

AI-Based Smart System for Personalized IELTS Preparation and Feedback Generation

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Abstract: *The IELTS Personal Assistant System is a web-based tool designed to help students prepare well for the IELTS exam. It uses React for the front end and Python Flask for the back end. The app creates an intelligent learning environment where users can practice the four main parts of the IELTS: Reading, Writing, Listening, and Speaking.*

The system starts with a user authentication part that lets people register and log in. Once they log in, they see a dashboard with options for the four practice areas.

In the Reading section, students read texts provided by the system. Once the test is complete, the system automatically reviews the answers, assigns band scores, points out areas that need improvement, and offers tips for getting better. For the Writing section, users write responses to tasks similar to those in the IELTS exam. The system then evaluates their writing, providing feedback on how well they addressed the task, how clearly their ideas are organized, their grammar, their strengths, and where they should focus more effort, along with an overall band score.

The Speaking module lets students record their spoken responses. The system analyzes the audio and checks things like fluency, coherence, vocabulary, grammar, and pronunciation. It then gives a band score and a plan to improve. In the Listening section, the system creates audio content and matching questions on the back end. After the candidate completes the listening test, the system evaluates the answers and provides scores, feedback, weaknesses, and improvement plans.

The dashboard also contains a sidebar with additional features such as My Courses, Progress Tracking, Study Materials, and Profile Settings. The My Courses section provides syllabus-based learning resources for each module and mock tests for practice. After completing tests, scores are calculated and stored by the backend.

The Progress section visualizes user performance through graphs for Reading, Writing, Listening, and Speaking modules. The Study Materials section lets users upload learning resources in PDF or image format. The Profile Settings module lets users manage their account information.

This system helps candidates improve their IELTS performance through automated evaluation, personalized feedback, and progress tracking, making the preparation process more structured and effective.

Keywords: Artificial Intelligence, IELTS Preparation, Automated Evaluation, Personalized Learning, Natural Language Processing (NLP), Speech Recognition, Web-Based Learning System, Progress Tracking

