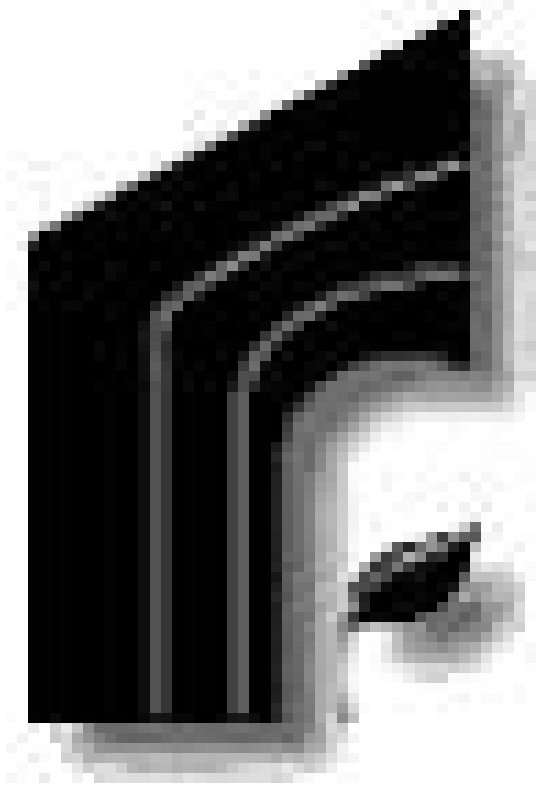


SPEECHBUDDY



Justina Basuthakur, Graphic Design

Developer: Nanwarin Chantarutai

Mentor: Professor Melissa Flicker

Kellogg Honors College Capstone Project



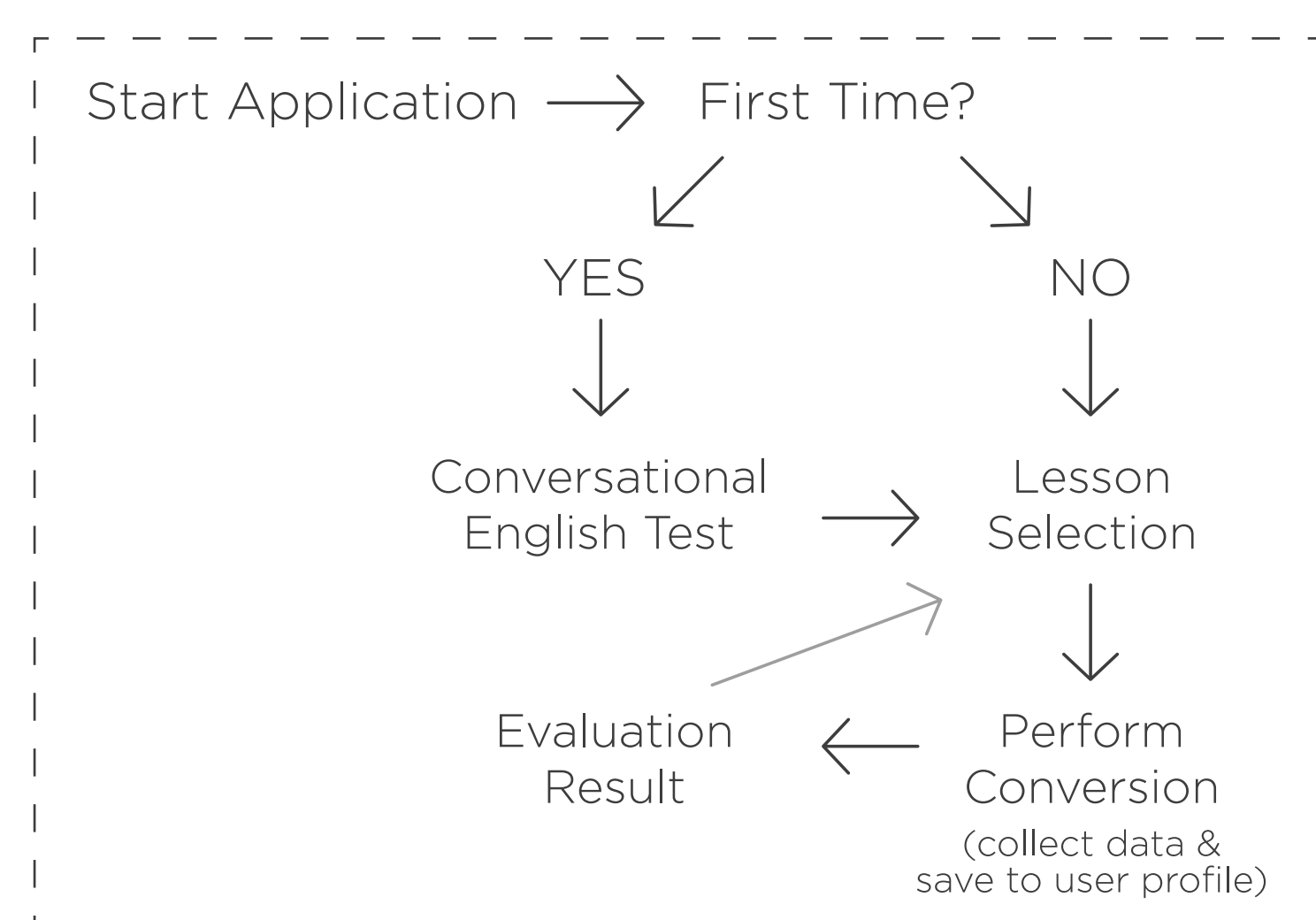
ABSTRACT

English is the most common official language in the world, and is by far the most common studied foreign language in the world with over 1.5 billion learners. These English language learners often face many challenges including unqualified teachers, limited learning environments, the overuse of native languages inside and outside the classroom, dependency on the instructor, and strong students dominating the classroom. Modern technology can serve as an approach to solving these challenges to assess oral proficiency. SpeechBuddy is a website that allows nonnative English speakers evaluate their pronunciation and customize learning lessons based on their preference and English level. Using the technology of automatic speech recognition and natural language processing, SpeechBuddy is designed for the user to become confident in his or her conversational English. To create easy use, SpeechBuddy was designed with a spacious feel that can be effortlessly navigated by an English learner who is familiar with the written language. Simple verbiage and straightforward graphics allow users to experience a thoughtful and elegant interface.

PROCESS

Initial Wireframing

A more technical wireframe was created to show a user's potential path through the application. These paths give a surface level look to SpeechBuddy's features.



Determining Back End Functions

To design the front end properly, the back end functions were taken into account:

- Automatic Speech Recognition
- Natural Language Processing

Personas & Use Cases

In order to create a friendly user interface and experience, it is necessary to research the behaviors of the potential audience. Listed below are three personas developed for SpeechBuddy. These personas are referred to throughout the creation of the application, as it is vital to design for the specific types of users.



Age: 27 | Gender: Male | Profession: International Marketing Consultant
An **international businessman** needs a way to **practice his presentations in English** because **he wants to relay information clearly and accurately.**

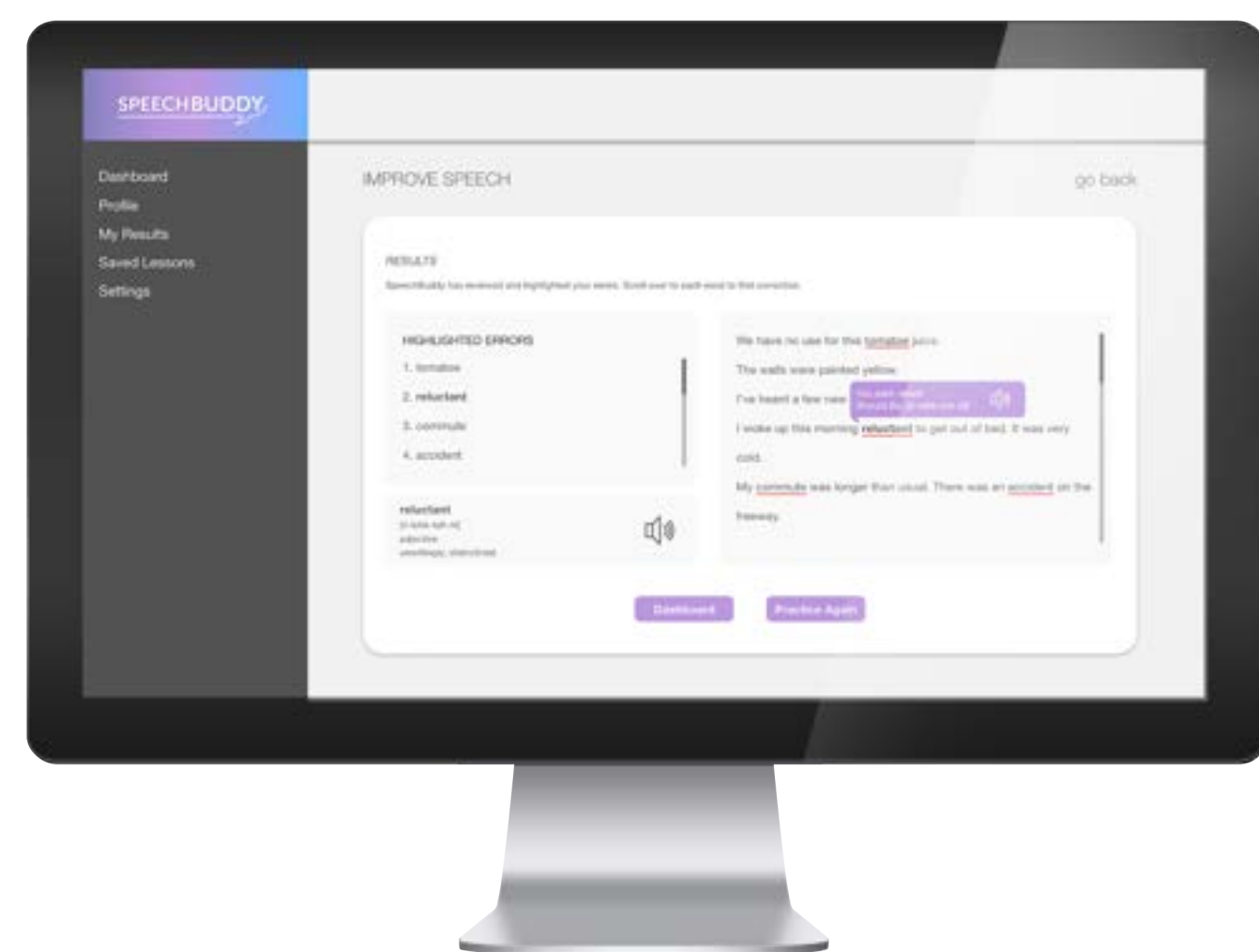
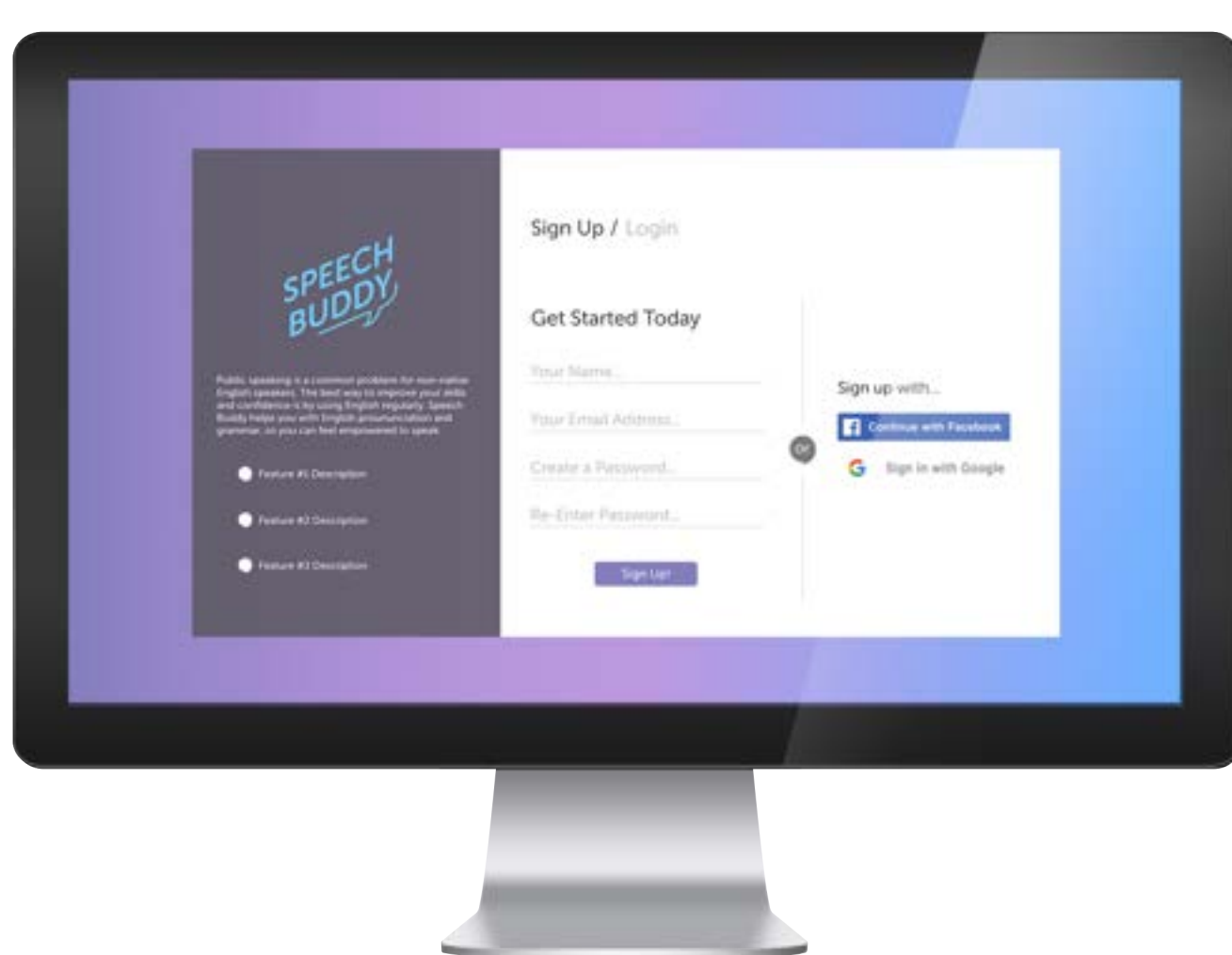


Age: 18 | Gender: Female | Profession: University Student
A **new international student** needs a way to **improve her conversational English skills** because **she struggles with grammar in social situations.**



Age: 35 | Gender: Female | Profession: ESL Teacher
An **ESL teacher** needs a way to **keep a detailed account of her students' progress** because **she teaches her students at a more individual level.**

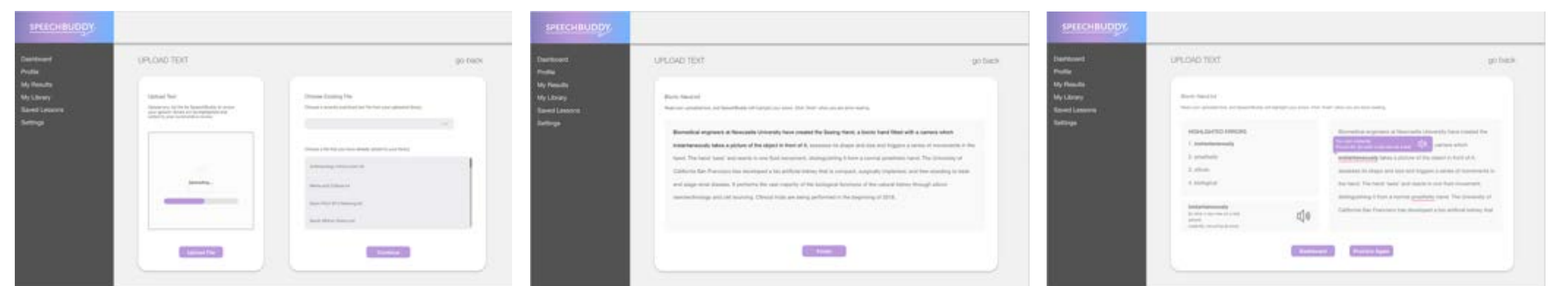
SCREENSHOTS



FEATURES

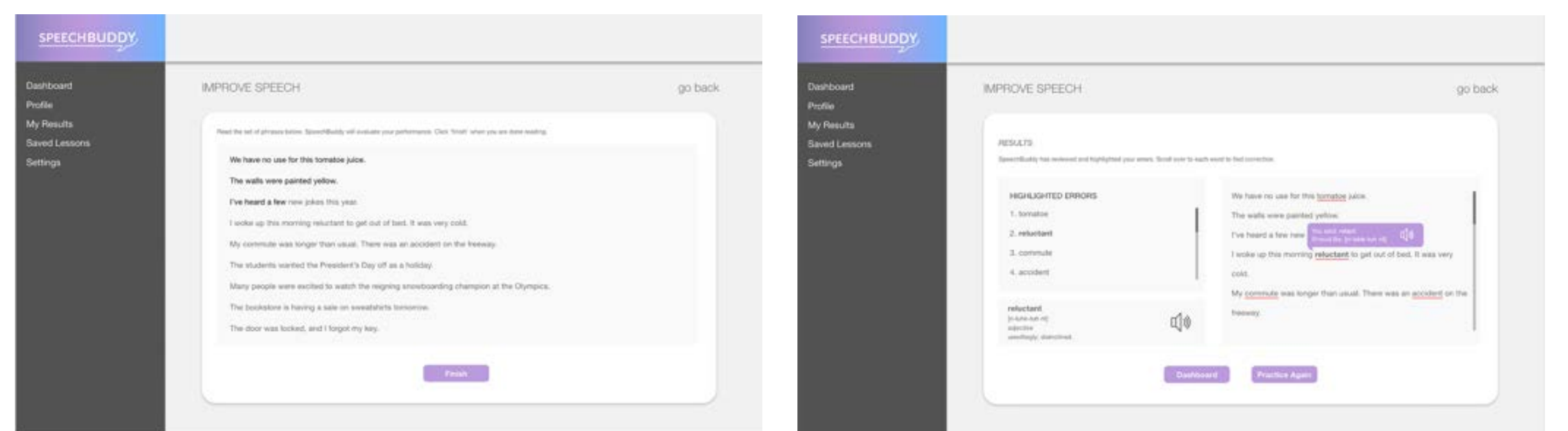
Upload Text

This feature requires users to upload documents that they would like to present in the future to hone in on their English public speaking skills. Users will then read the documents as the application will be able to detect and highlight incorrect pronunciation. The application can also collect common mispronounced words, and show them as a list of mistaken frequencies.



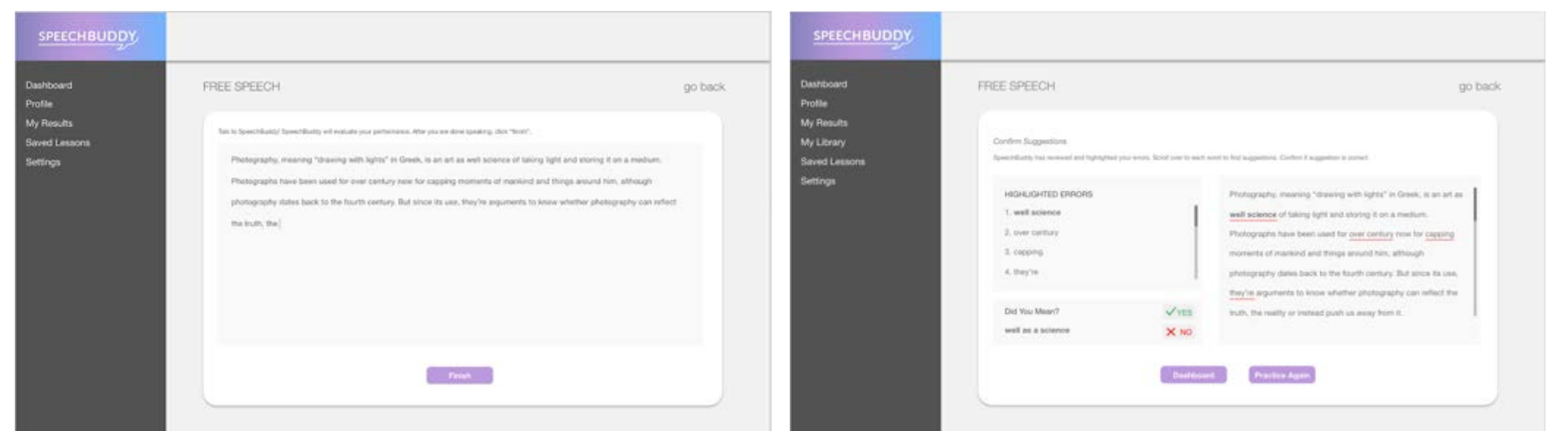
Improve Speech

This feature will generate random sentences based on the user's English level. The user will read the sentences and SpeechBuddy will evaluate and indicate errors, while collecting common mistakes. The data collected will create and suggest personalized lessons for the user.

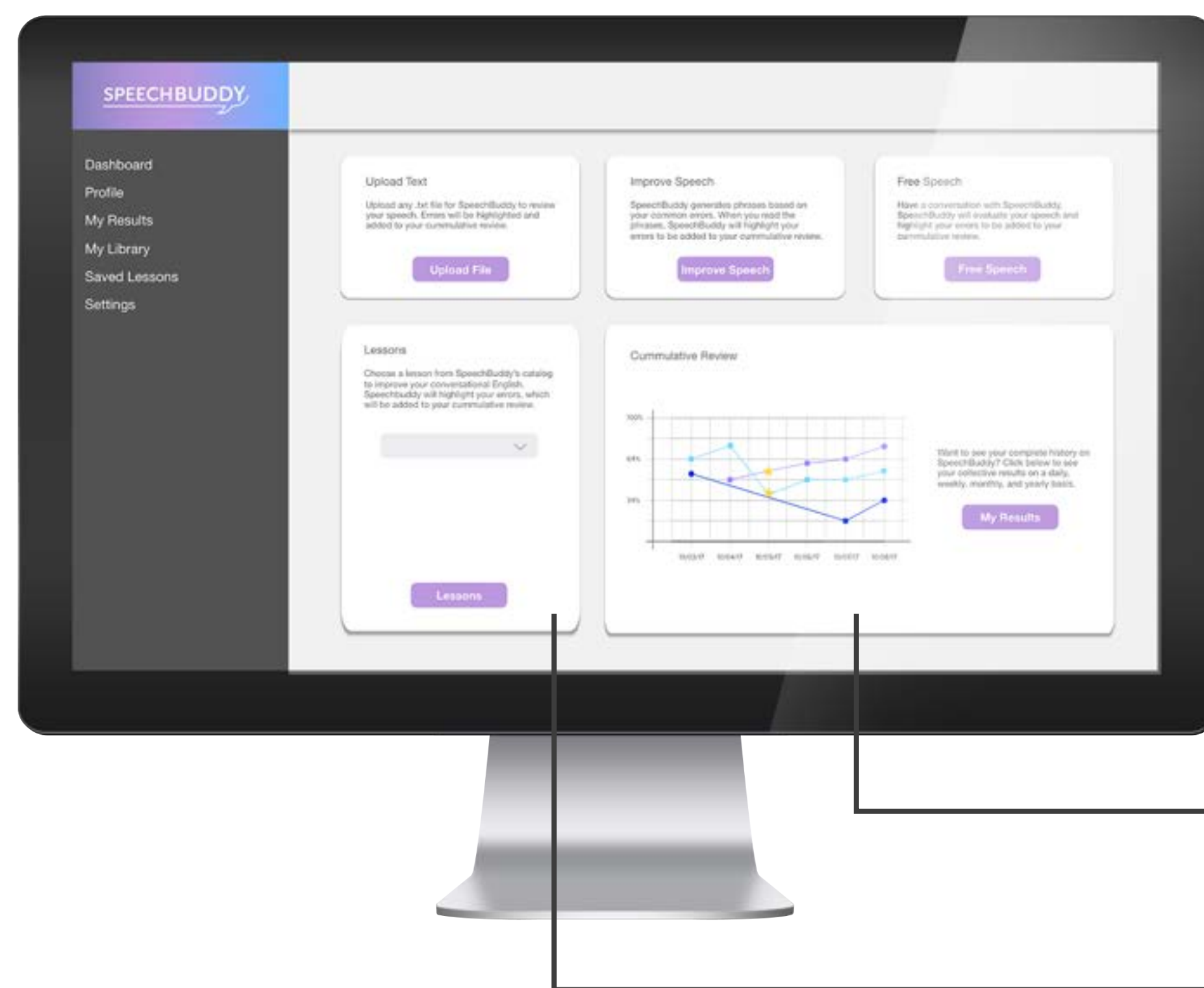


Free Speech

This feature allows the user to practice conversational English. The user can say anything to SpeechBuddy, and SpeechBuddy will evaluate the pronunciation and grammar of what was said. SpeechBuddy will indicate errors and collect the common mistakes to recommend personalized lessons to improve speech.



Additional Features



Cummulative Review:
User's collective results on a daily basis

Lessons:
Personalized lessons based on user results