

## project-1 : text - image

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

Mounted at /content/drive

```
!nvidia-smi
```

```
Sat Oct 4 15:51:53 2025
```

```
+-----+-----+
| NVIDIA-SMI 550.54.15     Driver Version: 12.4 |
+-----+-----+
| GPU  Name Persistence-| file Uncorr. ECC | | | |
| Fan  Temp  Perf  Pwr:Usage/Ca| Util Compute M. |
|      |          |          |          | MIG M. |
+-----+-----+-----+-----+
| 0  Tesla T4      Off  00000000:00:04.0 Off | 0 | | | |
| N/A  49C   P8      9W / 70W  0MiB / 15360MiB | 0%  Default |
|          |          |          |          | N/A |
+-----+-----+-----+-----+
+-----+
| Processes:                               GPU Memory |
| GPU  GI  CI      PID  Type  Process name        Usage  |
| ID  ID
+-----+
| No running processes found
+-----+
```

```
!pip install diffusers --upgrade
```

```
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) (0.35.3)
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) (2024.11.6)
Requirement already satisfied: packaging>=20.9 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (2024.11.6)
```

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Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub>=0.34.0->diffusers) (6.0.3)
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->diffusers) (3.12.1)
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)
```

```
!pip install invisible_watermark transformers accelerate safetensors
```

```
Collecting invisible_watermark
  Downloading invisible_watermark-0.2.0-
Requirement already satisfied: transform
Requirement already satisfied: accelerat
Requirement already satisfied: safetenso
Requirement already satisfied: Pillow>=6
Requirement already satisfied: PyWavelet
Requirement already satisfied: numpy>=1.17.0 in /usr/local/lib/python3.12/dist-packages (from invisible_watermark)
Requirement already satisfied: opencv-python>=4.1.0.25 in /usr/local/lib/python3.12/dist-packages (from invisible_watermark)
Requirement already satisfied: torch in /usr/local/lib/python3.12/dist-packages (from invisible_watermark) (2.8.0+cu126)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from transformers) (3.19.1)
Requirement already satisfied: huggingface-hub<1.0,>=0.34.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.35.3)
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) (6.0.3)
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.12/dist-packages (from transformers) (2024.11.6)
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (from transformers) (2.32.4)
Requirement already satisfied: tokenizers<=0.23.0,>=0.22.0 in /usr/local/lib/python3.12/dist-packages (from transformers) (0.22.1)
Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.12/dist-packages (from transformers) (4.67.1)
Requirement already satisfied: psutil in /usr/local/lib/python3.12/dist-packages (from accelerate) (5.9.5)
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<1.0,>=0.34.0->transformers) (2023.5.0)
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<1.0,>=0.34.0->transformers) (3.12.1)
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<1.0,>=0.34.0->transformers) (1.1.3)
Requirement already satisfied: setuptools in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (75.2.0)
Requirement already satisfied: sympy>=1.13.3 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (1.13.3)
Requirement already satisfied: networkx in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (3.5)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (3.1.6)
Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (12.6.77)
Requirement already satisfied: nvidia-cuda-runtime-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (12.6.77)
Requirement already satisfied: nvidia-cuda-cupti-cu12==12.6.80 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (12.6.80)
Requirement already satisfied: nvidia-cudnn-cu12==9.10.2.21 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (9.10.2.21)
Requirement already satisfied: nvidia-cublas-cu12==12.6.4.1 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (12.6.4.1)
Requirement already satisfied: nvidia-cufft-cu12==11.3.0.4 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (11.3.0.4)
Requirement already satisfied: nvidia-curand-cu12==10.3.7.77 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (10.3.7.77)
Requirement already satisfied: nvidia-cusolver-cu12==11.7.1.2 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (11.7.1.2)
Requirement already satisfied: nvidia-cusparse-cu12==12.5.4.2 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (12.5.4.2)
Requirement already satisfied: nvidia-cusparseelt-cu12==0.7.1 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (0.7.1)
```

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```
Requirement already satisfied: nvidia-nccl-cu12==2.27.3 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (2.27.3)
Requirement already satisfied: nvidia-nvtx-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (1.2.0)
Requirement already satisfied: nvidia-nvjitlink-cu12==12.6.85 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (1.2.0)
Requirement already satisfied: nvidia-cufile-cu12==1.11.1.6 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (1.11.1.6)
Requirement already satisfied: triton==3.4.0 in /usr/local/lib/python3.12/dist-packages (from torch->invisible_watermark) (3.4.0)
Requirement already satisfied: charset_normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (3.4.3)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (2.5.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests->transformers) (2025.8.3)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.12/dist-packages (from sympy>=1.13.3->torch->invisible_watermark) (1.1.0)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.12/dist-packages (from jinja2->torch->invisible_watermark) (3.0.2)
Downloading invisible_watermark-0.2.0-py3-none-any.whl (1.6 MB)
  1.6/1.6 MB 32.4 MB/s eta 0:00:00
```

```
Installing collected packages: invisible_watermark
Successfully installed invisible_watermark
```

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```
from diffusers import DiffusionPipeline
import torch
```

```
pipe = DiffusionPipeline.from_pretrained("stabilityai/stable-diffusion-xl-base-1.0", torch_dtype=torch.float16, use_safetensors=True, vae_revision="fp16")
pipe.to("cuda")
```

```
# if using torch < 2.0
# pipe.enable_xformers_memory_efficient_attention()
```

```
prompt = "beautiful girl chasing for his pet dog"
```

```
images = pipe(prompt=prompt).images[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(  
model_index.json: 100%                                         609/609 [00:00<00:00, 71.5kB/s]  
Fetching 19 files: 100%                                         19/19 [02:02<00:00, 7.18s/it]  
tokenizer_config.json: 100%                                     737/737 [00:00<00:00, 13.6kB/s]  
special_tokens_map.json: 100%                                    472/472 [00:00<00:00, 9.31kB/s]  
config.json: 100%                                         24.5kB/s  
scheduler_config.json: 100%                                     00<00:00, 13.7kB/s  
config.json: 100%                                         13.6kB/s  
merges.txt: 525k/? [00:00<00:00, 7.32MB/s]                                         1.39G/1.39G [01:07<00:00, 60.2MB/s]  
text_encoder_2/model.fp16.safetensors: 100%  
text_encoder/model.fp16.safetensors: 100%                                     246M/246M [00:40<00:00, 4.69MB/s]  
vocab.json: 1.06M/? [00:00<00:00, 13.6MB/s]                                         460/460 [00:00<00:00, 11.0kB/s]  
special_tokens_map.json: 100%                                     725/725 [00:00<00:00, 19.1kB/s]  
config.json: 1.68k/? [00:00<00:00, 35.6kB/s]                                         5.14G/5.14G [02:02<00:00, 90.1MB/s]  
unet/diffusion_pytorch_model.fp16.safete(...): 100%  
config.json: 100%                                         642/642 [00:00<00:00, 47.2kB/s]  
vae/diffusion_pytorch_model.fp16.safeten(...): 100%                                     167M/167M [01:07<00:00, 2.30MB/s]  
vae_1_0/diffusion_pytorch_model.fp16.saf(...): 100%                                     167M/167M [01:11<00:00, 1.85MB/s]  
Loading pipeline components...: 100%                                         7/7 [00:04<00:00, 1.52it/s]  
'torch_dtype` is deprecated! Use `dtype` instead!  
100%                                         50/50 [00:37<00:00, 1.34it/s]
```

images

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```
!pip install gradio
```

```
Requirement already satisfied: gradio in /usr/local/lib/python3.12/dist-packages (5.47.2)
Requirement already satisfied: aiofiles<25.0,>=22.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (24.1.0)
Requirement already satisfied: anyio<5.0,>=3.0.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (4.11.0)
Requirement already satisfied: brotli>=1.0.7 in /usr/local/lib/python3.12/dist-packages (from gradio) (1.1.0)
Requirement already satisfied: fastapi<1.0.0,>=0.69.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.118.0)
Requirement already satisfied: ffmpeg in /usr/local/lib/python3.12/dist-packages (from gradio) (0.6.1)
Requirement already satisfied: gradio-client==1.13.3 in /usr/local/lib/python3.12/dist-packages (from gradio) (1.13.3)
Requirement already satisfied: groovy~=0.1.2 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.1.2)
Requirement already satisfied: httpx<1.0,>=0.24.1 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.28.1)
Requirement already satisfied: huggingface-hub<2.0,>=0.33.5 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.35.3)
Requirement already satisfied: jinja2<4.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (3.1.6)
Requirement already satisfied: markupsafe<4.0,>=2.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (3.0.3)
Requirement already satisfied: numpy<3.0,>=1.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (2.0.2)
Requirement already satisfied: orjson~=3.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (3.11.3)
Requirement already satisfied: packaging in /usr/local/lib/python3.12/dist-packages (from gradio) (25.0)
Requirement already satisfied: pandas<3.0,>=1.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (2.2.2)
Requirement already satisfied: pillow<12.0,>=8.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (11.3.0)
Requirement already satisfied: pydantic<2.12,>=2.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (2.11.9)
Requirement already satisfied: pydub in /usr/local/lib/python3.12/dist-packages (from gradio) (0.25.1)
Requirement already satisfied: python-multipart>=0.0.18 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.0.20)
Requirement already satisfied: pyyaml<7.0,>=5.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (6.0.3)
Requirement already satisfied: ruff>=0.9.3 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.13.2)
Requirement already satisfied: safehttpx<0.2.0,>=0.1.6 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.1.6)
Requirement already satisfied: semantic-version~=2.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (2.10.0)
Requirement already satisfied: starlette<1.0,>=0.40.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.48.0)
Requirement already satisfied: tomlkit<0.14.0,>=0.12.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.13.3)
Requirement already satisfied: typer<1.0,>=0.12 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.19.2)
Requirement already satisfied: typing-extensions~=4.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (4.15.0)
Requirement already satisfied: uvicorn>=0.14.0 in /usr/local/lib/python3.12/dist-packages (from gradio) (0.37.0)
Requirement already satisfied: fsspec in /usr/local/lib/python3.12/dist-packages (from gradio-client==1.13.3->gradio) (2025.3.0)
Requirement already satisfied: websockets<16.0,>=13.0 in /usr/local/lib/python3.12/dist-packages (from gradio-client==1.13.3->gradio) (1.13.3)
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.12/dist-packages (from anyio<5.0,>=3.0->gradio) (3.10)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.12/dist-packages (from anyio<5.0,>=3.0->gradio) (1.3.1)
Requirement already satisfied: certifi in /usr/local/lib/python3.12/dist-packages (from httpx<1.0,>=0.24.1->gradio) (2025.8.3)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.12/dist-packages (from httpx<1.0,>=0.24.1->gradio) (1.0.9)
Requirement already satisfied: h11>=0.16 in /usr/local/lib/python3.12/dist-packages (from httpcore==1.*->httpx<1.0,>=0.24.1->gradio) (0.1.0)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<2.0,>=0.33.5->gradio) (3.19.1)
```

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```
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<2.0,>=0.33.5->gradio) (2.32.4)
Requirement already satisfied: tqdm>=4.42.1 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<2.0,>=0.33.5->gradio) (4.67)
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.12/dist-packages (from huggingface-hub<2.0,>=0.33.5->gradio)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.12/dist-packages (from pandas<3.0,>=1.0->gradio) (2.9.0)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.12/dist-packages (from pandas<3.0,>=1.0->gradio) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.12/dist-packages (from pandas<3.0,>=1.0->gradio) (2025.2)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.12/dist-packages (from pydantic<2.12,>=2.0->gradio) (0.7)
Requirement already satisfied: pydantic-core==2.33.2 in /usr/local/lib/python3.12/dist-packages (from pydantic<2.12,>=2.0->gradio) (2.33)
Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.12/dist-packages (from pydantic<2.12,>=2.0->gradio) (0.7)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.12/dist-packages (from typer<1.0,>=0.12->gradio) (8.3.0)
Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.12/dist-packages (from typer<1.0,>=0.12->gradio) (1.5.4)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.12/dist-packages (from typer<1.0,>=0.12->gradio) (13.9.4)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.12/dist-packages (from python-dateutil>=2.8.2->pandas<3.0,>=1.0->gradio)
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.12/dist-packages (from rich>=10.11.0->typer<1.0,>=0.12->gradio)
Requirement already satisfied: pygments<^3.0.0>=2.12.0 in /usr/local/lib/python3.12/dist-packages (from rich>=10.11.0->typer<1.0,>=0.12->gradio)
Requirement already satisfied: charset_n
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Requirement already satisfied: urllib3<3.0.0>=2.12.0 in /usr/local/lib/python3.12/dist-packages (from requests->huggingface-hub<2.0,>=0.33.5->gradio)
Requirement already satisfied: mdurl~0.
```

```
import gradio as gr
from diffusers import StableDiffusionPipeline, EulerDiscreteScheduler
import torch

model_id = "stabilityai/stable-diffusion-xl-base-1.0"

scheduler = EulerDiscreteScheduler.from_pretrained(model_id, subfolder="scheduler")
pipe = StableDiffusionPipeline.from_pretrained(model_id, scheduler=scheduler, torch_dtype=torch.float16)
pipe = pipe.to("cuda")

def generated_image(prompt):
    image = pipe(prompt).images[0]
    return image

gr.Interface(
    fn=generated_image,
    inputs=gr.Textbox(label="Enter your prompt"),
    outputs=gr.Image(type="pil"),
    title="Stable Diffusion 2.1 - PRAKASH SENAPATI IMAGE GENERATOR APP",
    description="Enter text prompt and see the generated image"
).launch()
```

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```
Fetching 18 files: 22%                                         4/18 [08:27<06:18, 27.01s/it]  
text_encoder_2/model.safetensors: 95%                         2.64G/2.78G [08:26<00:44, 3.01MB/s]  
vae_1_0/diffusion_pytorch_model.safetens(...): 100%          335M/335M [06:23<00:00, 1.10MB/s]  
vae/diffusion_pytorch_model.safetensors: 100%                335M/335M [05:06<00:00, 976kB/s]  
text_encoder/model.safetensors: 100%                          492M/492M [01:20<00:00, 4.10MB/s]  
unet/diffusion_pytorch_model.safetensors: 26%                2.69G/10.3G [08:15<22:29, 5.61MB/s]
```

ERROR:root:Internal Python error in the inspect module.  
Below is the traceback from this internal error.

```
Traceback (most recent call last):  
  File "/usr/local/lib/python3.12/dist-p  
      return list(tqdm_class(ex.map(fn, *i  
      ^^^^^^^^^^^^^^^^^^^^^^^^^^  
  File "/usr/local/lib/python3.12/dist-p  
      for obj in it:  
          ^  
          ^  
  File "/usr/local/lib/python3.12/dist-packages/tqdm/std.py", line 1181, in __iter__  
      for obj in iterable:  
          ^^^^^^  
  File "/usr/lib/python3.12/concurrent/futures/_base.py", line 619, in result_iterator  
      yield _result_or_cancel(fs.pop())  
      ^^^^^^^^^^  
  File "/usr/lib/python3.12/concurrent/futures/_base.py", line 317, in _result_or_cancel  
      return fut.result(timeout)  
      ^^^^^^  
  File "/usr/lib/python3.12/concurrent/futures/_base.py", line 451, in result  
      self._condition.wait(timeout)  
  File "/usr/lib/python3.12/threading.py", line 355, in wait  
      waiter.acquire()  
KeyboardInterrupt
```

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```
    ", line 51, in _executor_map  
    kwargs))  
    ^^^^^^  
    50, in __iter__
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):  
  File "/usr/local/lib/python3.12/dist-packages/IPython/core/interactiveshell.py", line 3553, in run_code  
      exec(code_obj, self.user_global_ns, self.user_ns)  
  File "/tmp/ipython-input-1378080014.py", line 8, in <cell line: 0>  
      pipe = StableDiffusionPipeline.from_pretrained(model_id, scheduler=scheduler, torch_dtype=torch.float16)  
      ^^^^^^^^^^  
  File "/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_validators.py", line 114, in _inner_fn  
      return fn(*args, **kwargs)  
      ^^^^^^  
  File "/usr/local/lib/python3.12/dist-packages/diffusers/pipelines/pipeline_utils.py", line 833, in from_pretrained  
      cached_folder = cls.download(  
      ^^^^^^
```

```
File "/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_validators.py", line 114, in _inner_fn
    return fn(*args, **kwargs)
           ^^^^^^^^^^^^^^^^^^
File "/usr/local/lib/python3.12/dist-packages/diffusers/pipelines/pipeline_utils.py", line 1632, in download
    cached_folder = snapshot_download(
           ^^^^^^^^^^^^^^^^^^
File "/usr/local/lib/python3.12/dist-packages/huggingface_hub/utils/_validators.py", line 114, in _inner_fn
    return fn(*args, **kwargs)
           ^^^^^^^^^^^^^^^^^^
File "/usr/local/lib/python3.12/dist-packages/huggingface_hub/_snapshot_download.py", line 332, in snapshot_download
    thread_map(
File "/usr/local/lib/python3.12/dist-packages/tqdm/contrib/concurrent.py", line 69, in thread_map
    return _executor_map(ThreadPoolExecutor, fn, *iterables, **tqdm_kwargs)
           ^^^^^^^^^^^^^^^^^^
File "/usr/local/lib/python3.12/dist-p+ /, line 49, in _executor_map
    with PoolExecutor(max_workers=max_workers) as pool:
           ^^^^^^^^^^^^^^^^^^
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File "/usr/lib/python3.12/concurrent/f
    self.shutdown(wait=True)
File "/usr/lib/python3.12/concurrent/f
    t.join()
File "/usr/lib/python3.12/threading.py", line 1149, in join
    self._wait_for_tstate_lock()
File "/usr/lib/python3.12/threading.py", line 1169, in _wait_for_tstate_lock
    if lock.acquire(block, timeout):
           ^^^^^^^^^^^^^^
KeyboardInterrupt
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):
  File "/usr/local/lib/python3.12/dist-packages/IPython/core/interactiveshell.py", line 2099, in showtraceback
    stb = value._render_traceback_()
           ^^^^^^^^^^
AttributeError: 'KeyboardInterrupt' object has no attribute '_render_traceback_'
```

During handling of the above exception, another exception occurred:

```
Traceback (most recent call last):
  File "/usr/local/lib/python3.12/dist-packages/IPython/core/ultratb.py", line 1101, in get_records
    return _fixed_getinnerframes(etb, number_of_lines_of_context, tb_offset)
           ^^^^^^^^^^^^^^^^^^
  File "/usr/local/lib/python3.12/dist-packages/IPython/core/ultratb.py", line 248, in wrapped
    return f(*args, **kwargs)
           ^^^^^^^^^^
  File "/usr/local/lib/python3.12/dist-packages/IPython/core/ultratb.py", line 281, in _fixed_getinnerframes
    records = fix_frame_filenames(inspect.getinnerframes(etb, context))
           ^^^^^^^^^^^^^^
  File "/usr/lib/python3.12/inspect.py", line 1769, in getinnerframes
    traceback_info = getframeinfo(tb, context)
```

```
~~~~~  
File "/usr/lib/python3.12/inspect.py", line 1718, in getframeinfo  
    lines, lnum = findsource(frame)  
    ~~~~~  
File "/usr/local/lib/python3.12/dist-packages/IPython/core/ultratb.py", line 182, in findsource  
    lines = linecache.getlines(file, globals_dict)  
    ~~~~~  
File "/usr/lib/python3.12/linecache.py", line 46, in getlines  
    return updatecache(filename, module_globals)  
    ~~~~~  
File "/usr/lib/python3.12/linecache.py", line 141, in updatecache  
    with tokenize.open(fullname) as fp:  
    ~~~~~  
File "/usr/lib/python3.12/tokenize.py", line 459, in open  
    encoding, lines = detect_encoding(buf)  
    ~~~~~  
File "/usr/lib/python3.12/tokenize.py"  
    first = read_or_stop()  
    ~~~~~  
File "/usr/lib/python3.12/tokenize.py"  
    return readline()  
    ~~~~~
```

KeyboardInterrupt

```
-----  
KeyboardInterrupt Traceback (most recent call last)  
/usr/local/lib/python3.12/dist-packages/tqdm/contrib/concurrent.py in _executor_map(PoolExecutor, fn, *iterables, **tqdm_kwargs)  
  50     initargs=(1k,)) as ex:  
---> 51         return list(tqdm_class(ex.map(fn, *iterables, chunksize=chunksize), **kwargs))  
  52
```

◆ 25 frames

KeyboardInterrupt:

During handling of the above exception, another exception occurred:

```
KeyboardInterrupt Traceback (most recent call last)  
[... skipping hidden 1 frame]
```

KeyboardInterrupt:

During handling of the above exception, another exception occurred:

```
AttributeError Traceback (most recent call last)  
AttributeError: 'KeyboardInterrupt' object has no attribute '_render_traceback_'
```

Next steps: [Explain error](#)  
During handling of the above exception, another exception occurred:

```
TypeError Traceback (most recent call last)  
[... skipping hidden 1 frame]
```

```
!nvidia-smi
```

```
381  if not is_recursion_error(etype, value, records):
382  return len(records), 0
383  NVDIA-SMI:550.54.15 Driver Version: 550.54.15 CUDA Version: 12.4
384  # Select filename, lineno, func name to track frames with
+-----+
GPU Name Persistence-M Bus-Id Disp.A Volatile Uncorr. ECC
Type Error: object of type 'NoneType' has no len()
Fan Temp Perf Pwr:Usage/Cap Memory-Usage GPU-Util Compute M.
+-----+
0 Tesla T4 Off 00000000:00:04.0 Off 0%
N/A 55C P8 10W / 70W 0MiB / 15360MiB 0% Default
+-----+
Processes:
GPU GI CI PID Type Pro
ID ID
+-----+
No running processes found
+-----+
```

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GPU Memory Usage

## Project-2 : Text Prompt to Audio generation

```
from huggingface_hub import notebook_login
notebook_login()
```

```
!pip install torchsde
```

```
Collecting torchsde
  Downloading torchsde-0.2.6-py3-none-any.whl.metadata (5.3 kB)
Requirement already satisfied: numpy>=1.19 in /usr/local/lib/python3.12/dist-packages (from torchsde) (2.0.2)
Requirement already satisfied: scipy>=1.5 in /usr/local/lib/python3.12/dist-packages (from torchsde) (1.16.2)
Requirement already satisfied: torch>=1.6.0 in /usr/local/lib/python3.12/dist-packages (from torchsde) (2.8.0+cu126)
Collecting trampoline>=0.1.2 (from torchsde)
  Downloading trampoline-0.1.2-py3-none-any.whl.metadata (10 kB)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (3.19.1)
Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (4.15.6)
Requirement already satisfied: setuptools in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (75.2.0)
Requirement already satisfied: sympy>=1.13.3 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (1.13.3)
Requirement already satisfied: networkx in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (3.5)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (3.1.6)
```

```
Requirement already satisfied: fsspec in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (2025.3.0)
Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde)
Requirement already satisfied: nvidia-cuda-runtime-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde)
Requirement already satisfied: nvidia-cuda-cupti-cu12==12.6.80 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde)
Requirement already satisfied: nvidia-cudnn-cu12==9.10.2.21 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (9.10.2.21)
Requirement already satisfied: nvidia-cublas-cu12==12.6.4.1 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (12.6.4.1)
Requirement already satisfied: nvidia-cufft-cu12==11.3.0.4 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (11.3.0.4)
Requirement already satisfied: nvidia-curand-cu12==10.3.7.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (10.3.7.77)
Requirement already satisfied: nvidia-cusolver-cu12==11.7.1.2 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (11.7.1.2)
Requirement already satisfied: nvidia-cusparse-cu12==12.5.4.2 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (12.5.4.2)
Requirement already satisfied: nvidia-cusparselt-cu12==0.7.1 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (0.7.1)
Requirement already satisfied: nvidia-nccl-cu12==2.27.3 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (2.27.3)
Requirement already satisfied: nvidia-nvtx-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (12.6.77)
Requirement already satisfied: nvidia-nvjitlink-cu12==12.6.85 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (12.6.85)
Requirement already satisfied: nvidia-cuf<del>le-cu12==1.11.1.6 in /usr/local/lib/python3.12/dist-packages (from torch>=1.6.0->torchsde) (1.11.1.6)
Requirement already satisfied: triton==3.4.0 Run this cell to mount your Google Drive. Learn more
Requirement already satisfied: mpmath<1.2.0 in /usr/local/lib/python3.12/dist-packages (from sympy>=1.13.3->torch>=1.6.0->torchsde) (1.13.3)
Requirement already satisfied: MarkupSafe<2.1.1 in /usr/local/lib/python3.12/dist-packages (from jinja2>=2.11.3->torch>=1.6.0->torchsde) (2.1.1)
Requirement already satisfied: Downloading torchsde-0.2.6-py3-none-any.

```

Downloading trampoline-0.1.2-py3-none-any.whl (5.2 kB)
Installing collected packages: trampoline, torchsde
Successfully installed torchsde-0.2.6 trampoline-0.1.2

```
import torch
import soundfile as sf
from diffusers import StableAudioPipeline

pipe = StableAudioPipeline.from_pretrained("stabilityai/stable-audio-open-1.0", torch_dtype=torch.float16)
pipe = pipe.to("cuda")

# define the prompts
#prompt = "The sound of a hammer hitting a wooden surface."
prompt = " baby crying with louder noise"
negative_prompt = "Low quality."

# set the seed for generator
generator = torch.Generator("cuda").manual_seed(0)

# run the generation
audio = pipe(
    prompt,
    negative_prompt=negative_prompt,
    num_inference_steps=200,
    audio_end_in_s=10.0,
    num_waveforms_per_prompt=3,
```

```
generator=generator,  
).audios  
  
output = audio[0].T.float().cpu().numpy()  
sf.write("baby crying with louder noise.wav", output, pipe.vae.sampling_rate)
```

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