```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```
!nvidia-smi
```

```
Thu Oct  2 14:33:11 2025
+-----------------------------------------------------------------------------------------+
| NVIDIA-SMI 550.54.15              Driver Version: 550.54.15      CUDA Version: 12.4      |
|-----------------------------------------+------------------------+----------------------+
| GPU  Name                 Persistence-M | Bus-Id          Disp.A | Volatile Uncorr. ECC |
| Fan  Temp   Perf          Pwr:Usage/Cap |           Memory-Usage | GPU-Util  Compute M. |
|                                         |                        |               MIG M. |
|=========================================+========================+======================|
|   0  Tesla T4                       Off | 00000000:00:04.0 Off   |                    0 |
| N/A   41C    P8               9W /  70W |     0MiB /  15360MiB   |      0%      Default |
|                                         |                        |                  N/A |
+-----------------------------------------+------------------------+----------------------+

+-----------------------------------------------------------------------------------------+
| Processes:                                                                              |
|  GPU   GI   CI        PID   Type   Process name                              GPU Memory |
|        ID   ID                                                               Usage      |
|=========================================================================================|
|  No running processes found                                                            |
+-----------------------------------------------------------------------------------------+
```

```
import torch
from transformers import AutoModelForCausalLM, AutoTokenizer
tokenizer = AutoTokenizer.from_pretrained("stabilityai/stable-code-instruct-3b", trust_remote_code=True)
model = AutoModelForCausalLM.from_pretrained("stabilityai/stable-code-instruct-3b", torch_dtype=torch.bfloat16, trust_remote_code=True)
model.eval()
model = model.cuda()

messages = [
    {
        "role": "system",
        "content": "You are a helpful and polite assistant",
    },
    {
        "role": "user",
        "content": "Write a simple website in HTML. When a u ◆ clicks the button, it shows a random joke from a list of 4 jokes."
    },
```

```
    ]

    prompt = tokenizer.apply_chat_template(messages, add_generation_prompt=True, tokenize=False)

    inputs = tokenizer([prompt], return_tensors="pt").to(model.device)

    tokens = model.generate(
        **inputs,
        max_new_tokens=1024,
        temperature=0.5,
        top_p=0.95,
        top_k=100,
        do_sample=True,
        use_cache=True
    )

    output = tokenizer.batch_decode(tokens[:, inputs.input_ids.shape[-1]:], skip_special_tokens=False)[0]
```

```
/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_auth.py:94: UserWarning:
The secret `HF_TOKEN` does not exist in your Colab secrets.
To authenticate with the Hugging Face Hub, create a token in your settings tab (https://huggingface.co/settings/tokens), set it as secre
You will be able to reuse this secret in all of your notebooks.
Please note that authentication is recommended but still optional to access public models or datasets.
  warnings.warn(
tokenizer_config.json:          9.35k/? [00:00<00:00, 227kB/s]

tokenizer.json:          2.12M/? [00:00<00:00, 25.4MB/s]

special_tokens_map.json: 100%                                            587/587 [00:00<00:00, 20.8kB/s]

config.json: 100%                                            738/738 [00:00<00:00, 26.0kB/s]
`torch_dtype` is deprecated! Use `dtype` instead!
model.safetensors.index.json:          29.4k/? [00:00<00:00, 2.21MB/s]

Fetching 2 files: 100%                                            2/2 [01:52<00:00, 112.00s/it]

model-00002-of-00002.safetensors: 100%                                            610M/610M [00:39<00:00, 13.2MB/s]

model-00001-of-00002.safetensors: 100%                                            4.98G/4.98G [01:51<00:00, 64.5MB/s]

Loading checkpoint shards: 100%                                            2/2 [00:00<00:00,  1.30it/s]

generation_config.json: 100%                                            132/132 [00:00<00:00, 11.7kB/s]
Setting `pad_token_id` to `eos_token_id`:0 for open-end generation.
```

```
print(output)
```

Sure, here's a simple HTML page with JavaScript code that displays a random joke when a button is clicked:
```html
<!DOCTYPE html>
<html>
<head>
        <title>Random Joke Generator</title>
        <script type="text/javascript">
                // List of jokes
                var jokes = [
                        "Why don't scientists trust atoms? Because they make up everything!",
                        "Why did the chicken go to the seance? To talk to the other side!",
                        "Why did the scarecrow win an award? Because he was outstanding in his field!",
                        "Why did the tomato turn red? Because it saw the salad dressing!"
                ];

                // Function to generate a random joke
                function getRandomJoke() {
                        var randomIndex = Math.floor(Math.random() * jokes.length);
                        return jokes[randomIndex];
                }

                // Function to display a joke
                function displayJoke() {
                        var joke = getRandomJoke();
                        document.getElementById("joke").innerHTML = joke;
                }
        </script>
</head>
<body>
        <h1>Random Joke Generator</h1>
        <p id="joke"></p>
        <button onclick="displayJoke()">Show Joke</button>
</body>
</html>
```
This code defines a list of jokes, a function to generate a random joke from the list, and a function to display the joke on the webpage
<|endoftext|>

```
!nvidia-smi
```

```
Thu Oct  2 15:39:15 2025
+-----------------------------------------------------------------------------------------+
| NVIDIA-SMI 550.54.15              Driver Version: 550.54.15      CUDA Version: 12.4      |
|-----------------------------------------+------------------------+----------------------+
| GPU  Name                 Persistence-M | Bus-Id          Disp.A | Volatile Uncorr. ECC |
| Fan  Temp   Perf          Pwr:Usage/Cap |           Memory-Usage | GPU-Util  Compute M. |
```

```
|                                      |                        |               MIG M. |
|======================================+========================+======================|
|   0   Tesla T4                   Off |   00000000:00:04.0 Off |                    0 |
| N/A   72C    P8            11W /  70W |     0MiB /  15360MiB   |   0%        Default  |
|                                      |                        |                  N/A |
+--------------------------------------+------------------------+----------------------+

+-----------------------------------------------------------------------------+
| Processes:                                                                  |
|  GPU   GI   CI        PID   Type   Process name                 GPU Memory  |
|        ID   ID                                                  Usage       |
|=============================================================================|
|  No running processes found                                                |
+-----------------------------------------------------------------------------+
```

```
!pip install -U diffusers
```

```
Requirement already satisfied: diffusers in /usr/local/lib/python3.12/dist-packages (0.35.1)
Requirement already satisfied: importlib_metadata in /usr/local/lib/python3.12/dist-packages (from diffusers) (8.7.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from diffusers) (3.19.1)
Requirement already satisfied: huggingface-hub>=0.34.0 in /usr/local/lib/python3.12/dist-packages (from diffusers) (0.35.0)
Requirement already satisfied: numpy in /usr/local/lib/python3.12/dist-packages (from diffusers) (2.0.2)
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.12/dist-packages (from diffusers) (2024.11.6)
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (from diffusers) (2.32.4)
Requirement already satisfied: safetensors>=0.3.1 in /usr/local/lib/python3.12/dist-packages (from diffusers) (0.6.2)
Requirement already satisfied: Pillow in /usr/local/lib/python3.12/dist-packages (from diffusers) (11.3.0)
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (202
Requirement already satisfied: packaging>=20.9 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (25.0
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (6.0.2)
Requirement already satisfied: tqdm>=4.42.1 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (4.67.1
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffu
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers)
Requirement already satisfied: zipp>=3.20 in /usr/local/lib/python3.12/dist-packages (from importlib_metadata->diffusers) (3.23.0)
Requirement already satisfied: charset_normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (3.4.3)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (2.5.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (2025.8.3)
```

```python
import torch
from diffusers import StableDiffusionPipeline

model_id = "CompVis/stable-diffusion-v1-4"
device = "cuda"


pipe = StableDiffusionPipeline.from_pretrained(model_id, torch_dtype=torch.float16)
```

```
pipe = pipe.to(device)

prompt = "a photo of an astronaut riding a horse on mars"
image = pipe(prompt).images[0]

image.save("astronaut_rides_horse.png")
```

model_index.json: 100%   541/541 [00:00<00:00, 12.7kB/s]

Fetching 16 files: 100%   16/16 [03:02<00:00, 13.82s/it]

preprocessor_config.json: 100%   342/342 [00:00<00:00, 1.29kB/s]

config.json: 100%   592/592 [00:00<00:00, 3.97kB/s]

config.json: 4.56k/? [00:00<00:00, 37.6kB/s]

scheduler_config.json: 100%   313/313 [00:00<00:00, 2.18kB/s]

merges.txt: 525k/? [00:00<00:00, 1.90MB/s]

scheduler_config-checkpoint.json: 100%   209/209 [00:00<00:00, 1.69kB/s]

text_encoder/model.safetensors: 100%   492M/492M [01:30<00:00, 3.88MB/s]

safety_checker/model.safetensors: 100%   1.22G/1.22G [00:40<00:00, 27.7MB/s]

tokenizer_config.json: 100%   806/806 [00:00<00:00, 5.82kB/s]

special_tokens_map.json: 100%   472/472 [00:00<00:00, 1.95kB/s]

vocab.json: 1.06M/? [00:00<00:00, 1.77MB/s]

config.json: 100%   743/743 [00:00<00:00, 4.01kB/s]

unet/diffusion_pytorch_model.safetensors: 100%   3.44G/3.44G [03:01<00:00, 53.1MB/s]

config.json: 100%   551/551 [00:00<00:00, 16.2kB/s]

vae/diffusion_pytorch_model.safetensors: 100%   335M/335M [01:19<00:00, 6.04MB/s]

Loading pipeline components...: 100%   7/7 [00:23<00:00, 2.53s/it]
`torch_dtype` is deprecated! Use `dtype` instead!
100%   50/50 [00:07<00:00, 7.48it/s]

```
import torch
from diffusers import StableDiffusionPipeline

model_id = "CompVis/stable-diffusion-v1-4"
```

```
device = "cuda"


pipe = StableDiffusionPipeline.from_pretrained(model_id, torch_dtype=torch.float16)
pipe = pipe.to(device)


prompt = "a photo of an celebration of christmas with family"
image = pipe(prompt).images[0]


image.save("celebration of christmas with family.png")
```

Loading pipeline components...: 100%   7/7 [00:22<00:00, 2.48s/it]

100%   50/50 [00:07<00:00, 6.82it/s]

```
!pip install --upgrade diffusers transformers scipy
```

Requirement already satisfied: diffusers in /usr/local/lib/python3.12/dist-packages (0.35.1)
Requirement already satisfied: transformers in /usr/local/lib/python3.12/dist-packages (4.56.1)
Collecting transformers
  Downloading transformers-4.56.2-py3-none-any.whl.metadata (40 kB)
                                                 40.1/40.1 kB 2.4 MB/s eta 0:00:00
Requirement already satisfied: scipy in /usr/local/lib/python3.12/dist-packages (1.16.2)
Requirement already satisfied: importlib_metadata in /usr/local/lib/python3.12/dist-packages (from diffusers) (8.7.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from diffusers) (3.19.1)
Requirement already satisfied: huggingface-hub>=0.34.0 in /usr/local/lib/python3.12/dist-packages (from diffusers) (0.35.0)
Requirement already satisfied: numpy in /usr/local/lib/python3.12/dist-packages (from diffusers) (2.0.2)
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.12/dist-packages (from diffusers) (2024.11.6)
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (from diffusers) (2.32.4)
Requirement already satisfied: safetensors>=0.3.1 in /usr/local/lib/python3.12/dist-packages (from diffusers) (0.6.2)
Requirement already satisfied: Pillow in /usr/local/lib/python3.12/dist-packages (from diffusers) (11.3.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (25.0)
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.12/dist-packages (from transformers) (6.0.2)
Requirement already satisfied: tokenizers<=0.23.0,>=0.22.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.22.0)
Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.12/dist-packages (from transformers) (4.67.1)
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (202
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Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers)
Requirement already satisfied: zipp>=3.20 in /usr/local/lib/python3.12/dist-packages (from importlib_metadata->diffusers) (3.23.0)
Requirement already satisfied: charset_normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (3.4.3)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (2.5.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests->diffusers) (2025.8.3)
Downloading transformers-4.56.2-py3-none-any.whl (11.6 MB)
                                                 11.6/11.6 MB 120.9 MB/s eta 0:00:00
Installing collected packages: transformers
  Attempting uninstall: transformers

```
      Found existing installation: transformers 4.56.1
      Uninstalling transformers-4.56.1:
        Successfully uninstalled transformers-4.56.1
   Successfully installed transformers-4.56.2
```

```python
import torch
from diffusers import StableDiffusionPipeline


model_id = "CompVis/stable-diffusion-v1-4"
device = "cuda"



pipe = StableDiffusionPipeline.from_pretrained(model_id, torch_dtype=torch.float16)
pipe = pipe.to(device)

prompt = "heavy rain in forest"
image = pipe(prompt).images[0]

image.save("forest.png")
```

```
/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_auth.py:94: UserWarning:
The secret `HF_TOKEN` does not exist in your Colab secrets.
To authenticate with the Hugging Face Hub, create a token in your settings tab (https://huggingface.co/settings/tokens), set it as secret
You will be able to reuse this secret in all of your notebooks.
Please note that authentication is recommended but still optional to access public models or datasets.
  warnings.warn(
Loading pipeline components...: 100%                                              7/7 [00:20<00:00,   3.15s/it]

`torch_dtype` is deprecated! Use `dtype` instead!
100%                                        50/50 [00:07<00:00,   7.49it/s]
```