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# The Ultimate EXCEL Handbook



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#1

# Functions

i. Top 10 Functions

=LET ()

=TRIM ()

=LAMBDA ()

=MAX ()



# Financial Modeling in Excel

## 10 Excel functions you should know

### =SUMIFS()

SUMIFS function adds all of its arguments that meet multiple criteria. For example, you would use SUMIFS in your financial model to sum up the sales of (1) a specific employee (2) for a specific product.

#### =SUMIFS

(sum range (e.g. sales),  
**criteria range 1** (e.g. employee),  
**criteria 1** (e.g. Tim),  
**criteria range 2** (e.g. Product),  
**criteria 2**, (e.g. Chairs))

Employee	Product	Sales
Laura	Tables	\$3,441
Mike	Chairs	\$5,110
Tim	Pillows	\$5,643
Phoebe	Tables	\$4,921
Tim	Chairs	\$4,839
Phoebe	Chairs	\$3,768
Mike	Chairs	\$4,707
Laura	Beds	\$5,361
Tim	Chairs	\$3,304
Phoebe	Tables	\$4,744

Employee	Product	Sales
Tim	=SUMIFS(F8:F17,D8:D17,D21,E8:E17,E21)	
Chairs		\$8,143

Know your IFs, COUNTIFs, AVERAGEIFs and all other IFs too - after all, financial modeling is just a series of IFs that could happen in this world.

### =IFERROR()

Use IFERROR function to format your financial models. The function checks for errors and returns the value specified by the user if found. The function checks for the following errors: #N/A, #VALUE!, #REF!, #DIV/0!, #NUM!, #NAME? or #NULL!.

#### =IFERROR(value, value\_if\_error)

Month	Total Wages Allocated	Employees	Wage
Jan	\$3,200	2	\$1,600
Feb	\$1,600	1	\$1,600
Mar (shop closed)	\$0	0	=IFERROR(D10/E10,0)

No IFERROR #DIV/0!  
 IFERROR \$0

# Financial Modeling in Excel

## 10 Excel functions you should know

### =XIRR()

Internal rate of return metric is needed to find out the annual growth rate of an investment. The higher the IRR, the better the investment (keeping all other factors the same, of course). IRR is good for comparing different investment opportunities.

#### =XIRR(cash flow values, dates of cash flows)

	1	2	3	4	5
Date	7/12/2021	8/11/2021	9/10/2021	10/10/2021	11/9/2021
Cash Flow	-1000	-550	750	1000	1250

IRR = **=XIRR(E6:I6,E5:I5)**

XIRR(values, dates, [guess])

### =XNPV()

Finance is money and we all know that money today is worth more than tomorrow. Financial analysts oftentimes have to calculate the value of an investment/company/project in today's terms.

#### =XNPV(discount rate, cash flow values, dates of cash flow)

	1	2	3	4	5
Date	7/12/2021	8/11/2021	9/10/2021	10/10/2021	11/9/2021
Cash Flow	-1000	-550	750	1000	1250

Discount Rate = 9%

NPV = **=XNPV(E8,E6:I6,E5:I5)**

XNPV(rate, values, dates)

Unlike IRR and NPV, XIRR and XNPV functions allow for payments at irregular intervals

# Financial Modeling in Excel

## 10 Excel functions you should know

### =PMT()

PMT function calculates the payment for a loan based on constant payments and a constant interest rate. You have to know the present loan value, number of periods and the interest rate. PMT, PPMT and IPMT functions are needed to figure out annuity loan repayments (e.g. mortgage)

### =PMT (interest rate, number of periods, present value)

Present Value	\$ 2,000
Number of periods	10
Interest Rate	5%

**PMT** =PMT(E8,E7,E6)

PMT(rate, nper, pv, [fv], [type])

**Monthly PMT** (\$21.58)

**=PMT()** calculates periodic payment for a loan in total  
**=PPMT()** calculates the payment on the principal for a loan  
**=IPMT()** calculates the interest payment on the loan

### =SLOPE()

If you're into investment banking, at some point you'll have to calculate the Beta of a stock, which means volatility. By using the SLOPE function in Excel, you'll find it easily by using the returns of the stock and the comparative benchmark index.

### =SLOPE

(% of equity change range,  
% range of change of index)

STOCK			INDEX		
Date	Close	Change	Date	Close	Change
11.10.2021	\$ 294.23		11.10.2021	\$14,445.00	
12.10.2021	\$ 292.88	-0.4609	12.10.2021	\$14,525.00	0.550775
13.10.2021	\$ 296.31	1.1576	13.10.2021	\$14,800.00	1.858108
14.10.2021	\$ 302.75	2.1272	14.10.2021	\$14,935.00	0.903917
15.10.2021	\$ 304.21	0.4799	15.10.2021	\$14,910.00	-0.16767
18.10.2021	\$ 307.29	1.0023	18.10.2021	\$15,015.00	0.699301
19.10.2021	\$ 308.23	0.305	19.10.2021	\$15,145.00	0.858369
20.10.2021	\$ 307.41	-0.2667	20.10.2021	\$15,190.00	0.296248
21.10.2021	\$ 310.76	1.078	21.10.2021	\$15,285.00	0.621524
22.10.2021	\$ 309.16	-0.5175	22.10.2021	\$15,445.00	1.035934
25.10.2021	\$ 308.13	-0.3343	25.10.2021	\$15,465.00	0.129324
26.10.2021	\$ 310.11	0.6385	26.10.2021	\$15,475.00	0.06462
27.10.2021	\$ 323.17	4.0412	27.10.2021	\$15,490.00	0.096837
28.10.2021	\$ 324.35	0.3638	28.10.2021	\$15,580.00	0.577664
29.10.2021	\$ 331.62	2.1923	29.10.2021	\$15,605.00	0.160205
01.11.2021	\$ 329.37	-0.6831	01.11.2021	\$15,715.00	0.699968

# Financial Modeling in Excel

## 10 Excel functions you should know

### =XLOOKUP

Lookup functions are a must to know for any modeler. They are used to quickly and easily find data in a table, for example, to find the amount sold by an employee, ID number, and thousands of other things.

**=XLOOKUP** (what do you want to look up, where can it be found, what do you want to return)

Employee	Sold
Laura	\$5,000
Mike	\$4,000
Tim	\$2,900
Phoebe	\$5,120

Laura =XLOOKUP(C14,C9:C12,D9:D12)

XLOOKUP(lookup\_value, lookup\_array, return\_array,

### =INDEX() & MATCH()

Sometimes, XLOOKUP won't do the job, as it can only compare one array with another one. Index and Match function combination can look up values in the whole table - it's 2 Dimensional.

**=INDEX**  
(what you want to return,

**=MATCH**  
(what are you looking for, where can it be found)

Select: Player Stage Points  
=INDEX(\$B\$7:\$G\$10,MATCH(\$B\$3,\$B\$7:\$B\$10,0),MATCH(\$C\$3,\$B\$7:\$G\$7,0))

MATCH(lookup\_value, lookup\_array, [match\_type])

Diarmuid Early Stage 3 830

Player	Stage 1	Stage 2	Stage 3	Stage 4	Total
Laurence Lau	1000	957	1000	959	3916
Diarmuid Early	821	1000	830	1000	3651
Andrew Ngai	847	899	815	838	3399

# Financial Modeling in Excel

## 10 Excel functions you should know

### =EOMONTH()

EOMONTH function finds the last day of the month after you add a specific number of months to a date. It's useful for calculating maturity dates or due dates that fall on the last day of the month. It also aids in setting up your financial model.

**=EOMONTH**  
(start\_date,  
months you want  
to add/subtract)

Today	Date of the last day of the month, 12 months after today
7/12/2022	=EOMONTH(E7,12)
	EOMONTH(start_date, months)
	7/31/2023

=EDATE() will aid in adding months to a specified start date

Jan	Feb	Mar	=EOMONTH(H13,1)	Jul
			EOMONTH(start_date, months)	

### =SEQUENCE

The SEQUENCE function allows you to generate a list of sequential numbers in an array. SEQUENCE function works great if you need to generate a list of 10,000 numbers in a column.

**=SEQUENCE** (number of rows you want to generate, number of columns you want to generate, starting point, step)

=SEQUENCE(5,5)		3	4	5
	SEQUENCE(rows, [columns], [start], [step])		9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25



#1

# Functions

## ii. Text Splitting Functions

=LET ()

=TRIM ()

=LAMBDA ()

=MAX ()



# TEXT TO COLUMNS

---

Allows to split text in Excel based on delimiters like commas or spaces.

Simply select the cell or range of cells, go to "Data => Text to Columns", and insert the required settings.

Alternatively, use the shortcut "Alt + A + E".

Remember, that this function replaces the text in the cell you chose to operate with.

Alt + A + E

Alt + A + E

Alt + A + E		



# TEXTAFTER/TEXTBEFORE

---

A function is a useful tool for retrieving text that comes after or before a specific delimiter, such as a space, comma, symbol, word, or phrase.

The syntax is "`=TEXTAFTER (cell to extract from, "delimiter", serial number of delimiters to start with)`".

Function TEXTBEFORE works in a similar but opposite way.

=TEXTBEFORE(D2,"W")	
D	E
FMWC	FM

`=TEXTAFTER(text,delimiter,[instance_num],[match_mode],[match_end],[if_not_found])`

`=TEXTAFTER(text,delimiter,[instance_num],[match_mode],[match_end],[if_not_found])`

# TEXTSPLIT

A function that returns text divided into rows or columns based on some specific delimiters.

Syntax is “=TEXTSPLIT (cell you are working with, “delimiter to divide into columns”, “delimiter to divide into rows”).

=TEXTSPLIT(D2,"W")

	D	E	F
	FMWC	FM	C

=TEXTSPLIT(text,col\_delimiter,[row\_delimiter],[ignore\_empty],[match\_mode],[pad\_with])

# FLASH FILL

---

A function that retrieves information from nearby cells based on your example.

It uses some sort of AI to understand which pattern you follow and will fill other required cells in a similar way.

Use the shortcut “Ctrl + E”!



Ctrl + E

Ctrl + E			

#2

# Conditional Formatting



# Conditional Formatting

What type should you use?



## General Usage

Use this feature to highlight values in specific cells

## Examples

- Highlight all numbers that are higher than 70\$ (e.g. average sales value)
- Highlight duplicate values in a table if you don't want to remove them
- Highlight text that contains necessary information (e.g. all cells that contain "sold")
- Highlight all number values that are equal to a specific number (e.g. product ID number)

Sales Value by Employee by Date							
Date	Jim	Kanye	Laura	Tim	Simon	Elsa	
8/22/2022	\$ 90.00	\$ 114.00	\$ 85.00	\$ 64.00	\$ 45.00	\$ 59.00	
8/23/2022	\$ 47.00	\$ 89.00	\$ 34.00	\$ 62.00	\$ 117.00	\$ 110.00	
8/24/2022	\$ 106.00	\$ 30.00	\$ 59.00	\$ 79.00	\$ 68.00	\$ 103.00	
8/25/2022	\$ 68.00	\$ 87.00	\$ 103.00	\$ 34.00	\$ 36.00	\$ 93.00	
8/26/2022	\$ 41.00	\$ 72.00	\$ 36.00	\$ 92.00	\$ 107.00	\$ 109.00	



# Conditional Formatting

What type should you use?



## General Usage

Use this feature to highlight values in specific cells.

## Examples

- Highlight top 10 sales in a week
- Highlight top 10 stores generating the most sales
- Highlight all employee KPI values that are above average
- Highlight top 20% products bringing in the most sales

Sales Value by Employee by Date							
Date	Jim	Kanye	Laura	Tim	Simon	Elsa	
8/22/2022	\$ 82.00	\$ 44.00	\$ 67.00	\$ 74.00	\$ 67.00	\$ 46.00	
8/23/2022	\$ 115.00	\$ 97.00	\$ 62.00	\$ 91.00	\$ 60.00	\$ 96.00	
8/24/2022	\$ 63.00	\$ 65.00	\$ 32.00	\$ 87.00	\$ 55.00	\$ 113.00	
8/25/2022	\$ 87.00	\$ 43.00	\$ 81.00	\$ 109.00	\$ 111.00	\$ 89.00	
8/26/2022	\$ 99.00	\$ 42.00	\$ 58.00	\$ 111.00	\$ 119.00	\$ 71.00	

# Conditional Formatting

What type should you use?



## General Usage

Use this feature to highlight the relationship of values in a cell range. Extends a band of color across the cell.

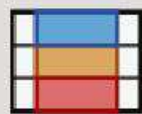
## Examples

- Compare prices between different stores
- Compare total points scored
- Compare user count

	Points Scored
Gavin	61
Nate	88
Laura	90
Simon	87
Linda	38

# Conditional Formatting

What type should you use?



**Color Scales**

## General Usage

The relationship of values in a cell range. Applies a color scale where the intensity of the cell's color reflects the value's placement toward the top or bottom of the range.

## Examples

- Compare sales across regions
- use in your what if analysis (compare project IRR at different discount rates and future cashflows)
- Compare profits between different months

	Sales	
New York	\$	65,785
Detroit	\$	40,989
Washington D.C.	\$	39,089
New Mexico	\$	72,909
Los Angeles	\$	77,454

# Conditional Formatting

What type should you use?



## General Usage

A cell range that contains three to five groups of values, where each group has its own threshold.

## Examples

- Visualize product ratings (star icons)
- Highlight sales data that are above and below a certain number (up and down icons)
- Highlight changes in data from previous periods
- Show levels cleared in Excel Esports battles!

EDUARDO  
GONZÁLEZ  
  
HARRY GROSS



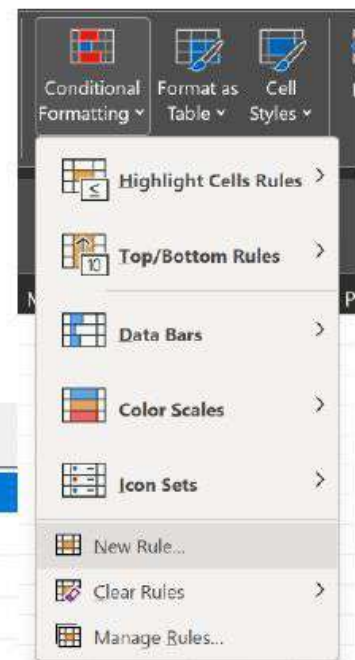
Sales	2021	2022	
Jan	\$ 6,718	\$ 6,686	↓ \$ (33)
Feb	\$ 7,038	\$ 7,004	↓ \$ (34)
Mar	\$ 7,358	\$ 7,430	↑ \$ 72
Apr	\$ 7,678	\$ 7,754	↑ \$ 75
May	\$ 7,998	\$ 8,077	↑ \$ 79

# Conditional Formatting

What type should you use?

Or...

Create your own rules!



## New Formatting Rule

Select a Rule Type:

- ▶ Format all cells based on their values
- ▶ Format only cells that contain
- ▶ Format only top or bottom ranked values
- ▶ Format only values that are above or below average
- ▶ Format only unique or duplicate values
- ▶ Use a formula to determine which cells to format

Edit the Rule Description:

**Format all cells based on their values:**

Format Style: 2-Color Scale

Minimum  
 Type: Lowest Value  
 Value: (Lowest value)  
 Color: [Orange]

Maximum  
 Type: Highest Value  
 Value: (Highest value)  
 Color: [Yellow]

Preview: [Orange to Yellow gradient bar]

OK

Cancel



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#3

# Data Table



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# Financial Modeling in Excel

## 5 Excel features you should know

### Data Table

A great tool for your what-if analysis. A range of cells in which you can change values in some of the cells and come up with different answers to a problem.

#### How to create it?

##### Instructions

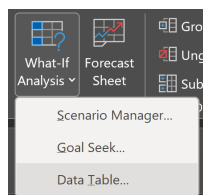
1. Write down input data
2. Calculate the value you want to find out
3. Write down additional input data you want to test
4. Go to Data -> What-If Analysis -> Data Table
5. Put in row and column input cell that corresponds to the layout you have created in step #3 and press OK

##### Example

Interest rate, number of periods and starting amount if you want to see how your savings amount would differ under different scenarios

Savings amount from the initial input data

Changes in interest rate, starting amount



Row input cell - interest rate from initial input data;  
Column input cell - starting amount from initial input data

Interest Rate	7%
Number of Periods	3
Starting Amount	\$ 2,000

	\$6,430	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%
\$ 1,500	\$ 4,752	\$ 4,775	\$4,799	\$4,822	\$ 4,846	\$ 4,870	\$ 4,893	
\$ 1,600	\$ 5,069	\$ 5,094	\$5,119	\$5,144	\$ 5,169	\$ 5,194	\$ 5,220	
\$ 1,700	\$ 5,386	\$ 5,412	\$5,439	\$5,465	\$ 5,492	\$ 5,519	\$ 5,546	
\$ 1,800	\$ 5,702	\$ 5,730	\$5,759	\$5,787	\$ 5,815	\$ 5,844	\$ 5,872	
\$ 1,900	\$ 6,019	\$ 6,049	\$6,079	\$6,108	\$ 6,138	\$ 6,168	\$ 6,198	
\$ 2,000	\$ 6,336	\$ 6,367	\$6,398	\$6,430	\$ 6,461	\$ 6,493	\$ 6,524	
\$ 2,100	\$ 6,653	\$ 6,686	\$6,718	\$6,751	\$ 6,784	\$ 6,817	\$ 6,851	
\$ 2,200	\$ 6,970	\$ 7,004	\$7,038	\$7,073	\$ 7,107	\$ 7,142	\$ 7,177	
\$ 2,300	\$ 7,286	\$ 7,322	\$7,358	\$7,394	\$ 7,430	\$ 7,467	\$ 7,503	
\$ 2,400	\$ 7,603	\$ 7,641	\$7,678	\$7,716	\$ 7,754	\$ 7,791	\$ 7,829	
\$ 2,500	\$ 7,920	\$ 7,959	\$7,998	\$8,037	\$ 8,077	\$ 8,116	\$ 8,156	

*By changing the initial input data, your data table will update too!*



# #4

# Pivot Table





# Financial Modeling in Excel

## 5 Excel features you should know

### Pivot Table

A PivotTable is a powerful tool to calculate, summarize, and analyze data that lets you see comparisons, patterns, and trends in your data.

#### How to create it?

##### Instructions

1. Have an Excel table with data
2. Go to Insert -> PivotTable and choose a table or a range you want to analyze
3. Choose fields to summarize the data by
4. Go to PivotTable Analyze or Design tabs to customize the Pivot Table

##### Example

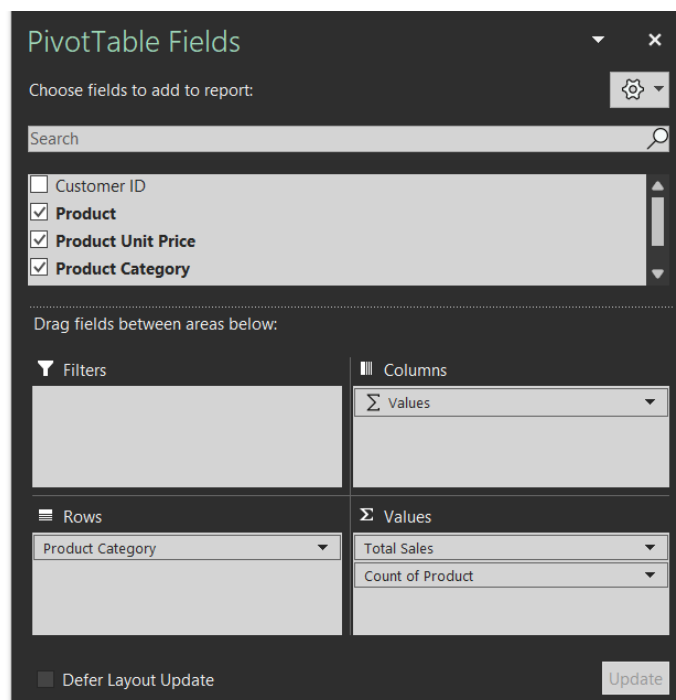
Store order history with customer ID, product ID, product price and product category

Choose the table from step 1

Look at the total sales and count of products bought by product categories. Choose columns, Rows, Filters, Values – everything is customizable and you can play with the report!

Add a slicer, insert timeline, add subtotals and other things

Summarized Data		
Product Category	Total Sales	Count of Product
Clothing	\$ 687	3
Furniture	\$ 845	6
Home & Garden	\$ 319	4
Pet Supplies	\$ 174	2
<b>Grand Total</b>	<b>\$ 2,025</b>	<b>15</b>



#5

# Data Validation



# Financial Modeling in Excel

## 5 Excel features you should know

### Data Validation

Use data validation to restrict the type of data or the values that users enter into a cell. One of the most common data validation uses is to create a drop-down list.

#### How to create it?

##### Instructions

1. Select the cell you want to create a drop-down list in

2. Select Data -> Data Validation

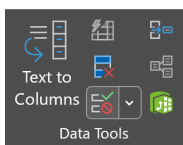
3. Choose what will the users be able to choose (numbers, dates, time, custom text, etc.)

4. Create Input Message so that users know what they are choosing

5. Link other data in your model to this dropdown list, so that values update automatically

##### Example

On your input data Excel sheet, create a cell where users will be able to choose between different store locations



Offer to choose from a list of store locations such as "USA, Spain, UK, Australia, Japan, Germany"

"Select Store Location"

Link profit and loss statements to geographical location of the stores from the dropdown by using "IF" statements

Store	USA	Year	2021				
P&L Projections		USA	2021				
Sales	(\$)	78,000,000	88,627,500	93,783,659	95,774,992	102,351,736	109,838,853
Domestic Sales	(\$)	70,000,000	72,467,500	75,021,979	77,666,504	80,404,248	83,238,498
Foreign Sales	(\$)	8,000,000	16,160,000	18,761,679	18,108,488	21,947,487	26,600,355
Manufacturing Costs	(\$)	56,500,000	63,240,000	66,585,600	67,917,312	72,211,366	77,140,835
Materials	(\$)	20,900,000	23,449,800	24,709,500	25,203,690	26,823,333	28,684,191
Direct Labor	(\$)	25,300,000	28,386,600	29,911,500	30,509,730	32,470,350	34,722,968
Other Direct Costs	(\$)	8,800,000	9,873,600	10,404,000	10,612,080	11,294,035	12,077,554
Indirect Manufacturing Costs	(\$)	1,500,000	1,530,000	1,560,600	1,591,812	1,623,648	1,656,121
Gross Profit	(\$)	21,500,000	25,387,500	27,198,059	27,857,680	30,140,369	32,698,018
SG&A Costs	(\$)	7,560,000	7,892,550	8,118,073	8,282,748	8,541,628	8,821,262
Marketing Costs	(\$)	1,560,000	1,772,550	1,875,673	1,915,500	2,047,035	2,196,777



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#6

# Group Data



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# Financial Modeling in Excel

## 5 Excel features you should know

### Group Data

If you have a list of data you want to group and summarize, you can create an outline of up to eight levels. Very important for financial models to switch between different levels of data complexity. Group data instead of hiding rows/columns!

#### How to do it (right)?

##### Instructions

1. Select rows/columns to group

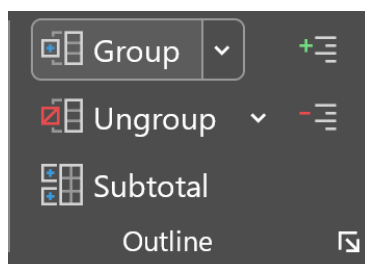
2. Go to Data -> Group -> Group

3. Group again, if you want to go into more detail

4. Press "-" to collapse the groups

##### Example

Level 1 – for top level management, Level 3 or 4 – for accountant in-depth data review



	1	2	3	A	B	C	D	E
	1	Healthy Foods Inc. Financial Model						
	2							
	3							
	4	Period Start						
	5	Period End						
	6	Period #						
	7							
	8	1 P&L Projections						
		2 Balance Sheet Projections						
+	46	3 Cashflow Projections						
+	74	4 Healthy Foods Inc. Valuation						
+	101							
+	135							
	136	5 Support Schedules and Tables						
	330							
+	331							



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#7



# Power Query



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# Financial Modeling in Excel

## 5 Excel features you should know

### Power Query

Power Query (known as Get & Transform in Excel) is a great tool for minimizing repetitive daily tasks. You can import or connect to external data and then shape this data. For example, remove a column, change a data type, or merge tables in ways that meet your needs. Then, you can load your query into Excel to create charts and reports.

#### How to create it?

##### Instructions

1. Connect to Data  
Go to Data -> Get Data

2. Transform Data  
Do all kinds of changes to your data while the original dataset stays the same

3. Combine Data  
Add other datasets and make connections between them to get more insights

4. Load Data  
Load the transformed and combined data to your worksheet and enjoy the clean dataset

##### Example

Pull in data from a different Excel file that contains participant names and stage points

Clean Data - remove unneeded columns, assign data types, rename columns for better understanding, etc.

Pull in another data source on the background of the participants - country, company, age group, etc. Append Queries.

Load the appended query into the Excel file. After each stage, add information on the points and refresh dataset.

	Stage 1 Rank	Stage 2 Rank	Stage 3 Rank	Stage 4 Rank	Stage 5 Rank	Age Group	Country	Region
1	1	2	1	2	1	Open	United States of America	North America
2	4	1	2	1	4	Open	Ireland	Europe
3	3	3	3	3	2	Open	Australia	Asia & Pacific
4	2	10	22	5	3	Open	Canada	North America
5	7	6	24	11	6	Open	United Kingdom	Europe
6	6	28	4	4	16	Open	United States of America	North America
7	28	4	7	7	11	Open	United Kingdom	Europe
8	12	12	21	10	5	Open	India	Asia & Pacific
9	10	16	10	12	12	Open	Australia	Asia & Pacific
10	8	8	12	22	24	Open	United States of America	North America
11	30	7	11	16	21	Open	United States of America	North America
12	9	5	134	28	7	Open	Netherlands	Europe
13	12	25	14	47	20	Open	Australia	Asia & Pacific
14	24	30	18	24	14	Open	Ukraine	Europe
15	18	20	27	18	27	Open	United States of America	North America
16	35	11	36	19	19	Open	United States of America	North America
17	32	25	36	26	10	Open	South Africa	Africa
18	16	38	5	46	33	Open	New Zealand	Asia & Pacific
19	90	13	50	8	9	Open	South Africa	Africa
20	19	22	23	23	21	Open	Philippines	Asia & Pacific
21	22	42	42	13	23	Open	Spain	Europe
22	32	52	26	19	25	Open	United States of America	North America
23	16	48	53	31	22	Open	United States of America	North America
24	58	13	31	39	29	Open	New Zealand	Asia & Pacific
25	63	15	17	43	46	Open	Canada	North America
26	24	23	16	84	51	Open	United States of America	North America
27	51	45	48	13	32	Open	Costa Rica	South/Latin America
28	14	67	40	31	46	Open	Poland	Europe

# #8 Excel Shortcuts







# USEFUL EXCEL SHORTCUTS

## GENERAL

Create embedded chart	Alt F1
Create chart in new worksheet	F11
Find previous match	Ctrl Shift F4
Find next match	Shift F4
Display the Paste Special dialog box	Ctrl Alt V
Repeat last action	F4
Close current workbook	Ctrl W
Close Excel	Alt F4
Create new workbook	Ctrl N
Open workbook	Ctrl O

## NAVIGATION

Move one screen right	Alt PgDn
Move one screen left	Alt PgUp
Move one screen up	PgUp
Move one screen down	PgDn
Move to right edge of data region	Ctrl →
Move to left edge of data region	Ctrl ←
Move to beginning of row	Home
Move to last cell in worksheet	Ctrl End
Move to first cell in worksheet	Ctrl Home

## FORMATTING

Align center	Alt H A C
Align left	Alt H A L
Align right	Alt H A R
Increase font size one step	Alt H F G
Decrease font size one step	Alt H F K
Currency Format	Ctrl Shift \$
Percentage Format	Ctrl Shift %
Scientific Number Format	Ctrl Shift ^
Date Format	Ctrl Shift #
Time Format	Ctrl Shift @
Number Format	Ctrl Shift !
Remove borders	Ctrl Shift -
Enter Current Date	Ctrl ;
Enter Current Time	Ctrl :

## WORKBOOK

Insert new worksheet	Shift F11
Go to next worksheet	Ctrl PgDn
Go to previous worksheet	Ctrl PgUp
Move to next pane	F6
Move to previous pane	Shift F6
Go to next workbook	Ctrl Tab
Go to previous workbook	Ctrl Shift Tab
Minimize current workbook window	Ctrl F9
Maximize current workbook window	Ctrl F10

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#9



# How ChatGPT Can Simplify Excel Workflow?



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## Let's analyze how ChatGPT can create an Excel macro

Here is an example of an Excel macro that can send emails with the specified subject and message, pulling the information from columns A and B:

```
Sub SendEmails()  
    Dim OutApp As Object  
    Dim OutMail As Object  
    Dim cell As Range  
    Dim subjectLine As String  
    Dim messageBody As String  
  
    subjectLine = "Kevin Cookie Company Invoice"  
    Set OutApp = CreateObject("Outlook.Application")  
  
    For Each cell In Columns("A").Cells.SpecialCells(xlCellTypeConstants)  
        If cell.Value Like "?*@*.*?" Then  
            Set OutMail = OutApp.CreateItem(0)  
            messageBody = "You have an invoice from Kevin Cookie Company " & cell.Offset(0,  
        End If  
    Next cell  
End Sub
```

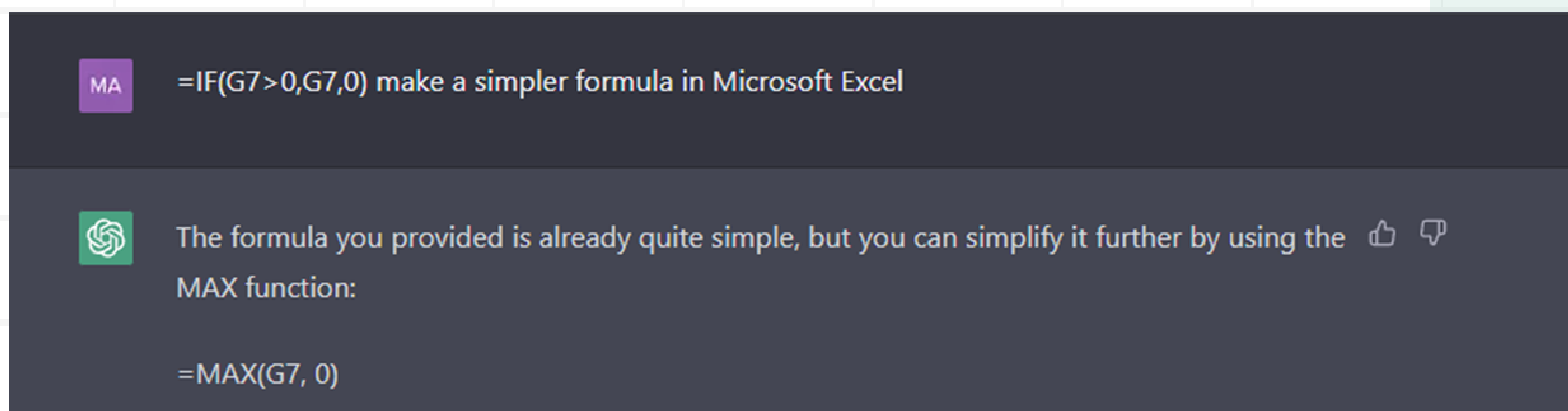
This macro will loop through each cell in column A, checking if the value in the cell is in the form of an email address (i.e. if it contains the "@" symbol). If it is an email address, it will use the value in the corresponding cell in column B as the "X" in the message, and send the email to the address in column A.

You will need to make sure that the Outlook object library is referenced in the VBE, you can do that from Tools -> references, select Microsoft Outlook library.

Note that this is a simple example that might need some adaptations to fit your actual use case.

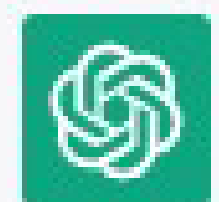
**In a recent video, Excel MVP Kevin Stratvert uses ChatGPT to create an Excel macro that functions as an invoicing app, using customer email addresses and the amount they owe (with all the data found on an Excel sheet). Not only does ChatGPT create an Excel macro, it also gives a detailed explanation for how this macro works.**

## Simplify nested IF formulas with ChatGPT



**You can also simplify work with nested IF formulas by using ChatGPT with Excel. Simply by typing in the description of the problem, ChatGPT will break it down into steps and provide the Excel formula necessary.**

## Can ChatGPT write Excel Power Query codes?



Here is the Power Query M code that appends Sheet1 from Workbook1 and Sheet2 from Workbook2 and removes duplicates from Column B:



less

Copy code

```
let
    Source1 = Excel.Workbook(File.Contents("C:\Workbook1.xlsx"), null, true),
    Sheet1_Table = Source1{[Item="Sheet1",Kind="Sheet"]}[Data],
    Source2 = Excel.Workbook(File.Contents("C:\Workbook2.xlsx"), null, true),
    Sheet2_Table = Source2{[Item="Sheet2",Kind="Sheet"]}[Data],
    AppendedData = Table.Combine({Sheet1_Table, Sheet2_Table}),
    RemovedDuplicates = Table.Distinct(AppendedData, {"Column B"})
in
    RemovedDuplicates
```

Note: Please replace the file path `"C:\Workbook1.xlsx"` and `"C:\Workbook2.xlsx"` with the actual file paths of your workbooks. Also, make sure to replace `"Column B"` with the actual column name that you want to remove duplicates from.

**Yes, it can. All you need to do is type in a command, for example: "Write an Excel Power Query M code to append sheet1 from workbook1 and sheet2 from workbook2 and remove duplicates from column B and ChatGPT will come back with an example of a Power Query M code that can be used. Also, ChatGPT gives a detailed explanation about the Power Query M code. Then, just copy and paste the code and you're good to go."**

# HOW CHATGPT CAN SIMPLIFY OUR EXCEL WORKFLOW



## Analyzing .csv with ChatGPT

E can you understand this .csv data?

```
Identifier;Access code;Recovery code;First name;Last name;Department;Location
9012;12se74;rb9012;Rachel;Booker;Sales;Manchester
2070;04ap67;lg2070;Laura;Grey;Depot;London
4081;30no86;cj4081;Craig;Johnson;Depot;London
9346;14ju73;mj9346;Mary;Jenkins;Engineering;Manchester
5079;09ja61;js5079;Jamie;Smith;Engineering;Manchester
```

Yes, I can understand this .csv data. It appears to be a table with 7 columns: Identifier, Access code, Recovery code, First name, Last name, Department, and Location. Each row represents information about an individual, with columns for their identifier number, access code, recovery code, first name, last name, department, and location.

E ok, please show me all people who work in sales department

To show all people who work in the Sales department, you could filter the data based on the value in the Department column. Here is the filtered data for people who work in the Sales department:

```
css Copy code
Identifier;Access code;Recovery code;First name;Last name;Department;Location
9012;12se74;rb9012;Rachel;Booker;Sales;Manchester
```

In this case, only one person, "Rachel Booker," works in the Sales department, as indicated by the value "Sales" in the Department column.

**Let's say you need to find some very specific information that's located in an Excel sheet. This is another case when using ChatGPT could save you some time. Export your Excel sheet as a CSV file. Copy and paste some of the data into ChatGPT (unfortunately it's not possible to copy and paste the whole thing as there's still some content limitations to what ChatGPT can digest). ChatGPT will explain the data and now you can start asking questions to help locate specific information that you need. ChatGPT can successfully locate and show you the information you are looking for, possibly saving you time and a headache doing the same with Excel.**

**Even though ChatGPT is super powerful and useful – the data or solutions it provides can sometimes be inaccurate. We advise you to always double-check and see if the answers provided are correct (and don't rely on ChatGPT for everything just yet!)**



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#10



# History of Microsoft Excel



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# HISTORY OF MICROSOFT EXCEL



**1982**

Microsoft launched Multiplan, a spreadsheet program, a competitor to Lotus 1-2-3.

**1985**

Birthday of Microsoft Excel on Mac

**1987**

Excel 2.0: Birthday of Microsoft Excel on Windows

**1990**

Excel 3.0 Included toolbars, drawing capabilities, outlining, add-in support, 3D charts, and many more new features

**1992**

Excel 4.0 Introduced auto-fill. Also, an easter egg in Excel 4.0 reveals a hidden animation of a dancing set of numbers 1 through 3, representing Lotus 1-2-3, which is then crushed by an Excel logo.

**1993**

Excel 5.0: Introduction of Visual Basic for Applications (VBA), taking Excel to unprecedented levels of functionality

**1997**

Excel 97: Introduced the Office Assistant (Clippy) and included improvements to VBA.



# HISTORY OF MICROSOFT EXCEL



**1999**

Excel 2000: Introduced the Clipboard feature, allowing users to interact with and use multiple objects simultaneously.

**2002**

Excel XP (Part of office XP): Featured a new task pane, improved data validation, and added the AutoRecover function for better data protection.

**2003**

Excel 2003: Introduction of the List feature (precursor to Tables), which enabled easier data management, and improvements to data analysis tools.

**2007**

Excel 2007: Introduced the Ribbon interface, named variables, and Open Office XML file formats.

**2010**

Excel 2010: Introduced Power Query (add-in), enabling users to work with larger datasets, as well as Excel Web App and mobile version for Windows 7.

**2013**

Excel 2013: New start screen, 50 new functions, Flash Fill tool, recommended charts, and three new chart tools; design, layout, and format.

# HISTORY OF MICROSOFT EXCEL

## 2016

Excel 2016: Added the Ink Replay button, Shared with Me feature, and integration with Power BI for advanced analytics.

## 2017

Office 365 including Excel 365 version introduced which had all updates automatically incorporated once they are released.

## 2018

The release of Excel 2019 introduced new functions like CONCAT and TEXTJOIN, improved the Power Query Editor with M Intellisense, and added new data visualization options such as funnel charts and map charts. Introduction of the Dynamic Arrays for Office 365 users.

## 2021

Excel 2021, new functions introduced: LAMBDA & LET to define your own formulas.

## 2022

Release of additional dynamic array function kit (MAP, LAMBDA, SCAN, etc.)

## 2023

IMAGE function released, waiting: Microsoft Copilot for Excel (aka Clippy AI?)

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