

Final Project: Generating Text, Images, and Code



Estimated time needed: 45 minutes

Welcome to Final Project: Generating Text, Images, and Code.

About the final project

In this final project, you'll use the Generative AI Classroom to complete three exercises focusing on different generative AI capabilities, including text generation, image generation, and code generation. Generative AI Classroom is a tool where you can write and compare your prompts to generate desired text with real-time chat responses.

Each exercise in this project provides instructions on using the tool and suggests examples to test it. Ensure you follow the instructions carefully and experiment with different prompts to achieve the desired results. Feel free to ask various questions to refine your prompts and further explore generative AI models' capabilities. Throughout the project, you'll explore the power of generative AI in creating diverse content, including text, images, and code.

Let's get started!

Learning Objectives

In this lab, you will be able to:

- Explore the text generation capability of generative AI for content marketing.
- Apply the image generation capability of generative AI for generating photo-realistic images.
- Implement the code generation capability of generative AI for generating a simple web page.

Exercise 1: Generate social media posts

Writing an effective social media post can be a powerful way to engage your audience and generate interest. Here are some best practices to create compelling posts with the assistance of Generative AI Classroom:

- Consider your audience, message, and platform carefully.
- Provide value to your audience, foster engagement, and build relationships.
- Personalize content using visuals and a call to action (CTA).

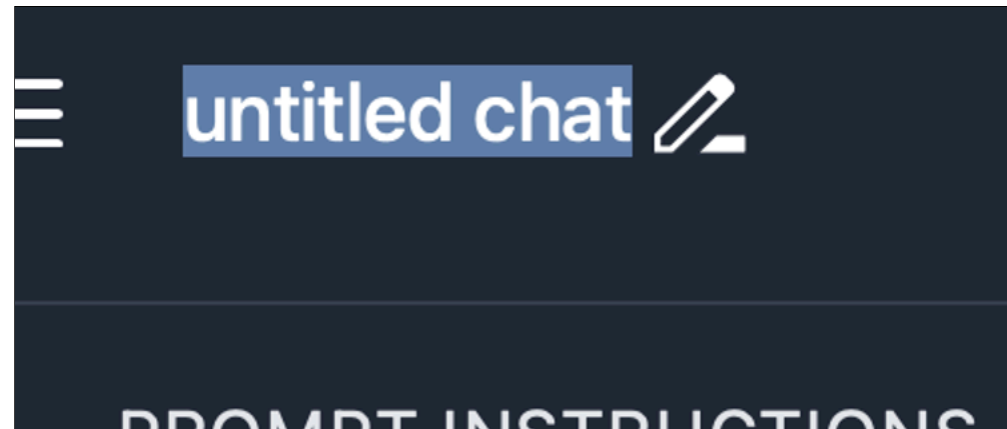
Writing effective social media posts for the desired subject and context requires cognitive attention, as you must consider the affirmative language, response aligned with the subject and product mail, and so on.

In this exercise, you will prompt Generative AI Classroom to generate the desired social media post and examine its text generation capability.

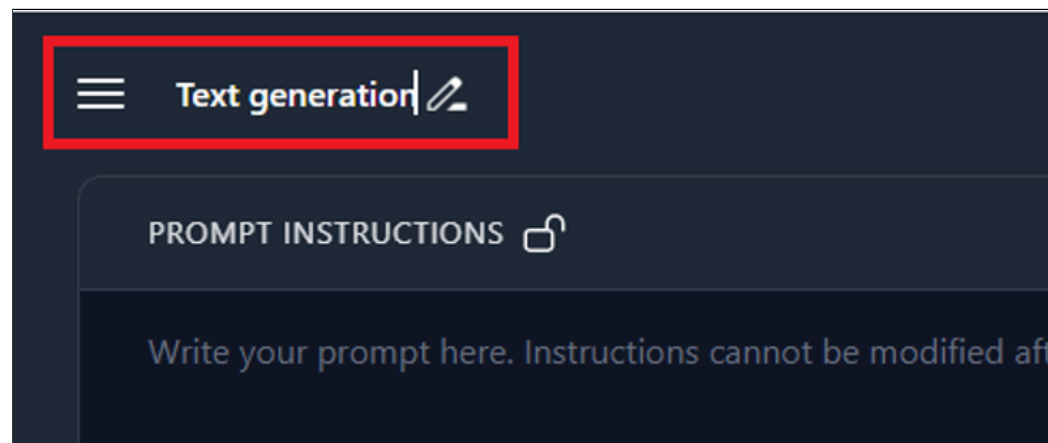
Step 1: Set up the environment

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

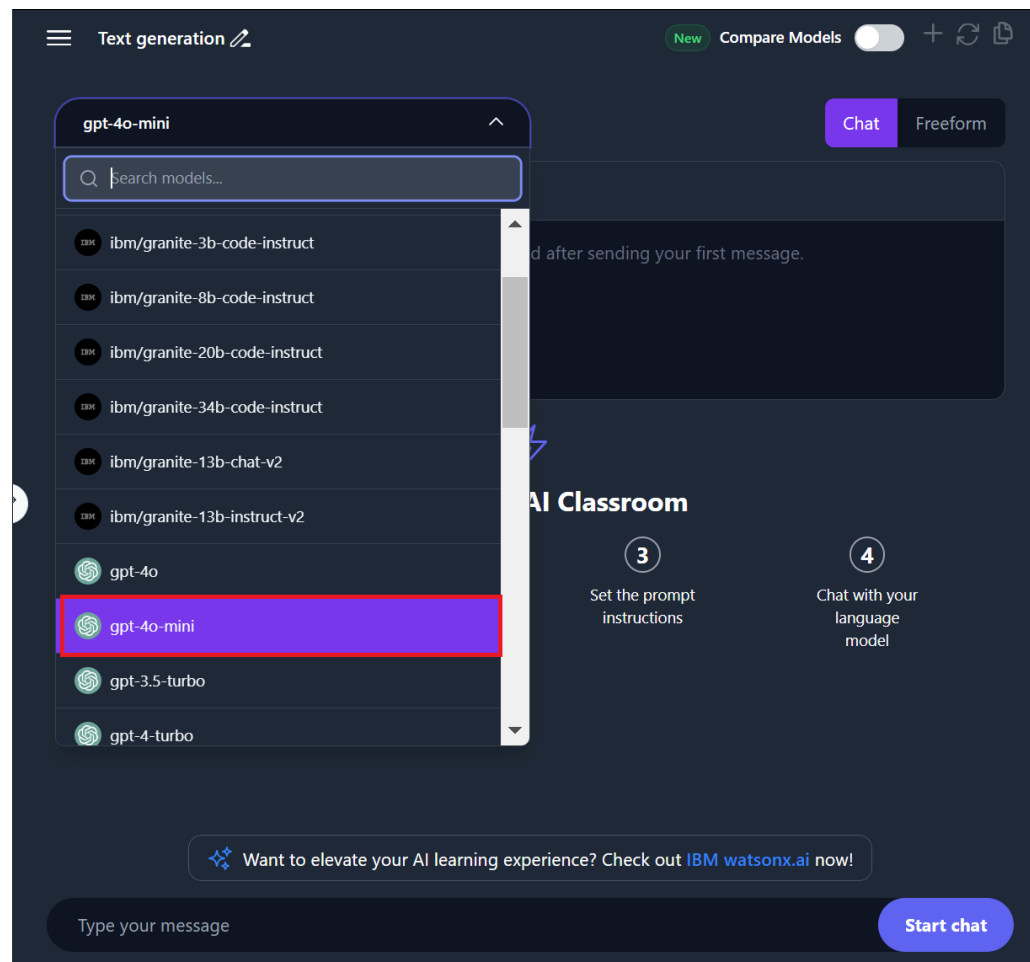
1. Name the chat: Use the pencil icon available on the top-left corner of the right pane to name the chat.



For this exercise, name the chat “Text Generation.”



2. Choose the model: Use the dropdown option from the top-right corner of the right pane for the text generation exercise. Here, you will use "gpt-4o-mini" as your model.



Step 2: Generate the desired text

1. Give 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. These instructions will be locked when you start the chat and cannot be modified later.

For example:

We are about to launch our latest mobile range by the end of this month. We need a tweet to create excitement about our new product launch. It's MobiZ10, and it's going to revolutionize the mobile industry.

The screenshot displays the IBM WatsonX AI Classroom interface. At the top, there's a header with a menu icon, 'Text generation' with an edit icon, a 'New' badge, a 'Compare Models' toggle, and icons for adding, refreshing, and copying. Below the header, a dropdown menu shows 'gpt-4o-mini'. To its right are 'Chat' and 'Freeform' buttons. A 'PROMPT INSTRUCTIONS' section with a copy icon contains a text box with the prompt: 'We are about to launch our latest mobile range by the end of this month. We need a tweet to create excitement about our new product launch. It's MobiZ10, and it's going to revolutionize the mobile industry.' This text box is highlighted with a red border. Below this is a lightning bolt icon and the title 'How to use AI Classroom'. A four-step guide follows: 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. The footer indicates it's powered by watsonx.

Text generation

New Compare Models

+

gpt-4o-mini

Chat Freeform

PROMPT INSTRUCTIONS

We are about to launch our latest mobile range by the end of this month. We need a tweet to create excitement about our new product launch. It's MobiZ10, and it's going to revolutionize the mobile industry.

How to use AI Classroom


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

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

Type your message

powered by **watsonx**

2. You can now use the text box available at the bottom of the page to write the prompts and converse with the chat system.

PROMPT INSTRUCTIONS 

We are about to launch our latest mobile range by the end of this month. We need a tweet to create excitement about our new product launch. It's MobiZ10, and it's going to revolutionize the mobile industry.

How to use AI Classroom

- 1 Name the chat
- 2 Choose your model
- 3 Set the prompt instructions
- 4 Chat with your language model

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

Type your message Start chat

powered by **watsonx**

3. Now that you have provided the context to the model by specifying the details in the prompt section, use the **Type your message** field to generate social media posts.

For example:

What's a catchy way to share this news on Twitter?

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

What's a catchy way to share this news on Twitter? | Start chat

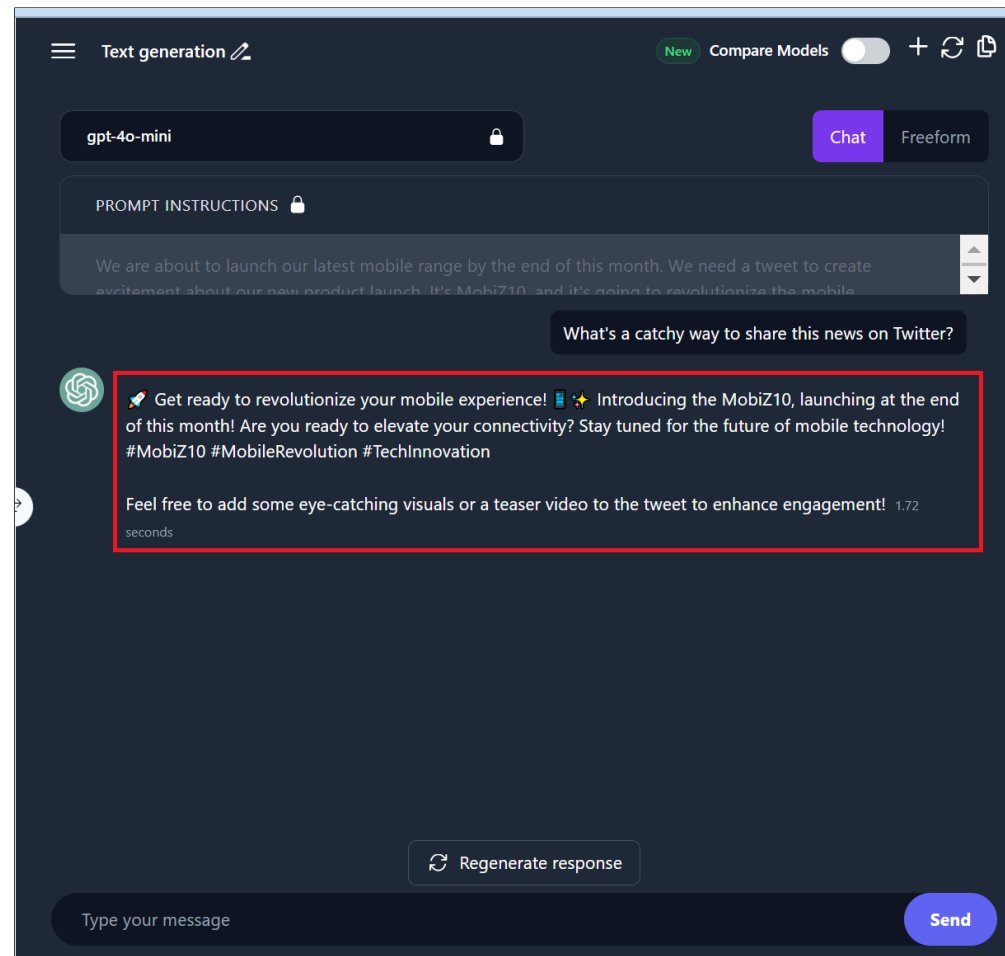
powered by **watsonx**

Note: For better results, include specific details about the subject and context of the required social media post.

4. Click the 'Start chat' option to send the message to the chatbot.



5. You will receive the textual response from Generative AI Classroom for the desired scenario, as shown below.



6. You can validate the generated content per the context, copy the social media post, and update the details as required.

7. If you are unsatisfied with the response, select the **Regenerate response** option, and Generative AI Classroom will generate a revised response for the recent prompt, as shown below.

Text generation

New Compare Models

+

↺

📄

gpt-4o-mini

🔒

Chat


Freeform

PROMPT INSTRUCTIONS

🔒

We are about to launch our latest mobile range by the end of this month. We need a tweet to create excitement about our new product launch. It's MobiZ10, and it's going to revolutionize the mobile

What's a catchy way to share this news on Twitter?



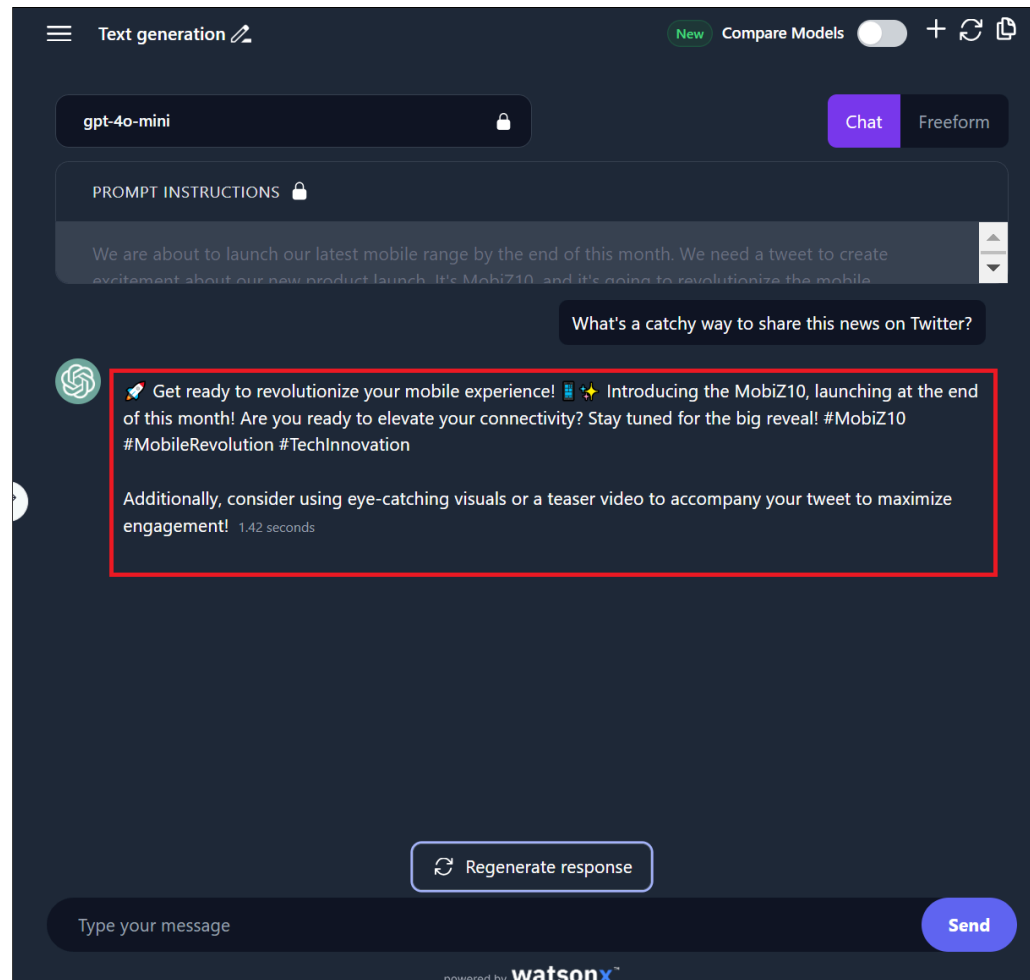
🚀 Get ready to revolutionize your mobile experience! 📱✨ Introducing the MobiZ10, launching at the end of this month! Are you ready to elevate your connectivity? Stay tuned for the future of mobile technology! #MobiZ10 #MobileRevolution #TechInnovation

Feel free to add some eye-catching visuals or a teaser video to the tweet to enhance engagement! 1.72 seconds

↺ Regenerate response

Type your message

Send



Note: You can further refine your prompts and provide specific details about your product to get customized and effective social media post ideas.

8. You can adapt the generated output and tweak it further, as required.

Note: You can continue to interact more to dive deeper and further as long as you like or require.

Step 3: Try yourself!

Now, try generating social media posts for different scenarios using Generative AI Classroom to experience the power of its text generation capabilities.

For example:

1. Instagram post

► [Click here for an example of a prompt](#)

2. Facebook announcement

► Click here for an example of a prompt

Note: Validate the responses generated through AI models for factual accuracy and use the technology ethically and responsibly.

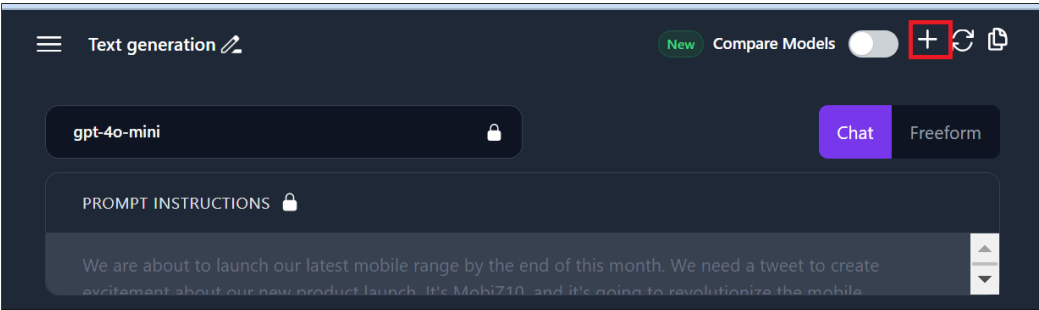
Exercise 2: Generate realistic images

The ability to quickly generate photo-realistic images based on any text input can transform the creative world. With the emergence of generative AI across various domains and industries, professionals can consider experimenting with image-generation models and tools to leverage generative AI in their work.

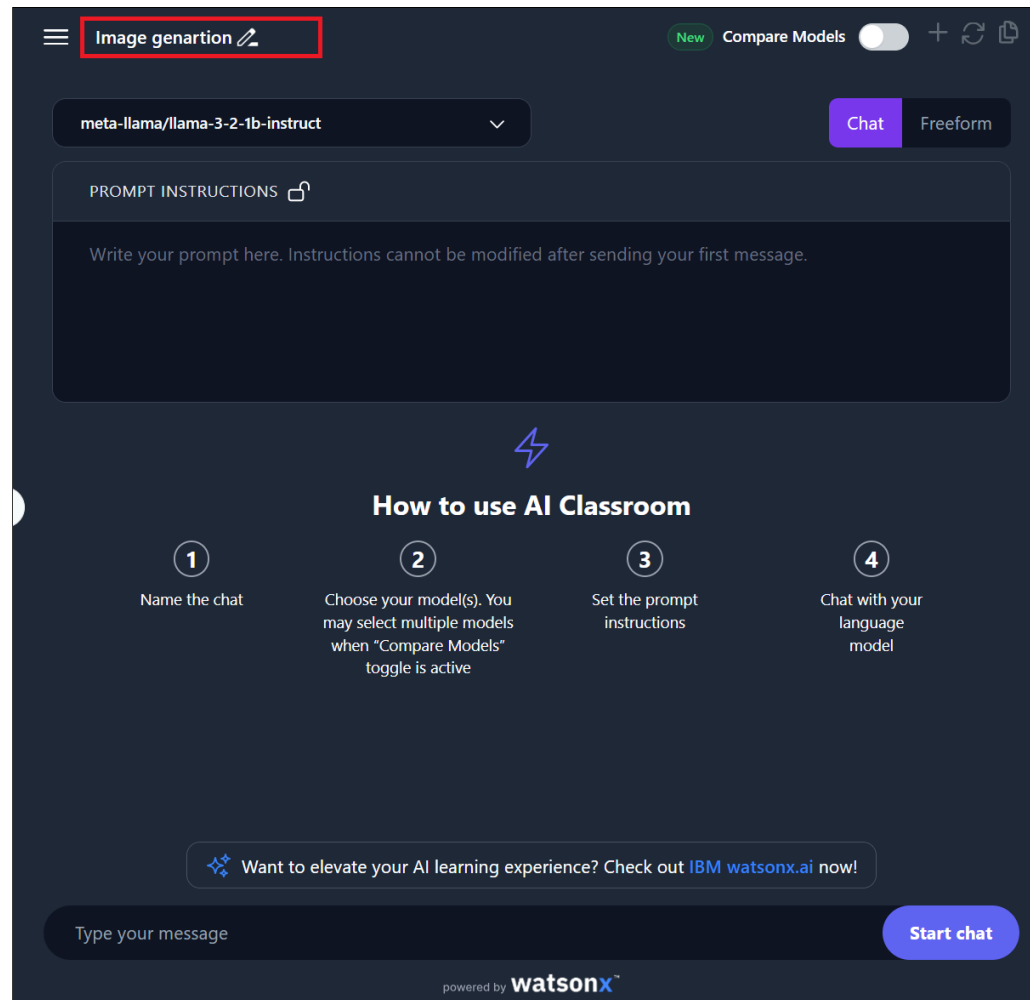
In this exercise, we will consider a scenario of a (fictitious) small-sized organization launching a line of plant-based cleaning products. The marketing and product development team collaborates with experts in graphic design, packaging design, and branding to decide on the design of the bottles for this product.

Step 1: Set up the environment

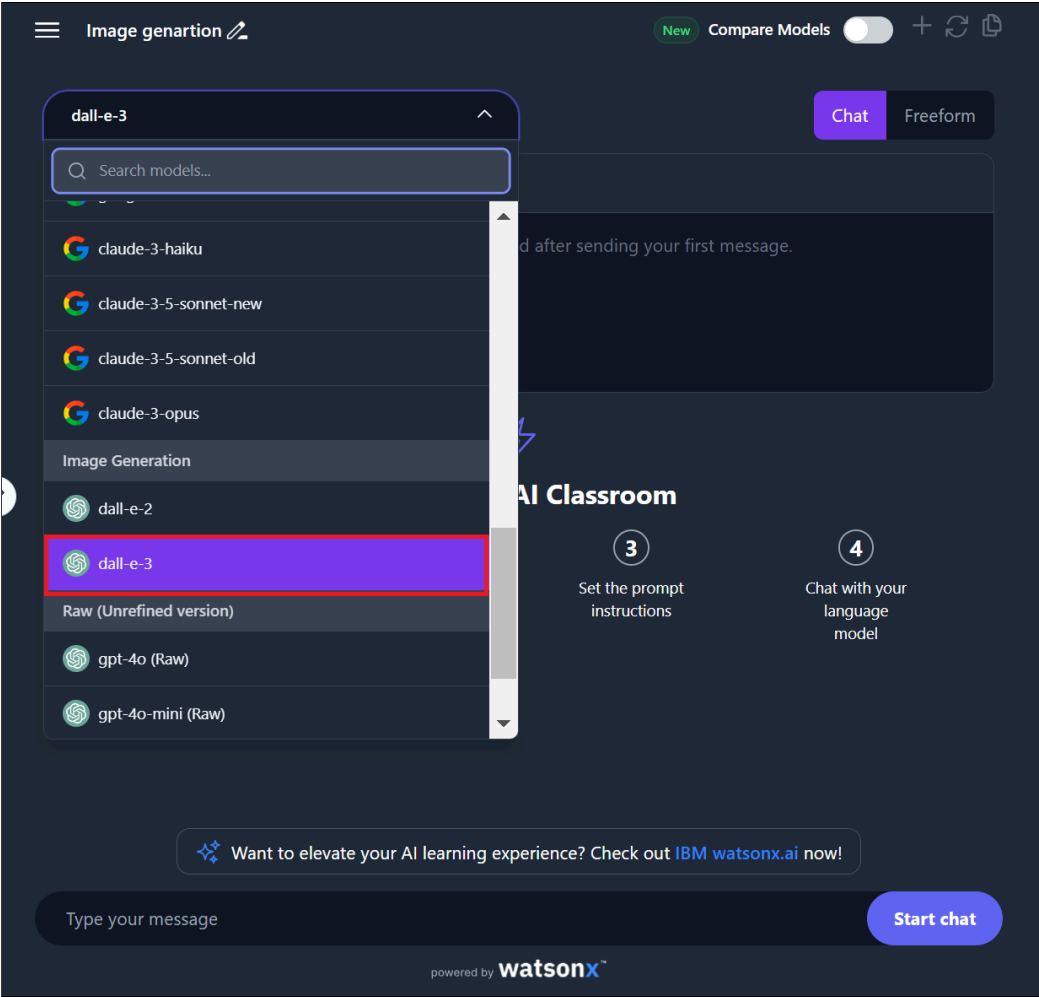
1. **Create a new chat:** Create a new chat by selecting the add "+" sign.



2. **Name the chat:** Once you have been directed to a new chat, now, you need to name the chat. For this exercise, name the chat "Image generation."



3. **Choose the model:** To generate an image, choose the model "dall-e-3." This model helps to generate high-quality images from textual descriptions.

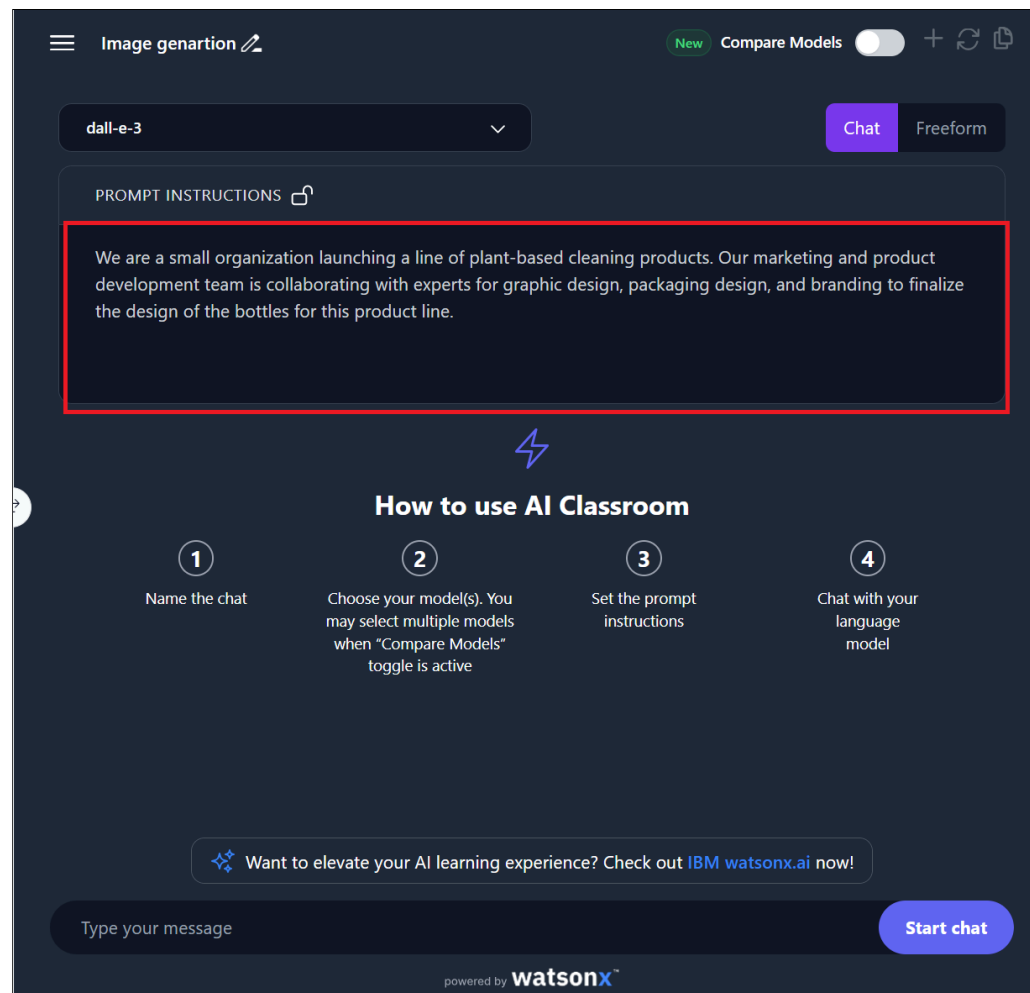


Step 2: Generate the desired image

- 1. **Give prompt instructions:** You can describe the details and the context of the requirements in the 'Prompt Instructions' section.

For example:

We are a small organization launching a line of plant-based cleaning products. Our marketing and product development team is collaborating with experts for graphic design, packaging design, and branding to finaliz

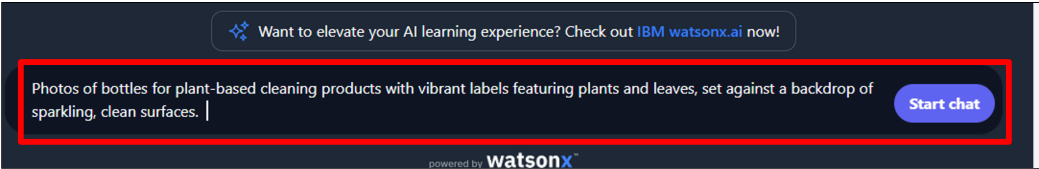


2. **Type your message:** Write your requirements in the 'Type your message' field.

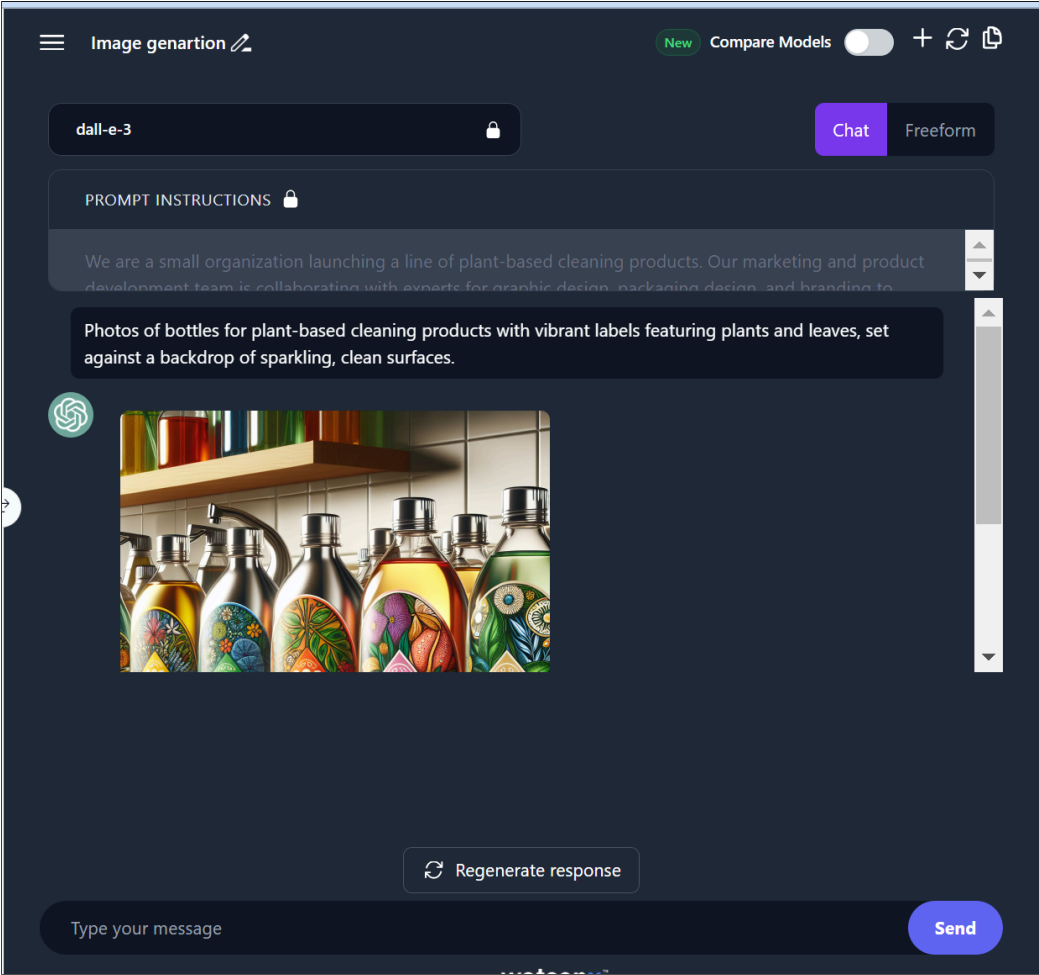
For example:

Photos of bottles for plant-based cleaning products with vibrant labels featuring plants and leaves, set against a backdrop of sparkling, clean surfaces.

Once done, select the 'Start chat' option.

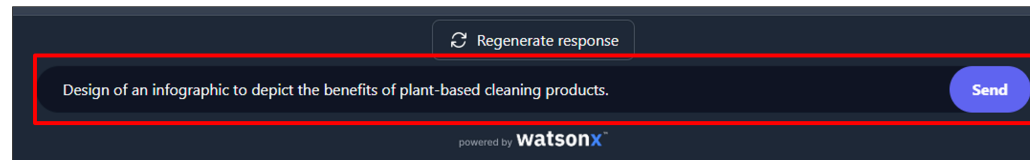


3. **Generate the image:** After a few seconds, the image will be generated. An example of the image generated as the output is displayed here.

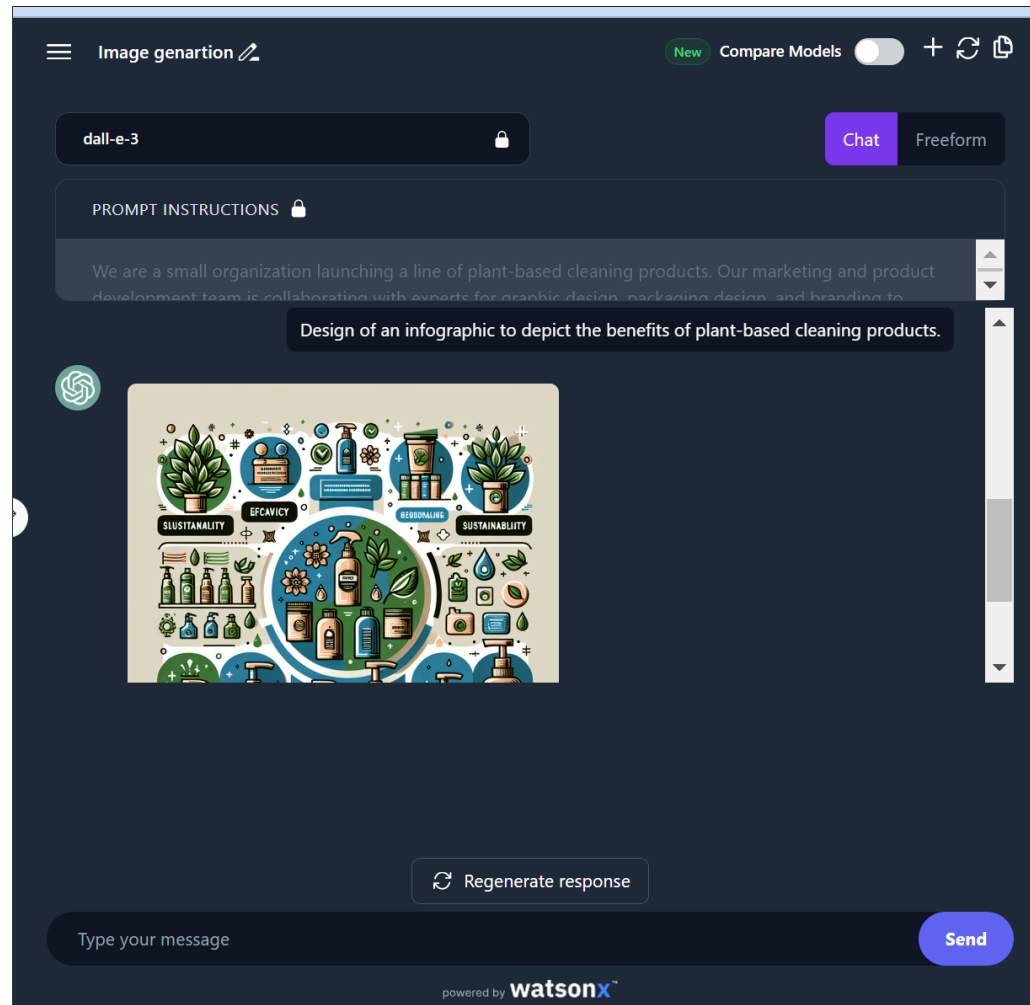


4. Next, the team wants to generate a sample to design an infographic to depict the benefits of their plant-based cleaning products. Enter the following message in the same chat and click **Send** to send the message to the model.

Design of an infographic to depict the benefits of plant-based cleaning products.



5. After a few seconds, the image is generated. An example of the image generated as the output is displayed here.



Step 3: Try yourself!

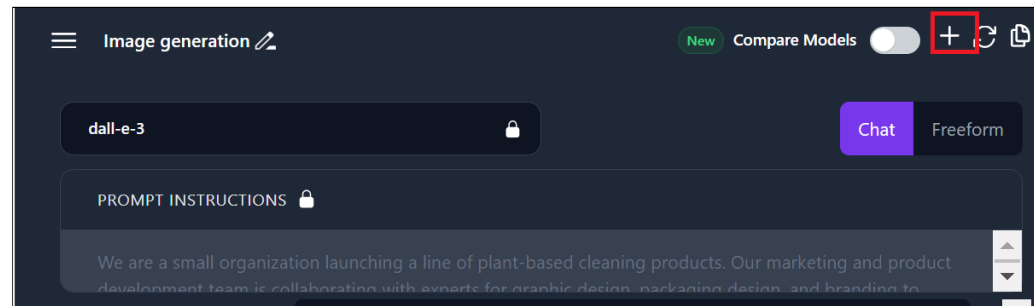
1. User manual
 - ▶ Click here for an example of a prompt
2. Website images
 - ▶ Click here for an example of a prompt

Exercise 3: HTML code generation

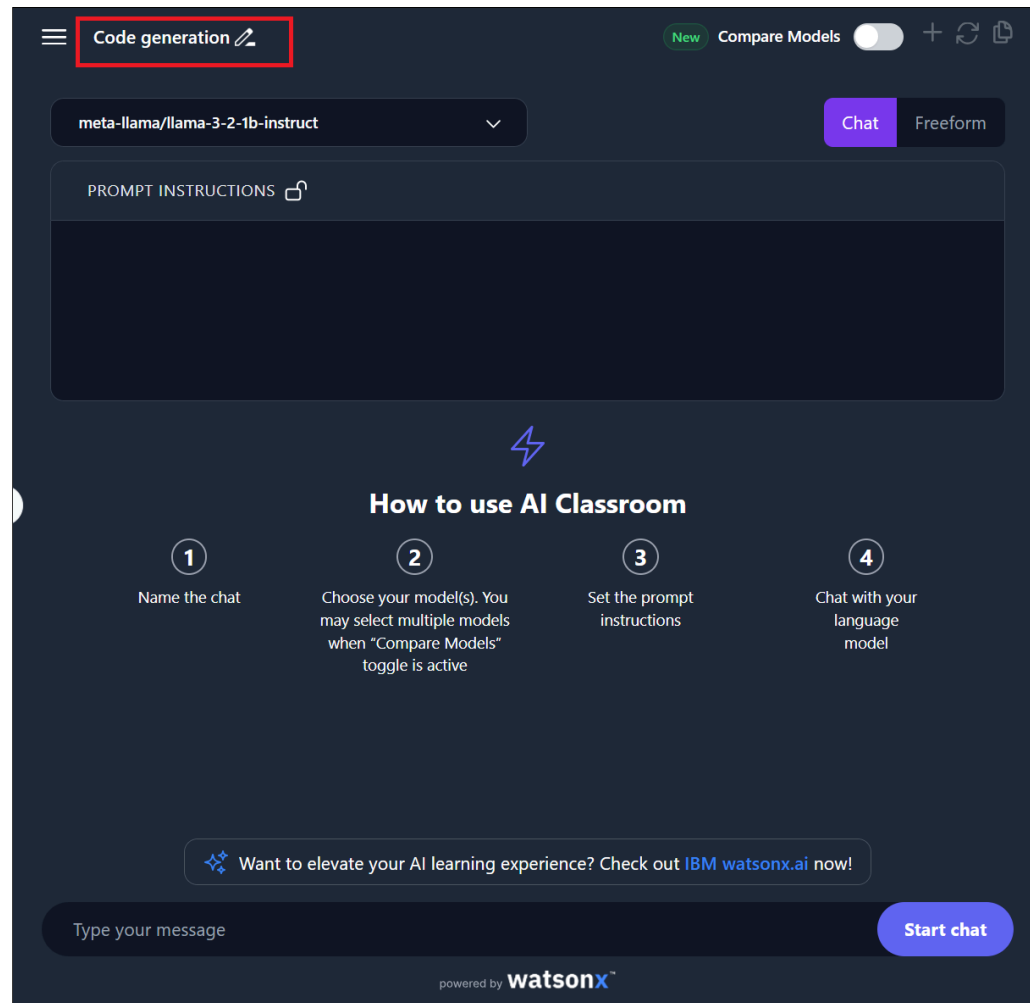
In this exercise, you will prompt Generative AI Classroom to generate the desired code in HTML and examine the generative AI model's code generation capability. You will then test and validate the code using JSFiddle, an online code-testing tool.

Step 1: Set up the environment

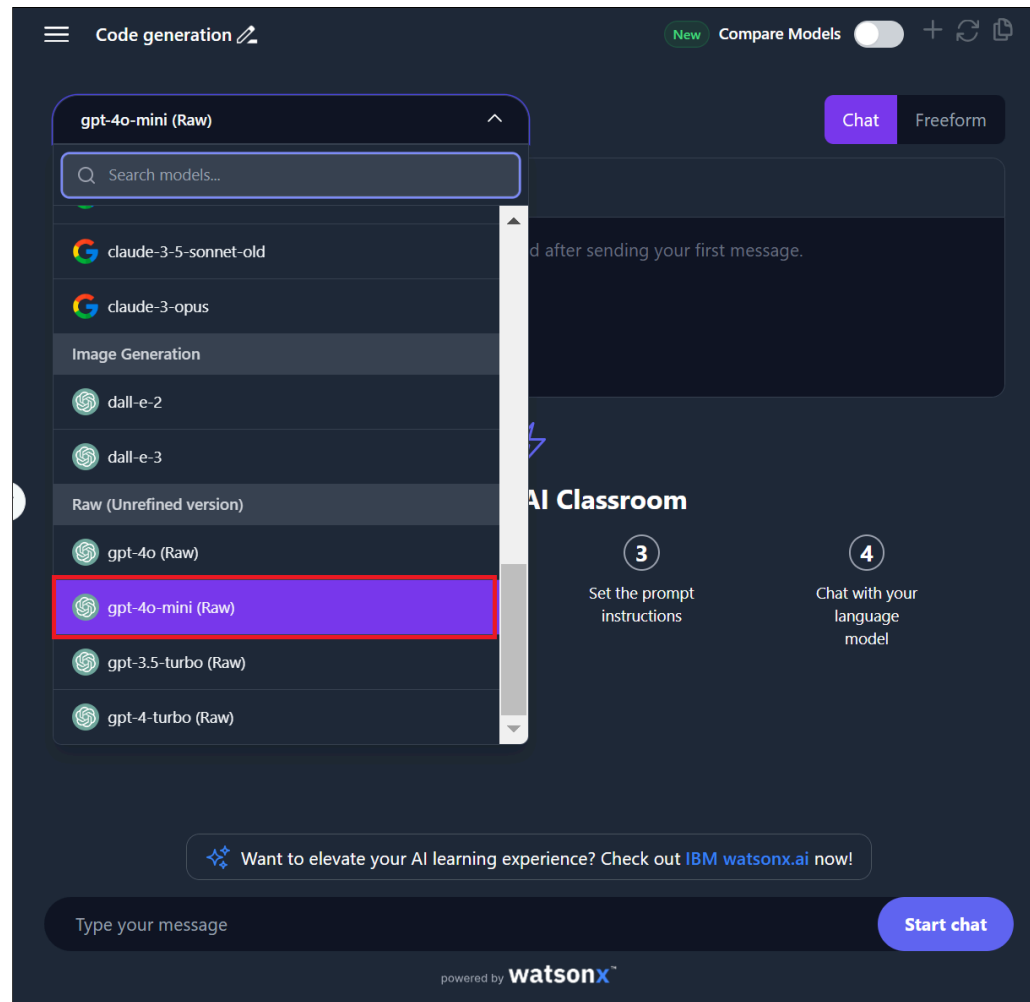
1. **Create a new chat:** You can continue this exercise in a new chat by selecting the '+' option.



2. **Name the chat:** Now, name the chat as 'Code generation.'



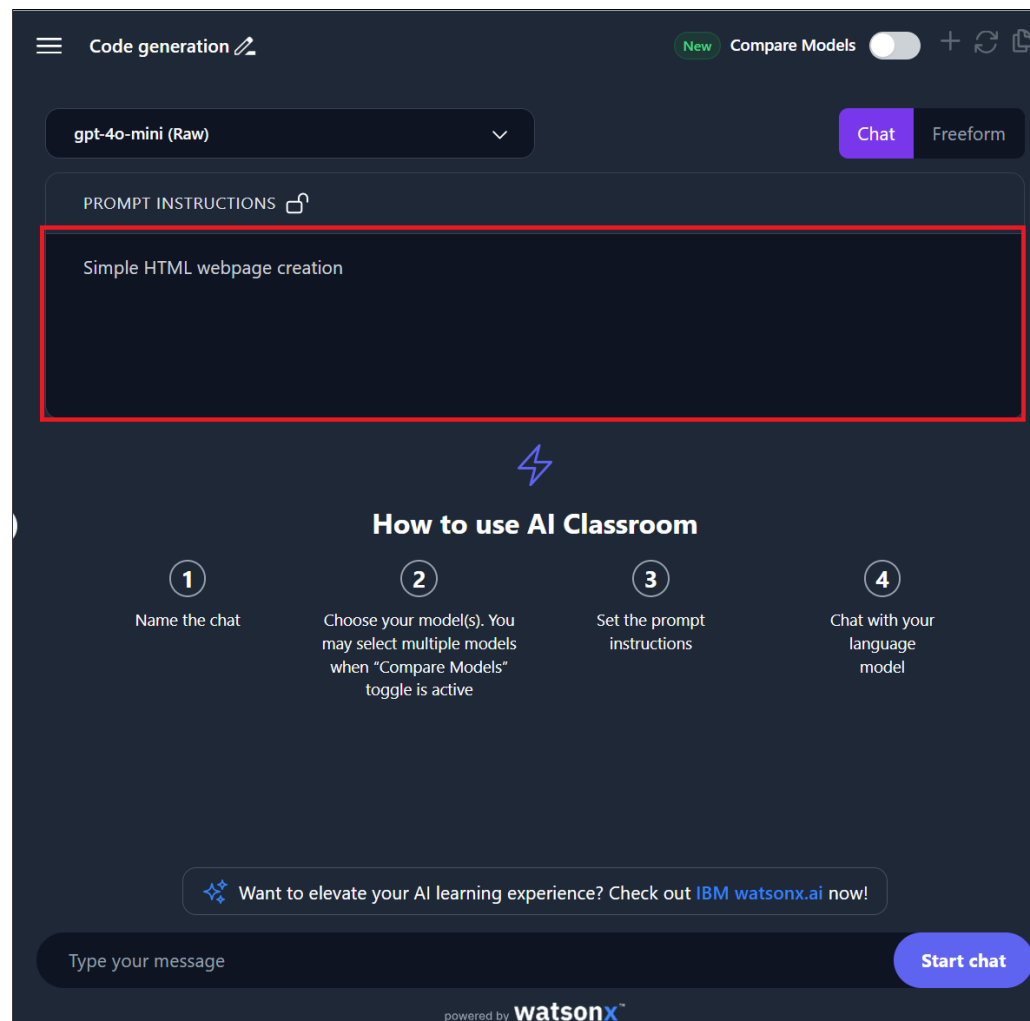
3. **Choose the model:** Use the dropdown option from the top-right corner of the right pane for the code generation exercise. Use "gpt-4o-mini" as your model.



Step 2: Generate the desired code

1. **Give prompt instructions:** For this exercise, give simple prompt instructions, such as:

Simple HTML webpage creation

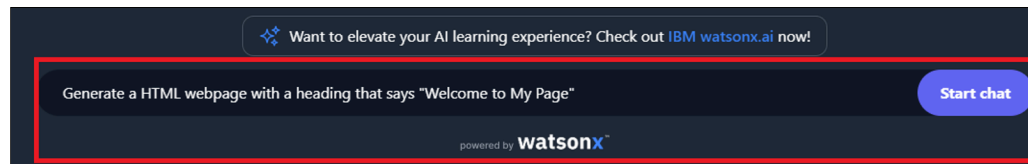


2. **Type your message:** Now, specify your requirements in the "Type your message" field.

For example:

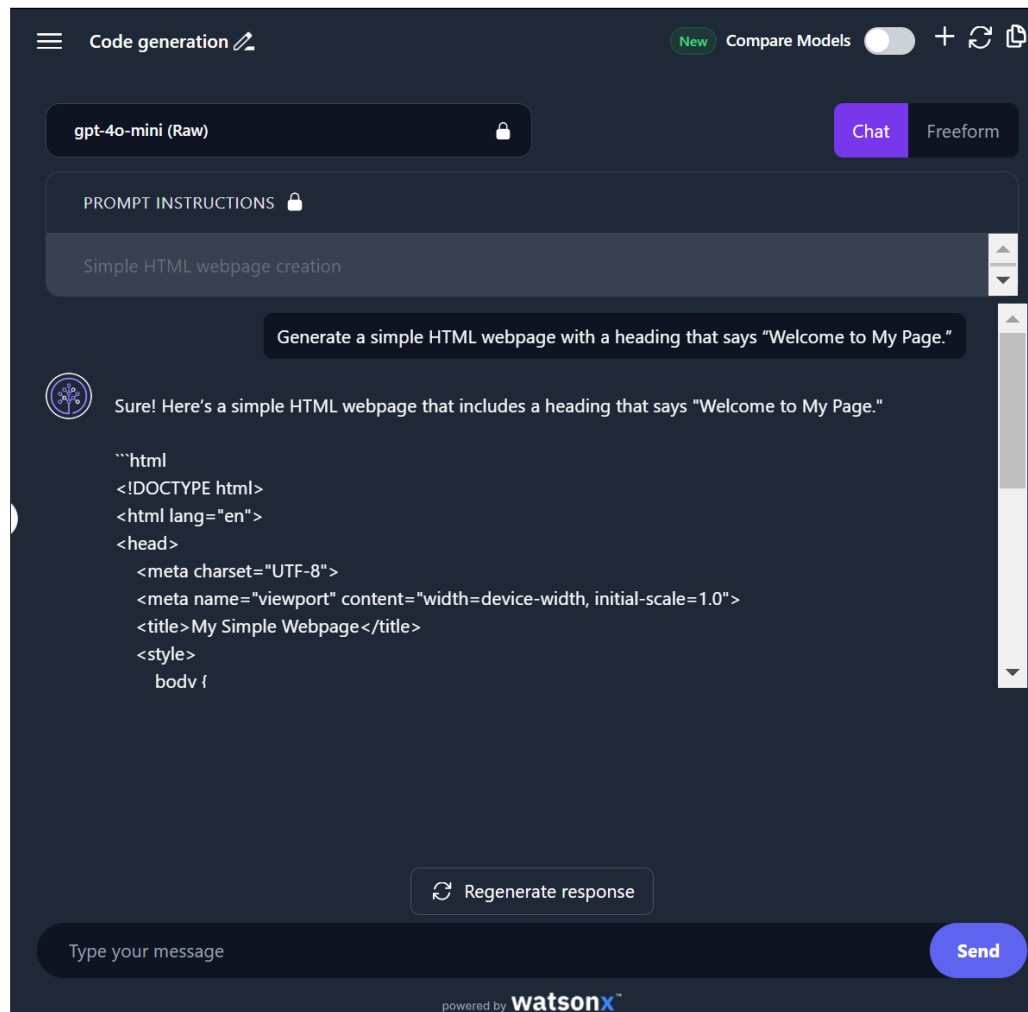
Generate a simple HTML webpage with a heading that says "Welcome to My Page."

Once done, select "Start chat."



Note: For better results, include specific details about the context of the required code.

3. **Generate response:** You will receive a code response for the desired Python code, as shown below.



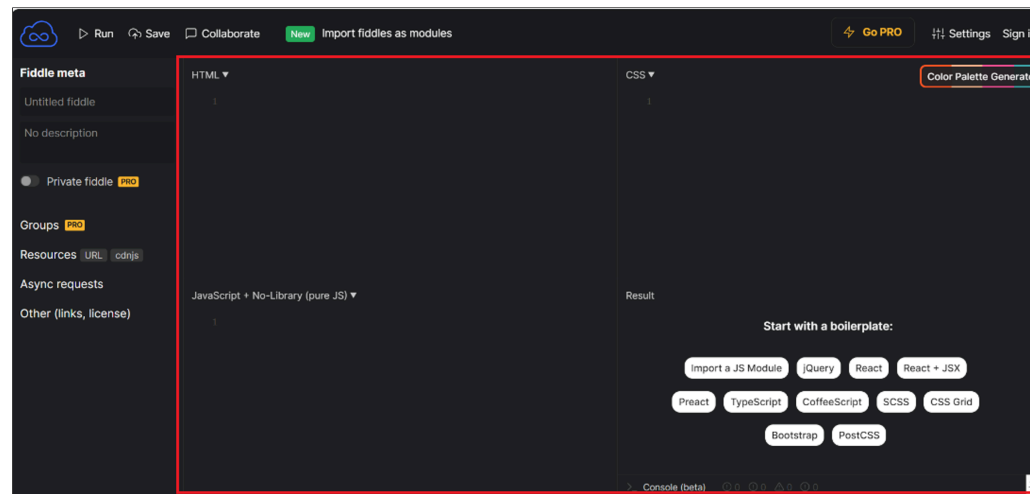
Step 3: Test the generated code

Use any accessible online programming language compiler tool you can access to test the code. Here, JSFiddle has been used to test and validate the generated code.

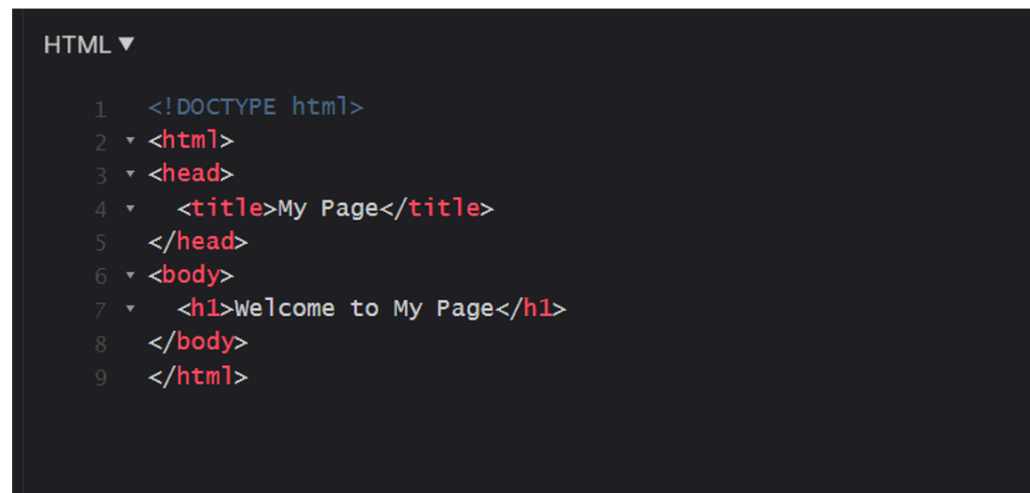
JSFiddle is a popular tool for testing, debugging, and sharing code snippets. It is a web development-specific online code editor and collaboration tool. It enables developers to write HTML, CSS, and JavaScript code in a browser-based environment and view real-time results.

Let's begin with testing the generated code.

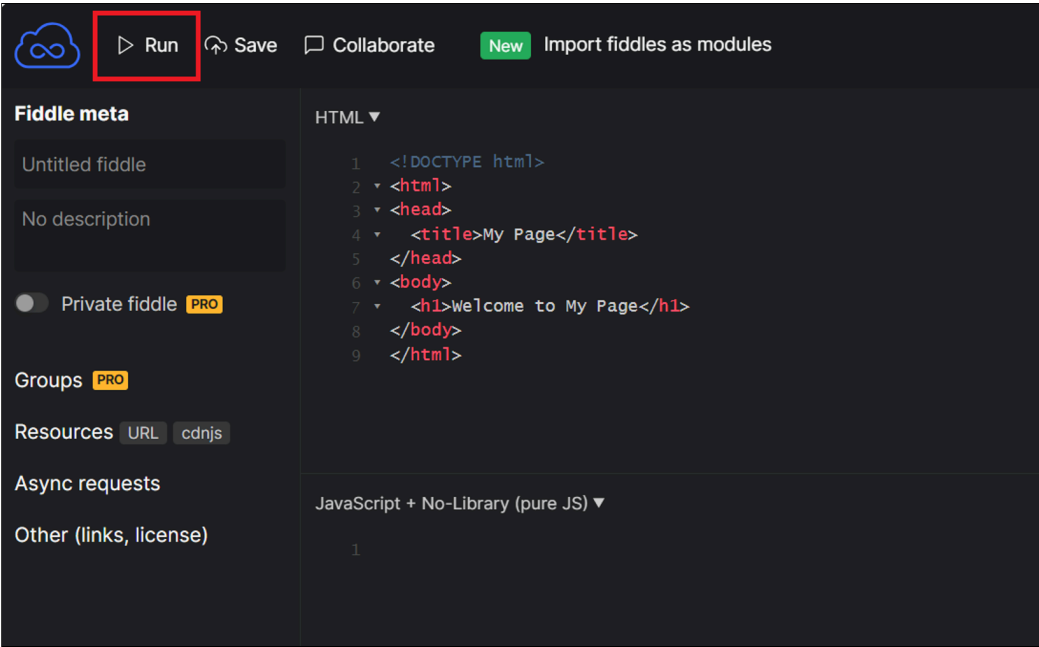
1. Click [JSFiddle](#) to launch it.
2. Once launched, you will reach the JSFiddle home page. On the home page of JSFiddle, you will find four boxes representing test panes for three languages and the result. Use the upper left box for HTML code, the upper right box for CSS, the lower left box for JavaScript, and the lower right box to display the code result.



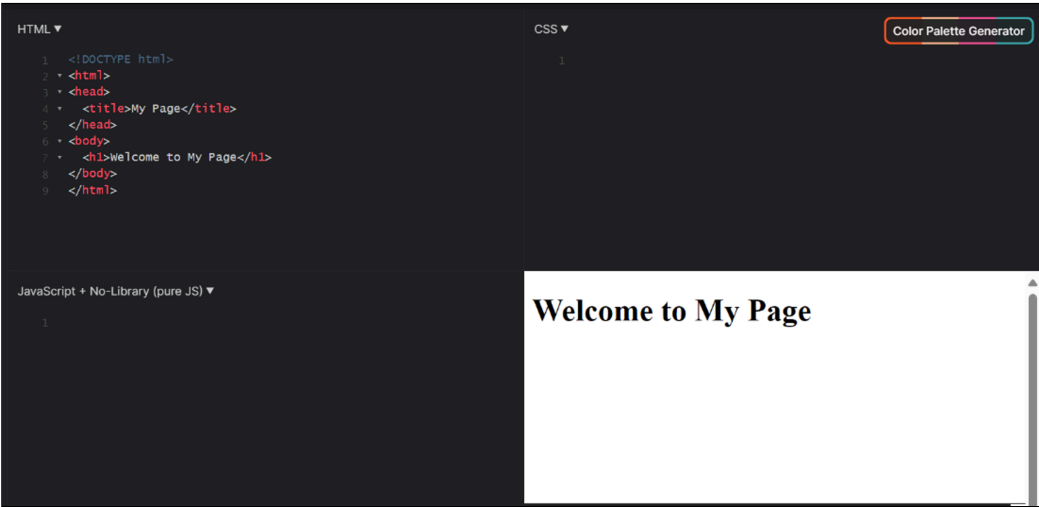
3. Now, navigate to the Code generation chat in Generative AI Classroom to copy the generated code in step 2.
4. Go to the JSFiddle home page and paste the copied code in the HTML test pane, as shown below.



5. To test and validate the code, click **Run** in the top navigation bar, next to JSFiddle's logo.



6. Review the result displayed in the lower right box on the screen, as shown below.



You can try to generate various codes and functions using Generative AI Classroom.

Summary

Congratulations! You just completed the hands-on lab final project.

In this lab, you explored and tested the capabilities of Generative AI Classroom. You generated the desired text and examined its text generation capability. You also created realistic images for your product, created an HTML code, and tested the generated code using the JSFiddle platform.

© IBM Corporation. All rights reserved.