Experimenting with Prompts

Estimated time needed: 40 minutes

Experimenting with Prompts

Large language models (LLMs) are pre-trained on vast amounts of data to generate novel content, including text, images, and video. To generate the desired response, you should feed the input to a model as a prompt. It is important to provide a context-based, clear, and precise prompt to guide the model and get the desired output. The process of designing effective prompts to generate better and desired responses is called prompt engineering.

In this lab, you will learn the basics of prompt engineering and experiment with simple prompts to control how a model interprets and generates desired and coherent responses.

Learning Objectives:

1. Design a prompt structure to write concise prompts based on requirements.
2. Write unambiguous and context-based prompts to generate the desired output.
3. Write prompts in different formats, such as questions, statements, and instructions.

Let's get started prompting and experimenting with foundation models.

Before you start prompting

Before beginning the exercise, you must set up the AI classroom and know the generative AI workspace.

Step 1

As a first step, you must set up your AI classroom for better learning experience.

- Name the chat
- Choose the foundation model

Step 2

Know your workspace to prompt the foundation model-based chatbot better.

- Use prompt instructions
- Type your message
- Manage your chat
- Delete the chat from history

Step 3

Identify the task to be accomplished through a prompt

Before you draft a prompt, you should clearly understand the task that a model needs to perform. For example, do you want the model to generate a story or a social post, or do you want the model to summarize text or classify text by identifying sentiments?
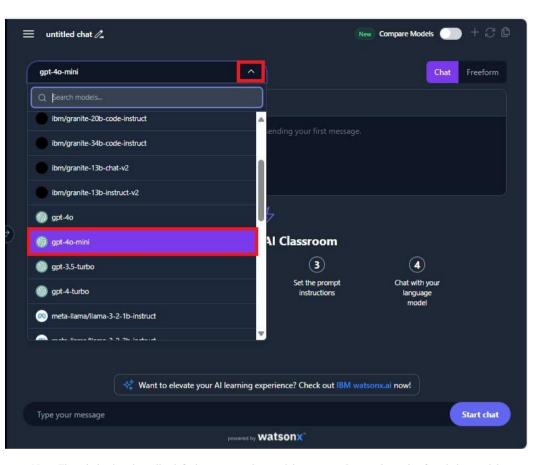
Step 4

Select the model

Before you start designing prompts, it is important to understand the model you will leverage to accomplish the tasks.

In this exercise, you will use the foundation model **gpt-4o-mini** to experiment with the prompts.

OpenAI's gpt-4o-mini is an advanced foundation large language model. As a powerful tool for generating coherent and contextually relevant text, the **gpt-4o-mini** foundation model can be used for various applications, including chatbots, virtual assistants, content generation, and more. It can be applied for translating languages, answering questions in an informative way, and completing tasks such as writing poems, code, scripts, musical pieces, emails, letters, and so on.

Select the **gpt-4.0-mini** model from the dropdown in the upper section of the right pane for this exercise.

Note: Though the dropdown list defaults to some other model, you can select an alternative foundation model.

Exercise 1: Prompt Structure

In this exercise, you will experiment to create a prompt structure for drafting prompts for converting the given text from English to Spanish.

Designing a prompt structure to convert text from English to Spanish

1. Let us propose a prompt structure that will help you write concise text prompts. You can provide this in the **Prompt Instructions** field.

    `[Description of task] [Data on which task needs to operate] [Optional-sample example of response]`

```
1    [Description of task] [Data on which task needs to operate] [Optional-sample example of response]
```

You can copy the above example and paste it into the required field.

2. Let's design a prompt based on the given structure.
   Description of task: Translate English statement into Spanish
   Data on which task needs to operate: Infusing Generative Artificial Intelligence into business-driven operations is need of an hour.
   Example: "My name is Sujan." in Spanish is "Mi nombre es sujan."

3. Write the prompt in the **Type your message** field.

Translate English Statement into Spanish: "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." (For example, "My name is Sujan." in Spanish is "Mi nombre es sujan.")

```
1   Translate English Statement into Spanish: "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." (For example, "My name is Sujan." in Spanish
```

You can copy the above example and paste it in the required field.

Translate English Statement into Spanish: "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." (For example, "My name is Sujan." in Spanish is "Mi nombre es sujan.")

Start chat

4. Click **Start Chat** to get the chatbot response as a result in the middle part of the right pane.

Translate English Statement into Spanish: "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." (For example, "My name is Sujan." in Spanish is "Mi nombre es sujan.")

"Infundir inteligencia artificial generativa en operaciones impulsadas por negocios es una necesidad del momento."

If you need further assistance with translations or have other phrases you'd like to translate, feel free to ask!

Translate English Statement into Spanish: "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." (For example, "My name is Sujan." in Spanish is "Mi nombre es sujan.")

The translation of the statement "Infusing Generative Artificial Intelligence into business-driven operations is need of an hour." into Spanish is: "Incorporar la Inteligencia Artificial Generativa en operaciones impulsadas por negocios es una necesidad urgente."
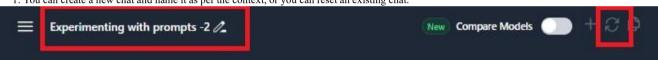
If you need further assistance with translations or have more phrases to translate, feel free to ask!

1.87 seconds

Exercise 2: Unambiguous prompts

Let's learn how adding context-specific input to the prompt influences the output. You need to design a prompt to **get information about the relevance of generative AI applications in the content marketing sector.**

Creating an unambiguous prompt

1. You can create a new chat and name it as per the context, or you can reset an existing chat.

Experimenting with prompts -2   New   Compare Models   + ↻

2. Enter the prompt in the **Type your message** field.

```
Tell me about the relevance of generative AI in the content marketing sector
```

```
1    Tell me about the relevance of generative AI in the content marketing sector
```

3. Click **Start Chat** and observe the generated response, similar to the screenshot below.

Tell me about the relevance of generative AI in the content marketing sector

Generative AI is highly relevant in the content marketing sector for several reasons:

Content Creation: Generative AI can produce high-quality written content, including articles, blog posts, social media updates, and product descriptions, rapidly and at scale. This helps marketers keep up with the demand for fresh content.

Personalization: AI can analyze user data to create personalized content tailored to individual preferences and behaviors. This leads to higher engagement rates and improved customer experiences.

SEO Optimization: AI tools can assist in optimizing content for search engines by suggesting relevant keywords, improving readability, and analyzing competitors. This enhances the visibility of content in search results.

Cost Efficiency: By automating content generation and curation, businesses can reduce labor costs associated with content marketing while maintaining quality and consistency.

A/B Testing and Analytics: Generative AI can help marketers create variations of content for A/B

Generative AI is increasingly relevant in the content marketing sector due to its ability to create high-quality, engaging content at scale. Here are some key points regarding its significance:

1. **Content Creation**: Generative AI can produce various types of content, including blog posts, social media updates, product descriptions, and even video scripts. This helps marketers save time and resources while maintaining a consistent output.

2. **Personalization**: AI can analyze customer data to create personalized content tailored to individual preferences and behaviors. This enhances customer engagement and can lead to higher conversion rates.

▶ Click here for full output of the result we got.The output produced at your end may be different.

4. Let's see how we can make the response more coherent by adding context to the prompt.

Enter the following prompt in the **Type your message** field.

Explain the key applications of generative AI in the content marketing sector

```
1    Explain the key applications of generative AI in the content marketing sector
```

5. Click **Start Chat** and observe the generated response, similar to the screenshot below.

Generative AI has several key applications in the content marketing sector that enhance efficiency, creativity, and effectiveness. Here are some of the primary applications:

1. **Content Generation**: Generative AI can automatically create a wide range of content types, including articles, blog posts, social media content, email newsletters, and product descriptions. This allows marketers to maintain a steady flow of content without the need for extensive manual input.

2. **Personalized Marketing**: By analyzing customer data and behavior, generative AI can produce personalized content that resonates with individual users. This includes tailored recommendations, personalized emails, and customized landing pages, leading to improved customer experiences and higher engagement rates.

▶ Click here for full output of the result we got.The output produced at your end may be different.

Explain the key applications of generative AI in the content marketing sector

Generative AI has several key applications in the content marketing sector that can enhance efficiency, creativity, and personalization. Here are some of the main applications:

Content Creation: Generative AI can produce high-quality written content, such as blog posts, articles, social media posts, and product descriptions. This helps marketers save time and resources while maintaining a consistent flow of content.

Personalization: AI can analyze customer data to create personalized content tailored to individual preferences and behaviors. This can include personalized email campaigns, product recommendations, and targeted advertising, enhancing customer engagement.

Visual Content Generation: Generative AI tools can create images, videos, and graphics. Marketers can use these tools to generate eye-catching visuals for their campaigns, social media, and websites without the need for extensive graphic design skills.

SEO Optimization: AI can assist in generating SEO-friendly content by suggesting keywords, optimizing headlines, and ensuring appropriate keyword density. This helps improve search engine rankings and visibility.

6. Review and compare the difference in the response generated by the **initial prompt** and the **modified prompt** that included **context** and **specific input**.

Tell me about the relevance of generative AI in the content marketing sector

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SEO Optimization: AI tools can assist in optimizing content for search engines by suggesting relevant keywords, improving readability, and analyzing competitors. This enhances the visibility of content in search results.

Cost Efficiency: By automating content generation and curation, businesses can reduce labor costs associated with content marketing while maintaining quality and consistency.

A/B Testing and Analytics: Generative AI can help marketers create variations of content for A/B

Explain the key applications of generative AI in the content marketing sector

Generative AI has several key applications in the content marketing sector that can enhance efficiency, creativity, and personalization. Here are some of the main applications:

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SEO Optimization: AI can assist in generating SEO-friendly content by suggesting keywords, optimizing headlines, and ensuring appropriate keyword density. This helps improve search engine rankings and visibility.

Exercise 3: Prompts in different formats

Prompts can be presented in different formats, such as questions, statements, or instructions. Let's experiment with how prompts in different formats can yield different results.

Experimenting with Prompts in different formats

1. You can create a new chat and name the chat as per the context, or you can reset an existing chat.

2. First, let's write a prompt in question format. Enter the prompt in the **Type your message** field.

What are the benefits of water reservoirs in a detailed paragraph?

```
1    What are the benefits of water reservoirs in a detailed paragraph?
```

    You can copy the above example and paste it into the required field.

3. Click **Start Chat** and observe the generated response, similar to the screenshot below.

Water reservoirs provide numerous benefits that are essential for sustainable water management and community development. They serve as a reliable water supply, storing significant volumes of water to meet the demands of households, agriculture, and industries, particularly during droughts or dry seasons. By capturing excess rainfall and runoff, reservoirs play a critical role in flood control, mitigating the risk of flooding in downstream areas and protecting infrastructure and agricultural land. Additionally, many reservoirs are integrated with hydroelectric power generation facilities, harnessing the energy of flowing water to produce renewable electricity, which reduces reliance on fossil fuels and lowers carbon emissions. Beyond their practical uses, reservoirs also offer recreational opportunities,

▶ Click here for full output of the result we got. The output produced at your end may be different.

> **What are the benefits of water reservoirs in a detailed paragraph?**

Water reservoirs offer numerous benefits that are crucial for various aspects of environmental management, agriculture, and urban development. Primarily, they serve as a reliable source of freshwater, ensuring a steady supply for drinking, irrigation, and industrial use, particularly in regions prone to drought. Reservoirs also play a vital role in flood control by capturing excess rainwater and regulating river flow, which helps protect downstream communities from flooding. Additionally, they support hydroelectric power generation, providing a renewable energy source that contributes to reducing reliance on fossil fuels. Reservoirs create habitats for diverse aquatic and terrestrial wildlife, promoting biodiversity and ecological balance. Furthermore, they can enhance recreational opportunities, such as fishing, boating, and swimming, which can boost local economies through tourism. Overall, the strategic management of water reservoirs is essential for sustainable water resource management, climate resilience, and community well-being.

4. Next, write the prompt in statement format. Enter the prompt in the **Type your message** field.

`Discuss the benefits of utilizing water reservoirs.`

```
1    Discuss the benefits of utilizing water reservoirs.
```

You can copy the above example and paste it into the required field.

5. Click **Start Chat** and observe the generated response, similar to the screenshot below.

> **Discuss the benefits of utilizing water reservoirs.**

Utilizing water reservoirs offers several benefits, including:

Water Supply Management: Reservoirs store water for various uses, including drinking water, irrigation, and industrial processes. This ensures a reliable supply, especially during dry seasons or droughts.

Flood Control: By capturing and storing excess rainwater, reservoirs help mitigate flooding downstream. They can release water gradually, reducing the risk of sudden flooding events.

Hydropower Generation: Many reservoirs are used for hydropower, generating electricity by releasing water through turbines. This renewable energy source contributes to reducing reliance on fossil fuels.

Recreation and Tourism: Reservoirs often become recreational areas for activities such as fishing, boating, and swimming, promoting tourism and local economies.

Ecosystem Support: Well-managed reservoirs can support local ecosystems by providing habitats for various species, including fish and birds, and maintaining water quality.

Utilizing water reservoirs presents a multitude of benefits that are vital for effective water resource management, environmental sustainability, and community welfare.

1. Reliable Water Supply: Water reservoirs are essential for storing large quantities of water, ensuring a steady and reliable supply for various applications, including household use, agricultural irrigation, and industrial processes. This is particularly important during periods of drought or low rainfall, when natural water sources may be insufficient, thereby safeguarding public health and economic stability.

▶ Click here for full output of the result we got..The output produced at your end may be different

6. Further, write the prompt in an instruction format. Enter the prompt in the **Type your message** field.

```
1   List the top five benefits of water reservoirs.
```

You can copy the above example and paste it into the required field.

7. Click **Start Chat** and observe the generated response, similar to the screenshot below.

List the top five benefits of water reservoirs.

The top five benefits of water reservoirs are:

Water Supply Management: Reservoirs store water for various uses, including drinking water, irrigation, and industrial processes. They help ensure a reliable water supply during dry seasons or droughts.

Flood Control: By capturing excess rainwater and runoff, reservoirs can mitigate the risk of flooding downstream. They act as buffers, allowing for controlled release of water during heavy rainfall events.

Hydroelectric Power Generation: Many reservoirs are used to generate hydroelectric power. The stored water can be released to turn turbines, providing a renewable source of energy that can help reduce reliance on fossil fuels.

Recreation and Tourism: Reservoirs often become recreational areas for activities like fishing, boating, swimming, and hiking. This can boost local economies through tourism and provide residents with leisure opportunities.

Ecosystem Support: Reservoirs can create new aquatic habitats, supporting biodiversity. They can also help maintain river flows, which are essential for the health of downstream ecosystems.

Here are the top five benefits of water reservoirs:

1. **Reliable Water Supply**: Reservoirs store large quantities of water, ensuring a consistent and dependable supply for drinking, irrigation, and industrial use, especially during dry seasons or droughts.

2. **Flood Control**: By capturing excess rainfall and runoff, reservoirs help manage flood risks by regulating water flow downstream, protecting communities and infrastructure from potential flooding.

3. **Hydroelectric Power Generation**: Many reservoirs are utilized for hydroelectric power, converting the energy of flowing water into

▶ Click here for full output of the result we got..The output produced at your end may be different

Exercise 4: Limit the output length

For a few text generation tasks, such as generating tweets or text messages for a social media post, there are limitations on the number of words. Let's experiment with a prompt that instructs the model to generate a response with a specific number of words or to generate a specific number of statements.

Generating a response of a specific number of words/statements

1. You can create a new chat and name the chat as per the context, or you can reset an existing chat.

2. Enter the prompt in the **Type your message** field.

```
Create an announcement for starting a new job at ABCTech company as a lead data scientist in a tweet-length message.
```

```
1    Create an announcement for starting a new job at ABCTech company as a lead data scientist in a tweet-length message.
```

You can copy the above example and paste it into the required field.

3. Click **Start Chat** and observe the generated response, similar to the screenshot below.

Create an announcement for starting a new job at ABCTech company as a lead data scientist in a tweet-length message.

🚀 Excited to announce that I'm joining ABCTech as a Lead Data Scientist! Thrilled to work with an innovative team to drive data-driven solutions and make an impact. Here's to new beginnings! #NewJob #DataScience #ABCTech

Create an announcement for starting a new job at ABCTech company as a lead data scientist in a tweet-length message.
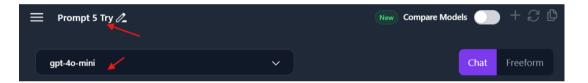
🚀 Excited to announce that I'm joining ABCTech as a Lead Data Scientist! Thrilled to work with an amazing team and tackle innovative challenges in the world of data. Let's make an impact together! #NewBeginnings #DataScience #ABCTech

Try it yourself

You can try experimenting with prompts regarding the following tasks:

1. **An academic researcher uses a text generation model to gather information on the latest AI technologies in education**

```
1    1. An academic researcher uses a text generation model to gather information on the latest AI technologies in education
```


≡ Prompt 5 Try ✎   New Compare Models ⬤ + ↻ ⧉

gpt-4o-mini ↙   ⌄   Chat Freeform

1. An academic researcher uses a text generation model to gather information on the latest AI technologies in education

The latest AI technologies in education include various applications that enhance learning experiences, personalize education, and improve administrative efficiency. Some key trends and technologies include:

Adaptive Learning Systems: These use AI algorithms to tailor educational content to individual student needs, adjusting in real-time based on performance and engagement levels.

Intelligent Tutoring Systems: AI-powered tutors can provide personalized feedback and support, helping students with specific subjects or skills.

Natural Language Processing (NLP): NLP is being utilized in tools for essay grading, language translation, and even in creating conversational agents that can assist students with queries.

Learning Analytics: AI tools analyze data from student interactions to provide insights into learning patterns, helping educators identify at-risk students and improve curriculum design.

Gamification and Virtual Reality: AI is being integrated into gamified learning platforms and VR environments to create immersive educational experiences that enhance engagement and retention.

Automated Administrative Tasks: AI is streamlining administrative processes such as enrollment, grading, and scheduling, allowing educators to focus more on teaching.

```
1    2. A content writer wants to create a captivating post about a new smartphone, with a character limit of 280
```

A content writer wants to create a captivating post about a new smartphone, with a character limit of 280

Unleash the future with the new XYZ Smartphone! 📱✨ Experience lightning-fast performance, stunning visuals, and a camera that captures every moment in breathtaking detail. Ready to elevate your mobile experience? #SmartphoneRevolution #TechTrends

Additional Details:

Highlight unique features: Consider mentioning specific features like battery life, camera specifications, or any innovative technology (e.g., 5G capability, AI integration).

Call to action: Encourage readers to visit the website for more information or to pre-order.

Use visuals: Pair the post with an eye-catching image or video of the smartphone to enhance engagement.

2.60 seconds

```
1    3. Get recommendations on the best places to visit in your city
```

Recommend on the best places to visit in Kansas city

Kansas City is a vibrant city with a rich cultural scene and plenty of attractions to explore. Here are some of the best places to visit:

Nelson-Atkins Museum of Art: This renowned art museum features a diverse collection of artworks from various cultures and periods, along with beautiful outdoor sculptures.

Union Station: A historic train station that has been transformed into a hub for dining, shopping, and entertainment. Don't miss the Science City and the Kansas City Museum located nearby.

Kansas City Zoo: Home to a wide variety of animals and interactive exhibits, the zoo is a great place for families and animal lovers.

Country Club Plaza: Known for its Spanish architecture, this shopping district offers a mix of high-end retailers, restaurants, and beautiful fountains.

Power and Light District: A lively entertainment district with bars, restaurants, and venues for live music and events, perfect for nightlife.

Kauffman Center for the Performing Arts: An architectural marvel, this venue hosts a range of performances, including ballet, opera, and symphony concerts.

National World War I Museum and Memorial: A comprehensive museum dedicated to World War I, offering exhibits, artifacts, and an impressive memorial tower.

Summary

Congratulations! You just completed the hands-on lab about experimenting with prompts.

In this lab, you experimented with designing a prompt structure that helps to write concise prompts. You learned how to write a concise, unambiguous prompt to generate the desired response . You also experimented with different formats of prompts, such as questions, statements, and instructions. You learned to select the specific format based on the requirements and desired response.