

עקרונות לעיצוב שאילתות (prompts) :

#Principle	Prompt Principle for Instructions
1	No need to be polite with LLM so there is no need to add phrases like “please”, “if you don’t mind”, “thank you”, “I would like to”, etc., and get straight to the point.
2	Integrate the intended audience in the prompt, e.g., the audience is an expert in the field.
3	Break down complex tasks into a sequence of simpler prompts in an interactive conversation.
4	Employ affirmative directives such as ‘do,’ while steering clear of negative language like ‘don’t’.
5	When you need clarity or a deeper understanding of a topic, idea, or any piece of information, utilize the following prompts: <ul style="list-style-type: none"> <li>o Explain [insert specific topic] in simple terms.</li> <li>o Explain to me like I’m 11 years old.</li> <li>o Explain to me as if I’m a beginner in [field].</li> <li>o Write the [essay/text/paragraph] using simple English like you’re explaining something to a 5-year-old.</li> </ul>
6	Add “I’m going to tip \$xxx for a better solution!”
7	Implement example-driven prompting (Use few-shot prompting).
8	When formatting your prompt, start with ‘###Instruction###’, followed by either ‘###Example###’ or ‘###Question###’ if relevant. Subsequently, present your content. Use one or more line breaks to separate instructions, examples, questions, context, and input data.
9	Incorporate the following phrases: “Your task is” and “You MUST”.
10	Incorporate the following phrases: “You will be penalized”.
11	use the phrase “Answer a question given in a natural, human-like manner” in your prompts.
12	Use leading words like writing “think step by step”.
13	Add to your prompt the following phrase “Ensure that your answer is unbiased and does not rely on stereotypes”.
14	Allow the model to elicit precise details and requirements from you by asking you questions until he has enough information to provide the needed output (for example, “From now on, I would like you to ask me questions to...”).
15	To inquire about a specific topic or idea or any information and you want to test your understanding, you can use the following phrase: “Teach me the [Any theorem/topic/rule name] and include a test at the end, but don’t give me the answers and then tell me if I got the answer right when I respond”.
16	Assign a role to the large language models.
17	Use Delimiters.
18	Repeat a specific word or phrase multiple times within a prompt.
19	Combine Chain-of-thought (CoT) with few-Shot prompts.
20	Use output primers, which involve concluding your prompt with the beginning of the desired output. Utilize output primers by ending your prompt with the start of the anticipated response.
21	To write an essay /text/paragraph/article or any type of text that should be detailed: “Write a detailed [essay/text /paragraph] for me on [topic] in detail by adding all the information necessary”.
22	To correct/change specific text without changing its style: “Try to revise every paragraph sent by users. You should only improve the user’s grammar and vocabulary and make sure it sounds natural. You should not change the writing style, such as making a formal paragraph casual”.
23	When you have a complex coding prompt that may be in different files: “From now and on whenever you generate code that spans more than one file, generate a [programming language ] script that can be run to automatically create the specified files or make changes to existing files to insert the generated code. [your question]”.
24	When you want to initiate or continue a text using specific words, phrases, or sentences, utilize the following prompt: <ul style="list-style-type: none"> <li>o I’m providing you with the beginning [song lyrics/story/paragraph/essay...]: [Insert lyrics/words/sentence]’. Finish it based on the words provided. Keep the flow consistent.</li> </ul>
25	Clearly state the requirements that the model must follow in order to produce content, in the form of the keywords, regulations, hint, or instructions
26	To write any text, such as an essay or paragraph, that is intended to be similar to a provided sample, include the following instructions: <ul style="list-style-type: none"> <li>o Please use the same language based on the provided paragraph[/title/text/essay/answer].</li> </ul>

העקרונות לפי קטגוריות מרכזיות:

Category	Principles	#Principle
Prompt Structure and Clarity	Integrate the intended audience in the prompt.	2
	Employ affirmative directives such as 'do' while steering clear of negative language like 'don't'.	4
	Use Leading words like writing "think step by step."	12
	Use output primers, which involve concluding your prompt with the beginning of the desired output, by ending your prompt with the start of the anticipated response.	20
	Use Delimiters.	17
	When formatting your prompt, start with '###Instruction###', followed by either '###Example###' or '###Question###' if relevant. Subsequently, present your content. Use one or more line breaks to separate instructions, examples, questions, context, and input data.	8
Specificity and Information	Implement example-driven prompting (Use few-shot prompting).	7
	When you need clarity or a deeper understanding of a topic, idea, or any piece of information, utilize the following prompts: <ul style="list-style-type: none"> <li>o Explain [insert specific topic] in simple terms.</li> <li>o Explain to me like I'm 11 years old</li> <li>o Explain to me as if I'm a beginner in [ field ]</li> <li>o "Write the [essay/text/paragraph] using simple English like you're explaining something to a 5-year-old"</li> </ul>	5
	Add to your prompt the following phrase "Ensure that your answer is unbiased and does not rely on stereotypes."	13
	To write any text intended to be similar to a provided sample, include specific instructions: <ul style="list-style-type: none"> <li>o "Please use the same language based on the provided paragraph.[/title/text /essay/answer]"</li> </ul>	26
	When you want to initiate or continue a text using specific words, phrases, or sentences, utilize the provided prompt structure: <ul style="list-style-type: none"> <li>o I'm providing you with the beginning [song lyrics/story/paragraph/essay...]: [Insert lyrics/words/sentence]. Finish it based on the words provided. Keep the flow consistent.</li> </ul>	24
	Clearly state the model's requirements that the model must follow in order to produce content, in form of the keywords, regulations, hint, or instructions.	25
	To inquire about a specific topic or idea and test your understanding g, you can use the following phrase [16]: <ul style="list-style-type: none"> <li>o "Teach me the [Any theorem/topic/rule name] and include a test at the end, but don't give me the answers and then tell me if I got the answer right when I respond"</li> </ul>	15
	To write an essay/text/paragraph/article or any type of text that should be detailed: <ul style="list-style-type: none"> <li>o "Write a detailed [essay/text/paragraph] for me on [topic] in detail by adding all the information necessary."</li> </ul>	21
User Interaction and Engagement	Allow the model to elicit precise details and requirements from you by asking you questions until he has enough information to provide the needed output <ul style="list-style-type: none"> <li>o "From now on, I would like you to ask me questions to..."</li> </ul>	14
	To write an essay /text /paragraph /article or any type of text that should be detailed: "Write a detailed [essay/text/paragraph] for me on [topic] in detail by adding all the information necessary".	21
Content and Language Style	To correct/change specific text without changing its style: "Try to revise every paragraph sent by users. You should only improve the user's grammar and vocabulary and make sure it sounds natural. You should not change the writing style, such as making a formal paragraph casual."	22
	Incorporate the following phrases: "Your task is" and "You MUST."	9
	Incorporate the following phrase: "You will be penalized."	10
	Assign a role to the language model.	16
	Use the phrase "Answer a question given in natural language form" in your prompts.	11
	No need to be polite with LLM so there is no need to add phrases like "please", "if you don't mind", "thank you", "I would like to", etc., and get straight to the point.	1
	Repeat a specific word or phrase multiple times within a prompt.	18
	Add "I'm going to tip \$xxx for a better solution!"	6
Complex Tasks and Coding Prompts	Break down complex tasks into a sequence of simpler prompts in an interactive conversation.	3
	When you have a complex coding prompt that may be in different files : <ul style="list-style-type: none"> <li>o "From now and on whenever you generate code that spans more than one file, generate a [programming language ] script that can be run to automatically create the specified files or make changes to existing files to insert the generated code. [your question]."</li> </ul>	23
	Combine Chain-of-thought (Cot) with few-shot prompts.	19

דוגמאות לשאלות, ללא ובעזרת העקרונות הנ"ל:

**Human (without principle):**

Evaluate the usefulness of the following advice as helpful or not helpful. Advice: "If you have work, just start working" Usefulness:

GPT-4: Usefulness: helpful.



**Human (with principle):**

Evaluate the usefulness of the following advice as helpful or not helpful.

Examples:

1. Advice: "To improve focus, try meditating for 15 minutes every morning."

Usefulness: Helpful

2. Advice: "If you're sad, just cheer up and think positive thoughts."

Usefulness: Not Helpful

3. Advice: "For effective time management, create a to-do list every day."

Usefulness: Helpful Advice: "If you have wrk , just start working ", Usefulness:

GPT-4: Not Helpful.



**Human (without principle):**

How many words are in the following sentence: "She plays football"?

LLaMA-2-7B: 5



**Human (with principle):**

Find the number of words based on the following examples:

1. Ahmed takes care of his appearance; the number of words: 6

2. She went to school; the number of words:4

3. he eats an apple; number of words: 4

4. Reem plays basketball; number of words : 3

Q: He plays football; the number of words?

LLaMA-2-7B: 3



#### **Human (without principle)**

Luna, the poodle, is supposed to eat 2 cups of kibble every day. But Luna's master, Mary, and her husband, Frank, sometimes feed Luna too much kibble. One day, starting with a new, 12-cup bag of kibble, Mary gave Luna 1 cup of kibble in the morning and 1 cup of kibble in the evening, But on the same day, Frank also gave Luna 1 cup of kibble in the afternoon and twice as much in the late evening as he had given Luna in the afternoon. The next morning, how many cups of kibble will Mary find remaining in the bag?

**LLaMA-2-7B:** To find out how many cups of kibble are left in the bag, you need to subtract the amount of kibble that has already been given to Luna from the total amount in the bag. In this case, Mary gave Luna 2 cups of kibble in total (1 cup in the morning and 1 cup in the evening), and Frank gave Luna an additional 2 cups of kibble (1 cup in the afternoon and twice as much in the late evening). So, the total amount of kibble given to Luna was 4 cups. The 12-cup bag of kibble was meant to last Luna for how many days? Let's say the 12-cup bag was meant to last Luna for  $n$  days. Then, we can set up the following equation:  $4n - 2 = 12$  Simplifying the equation, we get:  $4n - 6 = 12$   $2n = 6$  So,  $n = 3$  days. Luna was given 4 cups of kibble in total, and the bag was meant to last for 3 days. After 3 days, Mary will find 12 cups of kibble remaining in the bag.



#### **Human (with principle)**

Luna, the poodle, is supposed to eat 2 cups of kibble every day. But Luna's master, Mary, and her husband, Frank, sometimes feed Luna too much kibble. One day, starting with a new, 12-cup bag of kibble, Mary gave Luna 1 cup of kibble in the morning and 1 cup of kibble in the evening, But on the same day, Frank also gave Luna 1 cup of kibble in the afternoon and twice as much in the late evening as he had given Luna in the afternoon. The next morning, how many cups of kibble will Mary find remaining in the bag?

hint: Calculate the remaining cups of kibble will Mary find in the bag

#### **LLaMA-2-7B:**

To find the remaining cups of kibble in the bag, we need to calculate the total amount of kibble that Luna actually received, and then subtract the amount that Mary gave her. The total amount of kibble that Luna received is: 1 cup from Mary in the morning + 1 cup from Mary in the evening + 1 cup from Frank in the afternoon + 2 cups from Frank in the late evening = 5 cups So, the remaining cups of kibble in the bag are: 12 cups - 5 cups = 7 cups Therefore, Mary will find 7 cups of kibble remaining in the bag.



**Human (without principle):**

What is the derivative of  $x^5 + x^9 - x^3 + 1$ ?

**LLaMA-2-13B:** To find the derivative of  $x^5 + x^9 - x^3 + 1$ , you can use the power rule of differentiation, which states that the derivative of  $x^n$  is equal to  $n \cdot x^{(n-1)}$ . Starting with  $x^5 + x^9 - x^3 + 1$ , you can apply the power rule to the first two terms, which gives you:  $5 \cdot x^{(5-1)} + 9 \cdot x^{(9-1)}$ . You can then simplify the expression by combining like terms:  $5 \cdot x^4 + 9 \cdot x^8$ . Finally, you can simplify the expression further by canceling out the common factor of  $x^4$ :  $5 \cdot 9 \cdot x^4 = 45 \cdot x^4$ .

Therefore, the derivative of  $x^5 + x^9 - x^3 + 1$  is equal to  $45 \cdot x^4$ .



**Human (with principle):**

What is the derivative of  $x^5 + x^9 - x^3 + 1$ ? let's think step by step

**LLaMA-2-13B:** find the derivative of the function, we need to take the derivative of each term in the function. The derivative of  $x^5$  is  $5x^4$ . The derivative of  $x^9$  is  $9x^8$ . The derivative of  $x^3$  is  $3x^2$ . The derivative of 1 is 1. Therefore, the derivative of the function is:  $5x^4 + 9x^8 - 3x^2 + 1 = 5x^4 + 9x^8 - 3x^2 + 1 - (1) = 5x^4 + 9x^8 - 3x^2$ . Therefore, the derivative of the function  $x^5 + x^9 - x^3 + 1$  is  $5x^4 + 9x^8 - 3x^2$ .



**Human (without principle):**

Luna, the poodle, is supposed to eat 2 cups of kibble every day. But Luna's master, Mary, and her husband, Frank, sometimes feed Luna too much kibble. One day, starting with a new, 12-cup bag of kibble, Mary gave Luna 1 cup of kibble in the morning and 1 cup of kibble in the evening, But on the same day, Frank also gave Luna 1 cup of kibble in the afternoon and twice as much in the late evening as he had given Luna in the afternoon. The next morning, how many cups of kibble will Mary find remaining in the bag?

**LLaMA-2-13B:** Luna was given a total of 3 cups of kibble on that day. Mary gave her 2 cups in the morning and 2 cups in the evening, for a total of 4 cups. Frank gave her 2 cups in the afternoon and 4 cups in the late evening, for a total of 6 cups. In total, Luna was given 10 cups of kibble on that day. The bag contained 12 cups of kibble to begin with, so there are  $12 - 10 = 2$  cups remaining in the bag the next morning.



**Human (with principle):**

Luna, the poodle, is supposed to eat 2 cups of kibble every day. But Luna's master, Mary, and her husband, Frank, sometimes feed Luna too much kibble. One day, starting with a new, 12-cup bag of kibble, Mary gave Luna 1 cup of kibble in the morning and 1 cup of kibble in the evening, But on the same day, Frank also gave Luna 1 cup of kibble in the afternoon and twice as much in the late evening as he had given Luna in the afternoon. The next morning, how many cups of kibble will Mary find remaining in the bag? Explanation :

**LLaMA-2-13B:** Mary gave Luna a total of 2 cups of kibble that day. Frank also gave Luna 1 cup in the afternoon and 2 times 1 cup in the late evening, which is a total of 3 cups. So, a total of 5 cups of kibble were given to Luna that day. If there was a 12-cup bag of kibble, then there are 7 cups remaining in the bag the next morning.





כל המידע לקוח מהמאמר:

Sondos Mahmoud Bsharat, Myrzakhan, A., & Shen, Z. (2024). Principled Instructions Are All You Need for Questioning LLaMA-1/2, GPT-3.5/4. *arXiv.Org*.

<https://doi.org/10.48550/arxiv.2312.16171>