



Excel Mastery Guide

From Basics to Advanced Data Cleaning, Formulas & Pivots

- Data Cleaning
- Logical Functions
- Aggregations
- Lookups (XLOOKUP/INDEX-MATCH)
- Text Functions
- Date & Time
- Error Handling and Dynamic Arrays
- Pivot Tables
- Practical Business Scenarios
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Naveen Dhawan



DATA CLEANING & PREPARATION

Remove Duplicates

ID	Name	Dept
101	Priya S	IT
102	Rahul K	HR
101	Priya S	IT

Steps: Home → Remove Duplicates → select ID → OK.

Check First: =COUNTIF(\$A:\$A,A2)>1 → TRUE for duplicates.

Pro Tip: Keep a backup sheet before removal.

Text to Columns

Splits data from one column into multiple columns based on a delimiter

Steps: Data → Text to Columns →
Delimited → ;

Dynamic: =TEXTSPLIT(A2,";") → {John,
Matthew, IT}

Full Name
John;Matthew;IT
Sarah;Fern;HR

Flash Fill

Full Name	Email	First	Last
Naveen Dhawan	name@gmail.com		
Priya Sharma	priya@org.in		

Data → Flash Fill (Ctrl + E) → Automatically fills patterns (e.g., extract first names).

Type “Naveen” in C2 → Ctrl+E; type “Dhawan” in D2 → Ctrl+E.

Domain: =TEXTAFTER(B2,"@") → org.in

Trim, Clean & Substitute

Spaces: =TRIM(A2)

Non-printables: =CLEAN(A3)

Strip hyphen: =SUBSTITUTE(A4,"-", "") →
RahulKumar

Combined formula:

=TRIM(CLEAN(SUBSTITUTE(A2,CHAR(160),"")))

" Naveen "
"Priya\tSharma"
"Rahul-Kumar"

Naveen Dhawan

Handle Missing Data

ID	A	B	Division (A/B)	Check Blank	Handle N/A
1	10	2			
2	5	0			
3		4			
4	#N/A	2			

IFERROR: Handles any error (div/0, blank, etc.) and returns a custom value (Catches all errors)

=IFERROR(A2/B2, "Missing") : Row 2 → "Missing"

ISBLANK: Checks if a cell is empty (Detects empty cells)

=ISBLANK(A3) : Row 3 → TRUE

IFNA: Handles only #N/A errors (Only replaces #N/A)

=IFNA(A4/B4, "NA") : Row 4 → "NA"

Change Data Types & Find/Replace

- **Ctrl+1** → Number/Date/Text; normalize mixed dates:
=DATE(YEAR(A2),MONTH(A2),DAY(A2))
- **Ctrl+H (Replace)** for bulk cleanup (e.g., - → blank)



LOGICAL FUNCTIONS

IF • IFS • AND/OR • SWITCH

Score	Attendance%	Grade	Pass?	Points
92	95			
78	88			
61	70			

- **Grade (no nesting):** =IFS(A2>=90, "A", A2>=75, "B", A2>=60, "C", TRUE, "D")
- **Pass/Fail:** =IF(AND(A2>=60,B2>=75),"Pass","Fail")
- **Map grade:** =SWITCH(C2, "A",4, "B",3, "C",2,1)

Pro Tip: Use LET() to name sub-parts for speed on big models.

IF → Returns one value if a condition is TRUE, and another if FALSE

IFS → Tests multiple conditions and returns the value for the first TRUE condition.

AND / OR → AND returns TRUE if all conditions are TRUE.

OR returns TRUE if any condition is TRUE.

SWITCH → Returns result based on matching value.



AGGREGATIONS

SUMIFS • COUNTIFS • AVERAGEIFS

Date	Region	Status	Sales
1 Jan 2024	North	Completed	5400
15 Jan 2024	South	Pending	1200
22 Jan 2024	North	Completed	3100
5 Feb 2024	North	Completed	2800

Goal North + Completed in Jan-2024

=SUMIFS(D2:D5,B2:B5,"North",C2:C5,"Completed",A2:A5,">="&
DATE(2024,1,1),A2:A5,"<"&DATE(2024,2,1)) → 8500

Counts: =COUNTIFS(B2:B5,"North",C2:C5,"Completed") → 3

Average:

=AVERAGEIFS(D2:D5,B2:B5,"North",C2:C5,"Completed")



LOOKUPS

VLOOKUP • HLOOKUP • INDEX/MATCH
• XLOOKUP

VLOOKUP, HLOOKUP & XLOOKUP

SKU	Product	Price
1001	Mouse	799
1002	Keyboard	1499
1003	Monitor	11999

- `=VLOOKUP(1002, A2:C4, 3, FALSE)` : Returns 1499
- `=HLOOKUP(1002, B1:D2, 2, FALSE)` : Returns 1499
- `=XLOOKUP(1002, A2:A4, C2:C4, "Not Found")` : Returns 1499
- **Wildcard (partial match)** : `=XLOOKUP("*Mon*", B2:B4, C2:C4)` : Returns 11999

VLOOKUP → Looks for a value in the first column and returns data from another column.

HLOOKUP → Looks for a value in the first row and returns data from another row.

XLOOKUP → Searches a range (vertical or horizontal) and returns a matching value

INDEX/MATCH (2-way)

	North	South	West
Jan	1200	900	700
Feb	1400	1100	800

=INDEX(B2:D4, MATCH("Feb",A2:A4,0),
MATCH("South",B1:D1,0)) → 1100

INDEX → Returns a value from a table by row & column numbers

MATCH → Finds the position of a value in a row or column

👉 **INDEX + MATCH** together looks up a value in a table (like VLOOKUP but more flexible)



TEXT FUNCTIONS

**LEFT • RIGHT • MID • LEN • FIND • TEXTJOIN
• CONCAT**

LEFT

=LEFT(A1, 5) → Extracts first 5 characters.

RIGHT

=RIGHT(A1, 3) → Extracts last 3 characters.

MID

=MID(A1, 3, 4) → Extracts 4 characters starting from 3rd character.

LEN

=LEN(A1) → Returns length of string.

FIND

=FIND("@", A1) → Finds position of @ symbol.

CONCAT

=CONCAT(A1, B1) → Combines contents of A1 & B1.

TEXTJOIN

=TEXTJOIN(", ", TRUE, A1:A5) → Joins text with delimiter.

Name	Email	Phone
Naveen Dhawan	excel@gmail.com	9977761815

- **LEFT** → Extract first 6 characters of name
=LEFT(A2,6) → Naveen
- **RIGHT** → Extract last 4 digits of phone
=RIGHT(C2,4) → 1815
- **MID** → Extract 5 characters starting from the 7th position of the email
=MID(B2,7,5) → gmail
- **LEN** → Count characters in name (including space)
=LEN(A2) → 13
- **FIND** → Find position of "@" in email
=FIND("@",B2) → 6
- **TEXTJOIN** → Join Dept list with a comma
=TEXTJOIN(", ", TRUE,{"HR", "IT", "Sales"}) → HR, IT, Sales
- **CONCAT** → Combine name and phone
=CONCAT(A2," - ",C2) → Naveen Dhawan - 9977761815



DATE & TIME

**TODAY • NOW • DATE • YEAR • MONTH •
DAY • DATEDIF**

Start	End	SLA Days
3 Jan 2024	10 Jan 2024	7
4 Jan 2024	12 Jan 2024	8

TODAY → Current system date: =TODAY() → 25-Aug-2025

DAY → Extract day number from End =DAY(B2) → 10

YEAR → Extract year from Start =YEAR(A2) → 2024

NOW → Current system date & time

=NOW() → 25-Aug-2025 10:15 AM

DATE → Build custom date (2024, 1, 15)

=DATE(2024,1,15) → 15-Jan-2024

MONTH → Extract month number from End

=MONTH(B2) → 1

DATEDIF → Difference in days between Start & End

=DATEDIF(A2,B2,"D") → 7



ERROR HANDLING & ARRAYS

UNIQUE • FILTER • SORT • ISBLANK • IFERROR

Emp	Dept	Score
Asha	IT	88
Jay	HR	76
Mira	IT	92
Omar	Sales	67

Unique depts: =UNIQUE(B2:B6) → {IT,HR,Sales}

Filter IT ≥ 80: =FILTER(A2:C6,(B2:B6="IT")*(C2:C6>=80))
→ {Asha, 88; Mira, 92}

Sort by Score (desc): =SORT(A2:C6,3,-1)

→ Mira (92), Asha (88), Jay (76), Omar (67)

Error fallback: =IFERROR(1/0,"Check input")

→ Check input

Blank check: =ISBLANK(A10)→ TRUE

Pro Tip: Chain FILTER→SORT→TAKE for top-N leaderboards.

=TAKE(SORT(A2:C6,3,-1),3) → Top 3 scorers.



PIVOT TABLES

TO USE SUMMARIZE, FILTER, AND COMPARE LARGE DATASETS INSTANTLY—NO FORMULAS NEEDED

Date	Region	Product	Sales
1 Jan 2024	North	A	1200
2 Jan 2024	South	B	800
2 Jan 2024	North	A	1400

Build: Insert → PivotTable → Rows: Region; Columns: Product; Values: Sum of Sales

- Right-click values → Show Values As → % of Column Total
- Insert Slicers (Region, Product) + Timeline (Date grouped by Month)
- **Pro Tip:** Convert to Table first (Ctrl+T) so the Pivot refresh automatically expands

USE CASES

Sales Analysis: Group and sum sales by region or product.

Average Spend per Customer Segment



PRACTICAL BUSINESS SCENARIOS

Retail – Monthly Sales Performance

Problem: A retail manager wants to track whether each store has met its monthly sales target.

Store	Month	Sales	Target
Store A	1 Jan 2024	95,000	90,000
Store B	1 Jan 2024	82,000	85,000
Store C	1 Jan 2024	120,000	100,000

Solution

Status: =IF(C2>=D2,"Met Target","Below Target")

Store	Sales	Target	Variance	Status
Store A	95,000	90,000	5,000	Met Target
Store B	82,000	85,000	-3,000	Below Target
Store C	120,000	100,000	20,000	Met Target

Business Impact: Quickly shows underperforming stores to adjust marketing or staffing strategies.

Supply Chain – Inventory Analysis with Pivot

Problem: The operations team needs to see how stock levels vary by warehouse and product category.

Warehouse	Category	Item	Stock
WH1	Electronics	Laptop	120
WH1	Furniture	Chair	300
WH2	Electronics	Monitor	150
WH2	Furniture	Table	200
WH3	Electronics	Keyboard	400

Solution with Pivot Table

Insert → PivotTable → Rows: Warehouse, Columns: Category, Values: Sum of Stock.

Warehouse	Electronics	Furniture	Grand Total
WH1	120	300	420
WH2	150	200	350
WH3	400		400
Total	670	500	1170

Business Impact: Quickly shows overstocked or understocked warehouses for better distribution.



Excel Productivity Shortcuts

Keyboard shortcuts supercharge your speed and efficiency in Excel

- **Ctrl + Alt + V:** Opens Paste Special (Values, Formats, Formulas)
- **Ctrl + → / ← / ↑ / ↓:** jump to edge of data (quick navigation)
- **Ctrl + Shift + → / ← / ↑ / ↓:** select to edge of data region
- **Ctrl + Space:** select entire column (format, delete column)
- **Shift + Space:** select entire row (operate on full rows quickly)
- **Ctrl + Shift + Space:** select entire worksheet region
- **Ctrl + T:** convert range to Table (structured references)
- **Ctrl + `:** Toggle show formulas (audit formulas across the sheet)
- **Ctrl + Shift + +(plus):** Insert cells/rows/cols (quick insert)
- **Ctrl + -(minus):** Delete selected row/column/cells.
- **Ctrl + Shift + #:** apply Date format (dd-mmm-yy)
- **Alt → N → V → T:** Insert PivotTable (start fast analysis)
- **Alt → W → F → F:** Freeze Panes (lock headers while scrolling)
- **Alt → H → O → I:** AutoFit column width (data readable)
- **Alt → H → O → A:** AutoFit row height (fit tall cells)
- **Alt → A → M:** opens the Remove Duplicates tool
- **Alt → A → E:** Text to Columns (split names/CSV in one go)