

## **What is the prompt?**

Request to a language model for a response

- Questions
- Instructions.
- Context or extra information.
- Examples.
- Part of a task to complete

## **Model responses to prompts**

Generate various types of content based on the prompt.

- Text.
- Code
- Images.
- Music.
- Videos
- And more depending on the request

## **Prompt design**

### **Clarity.**

Ensuring the prompt is clear and easy to understand.

Example, please summarize the article on climate change from the New York times

### **Context.**

providing enough background all details so the Model knows exactly what to respond to

Example the article discusses the impact of rising sea levels, the role of carbon emissions and global efforts to combat climate change

### **Specificity.**

Asking precise questions, or making clear requests to avoid wig all inaccurate answers

Example summarize the main points and provide Chi statistics of findings mentioned in the article

### **Format.**

The way the prompt is framed example questions, instructions or task.

Example: Summarize the article (instructions-based format)

## Elements of prompt

- Instructions.
- Context
- Input data.
- Output Indicator

### Instructions

#### What it is?

The specific task or action you want the AI to perform

#### Why it matters

The instruction tells the AI exactly what to do without clear instructions, the AI might give you an unclear or irrelevant answer.

Example 1: Write a Python program. The AI knows it is to write code in Python.

Example 2: write a Python program that calculates the sum of two numbers. The AI knows not just to write a program, but specifically to calculator sum.

### Context

#### What it is

External information or extra details that guide the AI to give you a better answer.

#### Why it matters?

Context helps the AI understand the bigger picture and provide more relevant, accurate response.

Write a Python program that prints hello world.

The AI will provide a basic program suitable for beginners.

Writer buydown program.

The AI could provide a complex solution, assuming the user North advance programming.

### Input data

#### What it is

The question data or a specific information that you are asking the AI to process

#### Why it matters

Input data is the goal question or problem the AI needs to address it's what you are trying to find an answer to.

Example: You specify that you are using Python

Input data: I want to write a program in Python.

Example: you specify the task you want to achieve

I want to print 'hello world' to the screen

## **Output Indicator**

### What it is?

The form at all type of answer you want from the AI

### Why it matters?

Specifying the output format, ensures the responses delivered in the way you need it, whether it is a list, paragraph or some other format.

Output indicator. 'Can you help me write a Python program that prints hello world to the screen?'

## **Prompt Techniques**

### **zero-shot prompting**

Zero-shot prompting is when You ask an LLM model to perform a task without giving it any specific examples of prior training for the task the LLM uses its general knowledge to understand and complete the task.

Example:

- Task: Classifying sentiment in a sentence
- Prompt: "Is this text positive or negative? "I love the food here, it is amazing"
- Expected output: "Positive"

Why it is useful:

- Quick execution: No need to provide examples for each task
- Broad Application: LLM can perform various tasks based on general knowledge
- No Extra Training: No need for custom training or fine-tuning for every new task

## Few-shot prompting

is when you provide the LLM with a few examples (usually 1-5) of the task you want it to perform.

These examples help the LLM understand the task and guide it to generate a correct response. Unlike zero-shot prompting, where no examples are given, few-shot prompting offers some context to improve accuracy.

Examples help the LLM understand the expected output.

Example:

- Task: Sentiment classification of text

- Few-shot prompt:

"Classify the sentiment of the following texts as positive or negative

Example 1: "I love this place!" -> Positive

Example 2: "I hate the weather today" -> Negative

Now, classify: "The movie was amazing!"

Why is Useful

**Higher Accuracy:** Providing a few examples can significantly improve the accuracy of the LLM's response

**Guidance:** Helps the model understand the specific task and format you expect.

**Efficient for Tasks:** Works well when you don't want to give the LLM a lot of examples but need better results than zero-shot

## Chain of Prompting: Step by Step Problem Solving

What is chain of prompting

A method where tasks are broken into a sequence of prompts, each building on the previous, to solve complex problems incrementally.

Key Benefits:

Clarity: Simplifies tasks by tackling them in manageable steps

Improved Accuracy : Reduces errors by focusing on one aspect at a time.

Complex problem solving: Handles intricate challenges through systematic breakdown.

Example:

1. Imagine you are teaching a school student how to solve a math problem
2. The problem is: "A teacher has 24 candies. She wants to distribute them equally among 6 students. How many candies does each student get?"
3. Think step by step and provide the answer

### **Meta Prompting: Enhancing Problem-Solving and Creativity**

What is Meta Prompting?

A method where models create prompts or steps before tackling tasks. It focuses on thinking through the problem to come up with a solution based on its own reasoning.

Key Benefits:

Teaches problem-solving: Focuses on the process, not just the answer

Boosts Creativity: Encourages thinking beyond standard approaches.

Example:

1. Imagine you are teaching a school student how to solve a math problem
2. The problem is: "A teacher has 24 candies. She wants to distribute them equally among 6 students. How many candies does each student get?"
3. Explain the strategy for solving the problem
4. Think step by step and provide the answer

### **Generated Knowledge Prompting**

Purpose: Enhances the model's response quality.

Approach: Provide additional context or knowledge. Feed relevant text, code, or data for reference

Outcome: Enables more accurate and informed outputs

### **Self-Consistency Prompting**

Definition: Improves accuracy by leveraging multiple model outputs

Method: Ask the same prompt multiple times. Select the most common response

Benefits: Enhances accuracy and consistency

Best For: Tasks like arithmetic and commonsense reasoning