# **ChatGPT Prompt Template for Building Spreadsheets**.

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The goal of this template is to help users frame their Excel issues clearly and provide all necessary context so that solutions are accurate and effective.

**Prompt Template for Building Spreadsheet Solutions.**

**[Items in brackets are optional ]**

1. **General Task Overview**

**Task Description**:
Clearly describe the overall task or problem you're encountering in Excel. Be specific about the action or result you're trying to achieve.

*Example*: I need to create a formula that calculates bonuses based on monthly sales, with different percentage bonuses applied to different sales ranges.

* **Goal Clarification (Directional Prompting)**:
Provide the ultimate outcome or direction for the solution. This sets a clear objective and focuses the solution in the right direction.

*Example*: I want to know which formula can calculate bonuses using a tiered system: 5% for sales up to $1,000, 10% for sales between $1,000 and $5,000, and 15% for sales above $5,000.

1. **Dataset Context and Structure.**
* **Dataset Description**:
Give a detailed description of your dataset, including column headers, number of rows, data types, and any relevant cell ranges.

*Example*: My dataset contains three columns: "Employee Name" (A), "Monthly Sales" (B), and "Sales Date" (C). Data runs from row 2 to row 100, with total sales amounts in column B.

* **Conditions and Constraints**:
Mention any specific rules or conditions that apply to your data, such as specific ranges to filter, ignored data, or conditions (this can help Chain-of-Thought problem-solving).

*Example*: Sales less than $500 should be excluded from the bonus calculation. Only calculate bonuses for sales recorded in 2023.

1. **[ Advanced Prompting Techniques: ]** **[Few-Shot Examples for Guidance]**

**Provide a few examples of how the problem should be solved in different situations** to guide the prompt towards a solution. Few-shot prompting helps refine the type of solution generated.

*Example* (for a tiered bonus system):

* 1. If “Monthly Sales” = $500, bonus should be 5% of $500.
	2. If “Monthly Sales” = $2,000, bonus should be 10% of $2,000.
	3. If “Monthly Sales” = $10,000, bonus should be 15% of $10,000.

 **[Chain-of-Thought (CoT) Reasoning]**

**Ask for step-by-step reasoning in the solution** to make sure the logic is broken down clearly and correctly. This is helpful for complex problems like nested formulas, data analysis, or macros.

 *Example*: Can you explain the steps for creating a formula that calculates the total commission based on the sales range, starting with how to identify which range the sales fall into?

 **[Tree-of-Thought (ToT) Exploration]**

**Ask for multiple approaches or alternative paths to solve the problem** to ensure robustness. This technique explores multiple ways to approach a problem to increase the likelihood of finding the best solution.

*Example*: Could you explore different approaches to calculate bonuses?

* + Option 1: Use a single formula for all calculations.
	+ Option 2: Use a combination of helper columns to break down the steps.
	+ Option 3: Automate the calculation with VBA.

**4. Specific Excel Tools, Functions, or Features**

* **Excel Tools Involved**:
Mention any specific Excel functions or features you think may be involved (e.g., VLOOKUP, INDEX/MATCH, Power Query, VBA).

*Example*: I believe the IF() function or possibly a nested IF with AND() could be useful, but I’m unsure how to set up the tiering system. Alternatively, a SUMIFS might be required.

* **Formula or VBA vs. Power Query**:
Clarify the preferred method if you have one (e.g., if you prefer using formulas, VBA macros, or Power Query).

*Example*: I would like a formula-based solution, but I’m open to VBA if it simplifies things.

**5.** **Expected Outcome (Precision and Directional Prompting)**

* **Desired Output Format**:
Clearly specify the format or structure of the desired outcome. Precision and direction help in guiding the response towards a solution that fits your exact need.

*Example*: The result should be in a new column (D), with the bonus amount calculated for each employee. If there’s no bonus, the cell should display $0.

* **Check for Accuracy (Directional Prompting)**:
Ask for checks or validations in the solution, like testing on sample data to ensure it’s correct.

*Example*: Please make sure that the solution works with sales amounts from $0 to $10,000, and test it on sample data to verify.

 **6. Sample Data and Error Details**

* **Sample Data (Optional)**:
Providing a small sample dataset can clarify your problem. You can type out a few rows or reference cells that contain data.

*Example*:
| Employee Name | Monthly Sales | Sales Date |
|---------------|---------------|------------|
| Alice | $1,200 | 01/02/2023 |
| Bob | $2,500 | 05/12/2023 |
| Charlie | $7,500 | 08/23/2023 |

* **Error or Issue Faced**:
If there’s an error message or an unexpected result, include it to provide context (for CoT-style solutions).

*Example*: When using the formula =IF(B2>500, B2\*0.05), it calculates the bonus for everyone, even those who have sales below $500.

**7. Version and Platform Information**

* **Excel Version and Platform**:
Mention the Excel version and platform (e.g., Excel 365, Excel 2019, Windows, Mac, or Web). Advanced features like dynamic arrays, XLOOKUP, or Power Query may depend on this.

*Example*: I’m using Excel 365 on Windows.

 **8. [Explore Alternatives (ToT)]**

* **Are there any alternative approaches you’d like to explore?**
Exploring alternative solutions can lead to more efficient or creative approaches. You can ask for a Tree-of-Thought exploration of potential methods.

*Example*: Is there a way to automate this bonus calculation through VBA to avoid manual updating in the future? Also, is Power Query a better fit for cleaning and analyzing this data?

**Common Pitfalls to Avoid.**

1. **Over-reliance on specific functions:** Request alternative methods if your preferred function isn’t ideal (e.g., “Is INDEX/MATCH better than VLOOKUP here?”).
2. **Unclear goal setting:** Always ensure you articulate the expected outcome clearly (e.g., avoid vague requests like “help with a formula”).
3. **Ignoring version limitations:** Be mindful of which Excel features are available in your version. Ask for alternatives if your version lacks certain functions.
4. **Not considering dynamic or future data changes:** If your data set or logic will change over time, ask for flexible, dynamic solutions.

**A Prompt Example:**

**Problem**: I need to calculate a tiered bonus structure based on monthly sales for each employee.
**Dataset**: Column A contains "Employee Name," Column B has "Monthly Sales," and Column C has the "Sales Date."
**Goal**: I need to calculate the bonus:

* 5% for sales up to $1,000
* 10% for sales between $1,000 and $5,000
* 15% for sales over $5,000

The bonus should only be calculated for sales in 2023, and sales under $500 should be excluded.
**Tools**: I believe an IF or nested IF function could work, but I'm unsure how to handle multiple conditions.
**Expected Outcome**: The result should appear in column D as the bonus amount, or $0 if no bonus applies.
**Excel Version**: I’m using Excel 365 on Windows.
**Request**: Could you use Chain-of-Thought reasoning to explain the steps and suggest alternative approaches using Tree-of-Thought for more efficient options?

