T&T Converter

A speech-to-text *transcribing*, and language *translation converter.*

Group Members:
1) Syed Bilal Rizwan (23943)
2) Omar Ahmed Khan (07253)

Project Description:
Through this project, we will be creating a web application, that will be using the IBM Watson Speech-to-Text and IBM Language Translator APIs on Python, which will allow users to use one of our following features:
1) English Speech to Text Conversion (Transcribing English Text).
2) Text-Based Language Translation.

Dataset/Web APIs:
1) Speech-to-Text API
2) Language Translator

Python Libraries:
1. IBM_Watson library
2. Json library
3. IBM_cloud_sdk_core (independent function: authenticators)
4. Pandas library
5. Flask Micro Framework
6. Threading Library (for progress bar)
7. Time Library (for progress bar)

Features:
The project is going to boast the following features:

1) English Speech to Text Conversion (Transcribing English Text):
> The user will be able to record their speech, which will be processed by our web app and transcribed onto their screens. This will help save the users a lot of time that would otherwise have been spent typing everything down, and will also help avoid typos.

2) Text-Based Language Translation:
> The system shall also allow the users to translate texts from English to various other languages. This shall be of great use to travellers, and language enthusiasts alike. This feature shall provide ease and convenience to travellers as they will not have to worry about the language barriers wherever they may be in the world.

3) Progress Bar:

Considering the process of converting audio files into text will be a little time consuming, we will also add a progress bar that will show the progress of the conversion to the user. This will be added to ensure that the users understand that their command is being processed, and avoid having them sending multiple requests of the same command.

4) Ease-of-Access:

We would also be providing the users with an option to upload either a text file for translation, or an audio file for text-to-speech conversion. We will also feature a microphone button that will let the user record their audio, which will then be converted to text. We will also feature a text box where the user can paste their text directly so that it can be translated.

5) Download Buttons:

We will give our users an option to download the speech-to-text converted script in .docx or .txt format. This would allow them to keep a copy of their generated script and eliminate the need to re-run the speech-to-text converter multiple times for the same audio file.