ADVANCED EXCEL · LESSON 3 OF 12

Number, Custom & Conditional Formatting

Make numbers readable and insights jump out. Learn cell and number formats, write your own custom number formats (including lakhs and crores, K and M, and colour codes), and use conditional formatting with built-in rules and your own formulas.

Live class 2 | ✦ Excel for Microsoft 365, 2026 | Beginner | ⏱ 100 min

By the end of this lesson you can

- Apply cell formatting (fonts, alignment, borders, wrap, merge alternatives) the professional way
- Choose the right built-in number format and know that formatting never changes the stored value
- Write custom number formats with sections, conditions, colours, text and scaling
- Highlight insights with conditional formatting: rules, Top/Bottom, data bars, colour scales and icon sets
- Write custom-formula conditional formatting, such as highlighting whole rows

Datasets used

`superstore_sales.csv` `employees_small.csv`

Formatting changes how a value looks, not what it is

This is the most important idea in this lesson. When you format `0.256` as `26%`, the cell still contains `0.256`. Every formula that uses the cell sees `0.256`.

Same stored value, different formats

	A	B	C
1	**Stored value**	**Format applied**	**What you see**
2	0.256	Percentage, 0 decimals	26%
3	0.256	Percentage, 1 decimal	25.6%
4	1,234,568	Number with separator	1,234,567.89
5	46139	Date	27-Apr-2026
6	46139	Long date	Monday, 27 April 2026
7	0.6875	Time	16:30

```
C2    =TEXT(A2,"0%")
C3    =TEXT(A3,"0.0%")
C4    =TEXT(A4,"#,##0.00")
C5    =TEXT(A5,"dd-mmm-yyyy")
C6    =TEXT(A6,"dddd, d mmmm yyyy")
C7    =TEXT(A7,"hh:mm")
```

Column C uses the TEXT function to show exactly what each format produces. (TEXT returns text, so use it for labels, not for numbers you still need to calculate with.)

WATCH OUT **Rounding by format vs rounding by formula**

Formatting `2.456` with 1 decimal *shows* `2.5` but keeps `2.456`. Adding three such cells can show `7.4` while the visible numbers add up to `7.5`. If the rounded value must be used in calculations (invoices, tax), round it with a formula: `=ROUND(A2,1)`.

Cell formatting the professional way

Open **Format Cells** with `Ctrl + 1`. It has six tabs: Number, Alignment, Font, Border, Fill, Protection.

Goal	How
Bold header with fill colour	Home → Bold (`Ctrl + B`) and Fill Color, or Cell Styles → Heading
Wrap long text	Home → Wrap Text (`Alt + H, W`)
Centre a title across columns **without merging**	`Ctrl + 1` → Alignment → Horizontal: **Center Across Selection**
Rotate header text	Alignment → Orientation
Thin borders around a table	Home → Borders → All Borders
Copy formatting	Format Painter (double-click it to paint many places)
Clear only formatting	Home → Clear → Clear Formats
Consistent look across a workbook	Page Layout → Themes, and Cell Styles

COMMON MISTAKES

Avoid merged cells

Merged cells break sorting, filtering, copying, selecting columns and pivot tables. Use **Center Across Selection** instead: it looks the same and keeps every cell independent.

Built-in number formats

Format	Example display of 1234.5	Use for
General	1234.5	Default, no fixed format
Number	1,234.50	Quantities, amounts
Currency	₹1,234.50	Money, symbol next to the number
Accounting	₹ 1,234.50	Money in financial statements: symbol aligned at the left edge, zero shown as a dash
Percentage	123450%	Rates; type 12% or format `0.12`
Fraction	1234 1/2	Measurements
Scientific	1.23E+03	Very large or small numbers
Text	1234.5 (as text)	IDs, codes, phone numbers
Date / Time	Various	Dates and times (stored as serial numbers)

Shortcuts: `Ctrl + Shift + 1` number with 2 decimals, `Ctrl + Shift + 4` currency, `Ctrl + Shift + 5` percentage, `Ctrl + Shift + 3` date.

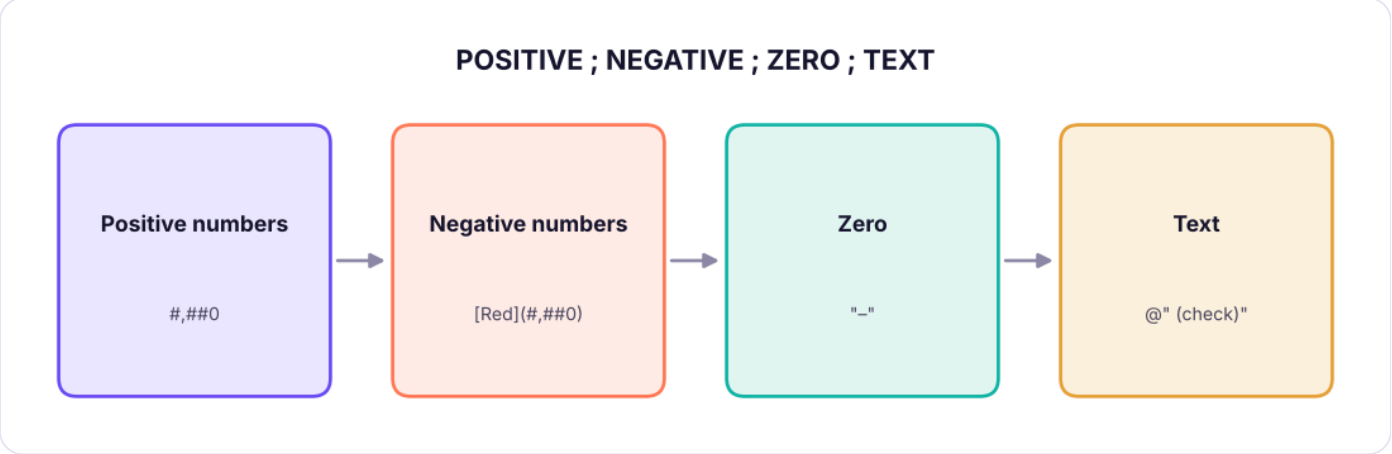
Custom number formats

`Ctrl + 1` → Number → **Custom** lets you write your own format code. Once you understand the structure, you can make dashboards that are much easier to read.

The four sections

A format code can have up to four parts, separated by semicolons:

```text
POSITIVE ; NEGATIVE ; ZERO ; TEXT
#,##0    ; [Red]-#,##0 ; "–" ; @
```



A custom number format has up to four sections separated by semicolons.

Placeholder characters

Code	Meaning	Value 7.5 →
`0`	Digit, shows a zero if none	`000.00` → 007.50
`#`	Digit, shows nothing if none	`#.##` → 7.5
`?`	Digit, shows a space (aligns decimals)	`?.??` → 7.5␣
`,` (in the middle)	Thousands separator	`#,##0`
`,` (at the end)	Divide by 1,000 for each comma	`#,##0,` shows 12,500 as 13
`%`	Multiply by 100 and add %	`0%`
`"text"`	Show literal text	`0" units"`
`@`	The cell's text	`"Dept: "@`
`[Red]`, `[Blue]`, `[Color10]`	Colour	`[Red]-0`
`[⩾1000]`	Condition	`[⩾1000]#,##0,"K";0`

Custom formats you will reuse

Each result in column C was produced by Excel's TEXT function with the format code in column B.

Custom format cookbook

	A	B	C
1	**Value**	**Format code**	**Result**
2	12500	#,##0	12,500
3	12500	#,##0,"K"	13K
4	12500	#,##0.0,"K"	12.5K
5	8450000	#,##0.0,,"M"	8.5M
6	-3200	#,##0;(#,##0)	(3,200)
7	0	#,##0;-#,##0;"–"	–
8	45	0" units"	45 units
9	0.0725	0.0%	7.3%
10	7	000	007
11	9876543210	00000 00000	98765 43210
12	1500	[>=1000]#,##0.0,"K";0	1.5K
13	850	[>=1000]#,##0.0,"K";0	850
14	0.25	▲ 0%;▼ 0%	▲ 25%
15	-0.12	▲ 0%;▼ 0%	▼ 12%

C2 `=TEXT(A2,B2)`

Each pattern is copied down/across to the other cells in its column.

TIP **Up and down arrows in KPIs**

`▲ 0%;▼ 0%` (add `[Color10]` for green and `[Red]` for red: `[Color10]▲ 0%;[Red]▼ 0%`) is the classic format for "change versus last month" cells in dashboards. The arrow and colour change automatically with the sign.

Indian number format: lakhs and crores

Indian reports group digits as 12,34,56,789 (crore, lakh, thousand). If your Windows region is set to English (India), the standard `#,##0` already groups this way. Otherwise use a conditional format:

Text

```
[≥10000000]##\,##\,##\,##0;[≥100000]##\,##\,##0;##,##0
```

Lakhs and crores

	A	B	C	D
1	**Value**	**Indian grouping**	**In lakhs**	**In crores**
2	1234567	12,34,567	12.35 L	0.12 Cr
3	98765432	9,87,65,432	987.65 L	9.88 Cr
4	450000	4,50,000	4.50 L	0.05 Cr

```
C2   =TEXT(A2/100000,"0.00")&" L"
D2   =TEXT(A2/10000000,"0.00")&" Cr"
C3   =TEXT(A3/100000,"0.00")&" L"
D3   =TEXT(A3/10000000,"0.00")&" Cr"
C4   =TEXT(A4/100000,"0.00")&" L"
D4   =TEXT(A4/10000000,"0.00")&" Cr"
```

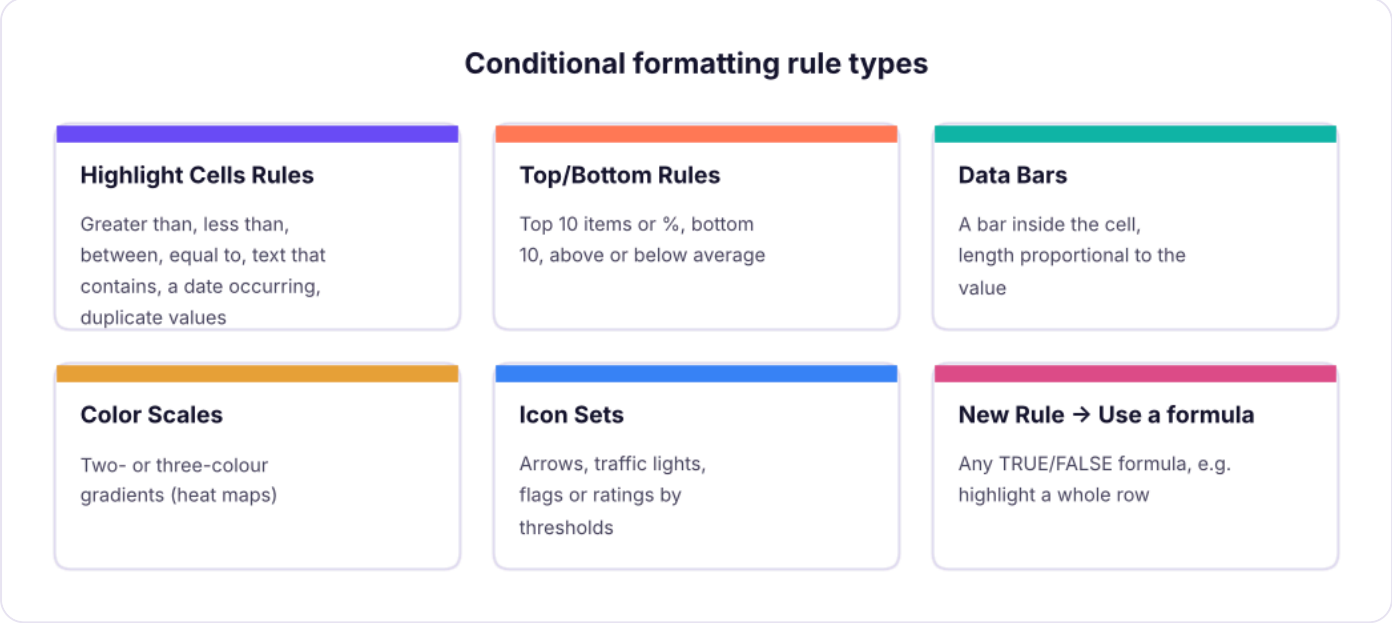
There is no "divide by 1 lakh" comma trick in Excel (each trailing comma divides by 1,000), so for lakhs either divide in a helper column (as above) or use Power BI's display units.

Date and time format codes

Code	Shows (for 27-04-2026 14:05)
`d, dd`	27
`ddd, dddd`	Mon, Monday
`m, mm`	4, 04
`mmm, mmmm`	Apr, April
`yy, yyyy`	26, 2026
`hh:mm`	14:05
`hh:mm AM/PM`	02:05 PM
`[h]:mm`	Total hours beyond 24, for timesheets (e.g. 37:30)
`"Q"` with a formula	Quarter labels need a formula: `="Q"&ROUNDUP(MONTH(A2)/3,0)`

Conditional formatting: let insights jump out

Home → Conditional Formatting changes a cell's look based on its value. It is how you turn a wall of numbers into something a manager understands in five seconds.



The five families of conditional formatting rules.

Highlight rules and Top/Bottom

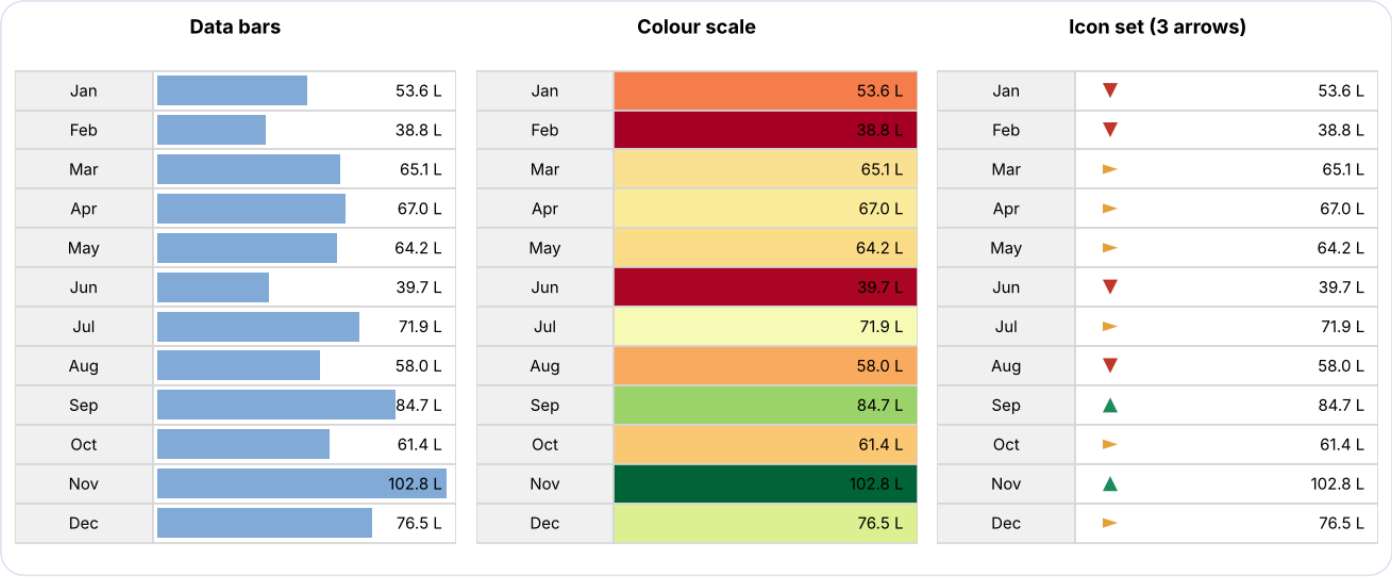
In the table below, green marks sales **above 1,50,000** and red marks **profit below 0** (both "Highlight Cells Rules"):

Highlight rules: sales > 1,50,000 (green), profit < 0 (red)

	A	B	C	D
1	Region	Category	Sales	Profit
2	North	Furniture	128,400	-3,250
3	North	Technology	212,950	28,400
4	South	Office Supplies	96,300	14,820
5	South	Technology	187,200	19,950
6	East	Furniture	74,100	-8,900
7	West	Technology	158,700	22,310

Data bars, colour scales and icon sets

These visual rules are best seen on real data. Here they are applied to monthly sales from the Superstore dataset:



Data bars (left), a green–yellow–red colour scale (middle) and icon sets (right) applied to the same monthly sales.

Rule	When to use	Watch out
Data bars	Compare magnitudes inside a table	Negative values draw leftwards; set a fixed minimum of 0 if needed
Colour scales	Heat maps: sales by region × month, attendance grids	Red/green is hard for colour-blind readers; consider blue–white–orange
Icon sets	Status at a glance: on track, at risk, off track	Default thresholds are percentages of the range (67% / 33%); set them to numbers or percentiles that match your business targets

Under **Manage Rules → Edit Rule** you can change thresholds, choose "Show Bar Only" or "Show Icon Only", and reverse the icon order.

Custom formula conditional formatting

New Rule → Use a formula to determine which cells to format is the most powerful option. Write a formula for the **top-left cell** of your selection that returns TRUE for cells you want formatted. Dollar signs matter:

- $ before the column ($D2) locks the rule to column D, so **every cell in the row** checks column D → the whole row is highlighted.
- No $ before the row number lets the row change as Excel moves down the selection.

Highlight whole rows where Department = Finance AND Salary > 1,00,000 — rule: =AND($C2="Finance",$F2>100000)

	A	B	C	D	E	F	G
1	Emp ID	Name	Department	City	Join date	Salary	Rating
2	E101	Kavya Iyer	HR	Mumbai	28-02-2016	97,000	4
3	E102	Imran Reddy	Finance	Delhi	14-12-2019	157,000	3
4	E103	Harpreet Kulkarni	Finance	Mumbai	05-10-2024	131,000	4
5	E104	Diya Iyer	HR	Bengaluru	02-01-2024	90,000	4
6	E110	Vikram Joshi	Finance	Chennai	19-10-2022	75,000	5
7	E119	Rohan Das	Finance	Delhi	19-07-2018	97,000	5

Rows E102 and E103 meet both conditions. E110 and E119 are in Finance but earn less than 1,00,000, so they stay white.

More custom-formula recipes

Goal	Select	Formula
Zebra stripes (every other row)	the table	`=MOD(ROW(),2)=0`
Overdue tasks (due date before today, status not Done)	the table	`=AND($E2<TODAY(),$F2<>"Done")`
Values above the column average	`C2:C100`	`=C2>AVERAGE($C$2:$C$100)`
Duplicate IDs	`A2:A100`	`=COUNTIF($A$2:$A$100,A2)>1`
Weekend dates	`A2:A100`	`=WEEKDAY(A2,2)>5`
Row of the employee picked in a drop-down (H1)	the table	`=$B2=$H$1`
Missing values	the table	`=ISBLANK(A2)` or `=A2=""`
Top 3 per column	`C2:C100`	`=C2⩾LARGE($C$2:$C$100,3)`

STEP BY STEP

Create a whole-row highlight

1. Select the data **without** the header (for example `A2:G21`). The active cell must be in row 2.
2. Home → Conditional Formatting → New Rule → **Use a formula to determine which cells to format**.
3. Formula: `=AND($C2="Finance",$F2>100000)`.
4. Click **Format...** → Fill → choose a colour → OK.
5. To edit later: Conditional Formatting → **Manage Rules** (choose "This Worksheet" to see all rules). Rules higher in the list win; tick **Stop If True** to prevent lower rules from also applying.

COMMON MISTAKES

The three most common conditional-formatting bugs

1. **Wrong anchor**: writing the formula for row 1 while the selection starts at row 2 shifts every result by one row.
2. **Missing $**: `=C2="Finance"` (no $) checks a different column for each cell, so only part of the row lights up.
3. **Copying cells copies rules**: pasting formatted cells many times creates hundreds of duplicate rules and slows the workbook. Clean up in Manage Rules, or paste values only.

Formatting a report: before and after

A clean report follows a few simple rules:

1. **Right-align numbers**, left-align text, and use the same number of decimals in a column.
2. Use **thousands separators**; show large values in K/M or lakh/crore with clear labels.
3. **Bold** headers and totals only; avoid using many colours.
4. Use **one highlight colour** for "needs attention" and keep everything else neutral.
5. **Freeze** the header row; make the column widths fit the content.
6. Add a title, the date range and the data source.

DO IT WITH AI **Do it with AI**

Ask an assistant: *"Write an Excel custom number format that shows values above 1 crore as '1.25 Cr', values above 1 lakh as '4.50 L', and smaller values with Indian comma grouping."* Then test the answer with `=TEXT(value, "format")` on a few numbers before applying it. (A pure format can only scale by thousands, so a good answer will suggest a helper column or Power BI for lakhs and crores.)

Summary

KEY TAKEAWAYS

- Formatting changes the **display**, never the stored value. Round with `ROUND` when it matters.
- Avoid merged cells; use **Center Across Selection**.
- Custom formats have four sections, `positive;negative;zero;text`, and support colours, conditions, text and scaling with trailing commas.
- Conditional formatting families: highlight rules, Top/Bottom, data bars, colour scales and icon sets.
- For whole-row highlights use a formula with $ before the column: `=$C2="Finance"`.
- Manage Rules shows priority; rule order and Stop If True decide which format wins.

Quick quiz

6 questions · tap an answer to check it

1. A cell contains 0.4567 formatted as 0%. What value does `=A1*100` return?

A 46

B 45.67

C 0.46

D 46%

Answer: B. The stored value is still 0.4567, so the formula returns 45.67. Formatting only changes the display.

2. Which custom format shows 8,450,000 as 8.5M?

A `#,##0,"M"`

B `#,##0.0,,"M"`

C `0.0"M"`

D `#,##0.0%`

Answer: B. Two trailing commas divide by 1,000,000, and 0.0 shows one decimal.

3. In the format `#,##0;[Red](#,##0);"-"`, how is -2500 shown?

A -2,500 in black

B (2,500) in red

C –

D 2,500 in red

Answer: B. The second section is for negative numbers: red, in brackets, without a minus sign.

4. You want to highlight entire rows where Status (column F) is "Late". Rows start at 2. Which rule is correct?

A `=F2="Late"`

B `=$F2="Late"`

C `=$F$2="Late"`

D `=F$2="Late"`

Answer: B. Locking the column with $ makes every cell in the row test column F; leaving the row free lets each row test itself.

5. What does "Center Across Selection" replace?

- **A** Wrap Text
- **B** Merge & Center
- **C** Format Painter
- **D** Freeze Panes

Answer: B. It centres text across several cells without merging them, so sorting and selecting still work.

6. Which conditional formatting type is best for a sales heat map of region × month?

- **A** Icon sets
- **B** Data bars
- **C** Colour scales
- **D** Highlight duplicates

Answer: C. Colour scales shade each cell by value, which creates a heat map.

EXERCISE **Dashboard number formats**

Write custom formats for: (a) revenue shown in thousands with "K" and no decimals; (b) month-on-month change shown as a green up arrow with one decimal percentage when positive, and a red down arrow when negative; (c) a 6-digit PIN code that must keep leading zeros.

Show solution (worked answer)

(a) `#,##0,"K"` (b) `[Color10]▲ 0.0%;[Red]▼ 0.0%;"-"` (c) `000000` (or store the PIN as text).

EXERCISE **Conditional formatting practice**

Using `employees_small.csv`: (1) colour-scale the salary column; (2) add an icon set to rating with green for 5, amber for 3–4 and red for 1–2; (3) highlight the whole row of anyone who joined after 1-Jan-2024.

Show solution (worked answer)

(1) Select F2:F21 → Color Scales → Green–Yellow–Red. (2) Select G2:G21 → Icon Sets → 3 traffic lights → Manage Rules → Edit: green when ≥ 5 (Number), amber when ≥ 3 (Number), otherwise red. (3) Select A2:G21 → New Rule → formula `=$E2>DATE(2024,1,1)` → choose a fill.

INTERVIEW CORNER **Questions you may be asked**

Q: What is the difference between formatting a number and rounding it? Formatting changes only how the value looks; the full value is used in calculations. `ROUND` changes the stored value. Use `ROUND` when the rounded figure must flow into other calculations, such as invoices.

Q: How would you highlight the top 10% of customers by revenue? Conditional Formatting → Top/Bottom Rules → Top 10% (change 10 to any value), or a formula rule `=C2 ⩾ PERCENTILE.INC($C$2:$C$500,0.9)` for more control.

Q: Why might a conditional format highlight the wrong rows? The formula was written for a different starting row than the active cell of the selection, or the $ signs are wrong.

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