

ChatGPT:

Great choice! 🎯 Topic **10: Simple Data Analysis** will give you strong, practical Excel skills you'll use in exams *and* real-life tasks like budgeting, tracking sales, or comparing performance.

Let's dive in:

🔍 Tutorial: Simple Data Analysis with Percentages & Conditional Formatting

✅ Objective

Learn how to calculate **percentages**, compare values, and highlight trends with **conditional formatting**.

💡 Why It Matters

- Percentages show changes (e.g., *sales grew by 15%*).
- Helps identify top/bottom performers quickly.
- Conditional formatting adds *visual cues* so you don't need to scan numbers line by line.

🔧 Steps

- Set up data** (e.g., Sales for 2024 vs. 2025).
- Calculate percentage change:**
$$\text{Change \%} = \frac{\text{New} - \text{Old}}{\text{Old}}$$

Example formula:

=(C2-B2)/B2

(where **B2** = Old Value, **C2** = New Value).
- Format as Percentage** → Select cells → Right-click → Format Cells → Percentage.
- Add Conditional Formatting:**
 - Highlight positive changes in green.
 - Negative changes in red.
 - Top 10% or Bottom 10% if needed.

📊 Worked Example

Suppose we track product sales:

Product	2024 Sales	2025 Sales	% Change
A	1200	1500	+25%
B	800	600	-25%
C	1500	1800	+20%
D	1000	950	-5%

Formula in **D2**:

=(C2-B2)/B2

Then copy down.

Conditional Formatting → Highlight **% Change** column:

- Green fill for >0.
- Red fill for <0.

Try-it Tasks

Starter:

- Enter 5 products with 2024 and 2025 sales.
- Calculate % Change.

Core:

- Apply Conditional Formatting to highlight increases (green) and decreases (red).

Stretch:

- Add a column for “Share of Total Sales” using:

```
swift  
=C2/SUM($C$2:$C$6)
```

- Format as Percentage.
- Insert a **Pie Chart** of 2025 sales.








Common Mistakes

- Forgetting brackets in formula: =C2-B2/B2 (wrong!) vs. =(C2-B2)/B2 (correct).
- Forgetting to use **absolute references (\$)** in totals.
- Applying conditional formatting rules to only 1 cell instead of the whole column.

Quick Recap

- Percentage change = $(\text{New} - \text{Old}) / \text{Old}$.
- Format results as % for readability.
- Conditional formatting highlights trends instantly.
- Use \$ for absolute references when dividing by totals.

 Next step: I'll generate a **Starter Workbook** with:

-  Instructions
-  Data (sample sales data)
-  Tasks
-  Hints
-  Answers
-  Checklist
-  Lookup (for reference formulas)

Do you want me to **generate the Python script** so you can create and open the workbook on your computer?

User:

python

ChatGPT:

Awesome—here's a complete **Python (openpyxl)** script that builds your **Simple Data Analysis** starter workbook with all the sheets, sample data, formulas, conditional formatting, data validation, a table, and a chart.

How to run (Windows & Mac)

1. Install Python 3 (if needed).
2. Open Terminal (Mac) or Command Prompt (Windows).