1. CODE DOCUMENTATION

The Healthcare Translation Web App consists of the following components:

Frontend (HTML, CSS, JavaScript)
- index.html: The main user interface with language selection, recording, transcription, translation, and playback features.

- styles.css: The stylesheet for styling the UI elements.

- script.js: The JavaScript logic handling language swapping, voice recognition, API calls, and audio playback functionality.

Backend (Flask API)
- **app.py**: Handles requests, sanitizes text input and translation

- **Flask Limiter**: Prevents abuse by rate-limiting requests.

AI Tools Used
- Speech Recognition: The Web Speech API is used to convert spoken words into text.

- Machine Translation: A Groq Llama 70B model was used for translation.

- Text-to-Speech (TTS): The SpeechSynthesis API is used for playback of translated text.

2. SECURITY CONSIDERATIONS

- API Security: The backend should validate and sanitize inputs to prevent abuse.

- Rate Limiting: Prevent excessive requests to avoid misuse of the translation API.

- Data Privacy: No user speech data is stored; all processing is real-time.