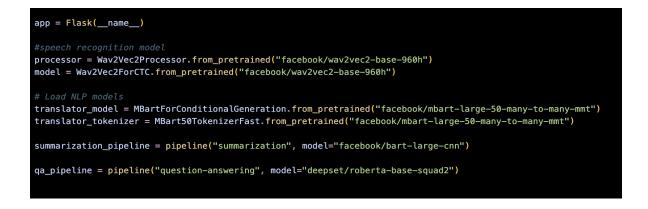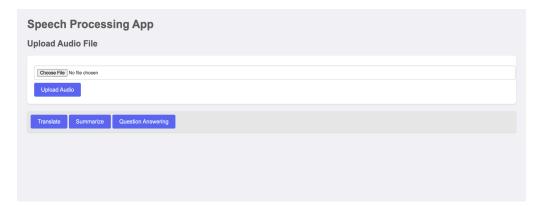# Home Assignment 3

Repo link: https://github.com/sainaveen1117/DL_HA3_Speech_App run python app.py to run the application.

I have Chosen Option 4 with Application approach

Build the flask application using below models
1. facebook/wav2vec2-base-960h for speech recognition
2. facebook/mbart-large-50-many-to-many-mmt for translation
3. facebook/bart-large-cnn for summarization
4. deepset/roberta-base-squad2 for qa tasks

```python
app = Flask(__name__)

#speech recognition model
processor = Wav2Vec2Processor.from_pretrained("facebook/wav2vec2-base-960h")
model = Wav2Vec2ForCTC.from_pretrained("facebook/wav2vec2-base-960h")

# Load NLP models
translator_model = MBartForConditionalGeneration.from_pretrained("facebook/mbart-large-50-many-to-many-mmt")
translator_tokenizer = MBart50TokenizerFast.from_pretrained("facebook/mbart-large-50-many-to-many-mmt")

summarization_pipeline = pipeline("summarization", model="facebook/bart-large-cnn")

qa_pipeline = pipeline("question-answering", model="deepset/roberta-base-squad2")
```

Speech Processing App

Upload Audio File

Choose File | No file chosen

Upload Audio

Translate | Summarize | Question Answering

1) Audio Transcription

Speech Processing App

Upload Audio File

Choose File | Harvard speech.wav

Upload Audio

Transcription: THE STALE SMELL OF OLD BEER LINGERS IT TAKES HEAT TO BRING OUT THE ODOUR A COLD DIP RESTORES HEALTH AND ZEST A SALT PICKLE TASTES FINE WITH HAM TAKOZAL PASTORE ARE MY FAVORITE A ZESTFUL FOOD IS THE HOT CROSS BUN

Translate | Summarize | Question Answering

2) Translate (translating to japanese)

Speech Processing App

Upload Audio File

Choose File   Harvard speech.wav

Upload Audio

Transcription: THE STALE SMELL OF OLD BEER LINGERS IT TAKES HEAT TO BRING OUT THE ODOUR A COLD DIP RESTORES HEALTH AND ZEST A SALT PICKLE TASTES FINE WITH HAM TAKOZAL PASTORE ARE MY FAVORITE A ZESTFUL FOOD IS THE HOT CROSS BUN

Translate   Summarize   Question Answering

Translated Text: 古くからのビールリングスの小さな小売店 それは香りを取り出すのに熱い 冷たいディップ 健康を維持し、塩漬けの味を味わう ハム・タコザル店 私のお気に入り 温かい食べ物はホットクロスブーンです

3) Summarization

Speech Processing App

Upload Audio File

Choose File   Harvard speech.wav

Upload Audio

Transcription: THE STALE SMELL OF OLD BEER LINGERS IT TAKES HEAT TO BRING OUT THE ODOUR A COLD DIP RESTORES HEALTH AND ZEST A SALT PICKLE TASTES FINE WITH HAM TAKOZAL PASTORE ARE MY FAVORITE A ZESTFUL FOOD IS THE HOT CROSS BUN

Translate   Summarize   Question Answering

Summary: A COLD DIP RESTORES HEALTH AND ZEST A SALT PICKLE TASTES FINE WITH HAM TAKOZAL PASTORE ARE MY FAVORITE A ZESTFUL FOOD IS THE HOT CROSS BUN.

4) QA

Speech Processing App

Upload Audio File

Choose File   Harvard speech.wav

Upload Audio

Transcription: THE STALE SMELL OF OLD BEER LINGERS IT TAKES HEAT TO BRING OUT THE ODOUR A COLD DIP RESTORES HEALTH AND ZEST A SALT PICKLE TASTES FINE WITH HAM TAKOZAL PASTORE ARE MY FAVORITE A ZESTFUL FOOD IS THE HOT CROSS BUN

Translate   Summarize   Question Answering

what tastes fine with ham?

Get Answer

Answer: SALT PICKLE