

#UpSkillWithKalpesh

Day 01

Data Science Unlocked

From Zero to Data Hero

Excel for Data Analysis Cheat Sheet



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1. Data Cleaning

- **Key Tools:**

- **Remove Duplicates**: Clean duplicate records (`Data` → `Remove Duplicates`).
 - **Text to Columns**: Split data based on delimiters (e.g., commas, spaces).
 - **Find & Replace**: `Ctrl + H` to clean unwanted characters or errors.
 - **TRIM**: `=TRIM(cell)` removes unnecessary spaces.
 - **CLEAN**: Removes non-printable characters.
 - **Error Handling**: `=IFERROR(value, "alternative")` for clean error handling.
 - **Advanced Filters**: Filter data by criteria (`Data` → `Advanced Filter`).
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2. Data Transformation

- **Text Functions:**

- **Extract Data:**

- `LEFT(text, num_chars)`
- `RIGHT(text, num_chars)`
- `MID(text, start, num_chars)`

- **Text Formatting:**

- `UPPER(text)`
- `LOWER(text)`
- `PROPER(text)`

♦ **Date Functions:**

- `=NOW()` * Current date and time.
- `=EDATE(start_date, months)` * Add/subtract months.
- `=WORKDAY(start_date, days)` * Exclude weekends.

♦ **Transform Data with Power Query:**

- **Connect Data Sources:** Import data from external files (CSV, databases, etc.).
- **Combine Queries:** Merge or append datasets.
- **Unpivot Columns:** Reshape data into a columnar structure for analysis.

3. Data Analysis Functions

• **Statistical Functions:**

- Central Tendency: `=AVERAGE(range)` , `=MEDIAN(range)` , `=MODE(range)` .
- Variance: `=VAR.S(range)` (sample), `=VAR.P(range)` (population).
- Standard Deviation: `=STDEV.S(range)` , `=STDEV.P(range)` .

♦ **Logical Functions:**

- `=IF(condition, value_if_true, value_if_false)`
- `=AND(condition1, condition2)`
- `=OR(condition1, condition2)`
- Nested `IF` : Combine multiple conditions.

♦ **Lookup & Reference:**

- Vertical/Horizontal Lookup: `=VLOOKUP` , `=HLOOKUP` .
- Advanced Lookup: `=INDEX + MATCH` , `=XLOOKUP` .

4. Data Visualization

- **Charts and Graphs:**

- Recommended Charts: `Insert` → `Recommended Charts`.

- Popular Types:

- Bar/Column Chart * Compare data categories.
 - Line Chart * Trends over time.
 - Scatter Plot * Relationship analysis.
 - Pie Chart * Distribution analysis.

- **Conditional Formatting:**

- Data Bars, Color Scales, and Icon Sets for insights at a glance.
 - Example Rule: Highlight sales \wedge 10,000 (`New Rule` * Greater Than).

- **Sparklines:** Add mini-charts in cells (`Insert` → `Sparklines`).

5. Advanced Analysis Tools

- **PivotTables:**

- Summarize and analyze large datasets.
 - Add **Slicers** for easy filtering.
 - Use Calculated Fields for advanced metrics.

- **What-If Analysis:**

- **Goal Seek:** Find input values to achieve a specific outcome.
 - **Scenario Manager:** Analyze different scenarios (e.g., Best/Worst Case).
 - **Data Tables:** Test multiple variables simultaneously.

- **Solver:**

- Optimize results based on constraints (e.g., minimize cost).

- **Power Pivot:**

- Create complex data models and relationships between tables.
- DAX formulas for advanced calculations (e.g., `SUMX`, `CALCULATE`).

6. Keyboard Shortcuts

Action	Shortcut
Select Entire Column	<code>Ctrl + Space</code>
Select Entire Row	<code>Shift + Space</code>
Create Table	<code>Ctrl + T</code>
AutoSum	<code>Alt + =</code>
Insert New Sheet	<code>Shift + F11</code>
Open Filter Dropdown	<code>Alt + Down Arrow</code>
Freeze Panes	<code>Alt + W + F + F</code>

7. Pro Tips for Efficient Analysis

1. **Use Named Ranges:** Easier to reference ranges (Formulas * Define Name).
2. **Data Validation:** Create dropdowns for cleaner data entry (`Data` → `Data Validation`).
3. **Combine Functions:** Use nested formulas like `=IF(AND(A1>10, B1<5), "Yes", "No")` .
4. **Backup Data:** Always work on a copy to avoid overwriting raw data.
5. **Organize Sheets:** Color tabs, add comments, and use a clean layout.

Summary: Excel for Data Analysis

1. **Data Cleaning:** Remove duplicates, trim spaces, and handle errors.
2. **Data Transformation:** Use text, date, and lookup functions. Power Query is a game-changer.
3. **Descriptive Analysis:** Averages, medians, and variance functions are your go-to.

4. **Visualization:** Master charts, conditional formatting, and sparklines.
5. **Advanced Tools:** PivotTables, Solver, and What-If Analysis for deeper insights.
6. **Shortcuts:** Memorize common shortcuts to save time.
7. **Pro Tools:** Leverage Power Query and Power Pivot for advanced data handling.