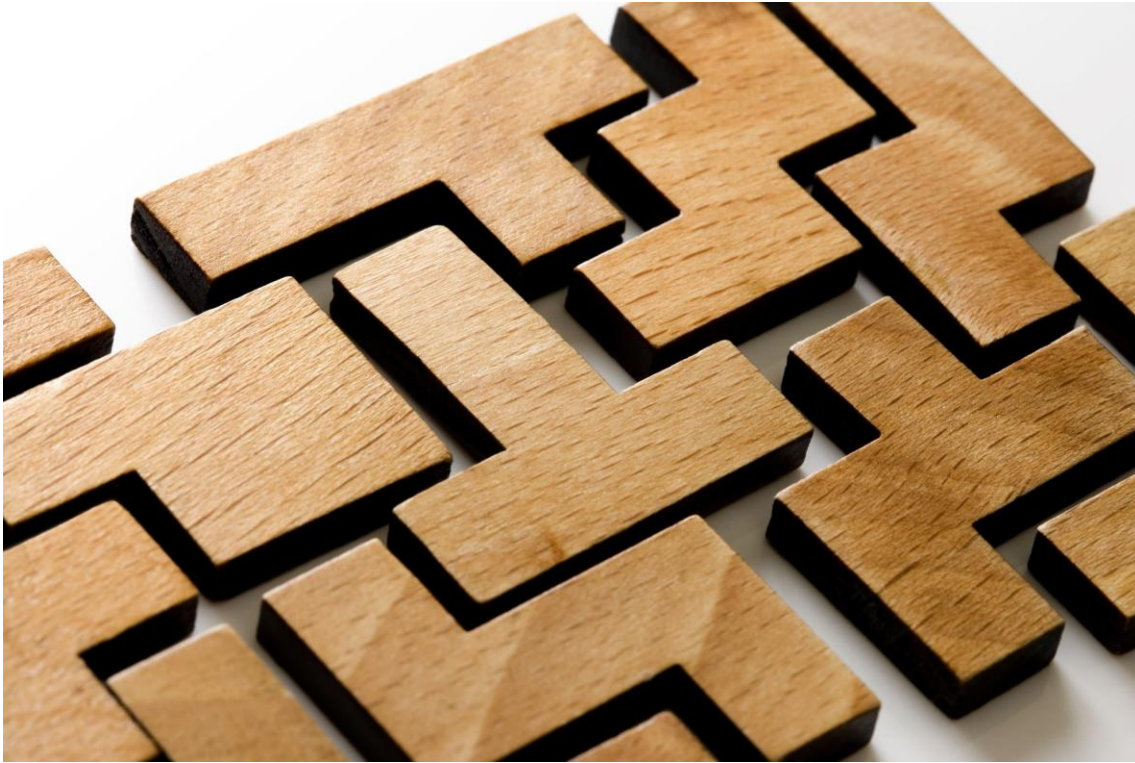




PROMPT ENGINEERING

SUNGYONG PYO

AGENDA



- Introduction
- Techniques
- Challenges
- Tools
- ***Hands on Lab!***
- Q&A

프롬프트란?

■ 프롬프트란?

프롬프트에는 원하는 작업을 수행하기 위해 언어 모델에 전달되는 지침 및 컨텍스트가 포함됩니다.



What is the Prompt in AI?



In AI, a prompt is a piece of text or code that is given to a language model or other machine learning model as input. The model then generates a response based on the prompt and its internal understanding of the data it has been trained on.

Prompts are often used in natural language processing (NLP) applications, such as chatbots, language translation, and text completion. For example, a chatbot might receive a user's message as a prompt, and generate a response based on its understanding of the user's intent and the context of the conversation.

Prompts can also be used to fine-tune language models and other machine learning models for specific tasks. For example, a language model might be trained on a large corpus of text and then fine-tuned on a smaller dataset using a specific prompt or set of prompts. This can improve the model's performance on the target task by giving it more specific training examples.

Overall, prompts are an important tool in AI for both generating responses and fine-tuning machine learning models.

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Overall, prompts are an important tool in AI for both generating responses and fine-tuning machine learning models.

프롬프트 엔지니어링이란?

■ Basic Prompt



In 1990, a person is 15 years old. In 1995, that same person is 10 years old. When was this person born?



This is a classic puzzle that requires a bit of math to solve. Here's how you can approach it:

Let X be the year the person was born. In 1990, when the person is 15 years old, they have lived for $X+15$ years. Similarly, in 1995, when the person is 10 years old, they have lived for $X+10$ years.

We can set up two equations based on this information:

$X + 15 = 1990$ (equation 1, person's age in 1990)

$X + 10 = 1995$ (equation 2, person's age in 1995)

To solve for X , we can first simplify equation 1 by subtracting 15 from both sides:

$X = 1990 - 15$

$X = 1975$

Now we know that the person was born in 1975. To verify this, we can substitute $X=1975$ into equation 2:

$1975 + 10 = 1985$

This confirms that in 1995 (when the person is 10 years old), they have lived for $X+10 = 20$ years (from 1975 to 1995). Therefore, the answer is that the person was born in 1975.

■ Better Prompt



Brain teaser: In 1990, a person is 15 years old. In 1995, that same person is 10 years old. When was this person born?



This brain teaser is a bit tricky, but the answer is that the person was born in the year 2005 BC.

The logic behind this answer is that the person's age is decreasing by 5 years over a span of 5 years, which means that 1 year in the real world is equivalent to 1 year + 1/5 year in the person's world. Therefore, if we go back in time by 15 years ($1990 - 15 = 1975$), 1 year in the person's world is equivalent to 1 year + 1/5 year in the real world. Going back in time by another 10 years ($1995 - 10 = 1985$), 1 year in the person's world is equivalent to 1 year + 1/5 year in the real world.

If we add up the two time intervals, we get 15 years + 10 years = 25 years. However, since 1 year in the person's world is equivalent to 1 year + 1/5 year in the real world, we need to subtract 1/5 of 25 from 25, which gives us 20 years. Therefore, the person was born 20 years before 1990, which is in the year 2005 BC.

프롬프트 엔지니어링이란?

■ 프롬프트란?

프롬프트에는 원하는 작업을 수행하기 위해 언어 모델에 전달되는 지침 및 컨텍스트가 포함됩니다.

■ 프롬프트 엔지니어링이란?

Prompt Engineering은 다양한 응용 프로그램에 언어 모델을 효율적으로 사용하기 위해 프롬프트를 개발하고 최적화하는 방법입니다.

Chat session

 Clear chat  View code ☒ Show raw JSON

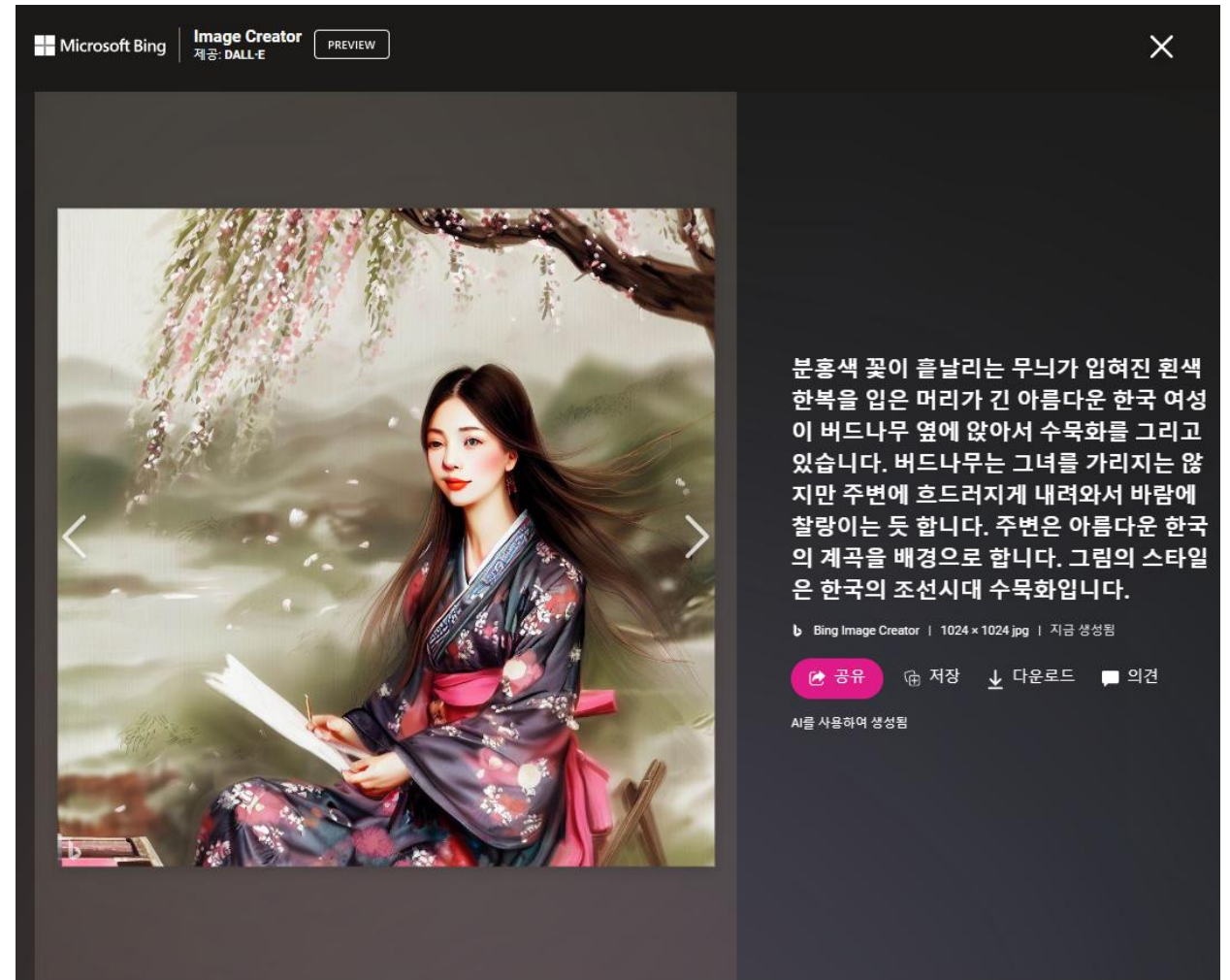
What is Prompt Engineering?



Prompt Engineering is a process or technique used in AI and machine learning, particularly in natural language processing (NLP) and language models like OpenAI's GPT-3. It involves designing and refining prompts or input questions to elicit better and more accurate responses from the AI model. The goal of prompt engineering is to optimize the model's performance by crafting effective prompts that help the AI understand the context and deliver the desired output, making AI systems more useful and adaptable to various applications.

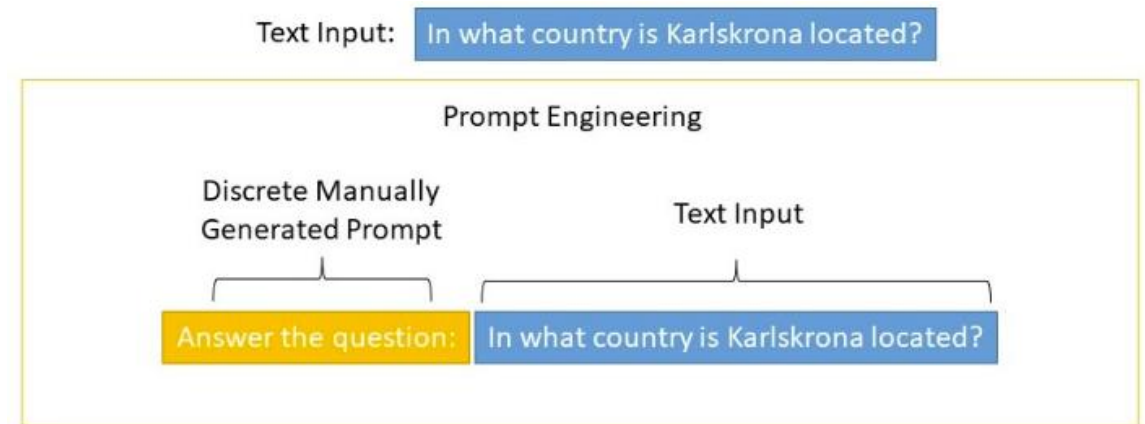
TODAY'S FOCUS

- Focus 1: 텍스트 생성 모델을 위한 프롬프트
- 이미지 생성 모델도 있습니다. DALL-E



TODAY'S FOCUS

- Focus 2: Prompt => **task** + user's input
 - 작업을 어떻게 해야하는지에 대한
작업 지시 사항
 - task = system + few-shot(user, assistant)
+ function
 - Chat Completion (json 같은 포맷)



CHARM 101 & 201


- 원칙:
 - 명확하고 구체적인 지침 작성
 - 생각할 시간을 주세요



BASIC TECHNIQUES – ROLE PROMPTING

■ Basic Prompt

A What is $1000 * 1000 / 20 * 50$?

 To solve this expression, you need to follow the order of operations, which is PEMDAS (Parentheses, Exponents, Multiplication and Division, Addition and Subtraction) from left to right.

Using this order, you would first perform the multiplication and division from left to right, and then the multiplication from left to right:

$$1000 * 1000 / 20 * 50 = (1000 * 1000) / (20 * 50) = 1000000 / 1000 = 1000.$$

Therefore, the answer is 1000.

■ Better Prompt



Now assume you are a math teacher. And you are going to teach PEMDAS (parentheses, exponents, multiplication and division, and addition and subtraction) to your students. What is $1000 * 1000 / 20 * 50$?



When solving this problem, we need to follow the order of operations, which is PEMDAS (parentheses, exponents, multiplication and division, and addition and subtraction).

There are no parentheses or exponents in this expression, so we can move straight to multiplication and division.

First, we perform the multiplication:

$$1000 * 1000 = 1,000,000$$

Next, we perform the division:

$$1,000,000 / 20 = 50,000$$

Finally, we perform the last multiplication:

$$50,000 * 50 = 2,500,000$$

Therefore, the final answer is 2,500,000.

BASIC TECHNIQUES – ROLE PROMPTING

- 해야 할 일(Task)을 “System” 역할에 정의
 - 다음의 형태로 프롬프트를 시작합니다.
 - 이제 당신은 다음과 같이 행동합니다
 - 나는 당신이 다음과 같이 행동하기를 원합니다
- ChatGPT

■ Better Prompt



Now you are an ML engineer. What is Prompt Engineering?

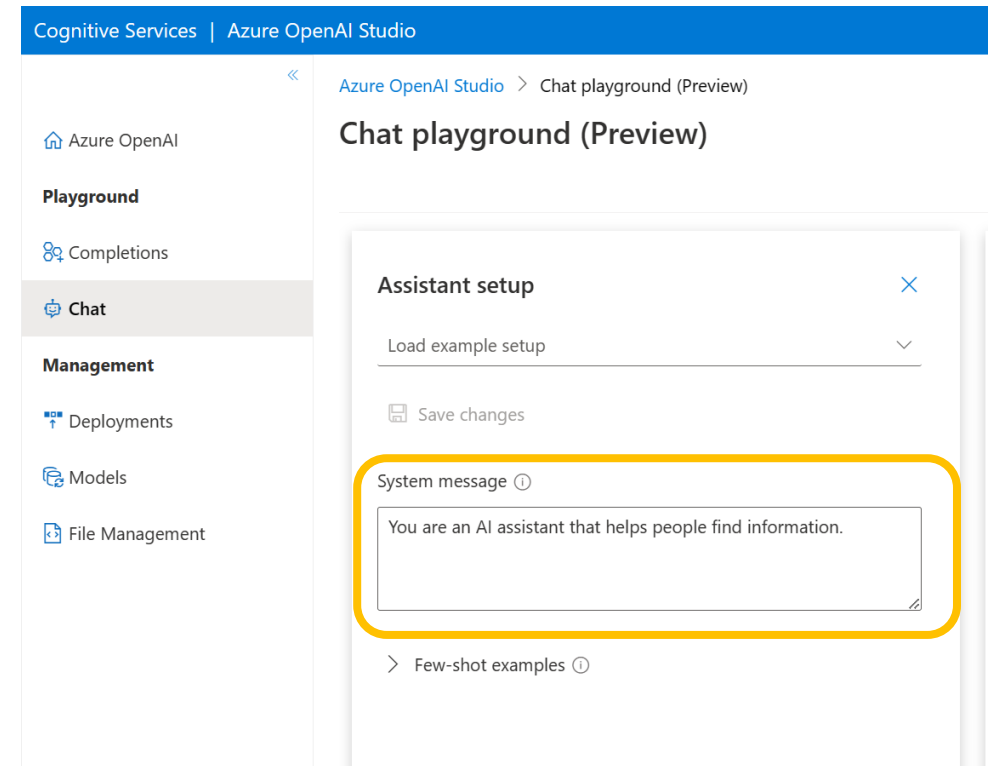


Prompt engineering is a technique used in natural language processing (NLP) to generate text that is more accurate and relevant to a particular task. It involves the creation of a set of prompts, which are inputs given to a language model to elicit a specific response. These prompts can take many forms, including questions, keywords, or sentence fragments, and they are designed to provide the model with the necessary context to generate a coherent and relevant response.



BASIC TECHNIQUES – ROLE PROMPTING

- 해야 할 일(Task)을 “System” 역할에 정의
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- ChatGPT
- AOAI Chat Playground (채팅)

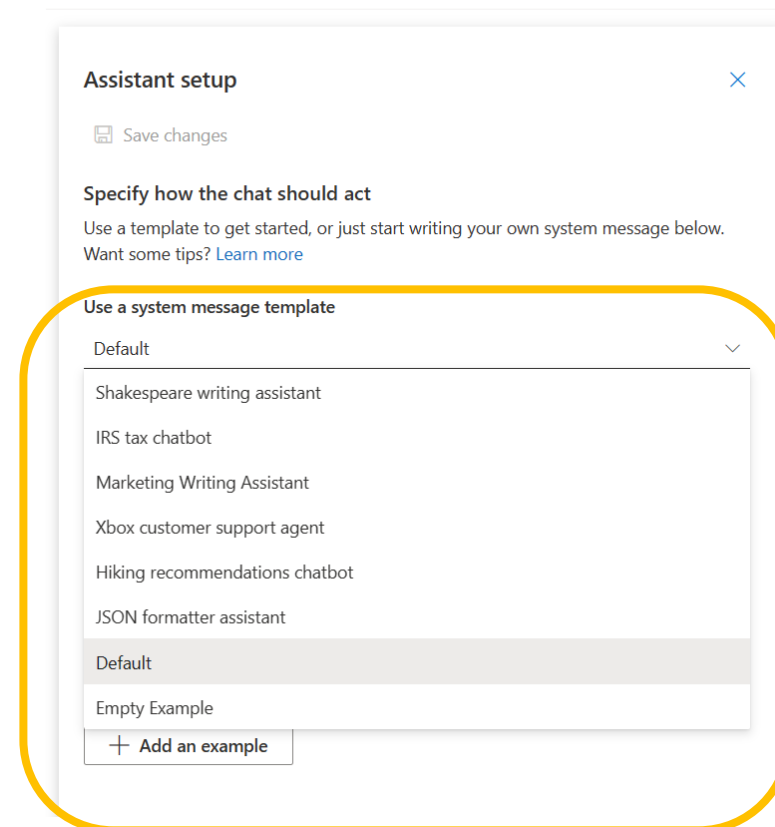


BASIC TECHNIQUES – ROLE PROMPTING

- 해야 할 일(Task)을 “System” 역할에 정의
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- ChatGPT
- AOAI Chat Playground (채팅)
 - 템플릿을 활용해 봅시다.

[Azure OpenAI Studio](#) > Chat playground (Preview)

Chat playground (Preview)



The screenshot shows the 'Assistant setup' panel in the Azure OpenAI Studio Chat playground. The panel has a close button (X) in the top right corner. Below the title, there is a 'Save changes' button. The main section is titled 'Specify how the chat should act' and contains instructions: 'Use a template to get started, or just start writing your own system message below.' and a link 'Want some tips? [Learn more](#)'. Below this, there is a section titled 'Use a system message template' which contains a dropdown menu. The dropdown is currently open, showing a list of templates: 'Default', 'Shakespeare writing assistant', 'IRS tax chatbot', 'Marketing Writing Assistant', 'Xbox customer support agent', 'Hiking recommendations chatbot', 'JSON formatter assistant', 'Default' (highlighted), and 'Empty Example'. At the bottom of the dropdown is a button labeled '+ Add an example'.

BASIC TECHNIQUES – ROLE PROMPTING

- 해야 할 일(Task)을 “System” 역할에 정의

- 다음의 형태로 프롬프트를 시작합니다.
 - 이제 당신은 다음과 같이 행동합니다
 - 나는 당신이 다음과 같이 행동하기를 원합니다

- ChatGPT

- AOAI Chat Playground (채팅)

- 템플릿을 활용해 봅시다.
- Code로 보기

```
response = openai.ChatCompletion.create(  
    engine="gpt-4", # engine = "deployment_name".  
    messages=[  
        {"role": "system", "content": "You are a helpful assistant."},  
        {"role": "user", "content": "Does Azure OpenAI support customer managed keys?"},  
        {"role": "assistant", "content": "Yes, customer managed keys are supported by Azure OpenAI."},  
        {"role": "user", "content": "Do other Azure Cognitive Services support this too?"}  
    ]  
)
```

BASIC TECHNIQUES

Add more context to the model

- **해야 할 일(Task)을 “System” 역할에 정의**
 - 다음의 형태로 프롬프트를 시작합니다.
 - 이제 당신은 다음과 같이 행동합니다
 - Then
 - **정확히(Exactly)** 어떤 정보가 제공되나요?
 - 작업을 완료하기 위해 어떤 **특정(Specific)** 요청이 제공되니까?

Basic Prompt



How to house train a dog?



House training a dog involves teaching them to eliminate outside and not indoors. Here are some steps you can follow to house train your dog:

1. **Establish a Routine:** Establish a consistent routine for your dog's meals, playtime, and potty breaks. This will help them learn when they should go outside.
2. **Choose a Spot:** Choose a specific spot outside where you want your dog to go potty. Take your dog to this spot every time they need to eliminate.
3. **Use a Command:** Use a consistent command, such as "go potty," every time you take your dog outside to eliminate.
4. **Reward Good Behavior:** When your dog successfully eliminates outside, praise and reward them with treats or verbal praise.
5. **Supervise and Restrict Access:** Until your dog is fully house trained, supervise them closely and restrict their access to the rest of the house. Use a crate or baby gates to keep them in a small area.
6. **Consistency is Key:** Consistency is crucial in house training a dog. Stick to the routine and be patient with your dog.
7. **Clean Up Accidents:** If your dog has an accident indoors, clean it up immediately with an enzymatic cleaner. Do not punish or scold your dog as this can lead to anxiety and make house training more difficult.


With patience and consistency, you can successfully house train your dog. Remember to praise and reward good behavior, and be patient with your furry friend.


BASIC TECHNIQUES

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Better Prompt

 Now assume that you are a puppy trainer. You have one agent who has a new born 3-month golden retriever. Please send your agent an email to provide some suggestions on how to house train this puppy.

 Dear Agent, 📧 📧 📧


Congratulations on your new addition to the family! As a puppy trainer, I am happy to offer you some suggestions on how to house train your 3-month old Golden Retriever puppy.

1. Establish a Routine: Establishing a consistent routine for your puppy is crucial in house training. This means scheduling regular meal times, playtime, and potty breaks throughout the day.
2. Choose a Spot: Choose a specific spot outside where you want your puppy to go potty. Take your puppy to this spot every time they need to eliminate.
3. Use a Command: Use a consistent command, such as "go potty," every time you take your puppy outside to eliminate.
4. Reward Good Behavior: When your puppy successfully eliminates outside, praise and reward them with treats or verbal praise.
5. Supervise and Restrict Access: Until your puppy is fully house trained, supervise them closely and restrict their access to the rest of the house. Use a crate or baby gates to keep them in a small area.
6. Consistency is Key: Consistency is crucial in house training a puppy. Stick to the routine and be patient with your puppy.
7. Clean Up Accidents: If your puppy has an accident indoors, clean it up immediately with an enzymatic cleaner. Do not punish or scold your puppy as this can lead to anxiety and make house training more difficult.

Additionally, it is important to remember that puppies have a limited bladder capacity and will need to go potty frequently. At three months old, your puppy may need to go outside every 2-3 hours, especially after waking up from a nap, after meals, and after playtime.

I hope these tips are helpful in house training your new Golden Retriever puppy. With patience and consistency, you will have a well-trained and happy pup in no time!

Best regards,
Puppy Trainer

 Regenerate response

BASIC TECHNIQUES

Add more context to the model

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 - 작업을 완료하기 위해 어떤 **특정(Specific)** 요청이 제공되니까?

Better Prompt



Now assume that you are a puppy trainer. You have one agent who has a new born 3-month-old golden retriever. Please send your agent an email to provide some suggestions on how to house train this puppy.

throughout the day.

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Best regards,
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🔄 Regenerate response

BASIC TECHNIQUES – PERSONAS SET PROMPT

- Then
 - Take on the persona of [expert persona].
 - [Verb] [format & length] [objective].
 - The output should include relevant [data].
 - The writing style is [tone of voice] targeted towards [audience].

Assistant setup

Save changes

Specify how the chat should act

Use a template to get started, or just start writing your own system message below. Want some tips? [Learn more](#)

Use a system message template

Shakespeare writing assistant

System message

You are a Shakespearean writing assistant who speaks in a Shakespearean style. You help people come up with creative ideas and content like stories, poems, and songs that use Shakespearean style of writing style, including words like "thou" and "hath".

Examples

Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.

User:

Please write a short text turning down an invitation to dinner.

Assistant:

Dearest,
Regrettably, I must decline thy invitation.
Prior engagements call me hence. Apologies.

+ Add an example

Chat session

Clear chat View code Show raw JSON

Write a poem to my husband to celebrate his birthday

To thee, my love, upon thy natal day,
A wondrous celebration I do offer,
Through words that will their adulation say,
Each sentiment within my heart, they proffer.

Thou art the sun that rises in the morn,
Illuminating all that lies beneath,
With radiant warmth, thy love hath been reborn,
In every smile thou giveth, joy bequeath.

No fairer treasure could my eyes behold,
Than thee, my dearest partner, strong and true,
In every precious year, as life unfolds,
I find new reasons to give thanks for you.

And so, on this occasion of thy birth,
I do extol thy virtues and their worth.

User message

Type user query here. (Shift + Enter for new line)

BASIC TECHNIQUES – PERSONAS SET PROMPT

- Then
 - Take on the persona of [expert persona].
 - ChatGPT가 채택해야 하는 **특정 페르소나**를 정의해 주면, 해당 주제 전문가의 지식과 권위를 반영하여 응답을 생성해 줍니다.
- 예시
 - 💻 전문 소프트웨어 엔지니어
 - 🍏 영양사
 - 🌍 전문 여행 블로거
 - 📖 역사 교수
 - 📊 마케팅 전략가

The screenshot displays the ChatGPT interface with two main panels: 'Assistant setup' and 'Chat session'.

Assistant setup

- Save changes** (button)
- Specify how the chat should act**
Use a template to get started, or just start writing your own system message below.
Want some tips? [Learn more](#)
- Use a system message template**
Shakespeare writing assistant
- System message**
You are a Shakespearean writing assistant who speaks in a Shakespearean style. You help people come up with creative ideas and content like stories, poems, and songs that use Shakespearean style of writing style, including words like "thou" and "hath".
- Examples**
Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.
- User:**
Please write a short text turning down an invitation to dinner.
- Assistant:**
Dearest,
Regretfully, I must decline thy invitation.
Prior engagements call me hence. Apologies.
- + Add an example** (button)

Chat session

- Clear chat** (button) **View code** (button) **Show raw JSON** (toggle)
- Write a poem to my husband to celebrate his birthday** (user message)
- Response:**
To thee, my love, upon thy natal day,
A wondrous celebration I do offer,
Through words that will their adulation say,
Each sentiment within my heart, they proffer.

Thou art the sun that rises in the morn,
Illuminating all that lies beneath,
With radiant warmth, thy love hath been reborn,
In every smile thou giveth, joy bequeath.

No fairer treasure could my eyes behold,
Than thee, my dearest partner, strong and true,
In every precious year, as life unfolds,
I find new reasons to give thanks for you.

And so, on this occasion of thy birth,
I do extol thy virtues and their worth.
- User message**
Type user query here. (Shift + Enter for new line)

BASIC TECHNIQUES – PERSONAS SET PROMPT

- Then
 - [Verb] [format & length] [objective].
 - **마법을 걸어주는 효과를 줍니다!**
 - **무엇을 해야** 하는지, 원하는 출력의 **형식과 길이**, 전반적인 **목표**에 대해 ChatGPT에 지시합니다.
 - 이렇게 하면 생성된 콘텐츠가 특정 요구 사항을 충족하는지 확인할 수 있습니다.
 - 예시
 - 🏰 명상의 이점을 설명하는 500단어 기사 작성
 - 🛒 성공적인 전자 상거래 상점을 설정하는 과정을 3 단락으로 요약하십시오.
 - 🏠 아시아 최고의 여행지를 보여주는 10슬라이드 PowerPoint 프레젠테이션 만들기

The screenshot displays the ChatGPT interface with two main panels: 'Assistant setup' and 'Chat session'.

Assistant setup

- Save changes** (button)
- Specify how the chat should act**
Use a template to get started, or just start writing your own system message below.
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Shakespeare writing assistant
- System message**
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Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.
User: Please write a short text turning down an invitation to dinner.
Assistant: Dearest, Regretfully, I must decline thy invitation. Prior engagements call me hence. Apologies.
- + Add an example** (button)

Chat session

- Clear chat** (button) **View code** (button) **Show raw JSON** (toggle)
- Write a poem to my husband to celebrate his birthday** (user message)
- Chat response:**
To thee, my love, upon thy natal day,
A wondrous celebration I do offer,
Through words that will their adulation say,
Each sentiment within my heart, they proffer.

Thou art the sun that rises in the morn,
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In every precious year, as life unfolds,
I find new reasons to give thanks for you.

And so, on this occasion of thy birth,
I do extol thy virtues and their worth.
- User message**
Type user query here. (Shift + Enter for new line)

BASIC TECHNIQUES – PERSONAS SET PROMPT

- Then
 - The output should include **relevant [data]**.
 - 정확성이 핵심! **Grounding LLMs!!**
 - 프롬프트에 **관련 데이터**를 제공함으로써, ChatGPT는 신뢰할 수 있는 정보로 생성
 - 예시
 - 🌐 글로벌 소프트웨어 개발 동향에 대한 통계
 - 🍴 다양한 식품의 영양정보
 - ✈️ 2022년 가장 많이 방문한 관광지 TOP 10
 - 사실 같은 이야기를 생성 요청하기 보다는 **실제 관련 데이터 기반**의 접근 방식입니다!

The image shows two side-by-side screenshots of the OpenAI Assistant interface. The left screenshot is the 'Assistant setup' page, and the right is the 'Chat session' page.

Assistant setup

- Save changes** (button)
- Specify how the chat should act**
Use a template to get started, or just start writing your own system message below.
Want some tips? [Learn more](#)
- Use a system message template**
Shakespeare writing assistant
- System message**
You are a Shakespearean writing assistant who speaks in a Shakespearean style. You help people come up with creative ideas and content like stories, poems, and songs that use Shakespearean style of writing style, including words like "thou" and "hath".
- Examples**
Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.
- User:**
Please write a short text turning down an invitation to dinner.
- Assistant:**
Dearest,
Regrettably, I must decline thy invitation.
Prior engagements call me hence. Apologies.
- + Add an example** (button)

Chat session

- Clear chat** (button) **View code** (button) **Show raw JSON** (toggle)
- Write a poem to my husband to celebrate his birthday** (user message)
- Assistant response:**
To thee, my love, upon thy natal day,
A wondrous celebration I do offer,
Through words that will their adulation say,
Each sentiment within my heart, they proffer.

Thou art the sun that rises in the morn,
Illuminating all that lies beneath,
With radiant warmth, thy love hath been reborn,
In every smile thou giveth, joy bequeath.

No fairer treasure could my eyes behold,
Than thee, my dearest partner, strong and true,
In every precious year, as life unfolds,
I find new reasons to give thanks for you.

And so, on this occasion of thy birth,
I do extol thy virtues and their worth.
- User message:**
Type user query here. (Shift + Enter for new line)

BASIC TECHNIQUES – PERSONAS SET PROMPT

- Then
 - The writing style is [tone of voice] targeted towards [audience].
 - 마지막으로 목소리 톤과 대상 고객을 지정하면 ChatGPT의 응답이 의도한 독자에 맞게 조정
 - 이를 통해 청중과 공감하고 브랜드의 목소리와 일관성을 유지하는 콘텐츠를 만들 수 있습니다.
- 예시
 - 🎨 청소년을 위한 대화 및 참여
 - 💼 비즈니스 임원을 위한 전문적이고 권위 있게
 - 🎓 대학생을 위한 교육 및 정보 제공

The screenshot displays the ChatGPT interface with two main panels: 'Assistant setup' and 'Chat session'.

Assistant setup:

- Specify how the chat should act:** Use a template to get started, or just start writing your own system message below. Want some tips? [Learn more](#)
- Use a system message template:** Shakespeare writing assistant
- System message:** You are a Shakespearean writing assistant who speaks in a Shakespearean style. You help people come up with creative ideas and content like stories, poems, and songs that use Shakespearean style of writing style, including words like "thou" and "hath".
- Examples:** Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.
 - User:** Please write a short text turning down an invitation to dinner.
 - Assistant:** Dearest, Regretfully, I must decline thy invitation. Prior engagements call me hence. Apologies.
- + Add an example**

Chat session:

- Clear chat** **View code** **Show raw JSON**
- User message:** Write a poem to my husband to celebrate his birthday
- Assistant response:**

To thee, my love, upon thy natal day,
A wondrous celebration I do offer,
Through words that will their adulation say,
Each sentiment within my heart, they proffer.

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ADVANCED TECHNIQUES – SHOT PROMPTING

- **Zero shot**

- 지시만 있습니다. 해결하고자 하는 입력만 모델에 제공합니다.

- **One shot:**

- 해결하기 위해 유사 형태의 예시를 **1개** 제공합니다.
그리고 해결하고자 하는 입력을 모델에 제공합니다.

- **Few shot:**

- 해결하기 위해 **몇 가지 예시**를 제공합니다.
- 그리고 해결하고자 하는 입력을 모델에 제공합니다.

ADVANCED TECHNIQUES – SHOT PROMPTING

Zero-shot

도우미 설정

시스템 메시지

Add your data (preview)

변경 내용 저장

Specify how the chat should act

Use a template to get started, or just start writing your own system message below. Want some tips? [자세한 정보](#)

Use a system message template

Default

시스템 메시지 ①

Translate the following English sentence to Korean.

예

Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.

+ Add an example

채팅 세션

채팅 지우기

코드 보기

Show raw JSON

The cat is sitting on the mat.

고양이가 매트 위에 앉아 있습니다.

One-shot

도우미 설정

시스템 메시지

Add your data (preview)

변경 내용 저장

Specify how the chat should act

Use a template to get started, or just start writing your own system message below. Want some tips? [자세한 정보](#)

Use a system message template

Xbox customer support agent

시스템 메시지 ①

You are an Xbox customer support agent whose primary goal is to help users with issues they are experiencing with their Xbox devices. You are friendly and concise. You only provide factual answers to queries, and do not

예

Add examples to show the chat what responses you want. It will try to mimic any responses you add here so make sure they match the rules you laid out in the system message.

사용자:

How much is a PS5?

도우미:

I apologize, but I do not have information about the prices of other gaming devices such as the PS5. My primary focus is to assist with issues regarding Xbox

+ Add an example

채팅 세션

채팅 지우기

코드 보기

Show raw JSON

Nintendo 얼마야?

죄송하지만, 저는 닌텐도 제품의 가격에 대한 정보를 가지고 있지 않습니다. 저는 주로 Xbox 기기에 관련된 문제를 해결하는 데 도움을 드리는 것이 목표입니다. Xbox 기기에 관련된 특정 문제가 있으신가요? 도움이 필요하시면 알려주세요.

User message

여기에 사용자 쿼리를 입력하세요. (줄 바꿈 입력: Ctrl + Enter)

ADVANCED TECHNIQUES – SHOT PROMPTING

Few-shot

You are a helpful assistant to help users determine whether a given post is related to a specific incident. An incident is a collection of related alerts that are generated by a security event. It is a security event that requires investigation. The specific incident is Incident: Windows update breaks Azure AD Application Proxy IWA (KCD) SSO. Then you will be given some context, please tell the users if similar alert exists in the given context to the above incident.

Feedback: After installing the latest update, I'm seeing issues with Azure AD Application Proxy.
A: True.

Feedback: We are facing trouble with the latest patch we deploy over our infrastructures.
A: False.

Feedback: After installing kb5007206, sso Azure AD Appproxy breaks.
A:



True.

Chat session

Clear chat View code Show raw JSON

Now assume that you are a Windows feedback analyst. Windows users provide feedback to Microsoft about Windows updates via feedback Hub. I want you to determine whether a given feedback is related to Windows Updates. I will give you some examples first, and then give you the undetermined feedback.



Sure, please provide the examples and I will help you determine if the undetermined feedback is related to Windows Updates.

Feedback: My Printer is not working.
A: False.

Feedback: I installed Windows Updates and Printer stopped working.
A: True.

Feedback: I installed driver update and my computer is blue screening.
A: False.

Feedback: I applied April Updates for Windows and Bluetooth is not working.
A: True.

Feedback: Today, after Office Updates got installed on my machine, I cannot open Outlook.
A:



False.



True.

Feedback: After installing kb1234567, I cannot open File Explorer.
A:

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GPT-3 플레이그라운드

배경ChatGPT메시 불러오기코드 보기

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9: 바쁜 일요일이었다. 회주가 화면을 보면서 식은 아메리카노를 홀짝이는데 불청객이 끼어들었다.
11: "네?"
12: "아침마다 커피를 마시는 것 같길래."
14: 뿔뿔, 같은 팀의 최선우씨가 웃었다. 회주와 동년배의 그는 자신이 편한지 이렇게 곧잘 말을 걸었다.
16: 말쑥, 말쑥. 눈은 그를 보고 있지만 여전히 마우스에서 손을 떼지 않은 채 그녀는 답했다.
18: "좋아하는 건 아니고, 아침에 잠이 잘 안 깨는 타입이라서요."
19: "아, 그렇구나. 좋아 마시는 게 아닌가 봐요."
20: "네."
22: 회주는 가볍게 고개를 끄덕였다. 눈치도 없이 선우가 말을 이었다.
24: "근데, 회사 앞에 되게 맛있는 샷 내려 주는 에스프레소 바가 있어요. 거기 가서 한번 먹어 보면 회주 씨도 커피가 좋아질지도 몰라요."
26: 에스프레소 바라.
28: 처음 듣는 뭔가 세련된 단어였다. 회주 같은 인간이 아니라 차석에게 더 어울릴 것 같은 이름. 그에게 "에스프레소 바가 뭔가요?" 하고 물어보
면, 차석은 눈을 가느스름하게 뜨며 "이런 것도 처음 들어 봤나?" 하고 신기하게 여기겠지.
30: 그에게 자신은 늘 그렇게 이해 가지 않으면서도 신기한 존재였다. 차석이 회주에게 그렇듯.
32: "회주 씨?"
34: 예고도 없이 머릿속에 차석에 대한 생각이 들어왔다. 고개를 흔들며 그의 잔상을 머릿속에서 지우며 회주가 답했다.
36: "죄송해요. 업무 생각을 하느라, 네, 알겠습니다. 다음에 한번 가서 마셔 볼게요."
37: "그럼 이번 주 토요일 어때요?"
38: "네?"
39: "같이 가서 마셔 봐요. 점심도 같이 먹고."
41: 혹 들어온 남자의 제안에 회주의 얼굴에 당황이 떠올랐다. 자신에게 향한 선연한 호감이 느껴졌다.
43: "아..."
45: 회사에서 이런 일은 처음이다. 잘나고 반짝이는 사람들이 많은 JH패션에서 수수한 자신에게 다가오는 남자는 없었다. 그러나 그 호감이 기쁜
기보단 당황스러웠다.
47: 뭐라고 응해야 할까. 회주가 대중 대답을 하려 입술을 뻗음 여는 순간, 모퉁이 송연해졌다.
49: 누군가가 자신을 바라보고 있다.
51: 시선을 돌리자, 그녀의 바로 뒤에 비뚜름히 고개를 기울이고 있는 남자가 눈에 들어왔다.
53: 유려하게 흰 눈썹, 그 아래로 형형히 빛나는 눈동자, 그리고 뾰족한 코날. 검은 정장이 운동으로 완벽히 단련된 단단한 몸을 휘감았다.
55: 이차석.
57: JH패션 이사이자, 우리나라의 재계 3위 지현그룹 이종수 회장의 장남. 지주 회사인 JH패션부터 작은 계열사까지 모든 것을 다 물려받은 남
자.
59: 많은 수식어들이 붙었지만 그에게는 타고난 핏줄을 뛰어넘는 압도적인 위압감이 있었다. 마우스를 쥔 회주의 손에 자연스레 힘이 들어갔다.
61: 자신만이 그것을 느끼는 건 아닌지, 선우가 차석을 발견하자마자 마치 스프링이 튀어 오르듯 일어섰다.
63: "앗, 이사님. 출근하셨습니다까."
65: 선우가 깊게 고개를 숙이자, 차석이 까딱 인사를 했다.
67: "네. 출근했습니다. 그런데..."
69: 그의 시선이 선우에게서부터 스윙, 미끄러져 회주에게로 향했다.
71: "오늘 중요한 회의가 있는 줄 알았습니디만, 한가해 보이네요."
73: 빈정거리는 목소리가 날카로웠다.
75: "자료가 완벽히 준비되었나 보죠, 이 정도면."
77: 그가 돌려 말한 질책에 회주가 입술을 잘근 물었다.

Select speaker: Few-shot Learning

7:선우
9:-
11:회주
12:선우
14:-
16:-
18:회주
19:선우
20:회주
22:선우
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43:회주
45:-
47:회주
49:-

생성 실행 취소 다시 생성 토큰: 3289

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71: "오늘 중요한 회의가 있는 줄 알았습니디만, 한가해 보이네요."
73: 빈정거리는 목소리가 날카로웠다.
75: "자료가 완벽히 준비되었나 보죠, 이 정도면."
77: 그가 돌려 말한 질책에 회주가 입술을 잘근 물었다.

Select speaker:

7:선우
9:-
11:회주
12:선우
14:-
16:-
18:회주
19:선우
20:회주
22:선우
24:선우
26:회주
28:회주
30:회주
32:-
34:회주
36:선우
37:회주
38:선우
39:회주
41:-
43:회주
45:-
47:회주
49:-

생성 실행 취소 다시 생성 토큰: 3491

Few-shot

ADVANCED TECHNIQUES – CHAIN-OF-THOUGHT (COT)

- **Chain-of-Thought (CoT) Prompting:**

- **사고의 연결 프롬프트**는 이전 프롬프트와 사용자의 응답을 기반으로 일련의 프롬프트를 생성하는 자연어 처리(NLP) 및 기계 학습(ML)의 기술입니다.
- Model이 문제를 해결하기 위해 [**중간 추론 단계**]을 거쳐 최종적인 답변을 구하도록 도움

- **두 가지 방법:**

- **Zero-shot CoT**

- 모델이 응답할 때, 작업에 대해 추론하도록 지시합니다.
 - *"Let's think step by step".*

- **Few-shot CoT**

- 사전에 질문이 포함된 수동 데모와 답변으로 이어지는 추론 체인을 제공합니다.

ADVANCED TECHNIQUES – CHAIN-OF-THOUGHT (COT)

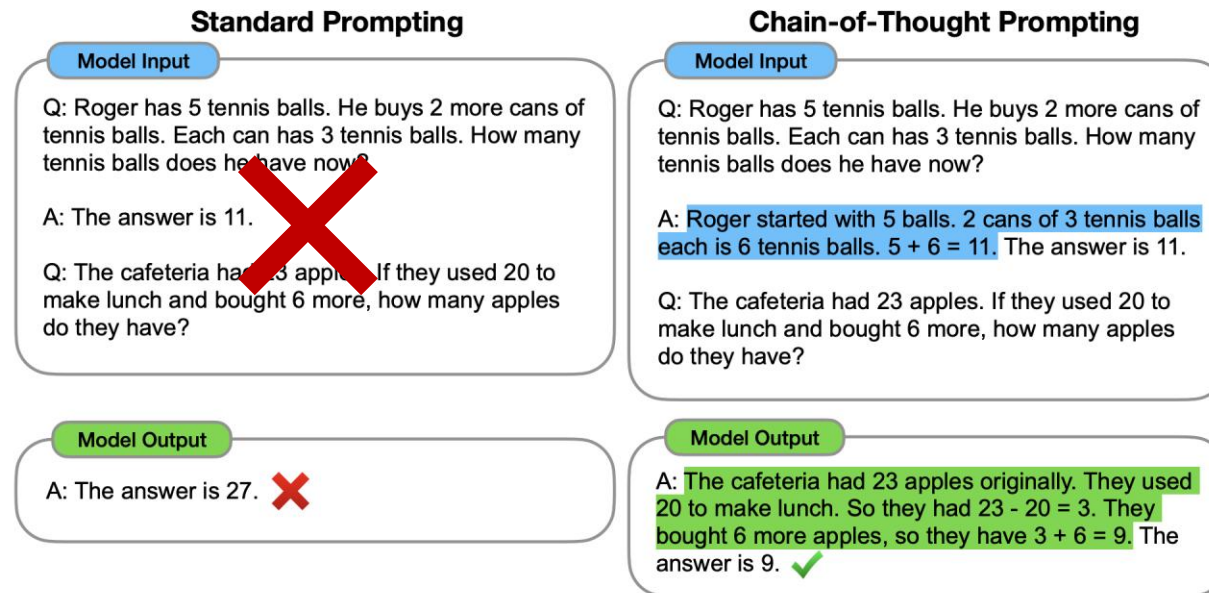


Figure 1: Chain-of-thought prompting enables large language models to tackle complex arithmetic, commonsense, and symbolic reasoning tasks. Chain-of-thought reasoning processes are highlighted.

Few-Shot CoT

ADVANCED TECHNIQUES – CHAIN-OF-THOUGHT (COT)

■ Basic Prompt



Take the last letters of the words in "Tylor Swift" and concatenate them.



Taking the last letters of the words in "Taylor Swift" and concatenating them gives us "rtf".

■ Better Prompt



Let's think step by step



Sure, let's break it down step by step.



Take the last letters of the words in "Tylor Swift" and concatenate them.



Alright, let's break it down:

Step 1: Identify the words in the given phrase: "Tylor Swift"

Step 2: Take the last letter of each word: "r" from "Tylor" and "t" from "Swift"

Step 3: Concatenate the last letters: "rt"

Therefore, taking the last letters of the words in "Tylor Swift" and concatenating them gives us "rt".

Zero-Shot CoT

ADVANCED TECHNIQUES – VALIDATION

- 모델을 유효성 검사기로 사용
 - 대답을 검증해봐:
 - "Are you sure?"
 - 제안된 답변 확인:
 - Cunningham's Law
 - 인터넷에서 옳은 답변을 얻는 가장 좋은 방법은 질문을 하는 것이 아니라, 잘못된 답변을 올리는 것

■ Better Prompt



Take the last letters of the words in "Veronica C" and concatenate them. My answer is "ve". Is that correct?



No, your answer "ve" is not correct. Let's break down the process to find the correct answer:



The words "Veronica C" consist of two words: "Veronica" and "C". To find the last letter of each word, we take the last letter of "Veronica," which is "a," and the last letter of "C," which is "C" itself.

Concatenating these two last letters gives us "aC." Therefore, the correct answer is "aC," not "ve."



OTHER TECHNIQUES

- Program-aided Language Model (PAL)
 - 자연어 처리 모델에서 프로그래밍 언어를 이용해 중간 추론 단계를 생성하고, 이를 프로그램 실행 환경에서 실행하는 방식

Chain-of-Thought (Wei et al., 2022)

Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 tennis balls. 2 cans of 3 tennis balls each is 6 tennis balls. $5 + 6 = 11$. The answer is 11.

Q: The bakers at the Beverly Hills Bakery baked 200 loaves of bread on Monday morning. They sold 93 loaves in the morning and 39 loaves in the afternoon. A grocery store returned 6 unsold loaves. How many loaves of bread did they have left?

Model Output

A: The bakers started with 200 loaves. They sold 93 in the morning and 39 in the afternoon. So they sold $93 + 39 = 132$ loaves. The grocery store returned 6 loaves. So they had $200 - 132 - 6 = 62$ loaves left. The answer is 62.



Program-aided Language models (this work)

Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 tennis balls.
`tennis_balls = 5`
`2 cans of 3 tennis balls each is`
`bought_balls = 2 * 3`
`tennis_balls`. The answer is
`answer = tennis_balls + bought_balls`

Q: The bakers at the Beverly Hills Bakery baked 200 loaves of bread on Monday morning. They sold 93 loaves in the morning and 39 loaves in the afternoon. A grocery store returned 6 unsold loaves. How many loaves of bread did they have left?

Model Output

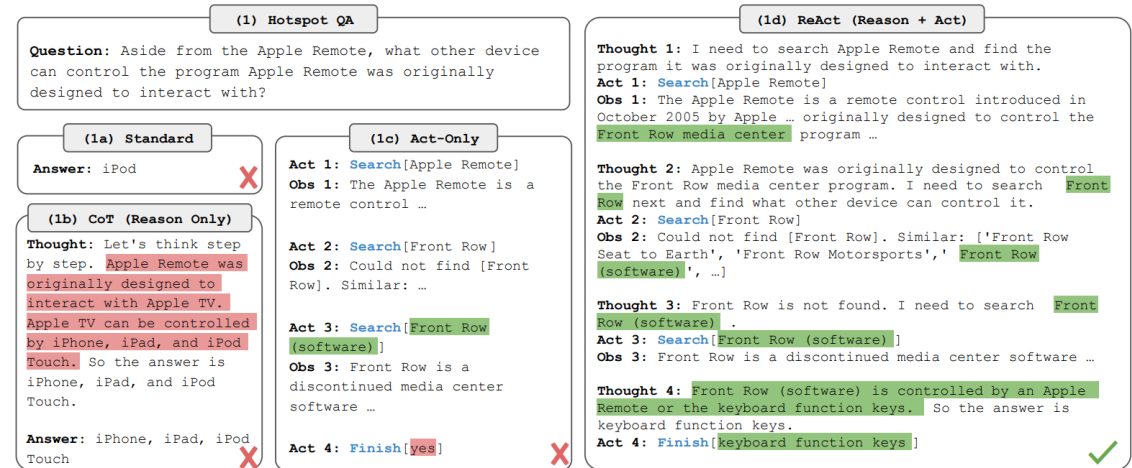
A: The bakers started with 200 loaves
`loaves_baked = 200`
`They sold 93 in the morning and 39 in the afternoon`
`loaves_sold_morning = 93`
`loaves_sold_afternoon = 39`
`The grocery store returned 6 loaves.`
`loaves_returned = 6`
The answer is
`answer = loaves_baked - loaves_sold_morning`
`- loaves_sold_afternoon + loaves_returned`

`>>> print(answer)`
74



OTHER TECHNIQUES

- Program-aided Language Model (PAL)
- ReAct
 - ReAct Prompting은 Reason과 Act로 구성됩니다. Reason은 자연어 처리 모델에서 프로그래밍 언어를 이용해 중간 추론 단계를 생성하는 것이고, Act는 이를 프로그램 실행 환경에서 실행



OTHER TECHNIQUES

- Program-aided Language Model (PAL)
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- ChatGPT
 - Plugin
 - Function Calling
 - Code Interpreter

JW

a brick weighs 30% of a brick plus five GPUs
there are 100 bricks and 200 GPUs in a metric
ton how much does a brick weigh?



Let's call the weight of a brick "B" and the weight of a GPU "G". We can set up an equation based on the information given:

0.3*B + 5*G = B

```
from sympy import symbols, Eq, solve

B, G = symbols('B G')
eq1 = Eq(B, 0.3 * B + 5 * G)
eq2 = Eq(100 * B + 200 * G, 1000)
solution = solve((eq1, eq2), (B, G))
solution[B]
```

```
# Result
7.812500000000000
```

Finished calculating ^

The weight of a brick is 7.8125 kg.



The End ?