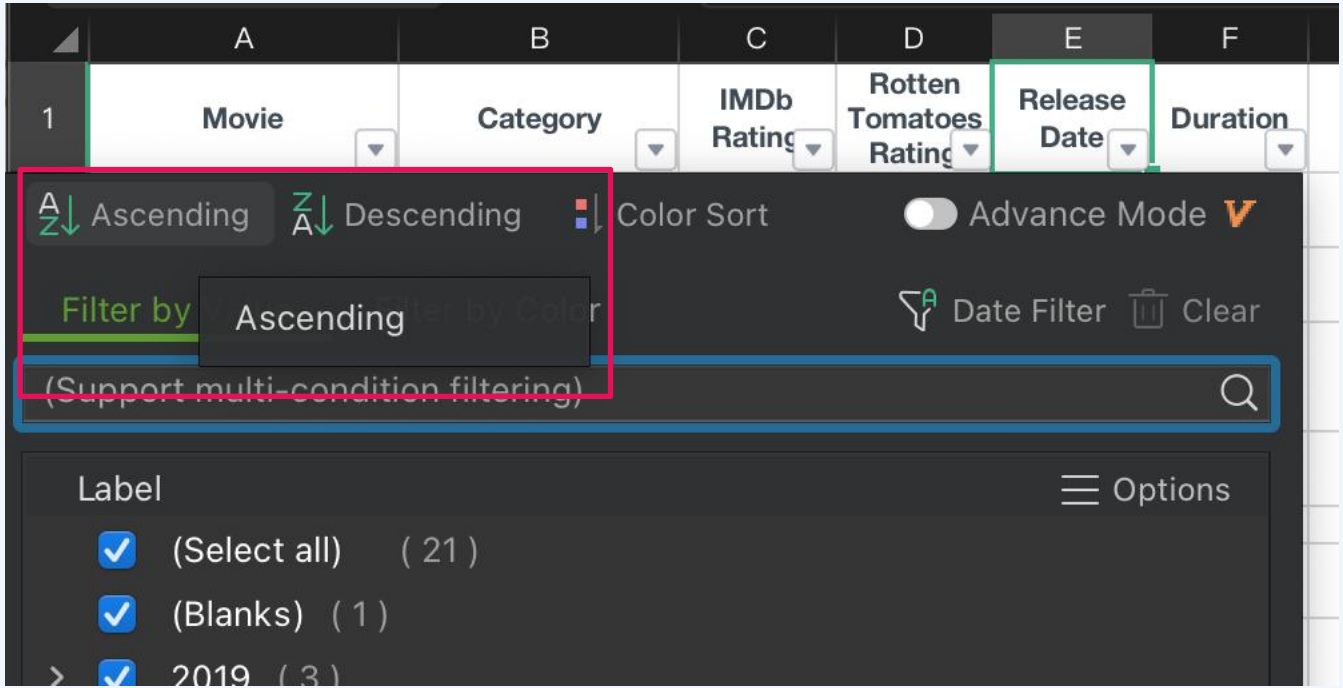
How to create a filter? How to sort?



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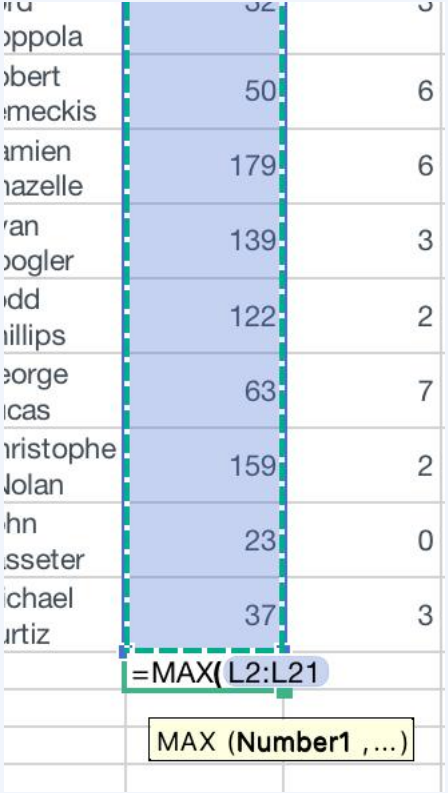
How to find maximum (=MAX()) or minimum (=MIN())?



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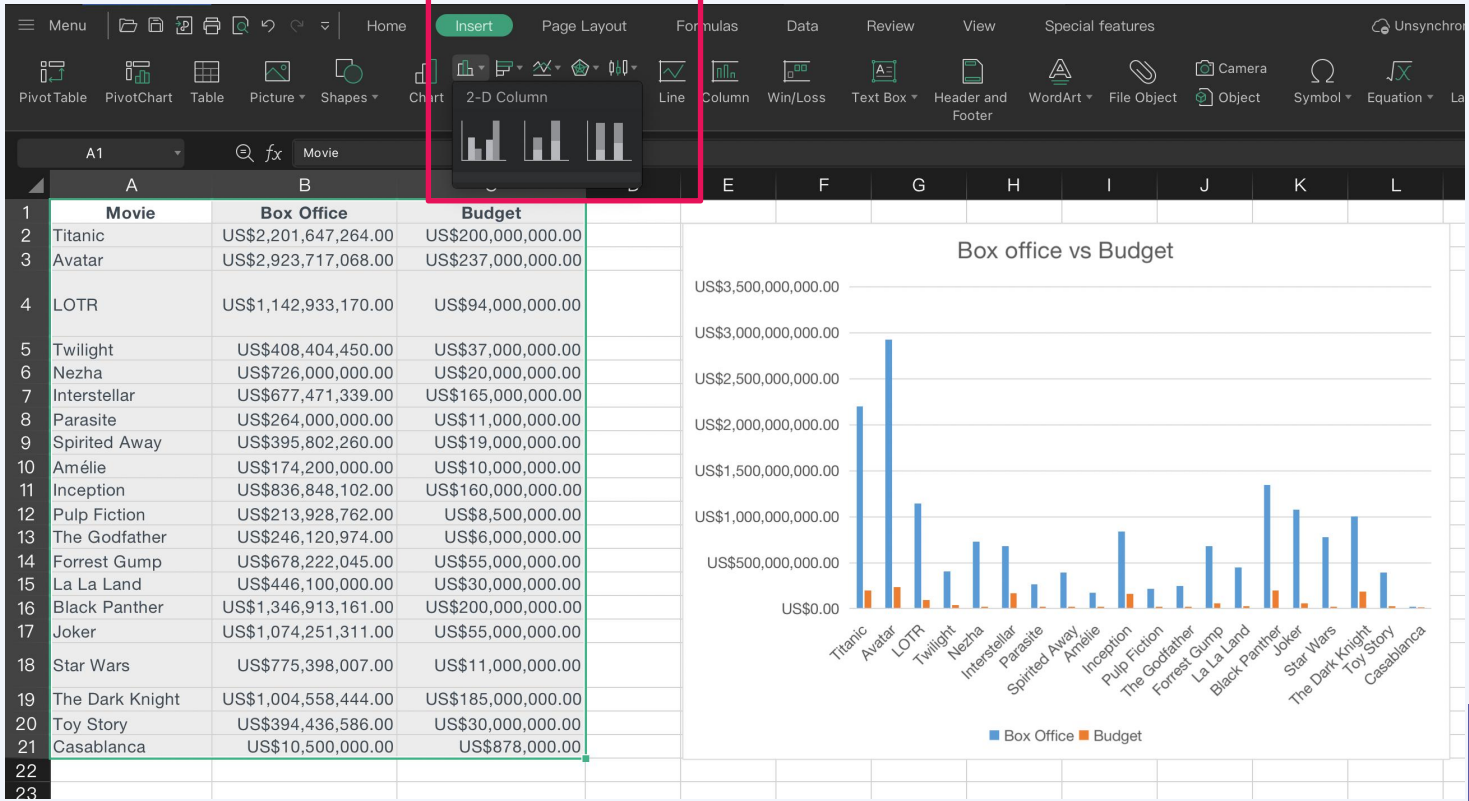
How to create a chart?



Movie	Box Office	Budget
Titanic	US$2,201,647,264.00	US$200,000,000.00
Avatar	US$2,923,717,068.00	US$237,000,000.00
LOTR	US$1,142,933,170.00	US$94,000,000.00
Twilight	US$408,404,450.00	US$37,000,000.00
Nezha	US$726,000,000.00	US$20,000,000.00
Interstellar	US$677,471,339.00	US$165,000,000.00
Parasite	US$264,000,000.00	US$11,000,000.00
Spirited Away	US$395,802,260.00	US$19,000,000.00
Amélie	US$174,200,000.00	US$10,000,000.00
Inception	US$836,848,102.00	US$160,000,000.00
Pulp Fiction	US$213,928,762.00	US$8,500,000.00
The Godfather	US$246,120,974.00	US$6,000,000.00
Forrest Gump	US$678,222,045.00	US$55,000,000.00
La La Land	US$446,100,000.00	US$30,000,000.00
Black Panther	US$1,346,913,161.00	US$200,000,000.00
Joker	US$1,074,251,311.00	US$55,000,000.00
Star Wars	US$775,398,007.00	US$11,000,000.00
The Dark Knight	US$1,004,558,444.00	US$185,000,000.00
Toy Story	US$394,436,586.00	US$30,000,000.00
Casablanca	US$10,500,000.00	US$878,000.00

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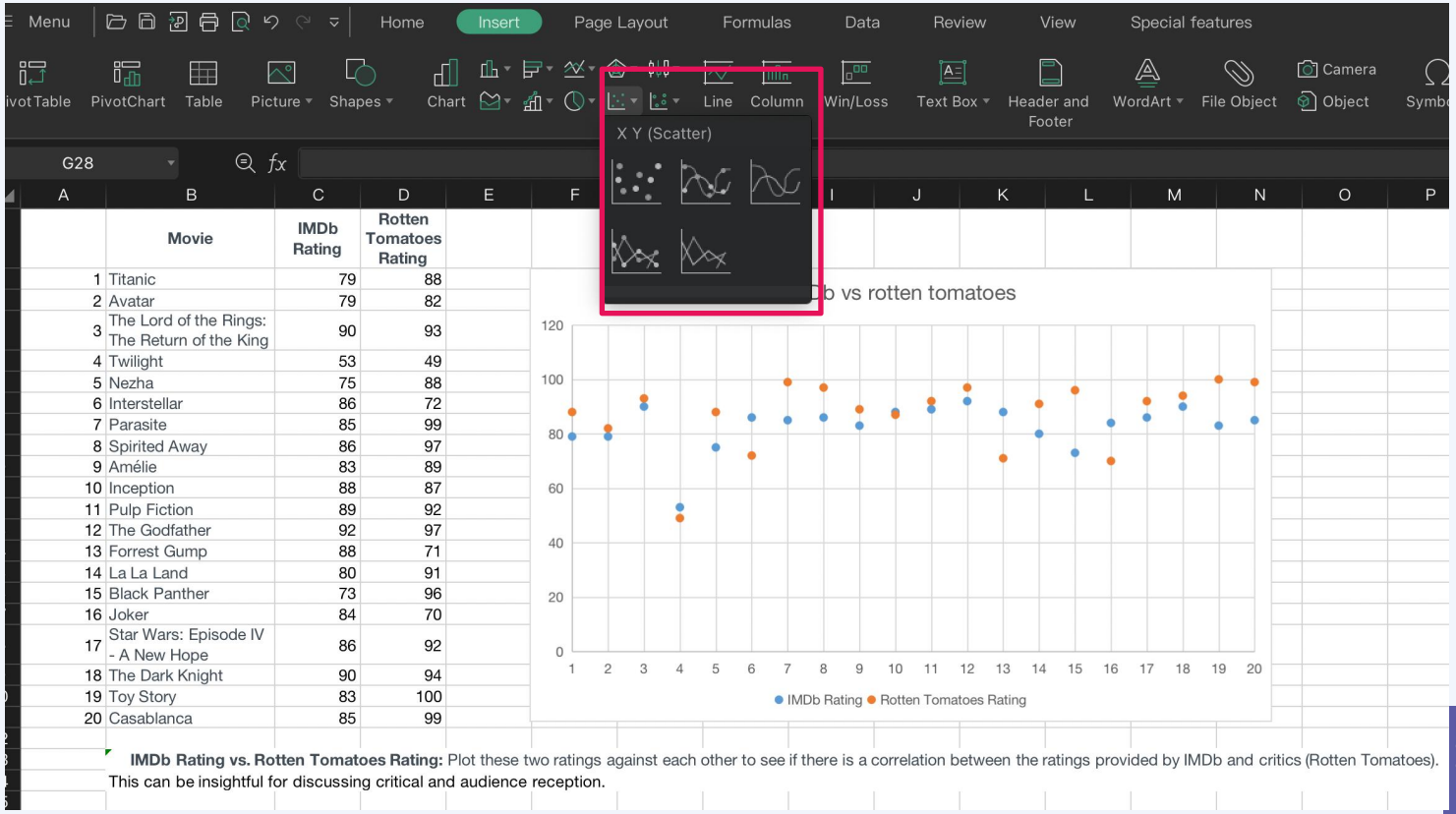
How to create a scatter plot?



	Movie	IMDb Rating	Rotten Tomatoes Rating
1	Titanic	79	88
2	Avatar	79	82
3	The Lord of the Rings: The Return of the King	90	93
4	Twilight	53	49
5	Nezha	75	88
6	Interstellar	86	72
7	Parasite	85	99
8	Spirited Away	86	97
9	Amélie	83	89
10	Inception	88	87
11	Pulp Fiction	89	92
12	The Godfather	92	97
13	Forrest Gump	88	71
14	La La Land	80	91
15	Black Panther	73	96
16	Joker	84	70
17	Star Wars: Episode IV - A New Hope	86	92
18	The Dark Knight	90	94
19	Toy Story	83	100
20	Casablanca	85	99

IMDb Rating vs. Rotten Tomatoes Rating: Plot these two ratings against each other to see if there is a correlation between the ratings provided by IMDb and critics (Rotten Tomatoes). This can be insightful for discussing critical and audience reception.

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