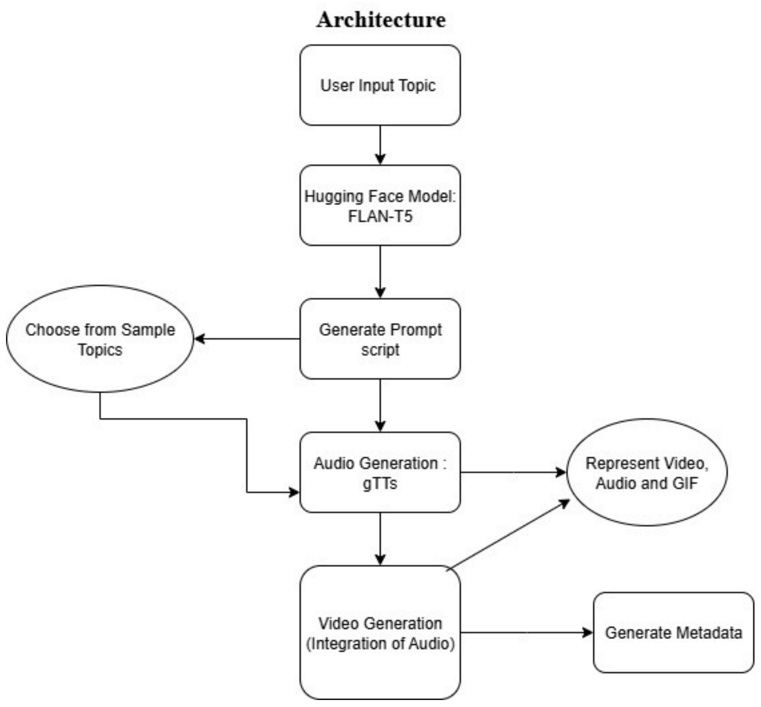
Setup Instructions

1. Run all cells in sequence
2. Choose a topic (or add your own)
3. Wait ~2–3 mins for video, audio, gif

Sample Input Topics

1. Electric Charges and Fields Class 12
2. Current Electricity Class 12,
3. Electromagnetic Induction Class 12


Architecture
User Input Topic
Hugging Face Model: FLAN-T5
Generate Prompt script
Choose from Sample Topics
Audio Generation : gTTs
Represent Video, Audio and GIF
Video Generation (Integration of Audio)
Generate Metadata

```
!pip install -q transformers gTTS moviepy requests
```

```
# Import Dependencies
from transformers import pipeline
from gtts import gTTS
from moviepy.editor import *
import requests, os
from IPython.display import Audio, HTML
from base64 import b64encode
```

```
physics_topics = [
    "Electric Charges and Fields Class 12",
    "Current Electricity Class 12",
    "Electromagnetic Induction Class 12"
]

print("Available Topics:\n")
for i, t in enumerate(physics_topics):
    print(f"{i+1}. {t}")

topic_index = int(input("\nEnter the number of the topic you want (1-3): ")) - 1
topic = physics_topics[topic_index]
```

```
Available Topics:

1. Electric Charges and Fields Class 12
2. Current Electricity Class 12
3. Electromagnetic Induction Class 12

Enter the number of the topic you want (1-3): 1
```

```
prompt = f"Write a detailed and engaging 800-word educational video script for a Class 12 Physics lesson on the topic: {topic}."
generator = pipeline("text2text-generation", model="google/flan-t5-large")
response = generator(prompt, max_length=1024, do_sample=True)[0]["generated_text"]
script = response
```

```
with open("script.txt", "w") as f:
    f.write(script)
```

```
Device set to use cpu
Both `max_new_tokens` (=256) and `max_length`(=1024) seem to have been set. `max_new_tokens` will take precedence. Please refer to t
```

```
tts = gTTS(text=script, lang='en')
tts.save("voiceover.mp3")
```

```
# Load audio
audio = AudioFileClip("voiceover.mp3")

# Divide audio into 5 parts to match 5 slides
slide_count = 5
slide_duration = audio.duration / slide_count

colors = [(0, 0, 0), (0, 51, 102), (0, 102, 51), (51, 0, 102), (102, 51, 0)]

slides = []
for i in range(slide_count):
    clip = ColorClip(size=(1280, 720), color=colors[i % len(colors)], duration=slide_duration)
    clip = clip.set_audio(audio.subclip(i * slide_duration, (i + 1) * slide_duration))
    slides.append(clip)

video = concatenate_videoclips(slides)
video.write_videofile("final_video.mp4", fps=24)
```

```
Moviepy - Building video final_video.mp4.
MoviePy - Writing audio in final_videoTEMP_MPY_wvf_snd.mp3
MoviePy - Done.
Moviepy - Writing video final_video.mp4

Moviepy - Done !
Moviepy - video ready final_video.mp4
```

```
# Display the audio
display(Audio("voiceover.mp3"))

# Display video
def play_video(path):
    mp4 = open(path, 'rb').read()
    data_url = "data:video/mp4;base64," + b64encode(mp4).decode()
    return HTML(f"""
      <video width=700 controls>
            <source src="{data_url}" type="video/mp4">
      </video>
    """)
play_video("final_video.mp4")
```

0:00 / 1:29

0:00 / 1:29

```
metadata_prompt = f"Generate a YouTube title, description, and 10 SEO-friendly tags for a Class 12 Physics video on: {topic}"
metadata_response = generator(metadata_prompt, max_length=256)[0]["generated_text"]
with open("metadata.json", "w") as f:
    f.write(metadata_response)
#print(metadata_response)
```

```
Both `max_new_tokens` (=256) and `max_length`(=256) seem to have been set. `max_new_tokens` will take precedence. Please refer to tl
```

```
!apt -y install ffmpeg
!ffmpeg -i final_video.mp4 -vf "fps=10,scale=320:-1" Video.gif

#Display the GIF
from IPython.display import Image, display

display(Image(filename="Video.gif"))
#Download
from google.colab import files
files.download("Video.gif")
```

```
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ffmpeg is already the newest version (7:4.4.2-0ubuntu0.22.04.1).
0 upgraded, 0 newly installed, 0 to remove and 35 not upgraded.
ffmpeg version 4.4.2-0ubuntu0.22.04.1 Copyright (c) 2000-2021 the FFmpeg developers
  built with gcc 11 (Ubuntu 11.2.0-19ubuntu1)
  configuration: --prefix=/usr --extra-version=0ubuntu0.22.04.1 --toolchain=hardened --libdir=/usr/lib/x86_64-linux-gnu --incdir=/us
  libavutil      56. 70.100 / 56. 70.100
  libavcodec     58.134.100 / 58.134.100
  libavformat    58. 76.100 / 58. 76.100
  libavdevice    58. 13.100 / 58. 13.100
  libavfilter     7.110.100 /  7.110.100
  libswscale      5.  9.100 /  5.  9.100
  libswresample   3.  9.100 /  3.  9.100
  libpostproc    55.  9.100 / 55.  9.100
Input #0, mov,mp4,m4a,3gp,3g2,mj2, from 'final_video.mp4':
  Metadata:
    major_brand     : isom
    minor_version   : 512
    compatible_brands: isomiso2avc1mp41
    encoder         : Lavf61.1.100
  Duration: 00:01:29.47, start: 0.000000, bitrate: 142 kb/s
  Stream #0:0(und): Video: h264 (High) (avc1 / 0x31637661), yuv420p, 1280x720, 7 kb/s, 24 fps, 24 tbr, 12288 tbn, 48 tbc (default)
    Metadata:
      handler_name    : VideoHandler
      vendor_id       : [0][0][0][0]
      encoder         : Lavc61.3.100 libx264
  Stream #0:1(und): Audio: mp3 (mp4a / 0x6134706D), 44100 Hz, stereo, fltp, 127 kb/s (default)
    Metadata:
      handler_name    : SoundHandler
      vendor_id       : [0][0][0][0]
File 'Video.gif' already exists. Overwrite? [y/N] y
Stream mapping:
  Stream #0:0 -> #0:0 (h264 (native) -> gif (native))
Press [q] to stop, [?] for help
Output #0, gif, to 'Video.gif':
  Metadata:
    major_brand     : isom
    minor_version   : 512
    compatible_brands: isomiso2avc1mp41
    encoder         : Lavf58.76.100
  Stream #0:0(und): Video: gif, bgr8(pc, gbr/unknown/unknown, progressive), 320x180, q=2-31, 200 kb/s, 10 fps, 100 tbn (default)
    Metadata:
      handler_name    : VideoHandler
      vendor_id       : [0][0][0][0]
      encoder         : Lavc58.134.100 gif
frame=  895 fps=146 q=-0.0 Lsize=      30kB time=00:01:29.41 bitrate=   2.7kbits/s speed=14.6x
video:30kB audio:0kB subtitle:0kB other streams:0kB global headers:0kB muxing overhead: 0.065149%
```

Start coding or generate with AI.