# Multilingual Speech Recognition Model Using Pre-trained Multilingual Whisper

## Project Overview

This project leverages the power of the pre-trained Multilingual Whisper model by OpenAI to perform speech recognition in multiple languages without additional training. The Whisper model is designed to transcribe audio files into text, detecting the language automatically. The project includes a web interface for uploading audio files and receiving the transcribed text.

## Project Structure

1. **Installation of Dependencies**
2. **Loading the Pre-trained Whisper Model**
3. **Language Detection and Speech Transcription**
4. **Web Interface for User Interaction**

### 1. Installation of Dependencies

The project starts with installing the Whisper model from OpenAI's GitHub repository. Additionally, Gradio is used to create a user-friendly web interface for the application.

### 2. Loading the Pre-trained Whisper Model

We load the base version of the Whisper model to handle the speech recognition tasks.

### 3. Language Detection and Speech Transcription

The project includes functionality to load audio files, preprocess them, and then use the Whisper model to detect the language and transcribe the speech.

#### Loading and Preprocessing Audio

Audio files are loaded and preprocessed to ensure they are compatible with the Whisper model's input requirements.

#### Language Detection

The model detects the language of the audio clip, providing a probability distribution over supported languages.

#### Speech Transcription

The Whisper model transcribes the audio into text using its decoding capabilities.

### 4. Web Interface for User Interaction

Gradio is used to build an interactive web interface that allows users to upload audio files and receive transcriptions in real-time.

## Conclusion

This project demonstrates the application of a pre-trained multilingual speech recognition model to transcribe audio files in various languages. The use of Gradio for the web interface enhances the user experience by providing an easy-to-use platform for interacting with the model. This project showcases the potential of using advanced machine learning models in practical applications without the need for extensive additional training.