Framework for Automated Student Assessment using NLP - Audio

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Team: 33

Brief Problem Statement

This application is for students to improve their skills by ongoing day-to-day assessment and being supervised by an experienced teacher. Doing this physically is time-consuming and is an administrative burden.

The current work proposes to automate the test taking/grading process by using the audio of the student-teacher interactions during class, to perform this assessment. The work shall start with a limited set of known questions with clear answers in the form of multiple choices or True/False. Based on progress of work, exploration into use of semantic matching for allowing rephrasing of the questions by the teacher may be carried out. To summarise main features of this application are:
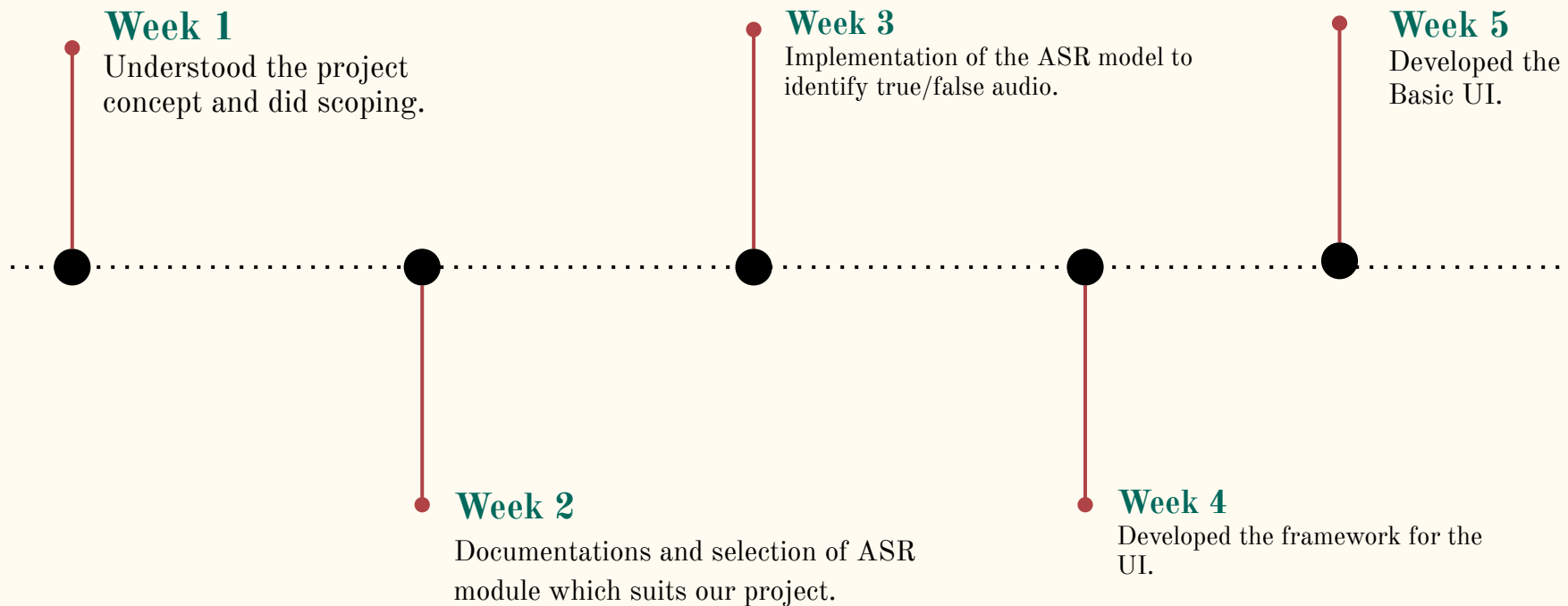
● Automate the student assessment based on the student-teacher interactions during class.

● Start with basic MCQ's and True/False questions and further expand the work to long answer questions

Milestones

- Sprint 1: Project Scoping and concept ✅
- Sprint 2: Requirements Collection ✅
- Sprint 3: Making the ASR model work, build UI ✅
- Sprint 4: Backend for Web application
- Sprint 5: Development of Dashboards
- Sprint 6: Testing the integrity of ASR model and database
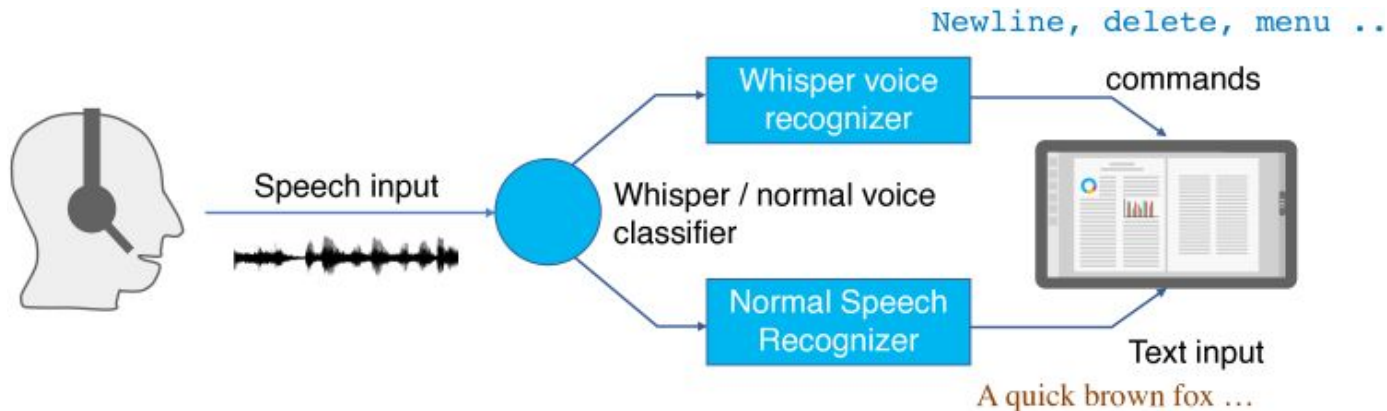- Sprint 7: Deployment.

Timeline History

Week 1
Understood the project concept and did scoping.

Week 2
Documentations and selection of ASR module which suits our project.

Week 3
Implementation of the ASR model to identify true/false audio.

Week 4
Developed the framework for the UI.

Week 5
Developed the Basic UI.

Speech → Text

Whisper Module

Whisper is an automatic speech recognition (ASR) system trained on multilingual and multitask supervised data collected from the web. We show that the use of such a large and diverse dataset leads to improved robustness to accents, background noise and technical language. Moreover, it enables transcription in multiple languages, as well as translation from those languages into English.
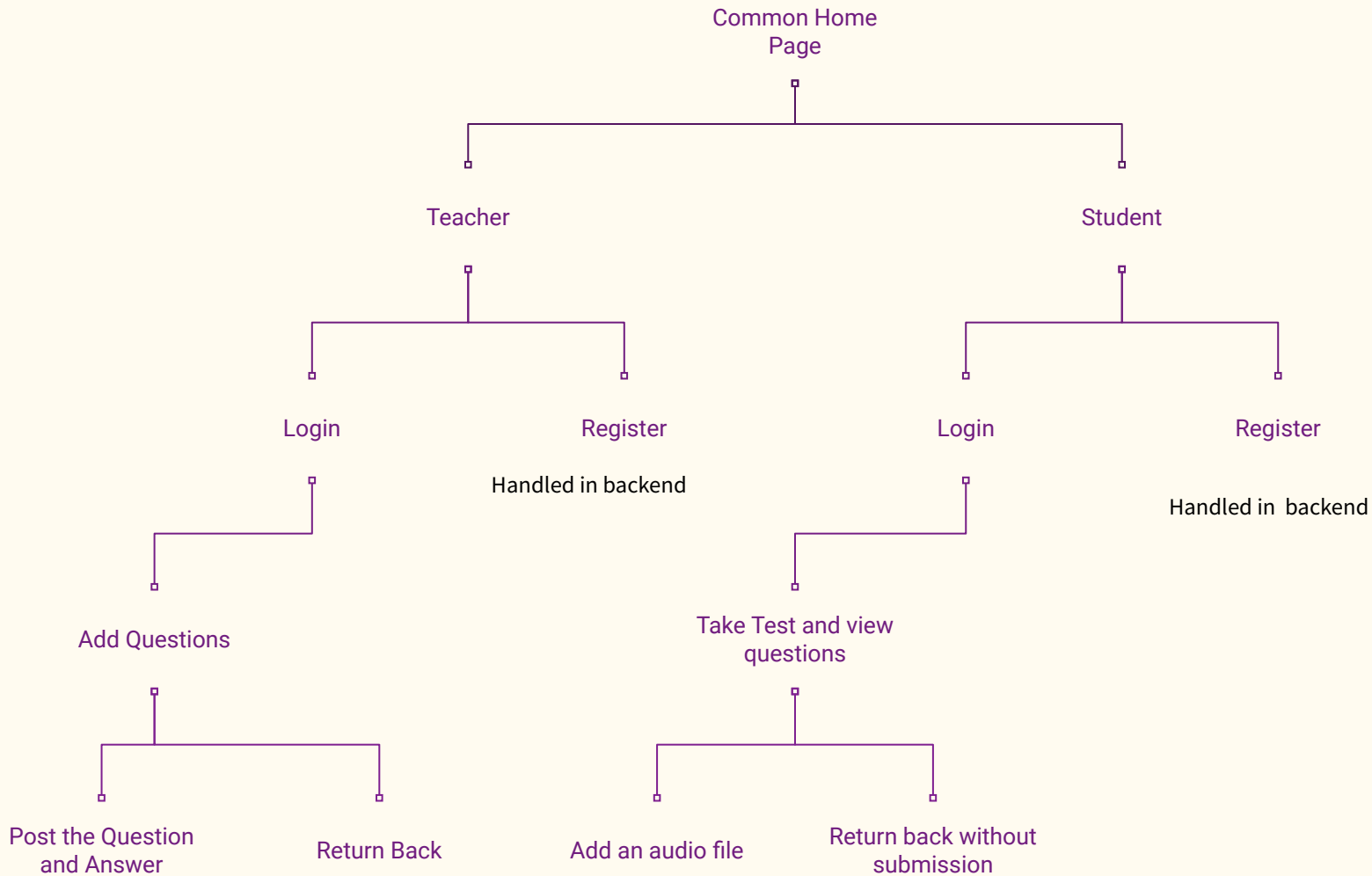
Implementation of ASR module:

Whisper:

See Sidhi's Laptop LOL

User Interface

Grade Mate

Common Home Page

Teacher

Student

Login

Register

Handled in backend

Login

Register

Handled in backend

Add Questions

Take Test and view questions

Post the Question and Answer

Return Back

Add an audio file

Return back without submission

A friendly tool for managing and grading student assessments.

Teacher   Student

A friendly tool for managing and grading student assessments.

Login   Register

Enter your credentials

User Name

Password

Login

A friendly tool for managing and grading student assessments.

Add Questions

Logged in as a Teacher

Enter your question here

Please enter the question to be posted:

Question

Please enter the answer for the question to be posted:

True   False

Post

Cancel add request:

Back

A friendly tool for managing and grading student assessments.

Take Test

Logged in as a student

Welcome to the test, lets start

View the Questions ▾

Sun rises in the south

Asrith is waste fellow

Geethika Lives in Bakul

End Test

Submit your file here

Choose file   No file chosen

Submit   Back

Team 33

Devisetti Sai Asrith
Thota Venkata Sai Lakshmi Geethika
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P Pavan