Final Project: Generating Text, Images, and Code

Estimated time needed: 45 minutes

Welcome to the final project.

About the final project

This final project requires you to complete the exercises using tools like ChatGPT and Stable Diffusion.

There are three exercises in this final project focusing on some of the generative AI capabilities covered in the course: text generation, image generation, and code generation. Follow the instructions given in each exercise and test the suggested examples. Try asking various questions to refine your prompts and complete desired tasks.

In this lab, you will explore and test the capabilities of generative AI models to create content such as text, images, and code. You will use ChatGPT to generate the desired text and explore its text generation capability. You will use Stable Diffusion Online to create realistic images and analyze its image generation capability. You will use ChatGPT to create an HTML code and analyze its code generation capability.

Learning objectives:

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

Let's get started.

Exercise 1: Generate social media posts using ChatGPT

Writing an effective social media post using ChatGPT 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 ChatGPT:

- Consider your audience, message, and platform carefully.
- Provide value to your audience, foster engagement, and build relationships.
- Personalize content using visuals and 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 ChatGPT to generate the desired social media post and examine the generative AI model's text generation capability.

Step 1: Prompt ChatGPT to create a social media post

1. Launch ChatGPT and sign in.

> ***Note:*** *If you cannot access ChatGPT by clicking on the link, copy the following URL and paste it in a browser.*

```
https://chat.openai.com/
```

Once signed in, You will view the following ChatGPT home page.

2. Consider a context for your desired social media post and write the prompt or statement in the **send a message** field at the bottom of the ChatGPT screen.

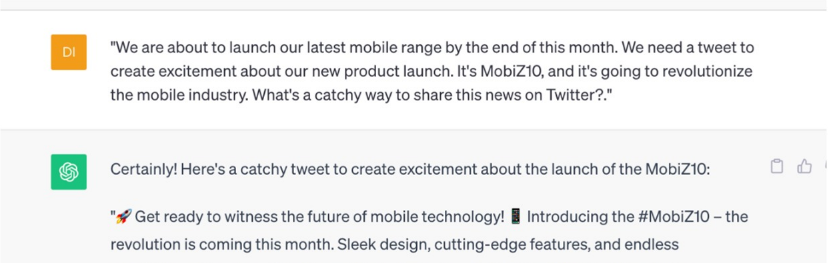
For example,

```
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 M
```

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

3. Click the arrow sign or press the enter key to send the message to the chatbot.

4. You will receive the textual response from ChatGPT for the desired scenario, as shown below.

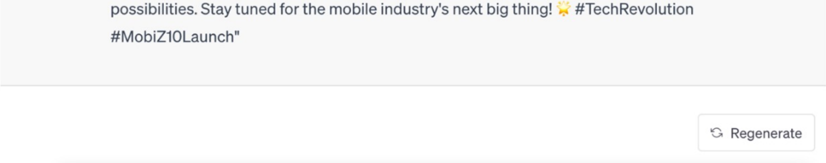


DI

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

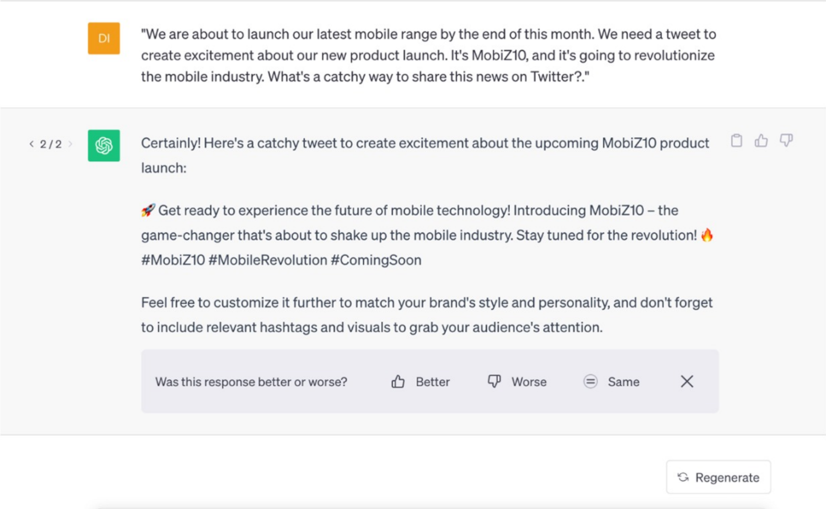
Certainly! Here's a catchy tweet to create excitement about the launch of the MobiZ10:

"🚀 Get ready to witness the future of mobile technology! 📱 Introducing the #MobiZ10 – the revolution is coming this month. Sleek design, cutting-edge features, and endless



possibilities. Stay tuned for the mobile industry's next big thing! 🌟 #TechRevolution #MobiZ10Launch"

5. You can validate the generated content per the context, copy the social media post, and update the details as required.
6. If you are unsatisfied with the response, click **regenerate**, and ChatGPT will generate a revised response for the recent prompt, as shown below.



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

Certainly! Here's a catchy tweet to create excitement about the upcoming MobiZ10 product launch:

🚀 Get ready to experience the future of mobile technology! Introducing MobiZ10 – the game-changer that's about to shake up the mobile industry. Stay tuned for the revolution! 🔥 #MobiZ10 #MobileRevolution #ComingSoon

Feel free to customize it further to match your brand's style and personality, and don't forget to include relevant hashtags and visuals to grab your audience's attention.

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

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

> *Note: You can continue to interact with the ChatGPT to dive deeper and further as long as you like or require.*

Step 2: Try yourself

Now, you must try generating social media posts for different scenarios using ChatGPT to experience the power of their text generation capabilities.

For example,

1. Create a compelling Instagram post to promote a festival contest for your product line.
2. Write a LinkedIn post describing the variety of services we provide, mentioning [what services you provide].
3. Create a Facebook announcement for all employees for an internal company event.

> *Note: You must validate the responses generated through ChatGPT for factual accuracy and use the technology ethically and responsibly.*

Exercise 2: Generate realistic images using Stable Diffusion Online

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 organization launching a line of plant-based cleaning products named 'Plantf'. 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.

They decide to generate a sample of the design of the bottles using Stable Diffusion Online. Stable Diffusion Online is powered by Stable Diffusion XL, a state-of-the-art tool offered by Stability AI.

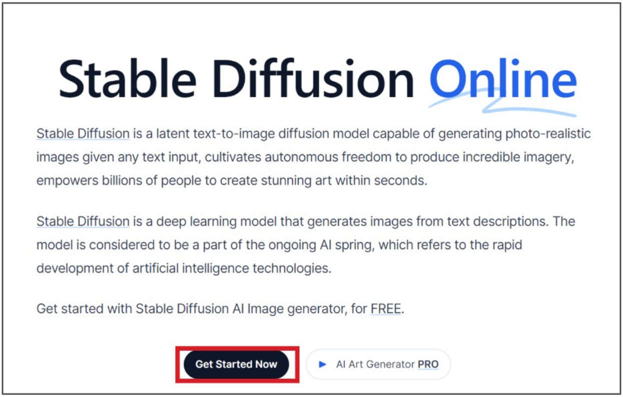
Step 1: Navigate to Stable Diffusion Online

1. Click Stable Diffusion Online to launch it.

   > *If you cannot access Stable Diffusion Online by clicking on the link, copy the following URL and paste it into a browser.*

```
https://stablediffusionweb.com/
```

2. Once launched, you will view the webpage that provides an interface for generating images for free. Click on **Get Started Now** to navigate to the AI image generator section.



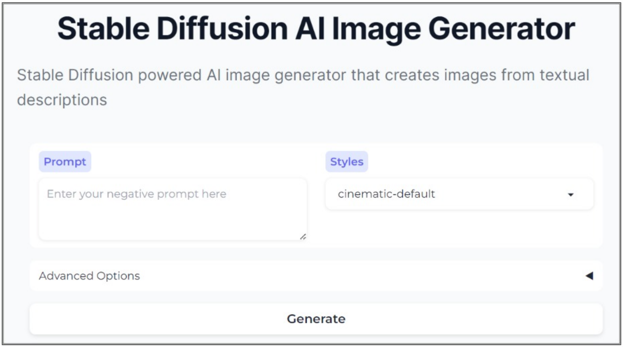
Stable Diffusion Online

Stable Diffusion is a latent text-to-image diffusion model capable of generating photo-realistic images given any text input, cultivates autonomous freedom to produce incredible imagery, empowers billions of people to create stunning art within seconds.

Stable Diffusion is a deep learning model that generates images from text descriptions. The model is considered to be a part of the ongoing AI spring, which refers to the rapid development of artificial intelligence technologies.

Get started with Stable Diffusion AI Image generator, for FREE.

3. You will be navigated to the Stable Diffusion AI Image Generator section.



Stable Diffusion AI Image Generator

Stable Diffusion powered AI image generator that creates images from textual descriptions

Styles: cinematic-default

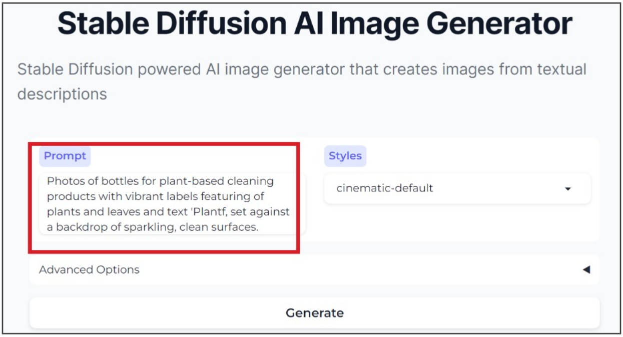
Step 2: Generate the desired image

1. Consider the context for the desired image and the related text prompt. Your prompt should be descriptive to include details like attributes and elements you want in the generated image.

2. Write the prompt or statement in the **Prompt** field.
   For example,

```
Photos of bottles for plant-based cleaning products with vibrant labels featuring of plants and leaves and text 'Plantf, set against a backdrop of
```

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



Stable Diffusion AI Image Generator

Stable Diffusion powered AI image generator that creates images from textual descriptions

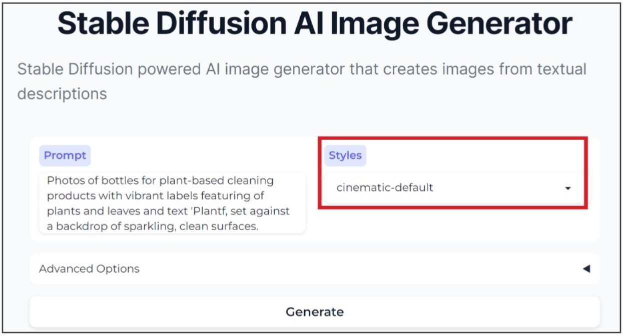
Prompt

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

Styles

cinematic-default

3. Let's accept the default style, **cinematic-default**, in the Styles drop-down list.



Stable Diffusion AI Image Generator

Stable Diffusion powered AI image generator that creates images from textual descriptions

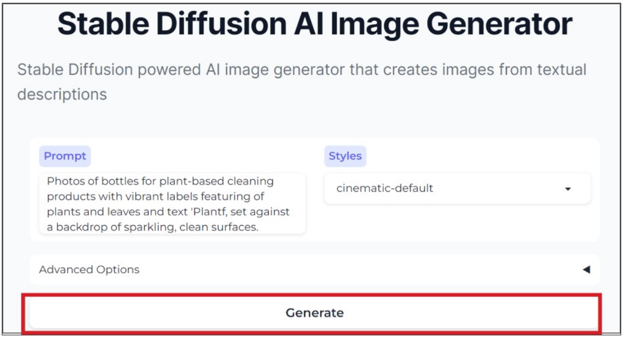
Prompt

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

Styles

cinematic-default

4. Click **Generate** to send the message to the model.



Stable Diffusion AI Image Generator

Stable Diffusion powered AI image generator that creates images from textual descriptions

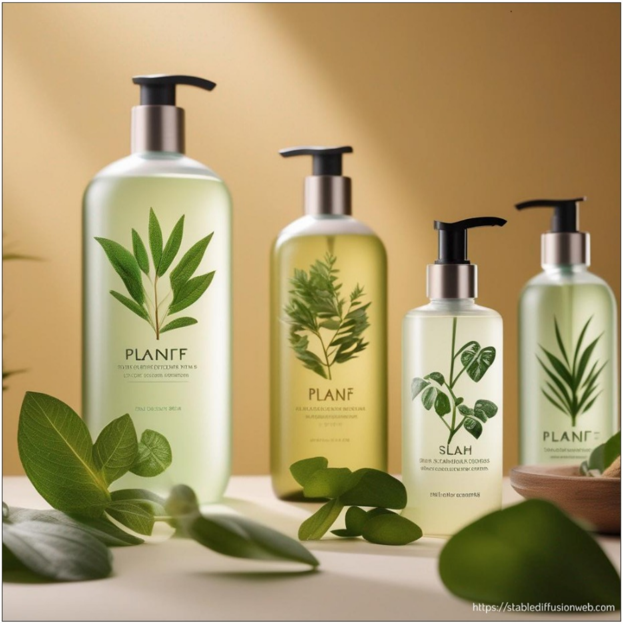
Prompt

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

Styles

cinematic-default

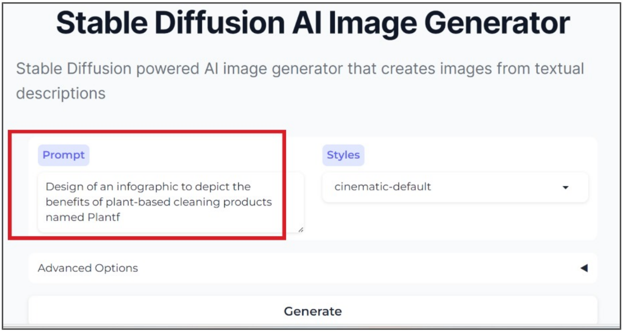
5. After a few seconds, the image will be generated. The image that was generated at our end as the output is displayed here.



https://stablediffusionweb.com

7. Next, the team wants to generate a sample for the design of an infographic to depict the benefits of their plant-based cleaning products. Delete the existing prompt in the Prompt field and enter the new prompt to generate a design of an infographic. Let's enter the following prompt.

```
Design of an infographic to depict the benefits of plant-based cleaning products named Plantf
```



Stable Diffusion AI Image Generator

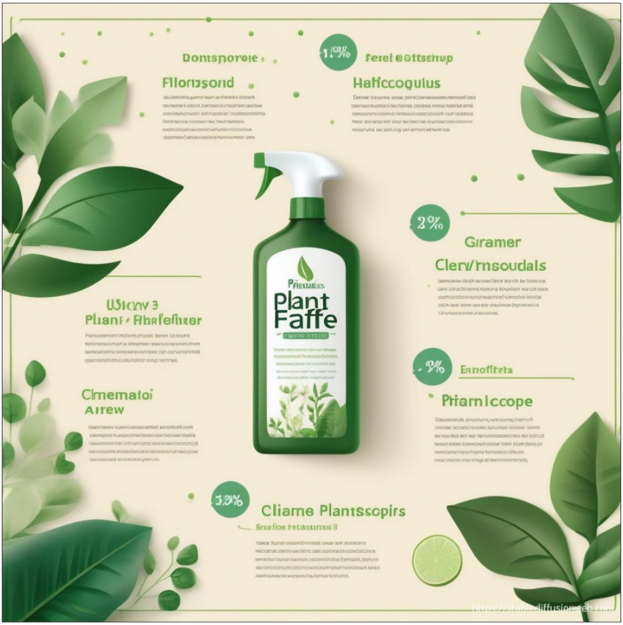
Stable Diffusion powered AI image generator that creates images from textual descriptions

Prompt: Design of an infographic to depict the benefits of plant-based cleaning products named Plantf

Styles: cinematic-default

7. Click **Generate** to send the message to the model.

8. After a few seconds, the image will be generated. The image that was generated at our end as the output is displayed here.



> *Note: The generated images may not be very good in quality or precision (in relation to the shared prompt) as this is a free image generator. To generate faster and better-quality images, you may consider upgrading to premium (pricing) plans.*

Step 3: Try yourself

Now, you can try to describe and generate realistic images of your choice using Stable Diffusion.

> *Note: Generated images may include distorted figures and objects that you can screen before downloading the image.*

Exercise 3: HTML code generation using ChatGPT

In this exercise, you will prompt ChatGPT 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: Prepare the prompt and generate the code

1. Launch ChatGPT.

   > ***Note:** If you cannot access ChatGPT by clicking on the link, copy the URL `https://chat.openai.com/` and paste in it in a browser.*

2. Consider a scenario or context for the desired code content and write the prompt or statement in the **Send a message** field at the bottom of the screen.

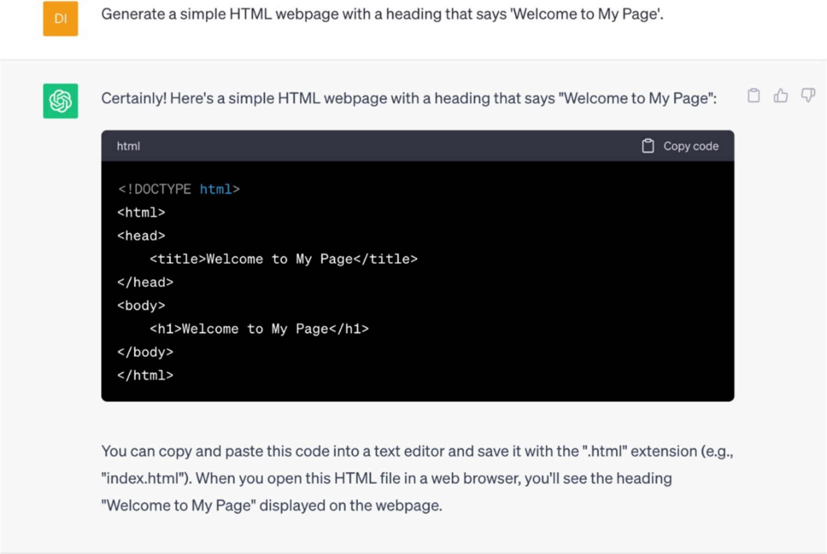
For example,
`Generate a simple HTML webpage with a heading that says "Welcome to My Page".`

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

3. Now, click the arrow sign or press the enter key to send the message to the chatbot.

4. You will receive a code response from ChatGPT for the desired Python code, as shown below.

Default (GPT-3.5)



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

Certainly! Here's a simple HTML webpage with a heading that says "Welcome to My Page":

```html
<!DOCTYPE html>
<html>
<head>
    <title>Welcome to My Page</title>
</head>
<body>
    <h1>Welcome to My Page</h1>
</body>
</html>
```

You can copy and paste this code into a text editor and save it with the ".html" extension (e.g., "index.html"). When you open this HTML file in a web browser, you'll see the heading "Welcome to My Page" displayed on the webpage.

> *Note: You also get guidance on how to use the code.*

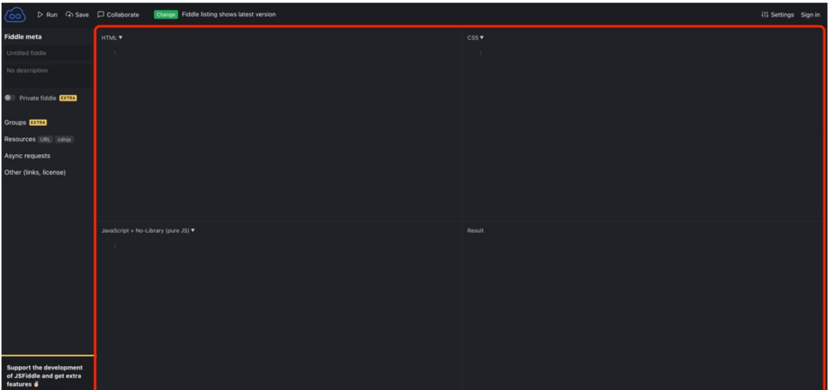
Step 2: Test the generated code

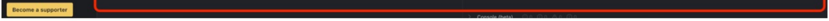
You can use any accessible online programming language compiler tool you can access to test the code. Here, JSFiddle has been used to test and validate the generated code.

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.

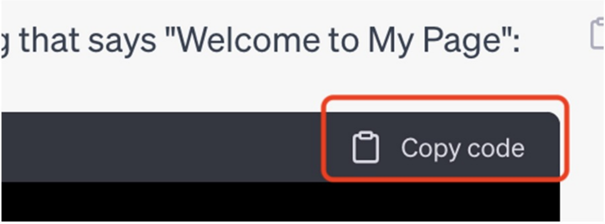
1. Click JSFiddle to launch it.
2. Once launched, you will reach the JSFiddle home page, as shown below.





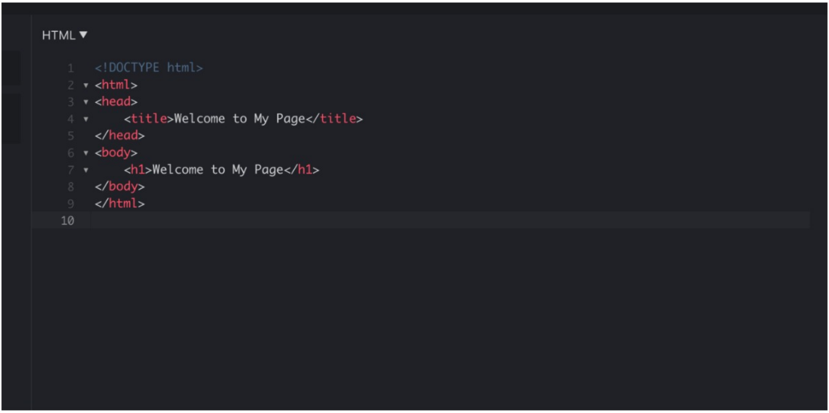
> *Note: On the home page of JSFiddle, you will find four boxes representing test panes for three languages and the result. You can use the upper left box for HTML code, the upper right box for CSS, the lower left box for JavaScript, and the lower right box to display the code result.*

3. Now, go to ChatGPT to copy the generated code in step 1 using the **Copy code** option available in the upper right corner of the response field.



that says "Welcome to My Page":

4. Go to the JSFiddle home page and paste the copied code in the HTML test pane, as shown below.

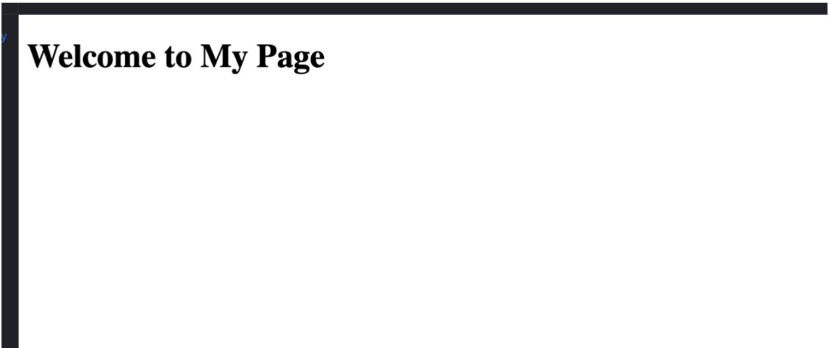


```html
<!DOCTYPE html>
<html>
<head>
    <title>Welcome to My Page</title>
</head>
<body>
    <h1>Welcome to My Page</h1>
</body>
</html>
```

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

<Image missing>

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



Welcome to My Page

>_ Console (beta)
0
0
0
0

7. You can try to generate various codes and functions using ChatGPT.

> *Note: You must validate the code generated through ChatGPT for factual accuracy and use the technology ethically and responsibly. You can also learn coding and programming as the model provides step-by-step explanations and guidance. However, you cannot generate large and complex code from scratch, as their training data set based on 2021 libraries may limit their capability.*

Summary:

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

In this lab, you explored and tested the capabilities of generative AI models to create content such as text, images, and code. You used ChatGPT to generate the desired text and examined its text generation capability. You used Stable Diffusion Online to create realistic images and analyzed its image generation capability. You created an HTML code using ChatGPT and analyzed its code generation capability.

Next Steps:

Remember that this knowledge has a wide range of potential applications as you go about your life and career. Your imagination is the only restriction on the use cases.

Thank you for joining us on this enlightening journey. We hope you will continue to be a curious explorer eager to learn and adapt as the field of artificial intelligence develops. Here's to a time when you can expertly, plainly, and precisely direct AI conversations!

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