

Lab: Effective Text Prompts for Image Generation



Estimated time: 30 minutes

Introduction

Welcome to the hands-on lab - Effective Text Prompts for Image Generation!

Prompts are particularly significant in image generation, as the generative AI model depends on textual cues to generate the preferred image. There are various types of images that can be classified based on attributes such as color, style, and resolution. Therefore, it is critical to specify the image type you require and the details it should encompass when crafting textual prompts for image generation.

Learning objectives

After completing this lab, you will be able to:

1. Leverage the image generation capability of the generative AI platform
2. Apply various image-prompting techniques for effective image generation

Choose the model

Use the drop-down arrow from the top-left corner of the right pane for the text generation exercise and choose **DALL·E 2** model.



Important note

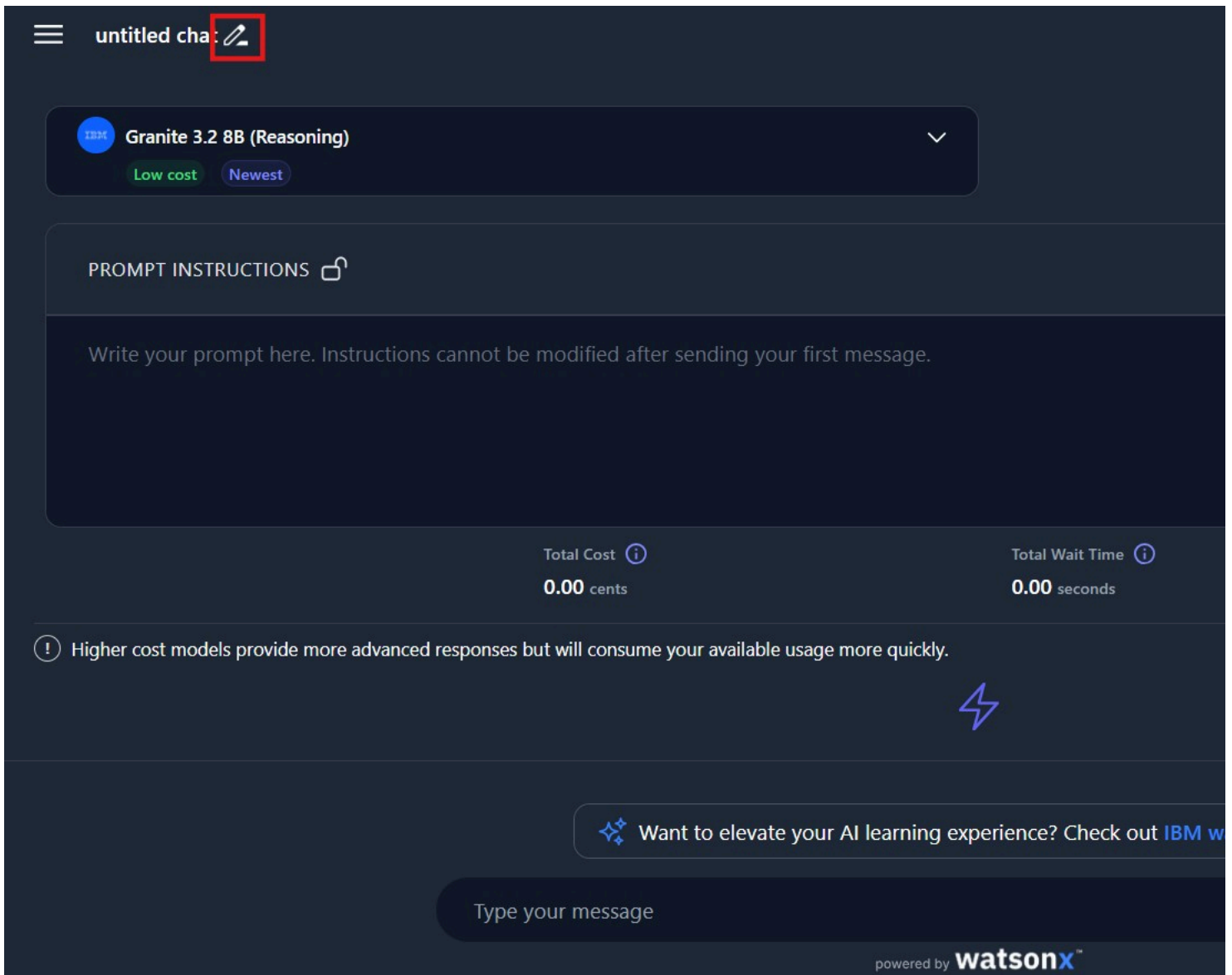
Please note that there is a daily usage limit on the number of image outputs that can be generated in the DALL·E labs. Once this limit is reached, you will have to wait for 24 hours (or for the specified time limit as mentioned in the notification) before generating additional images. To ensure a smooth learning experience, learners are strongly advised to use the platform judiciously.

Step 1: Set up the AI classroom

In this exercise, you will prompt the generative AI classroom chatbot to generate the preferred image and review the generative AI model's image generation capability.

As the first step, you must set up your generative AI classroom for a better learning experience. To do so, you should:

1. **Name the chat.**
Use the pencil icon available on the top-left corner of the right pane to name the chat.



2. Select the model.

Use the drop-down arrow from the list box at the top in the right pane and select **DALL·E 2** from the drop-down list.



Step 2: Generate image from text prompt

1. Provide prompt instructions.

Use the **PROMPT INSTRUCTIONS** field on the upper right pane of the chat system to provide instructions or any specific details about the context of the required output. For example, let's type the following in the **PROMPT INSTRUCTIONS** field.

High-resolution images

Note: These instructions will be locked once you'll start the chat and cannot be modified later.

The screenshot shows the IBM Watson AI Classroom interface. At the top, there's a header with 'Chat 1', a 'New' button, and a 'Compare Models' toggle. Below this, a model selection dropdown shows 'DALL-E 2' with 'Low cost' and '512x512 Parameters'. To the right are 'Chat' and 'Freeform' buttons. The main section is titled 'PROMPT INSTRUCTIONS' and contains a text box with the text 'High-resolution images', which is highlighted with a red rectangular border. Below the text box, there are two status indicators: 'Total Cost 0.00 cents' and 'Total Wait Time 0.00 seconds'. A warning message states: 'Higher cost models provide more advanced responses but will consume your available usage more quickly.' Below this is a section titled 'How to use AI Classroom' with four numbered steps: 1. Name the chat, 2. Choose your model(s), 3. Set the prompt instructions, and 4. Chat with your language model. At the bottom, there's a promotional banner for IBM watsonx.ai and a 'Start chat' button.

2. Type your message.

Think about and specify description for the image you would like to generate. To do so, use the text box available at the bottom of the page to write the prompts and converse with the chat system.

Now, write the preferred prompt in the **Type your message** box. For example, type the words "image of a cat" in the **Type your message** box.

Chat 1

New Compare Models

DALL-E 2

Low cost 512x512 Parameters

Chat Freeform

PROMPT INSTRUCTIONS

High-resolution images

Total Cost 0.00 cents

Total Wait Time 0.00 seconds

Higher cost models provide more advanced responses but will consume your available usage more quickly.

How to use AI Classroom

- 1 Name the chat
- 2 Choose your model(s). You may select multiple models when "Compare Models"
- 3 Set the prompt instructions
- 4 Chat with your language model

Want to elevate your AI learning experience? Check out [IBM watsonx.ai](#) now!

image of a cat

Start chat

powered by **watsonx**

3. Select "Start chat" to generate the image.

Note: The image may take some time to generate.

The screenshot shows the IBM Watson AI Classroom interface. At the top, there's a header with 'Chat 1', a 'New' button, and a 'Compare Models' toggle. Below this, a model selection bar shows 'DALL-E 2' with a 'Low cost' tag and '512x512 Parameters'. To the right are 'Chat' and 'Freeform' buttons. A large text area for 'PROMPT INSTRUCTIONS' contains the text 'High-resolution images'. Below this, a status bar shows 'Total Cost 0.00 cents' and 'Total Wait Time 0.00 seconds'. A warning message states: 'Higher cost models provide more advanced responses but will consume your available usage more quickly.' A lightning bolt icon is above the 'How to use AI Classroom' section, which lists four steps: 1. Name the chat, 2. Choose your model(s), 3. Set the prompt instructions, and 4. Chat with your language model. A promotional banner for IBM watsonx.ai is present. At the bottom, a text input field contains 'image of a cat' and a 'Start chat' button is highlighted with a red box. The footer says 'powered by watsonx'.

Chat 1

New Compare Models

DALL-E 2
Low cost 512x512 Parameters

Chat Freeform

PROMPT INSTRUCTIONS

High-resolution images

Total Cost 0.00 cents
Total Wait Time 0.00 seconds

Higher cost models provide more advanced responses but will consume your available usage more quickly.

How to use AI Classroom

- 1 Name the chat
- 2 Choose your model(s). You may select multiple models when "Compare Models"
- 3 Set the prompt instructions
- 4 Chat with your language model

Want to elevate your AI learning experience? Check out [IBM watsonx.ai](#) now!





image of a cat



Start chat

powered by watsonx



4. An image of a cat will be generated.

Note: The generated images will expire in two hours.

Chat 1  New Compare Models  +  

 **DALL-E 2**  Low cost 512x512 Parameters


Chat Freeform


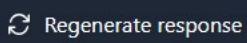
PROMPT INSTRUCTIONS  

Total Cost ⓘ **1.80** cents Total Wait Time ⓘ **10.61** seconds

! Higher cost models provide more advanced responses but will consume your available usage more quickly.

image of a cat



Type your message Send

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5. Select "Regenerate response" to generate a new image.


Chat 1

New Compare Models

+

↺

📄

DALL-E 2

Low cost

512x512 Parameters

🔒

Chat

Freeform

PROMPT INSTRUCTIONS

🔒

⌵

Total Cost ⓘ

1.80 cents


Total Wait Time ⓘ


10.61 seconds

ⓘ

Higher cost models provide more advanced responses but will consume your available usage more quickly.

image of a cat





↺ Regenerate response


Type your message

Send

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6. The image is regenerated.




DALL-E 2

Low cost

512x512 Parameters



PROMPT INSTRUCTIONS






Total Cost


1.80 cents

Total Wait Time

10.89 seconds

 Higher cost models provide more advanced responses but will consume your available usage more quickly.



 Regenerate response

Type your message

Send

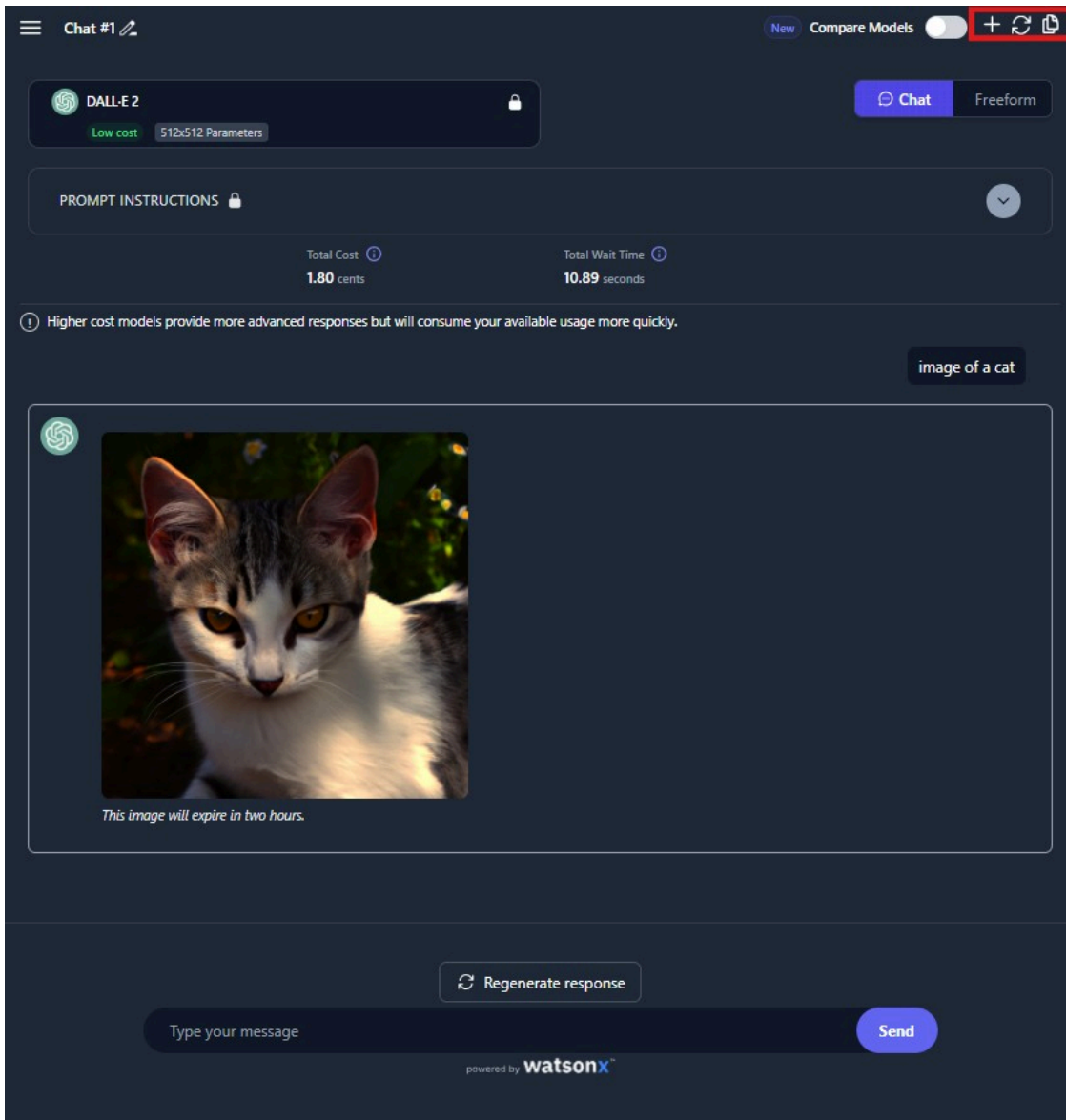
powered by

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Note that the **plus icon** available at top-right of the page helps to add a new chat to generate text or images, and the **refresh icon** refreshes the generative AI page. The **floppy icon** helps in duplicating the chat.

about:blank

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Step 3: Refine prompt using style modifiers

Style modifiers serve as descriptors that influence the artistic style or visual attributes of images produced by generative AI models. These descriptors can help the generative AI model produce graphics with innovative styles while conforming to the structure and content of the text prompt. Some examples of style modifiers include Photographic, Animated, Digital Art, Comic Book, Fantasy Art, Line Art, Analog Film, Neon Punk, Isometric, Origami, and Cinematic Pixel Art.

1. **Refine your prompt using any of the style modifiers and select Send.**

For example, type the prompt "Comic art of a cat" in the **Type your message** box.

Comic art of a cat



This image will expire in two hours.

2. Try refining your prompt with a different style modifier and Select Send.

For example, type the prompt "Image of a cat with neon punk" in the **Type your message** box.

Image of a cat with neon punk



This image will expire in two hours.

Step 4: Refine your prompt using quality boosters to enhance image quality

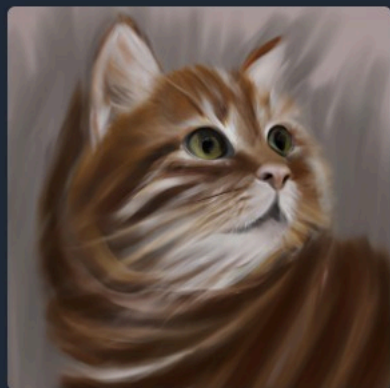
High-quality images are more attractive than low-quality ones. Quality boosters are terms used in an image prompt to enhance the visual appeal and improve the overall quality and sharpness of the output image. Some examples of quality boosters include high-resolution, intricate details, hyper-detailed, sharp focus, and complementary colors. These terms continue to evolve with the image's characteristics.

1. Refine your prompt.

Refine your prompt with a few quality boosters and select **Send**.

For example, type the prompt "Create a highly detailed and realistic painting of a cat" in the **Type your message** box.

Create a highly detailed and realistic painting of a cat



This image will expire in two hours.

2. Enhance your prompt.

Enhance your prompt with another quality booster, focusing on the complementary colors, and select **Send**

For example, type the prompt "A cat having complementary colors and charming body" in the **Type your message** box.

A cat having complementary colors and charming body



This image will expire in two hours.

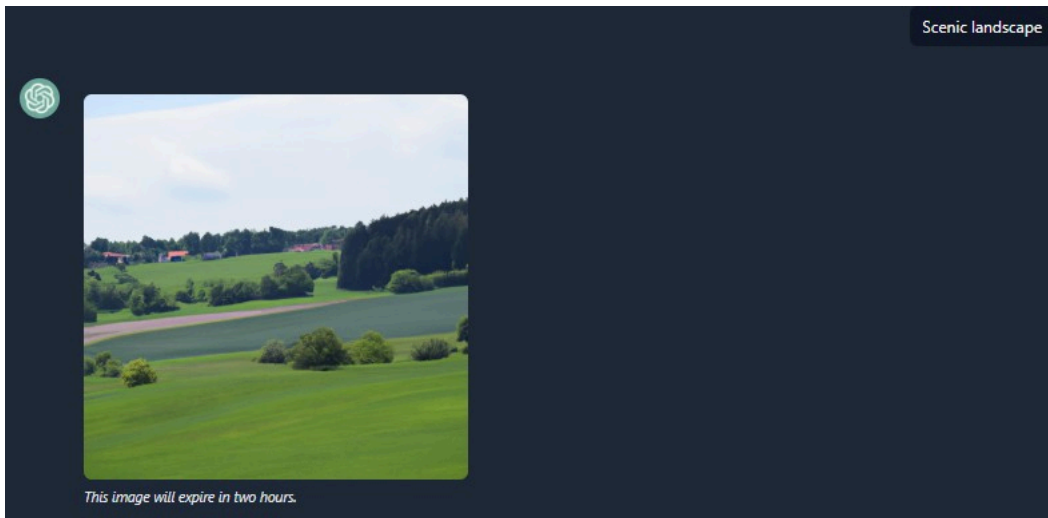
Step 5: Enhance your prompt with weighted terms for emphasis

Weighted terms let you enhance or diminish particular objects or emotions in an image. Generative AI models allow you to give positive or negative weights to such terms to emphasize or de-emphasize a certain object or emotion in the image.

1. Create a prompt.

Create a prompt and select **Send**.

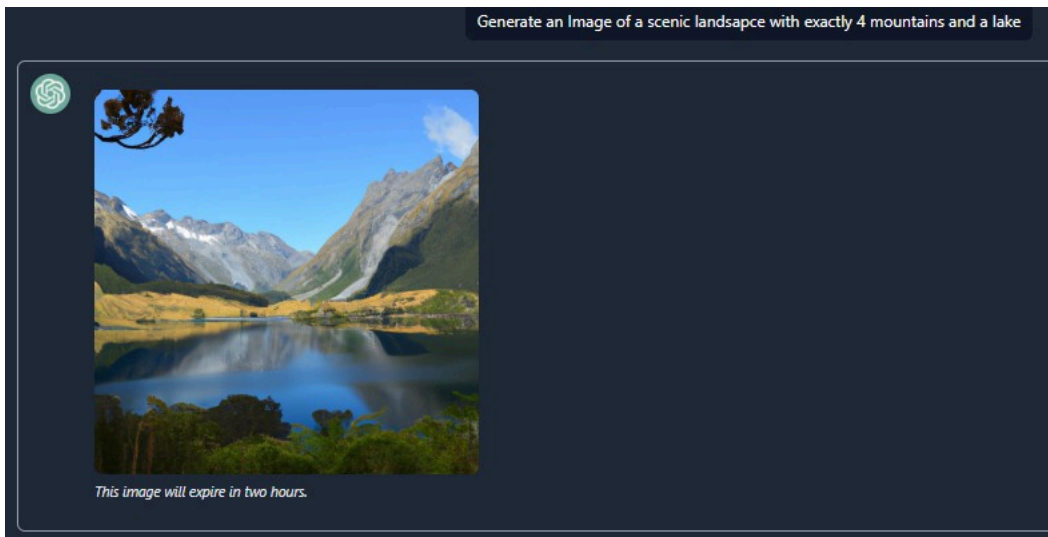
For example, type the prompt **Scenic landscape** in the **Type your message** box.



2. Refine your prompt.

Now, refine your prompt with specific terms and select **Send**.

For example, type the prompt "Generate an Image of a scenic landscape with exactly 4 mountains and a lake" in the **Type your message** box.



Try yourself

1. Try some more style modifiers yourself. You can even explore a combination of one or more style modifiers, separating them with commas.

For example:

- a. An animated, neon punk image of a cat
- b. A lined, digital art image of a cat
- c. A comic book-inspired, fantasy art portrayal of a cat
- d. An origami-inspired, isometric view of a cat

2. Now, try some quality boosters. You can even explore a combination of one or more quality boosters, separating them with commas or "and."

For example:

- a. A lifelike, exquisitely detailed, high-quality image of a cat
- b. An exquisite, handcrafted mahogany dining table
- c. A sensational, multi-layered chocolate cake
- d. A breathtaking, panoramic view of a castle on a hill

3. Further, dabble with some different emotions and specifications and check out the output.

For example:

- a. Tranquil beach with crystal-clear water and sands
- b. Futuristic cityscape with sleek skyscrapers and illuminated streets

Summary

Congratulations on completing the hands-on lab - Effective Text Prompts for Image Generation.

In this lab, you explored the popular, open-source image generation model **DALL·E 2**. You used this generative AI model to create images by providing appropriate text prompts. You also learned to refine your prompts to optimize image quality and ensure that required details are included.

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