# 📚 Prompt Library for Data Developers

A collection of effective ChatGPT prompt templates to supercharge coding tasks.

## 🐍 Python Development

### 1. Code Generation

Generate a Python function that [describe functionality].

Include docstrings, type hints, and error handling.

Example input: [example]. Example output: [example].

### 2. Debugging Code

I have the following Python code: [paste code].

It gives me [error/wrong output].

Explain the issue and provide a corrected version of the code.

### 3. Refactoring

Refactor the following Python code to improve [efficiency/readability/performance].

Explain the changes you made:

[paste code]

### 4. Unit Testing

Write unit tests for the following Python function using pytest.

Cover edge cases and invalid inputs as well:

[paste code]

### 5. Documentation Helper

Generate clear docstrings for the following Python function/class:

[paste code]

## 🗄️ SQL & Databases

### 6. SQL Query Writing

Write an SQL query for the following: [describe requirement].

The table schema is: [list schema].

Optimize for readability and performance.

### 7. SQL Debugging

Here is my SQL query: [paste query].

It returns [unexpected result].

Explain the issue and suggest a corrected query.

### 8. SQL Optimization

Optimize the following SQL query for large datasets.

Explain how the optimization improves performance:

[paste query]

## 🌐 APIs & Automation

### 9. API Request Template

Write Python code using the requests library to call the [API name] endpoint.

Use authentication [bearer/api key/etc.], handle errors, and parse JSON output.

Example response: [provide example].

### 10. Script Automation

Generate a Python script that automates [task: e.g., renaming files, sending emails, updating database].

Make it reusable and include error handling.

## 📊 Data Analysis & Visualization

### 11. Data Cleaning

Write Python code using Pandas to clean a dataset with columns [list columns].

Handle missing values, incorrect types, and duplicates.

Explain each step with comments.

### 12. Visualization

Write Python code to visualize [describe chart/insight] using [Matplotlib/Seaborn/Plotly].

Add titles, labels, and legends.

Dataset columns: [list columns].

## 🤖 Machine Learning

### 13. Model Training

Write Python code to train a [model type, e.g., RandomForest] on dataset with columns [list columns].

Include train/test split, model evaluation, and accuracy report.

### 14. Hyperparameter Tuning

Suggest hyperparameter tuning strategies for [ML model/library].

Give an example using GridSearchCV/RandomizedSearchCV in Python.

### 15. Explain a Concept

Explain how [ML concept: e.g., cross-validation, overfitting, regularization] works.

Provide code examples, common mistakes, and best practices.

✅ **Pro Tip:** When using these prompts, always:

* Add **input/output examples** for clarity.
* Specify your **preferred library** (e.g., Pandas, PySpark, Scikit-learn).
* State constraints (performance, readability, reusability).