FEBRUARY 2024

LANG

A COMMUNICATION ASSESSMENT TOOL

02 ABOUT LANG

This tool offers a robust solution for accurately evaluating candidates' communication skills across five essential dimensions: Listening, Grammar, Pronunciation, Fluency, and the ability to articulate their work effectively. Leveraging advanced functionalities and innovative solutions, it provides comprehensive assessments and detailed scores, ensuring thorough insights into each candidate's proficiency.

Moreover, with integrated video proctoring features, the tool safeguards the integrity and authenticity of the assessment process, mitigating risks of misconduct or dishonesty. Tailored for future prospects such as IELTS exams and company placements, this tool serves as a reliable and versatile platform for evaluating and selecting candidates with confidence and precision.

03 FUNCTIONALITIES

LISTENING ASSESSMENT

The listening assessment component of 'LANG' comprises two modules to gauge a candidate's listening abilities. In the first module, the tool dictates sentences, and candidates are required to accurately transcribe them by carefully listening.

Conversely, the second module entails the tool reciting a paragraph, after which candidates must attentively listen and subsequently answer three multiple-choice questions. Each listening assessment module presents varying data for evaluating candidates' listening skills effectively.

GRAMMAR ASSESSMENT

The grammar assessment tool features two modules to evaluate candidates' grammar accuracy. In the first module, candidates respond to a prompt with a verbal answer, which the tool records and transcribes. After recording , grammar errors are identified, and scoring is provided accordingly.

The second module involves candidates describing an image, with assessments based on their descriptions. grammar errors are identified, and scoring is provided accordingly.

04 FUNCTIONALITIES

PRONOUNCIATION ASSESSMENT

In the pronunciation assessment component of ‘LANG’, users are presented with sentences on the screen and asked to recite them while recording their response.

The tool then evaluates the accuracy of pronunciation, identifies any corrections needed, and scores the user based on their performance. This feature enables users to practice and improve their pronunciation skills effectively, providing valuable feedback for their language proficiency development.

ABILITY TO EXPLAIN WORK ASSESSMENT

LANG’s "Ability to explain work" component begins by informing the user about the evaluation criteria, which outline the rules and regulations guiding the assessment process.

Subsequently, the user is prompted to record their explanation regarding their work or project. The recorded response is then assessed based on three key aspects: clarity, structure, and effectiveness. Each aspect is assigned a score accordingly, and the user receives feedback tailored to areas where improvement is needed,

05 FUNCTIONALITIES

FLUENCY ASSESSMENT

The Fluency assessment module of the communication assessment tool incorporates a listening exercise where the user is prompted with a question and required to record their response.

The tool evaluates parameters such as filler usage, pause count, and speech rate to estimate the user's fluency. By analyzing these metrics, the tool provides insights into the user's Fluency during the interaction

VIDEO PROCTORING

The video proctoring feature of 'LANG' comprises two key components: authentication and live monitoring. During authentication, users capture their image for comparison with live video feed during the assessment.

In the live monitoring module, users are continuously surveilled throughout the assessment. If the authenticated user is detected, a green box appears above their head, indicating a match. Conversely, if a different person is detected, a red box is displayed. In the event of multiple detections, an alarm sounds and a warning message appears. After five alarms or authentication failure, the assessment is terminated for security purposes.

06 FUTURE ENCHANCEMENT

1. Advanced Speech Analysis: Integrate advanced speech processing techniques to analyze aspects such as pronunciation, intonation, fluency, and accent.

2. NLP Techniques: Incorporate natural language processing techniques to enhance the analysis of written text, including sentiment analysis, and stylistic analysis, expanding the tool's capabilities in automated text evaluation.

3. Adaptive Learning Features: Implement adaptive learning algorithms to personalize the assessment experience based on individual learner needs and performance, providing targeted exercises and feedback tailored to each user.

4. Integration with Learning Management Systems: Integrate the assessment tool with popular LMS platforms to streamline the assessment process for educational institutions and language learning organizations.

5. Audio-Based Proctoring: Implement real-time monitoring and analysis of spoken responses during assessments to detect anomalies and ensure integrity. This additional layer of security enhances the tool's capabilities for language proficiency assessments, especially in remote or online testing environments.

07 TECHNOLOGIES AND TOOLS USED

1. Python: The primary programming language used for writing the code.

2. SpeechRecognition Library: Used for converting speech to text during the listening assessment.

3. Google Text-to-Speech (gTTS) API: Utilized to convert text to speech for providing instructions and feedback during the listening assessment.

4. Pyttsx3 Library: Another text-to-speech library used for converting text to speech.

5. OpenCV Library: Used for video processing and implementing video proctoring features.

6. tkinter Library: Utilized for building the graphical user interface (GUI) for the pronunciation checker and grammar checker.

7. requests Library: Used for sending HTTP requests to the LanguageTool API for grammar checking.

08 TECHNOLOGIES AND TOOLS USED

8. language_tool_python Library: A Python wrapper for the LanguageTool API, used for checking grammar and providing suggestions.

9. difflib Library: Used for calculating the similarity ratio between the original text and the user's input during the listening assessment.

10. playsound Library: Used for playing audio files during the listening assessment.

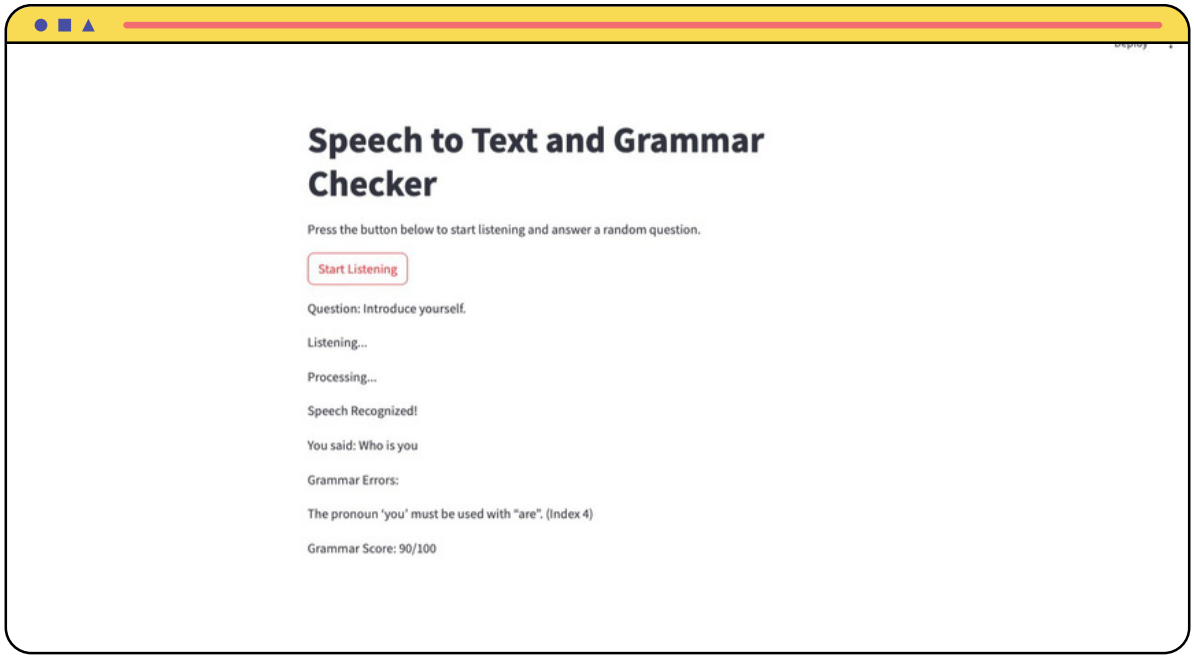
11. csv Library: Utilized for storing assessment records in CSV format.

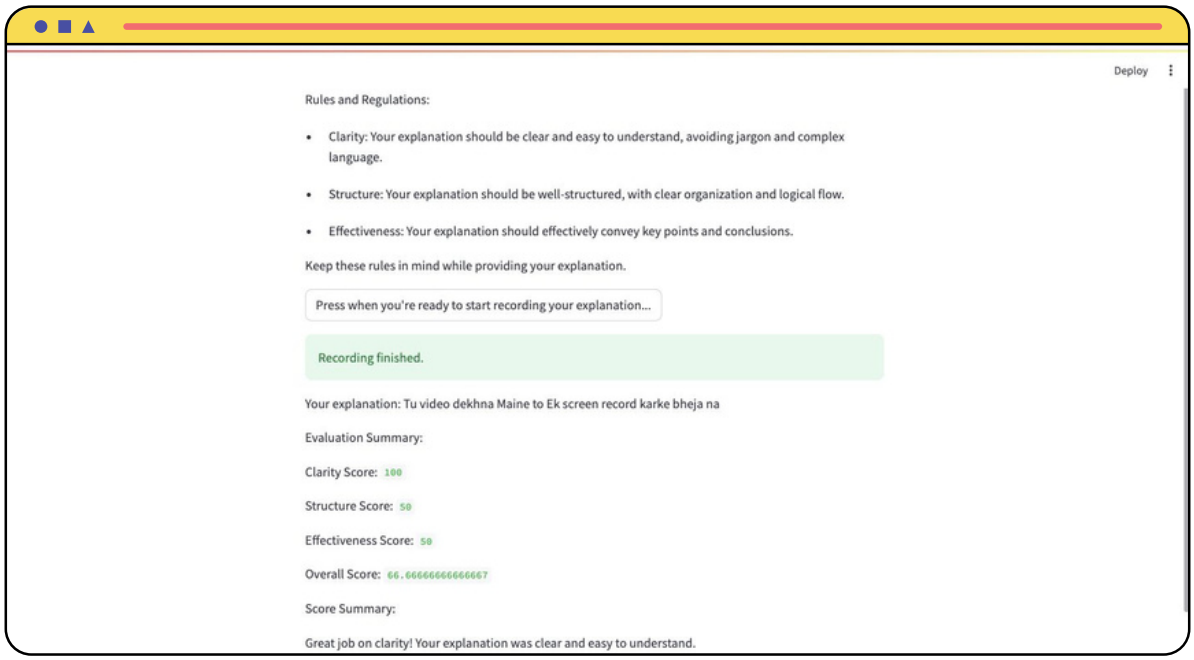
12. time Library: Used for timing the duration of audio recordings during the listening assessment.

13. PIL (Python Imaging Library) and ImageTk Libraries: Used for loading and displaying images in the GUI.

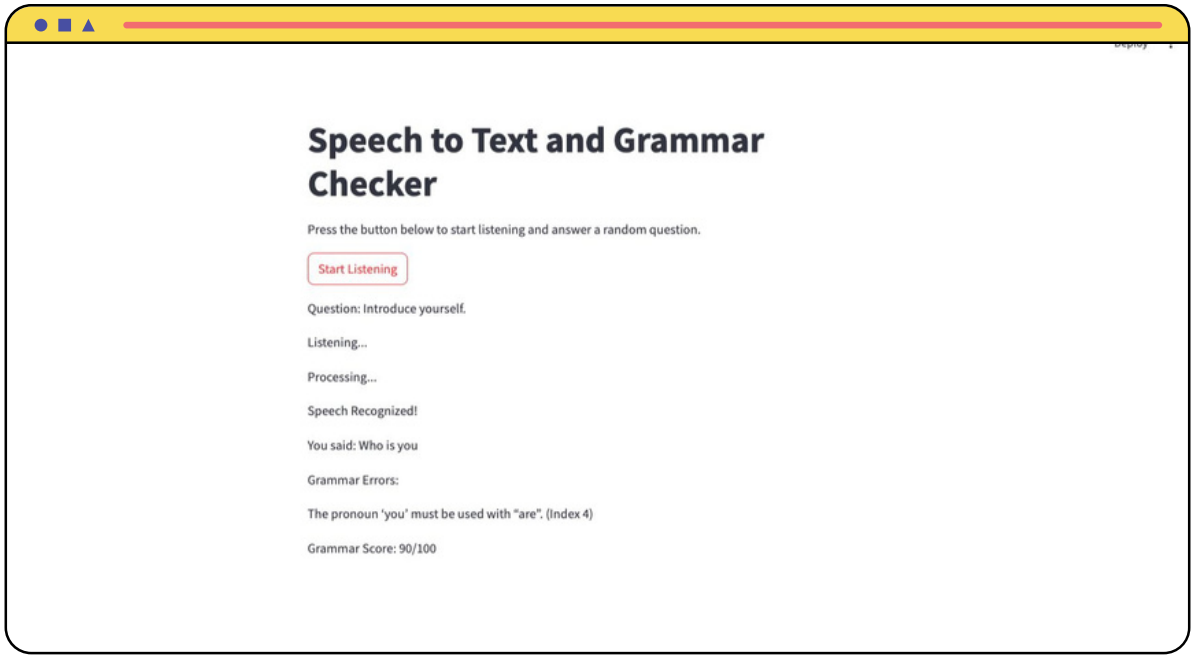
These technologies and tools are combined to create 'LANG' with various functionalities such as listening assessment, pronunciation checker, fluency assessment, grammar checker, and video proctoring features.

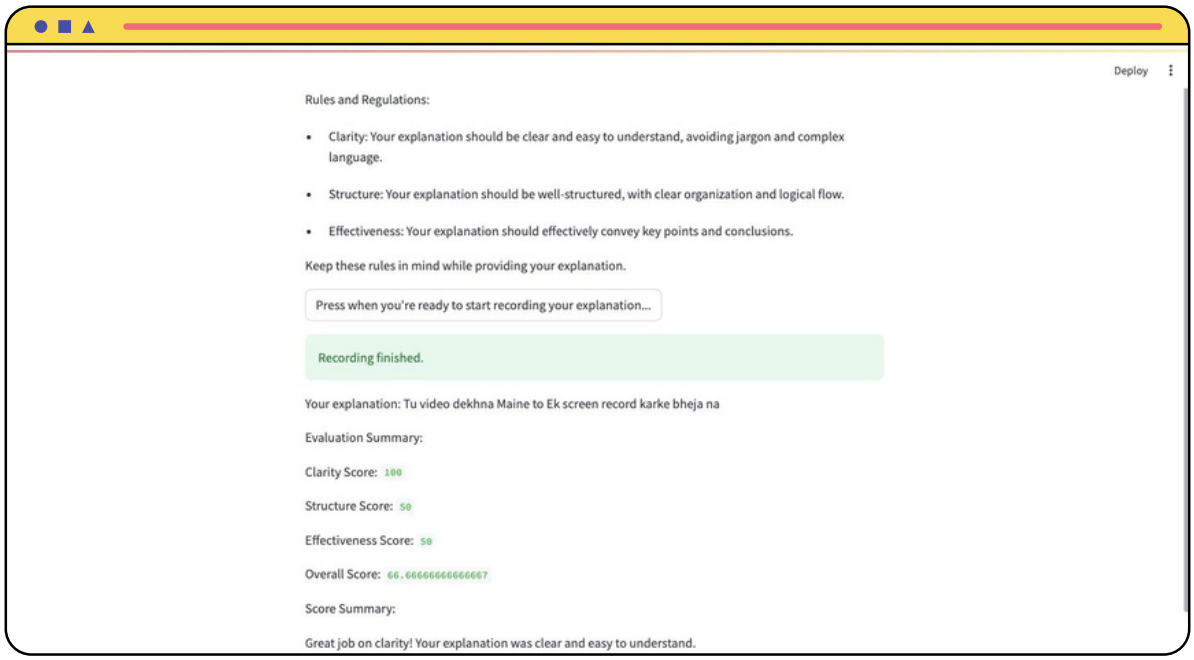
09 WEB USER INTERFACE





10 APP USER INTERFACE





11 MOBILE APPLICATION