1. Create a fantasy landscape image using a text-to-image model

Solution:

!pip uninstall -y diffusers transformers accelerate safetensors
!pip install diffusers==0.30.2 transformers==4.44.2 accelerate==0.33.0 safetensors==0.4.4

```
from diffusers import StableDiffusionPipeline
import torch
from IPython.display import display

pipe = StableDiffusionPipeline.from_pretrained(
    "runwayml/stable-diffusion-v1-5",
    torch_dtype=torch.float16
).to("cuda")

# Prompt
prompt = "A magical fantasy landscape with glowing waterfalls and floating islands"

# Generate
result = pipe(prompt)
image = result.images[0]

# Show
display(image)

# Save
image.save("fantasy.png")
```

2. Generate an AI-made cartoon superhero character.

Solution:

```
from IPython.display import display

prompt = "A cartoon superhero with a red cape, flying over a futuristic city, digital art style"
image = pipe(prompt, guidance_scale=7.5).images[0]

# Show inline in Colab
display(image)

# Save to file if you want
image.save("superhero.png")
```

3. Generate an oil painting style portrait from a text prompt.

Solution:

```
from IPython.display import display

prompt = "An oil painting of a wise old man reading a book under candlelight"
image = pipe(prompt, guidance_scale=7.5).images[0]

# Show inline in Colab
display(image)

# Save to file if you want
image.save("superhero.png")
```

4. Generate multiple variations of a futuristic car design.
Solution:

```
from IPython.display import display

prompt = "A futuristic electric car with neon lights, concept art"
result = pipe(prompt, num_images_per_prompt=3, guidance_scale=7.5)

images = result.images

# Show images inline
for i, img in enumerate(images):
    display(img)  # show in Colab output
    img.save(f"car_design_{i}.png")  # also save as files
```

"Prompt Engineering Challenge"

- Give them a vague prompt: *"A cat in space"*.
- Ask students to refine it into **3 detailed prompts** to get *cartoon style, realistic style, and futuristic art*.
- Task: Generate images with each refined prompt and discuss how prompt wording changes results.
- Learning: Importance of precision in prompt design.