



Sri Lanka Institute of Information Technology

E-LEARNING SYSTEM FOR HEARING IMPAIRED STUDENTS

Project ID : 2021-176

STATUS DOCUMENT

Student Name : Accash R.

Student ID: IT18069600

Group Details

Supervisor - Mrs. Kalpani Manathunga

Co- Supervisor - Mrs. Samantha Siriwardana

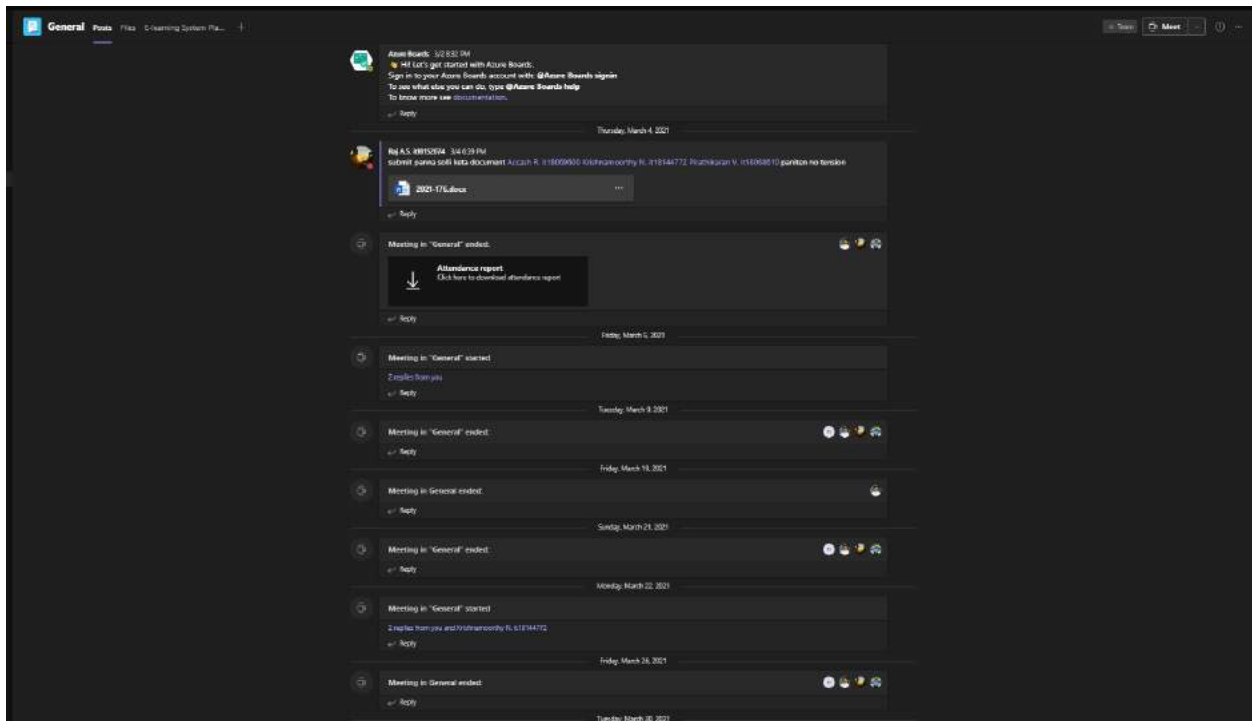
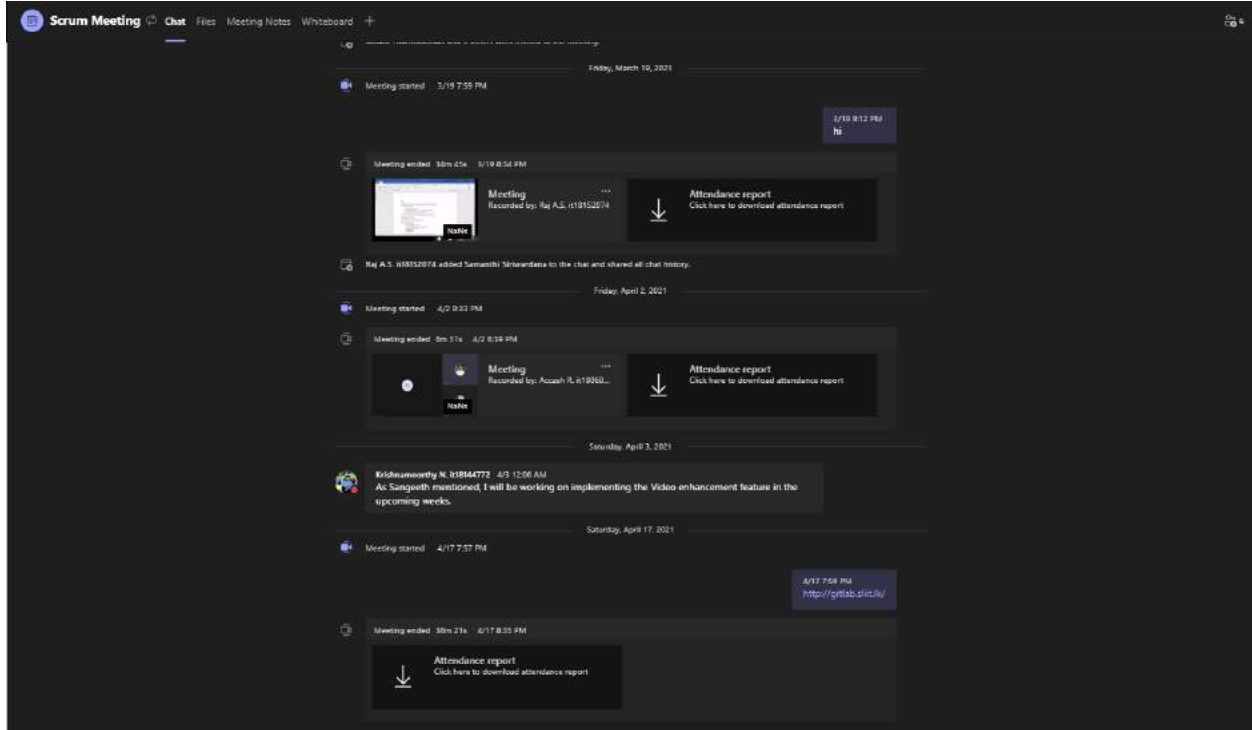
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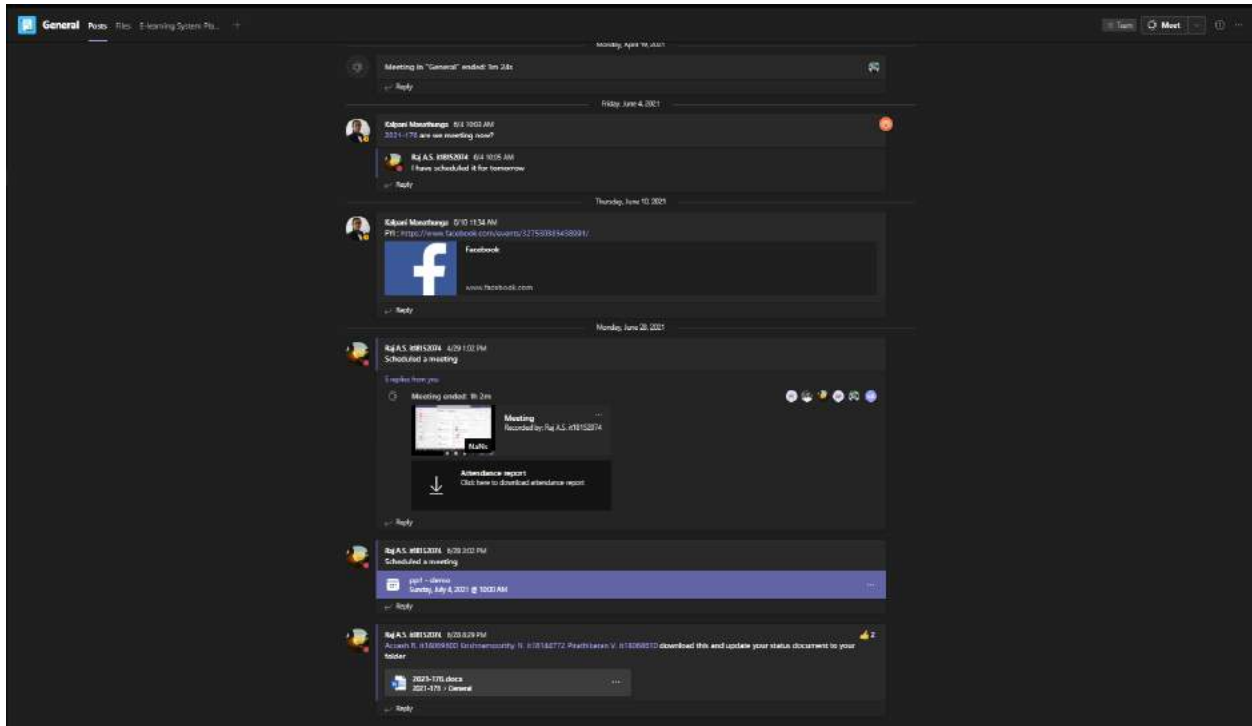
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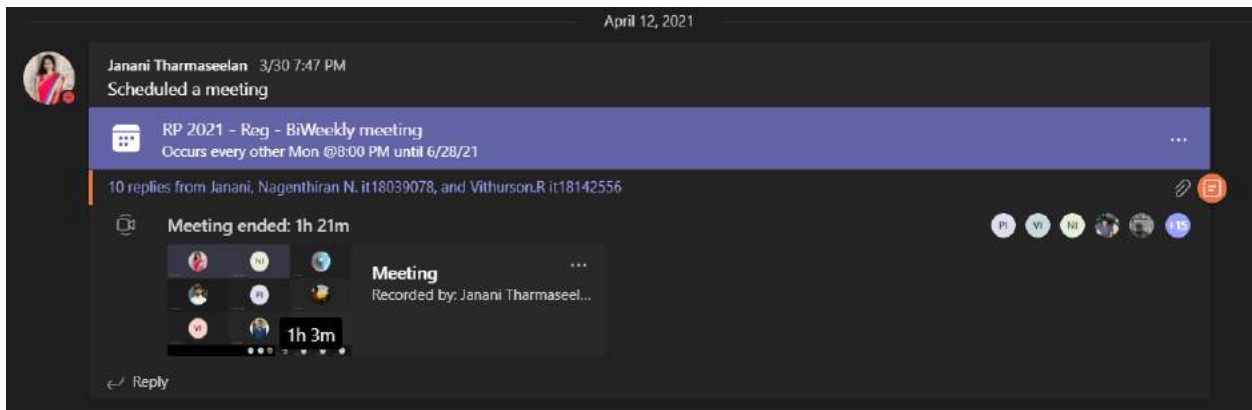
1. Screenshots of MS Teams meeting

1.1 Weekly Scrum Meeting

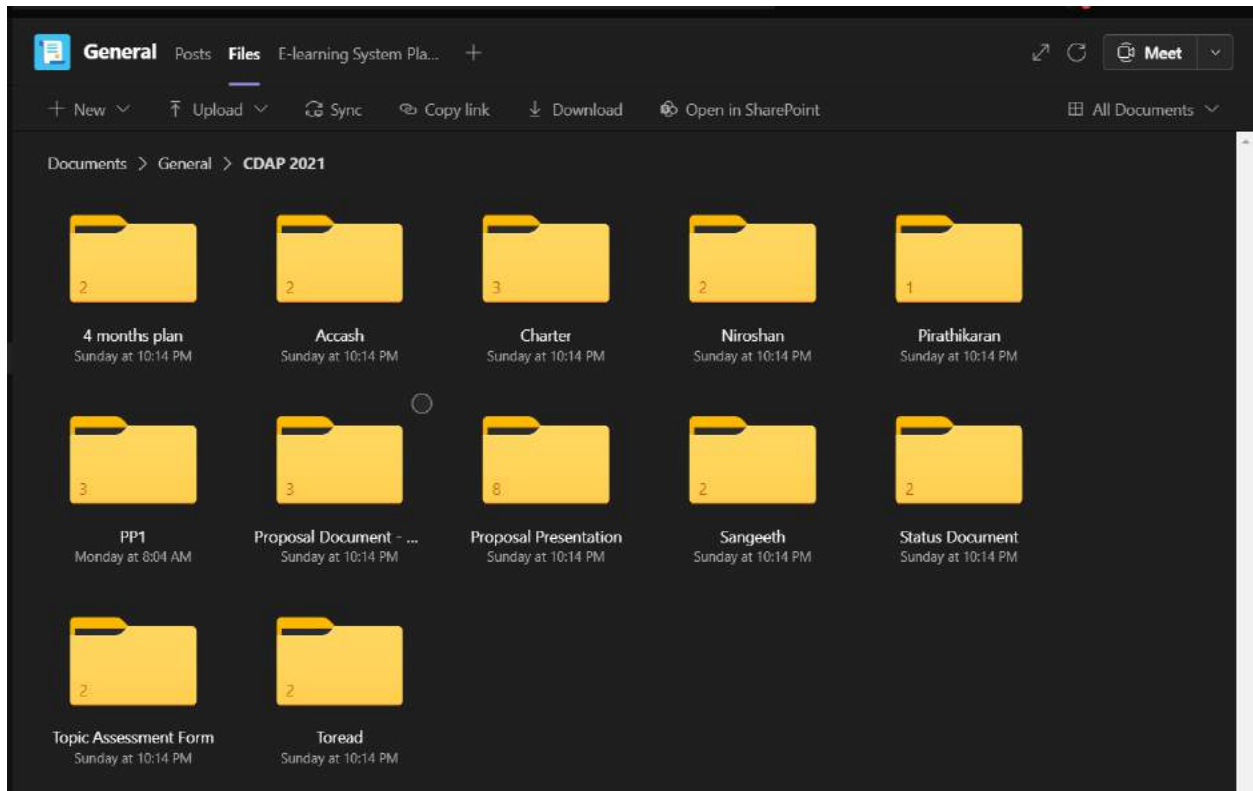




1.2 Bi-Weekly Scrum Meeting with Supervisor and other teams



1.3 Shared Documents



1.4 Team members and superiors

Group membership

6 members

 Add members



Samanthi Siriwardana
Owner ▾



Pirathikaran V. it18068610
Owner ▾



Accash R. it18069600
Owner ▾



Raj A.S. it18152074
Owner ▾



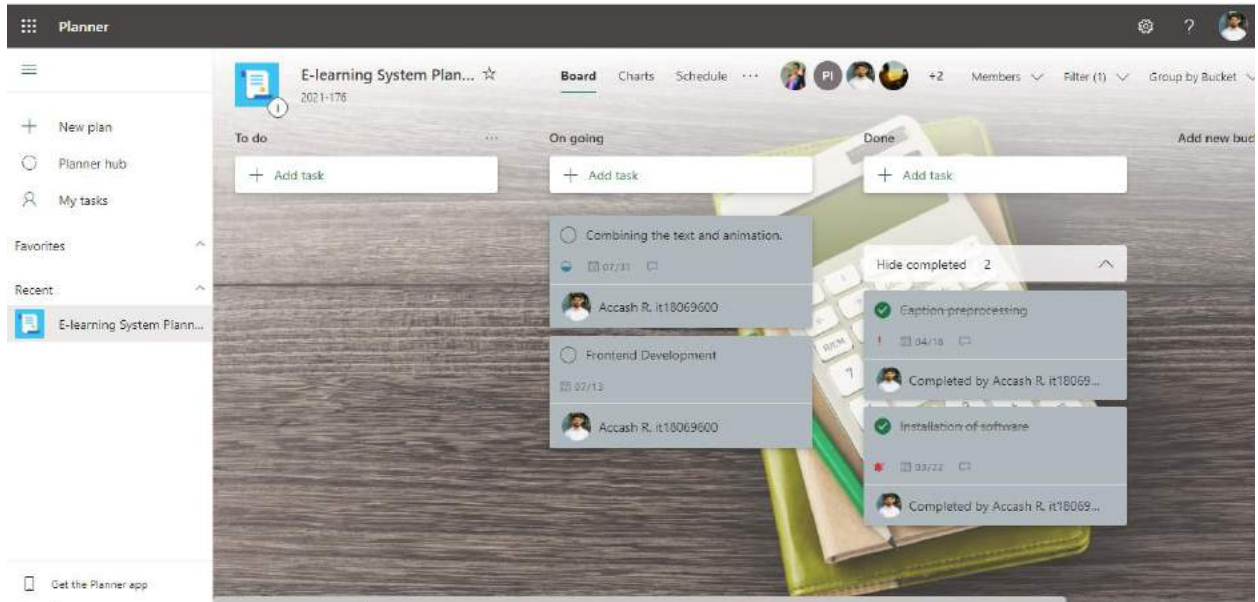
Krishnamoorthy N. it18144772
Owner ▾



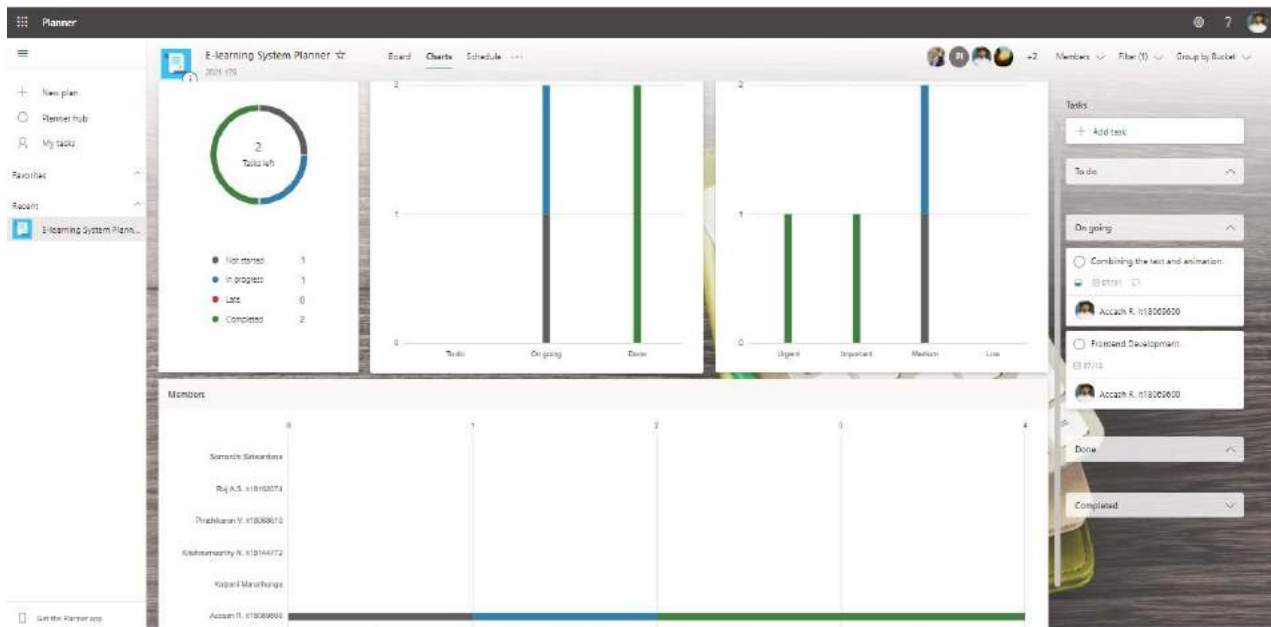
Kalpani Manathunga
Owner ▾

2. Screenshots of Planner

2.1 Bucket Plan

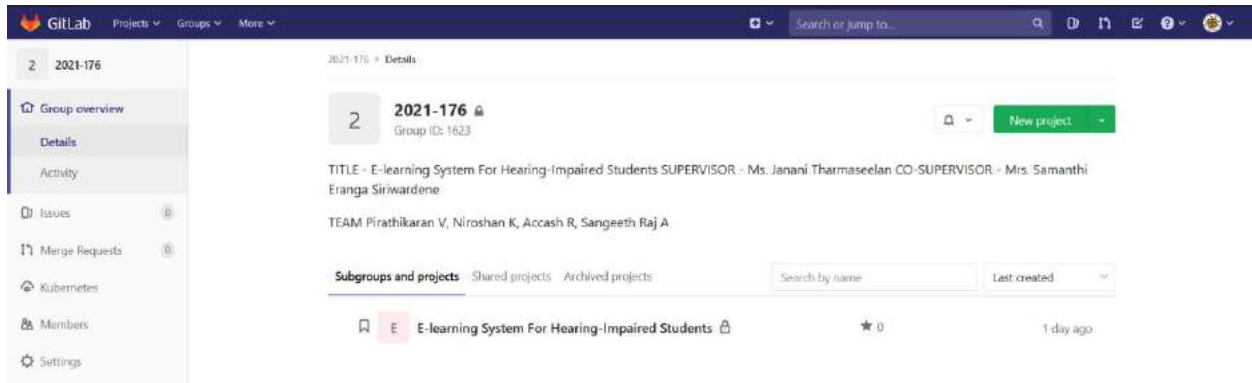


2.2 Chart Overview

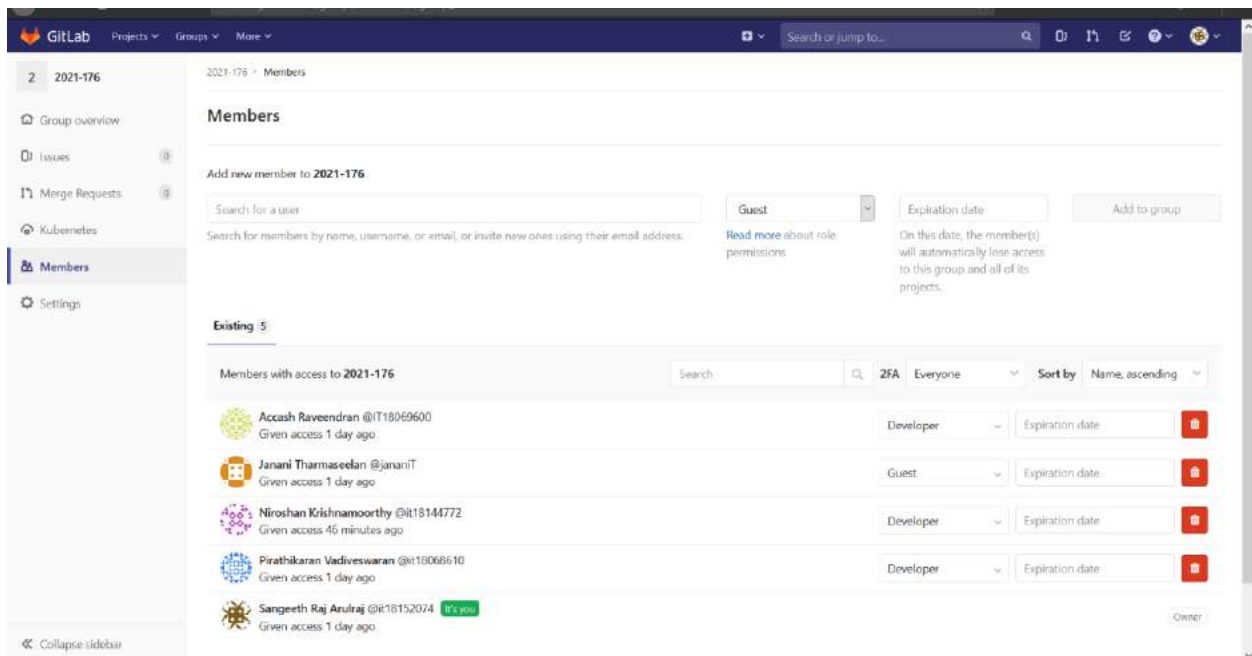


3. Screenshots of GitLab

3.1 Group



3.2 Members



3.3 Project

The screenshot shows the GitLab interface for a project titled "E-learning System For Hearing-Impaired Students". The left sidebar contains navigation options like "Project overview", "Repository", and "Issues". The main content area displays project statistics (2 commits, 1 branch, 0 tags, 113 KB files) and a list of files including README.md, LICENSE, and CHANGELOG. The README.md file is selected, showing its content which includes a project description, objectives, and a list of team members with their roles and contributions.

E-learning System For Hearing-Impaired Students
Project ID: 574

2 Commits | 1 Branch | 0 tags | 113 KB Files

master e-learning-system-for-hearing-impaired-students / +

Update README.md
Sangeeth Raj Anuraj authored 1 day ago

Name	Last commit	Last update
README.md	Update README.md	1 day ago

README.md

E-learning System For Hearing-Impaired Students

****Brief Description of your Research Problem:****

In the current situation, only a few numbers of higher education institutions used e-learning method, because of lack of telecommunications devices, multimedia softwares and high implementation cost. In normal teaching method not suitable for a deaf student. They need more time to understand than normal students. Deaf and dumb sign language difficult to understand by normal people, where e-learning student should ask a question while teaching, then lecturer should understand the sign language. Another main problem is 142 existing different sign languages all over the world. When we develop the e-learning platform we consider only British Sign language. When capture hand gesture it difficult to detect by the system when using two hands with real-time, because both hand gestures may give wrong outputs additionally.

****Main Objective:**** Solving communication and learning barrier between tutors and hearing-impaired students through learning Management System.

****Sub Objective 1:**** Changing physical learning environment to virtual environment for hearing-impaired students

Sub Objective 2: Motivating hearing-impaired students to adopt virtual learning.

Sub Objective 3: Improving Engagement of hearing-impaired students in Web contents.

Sub Objective 4: Providing hearing-impaired students to involve in clearing their doubts through Sign Language.

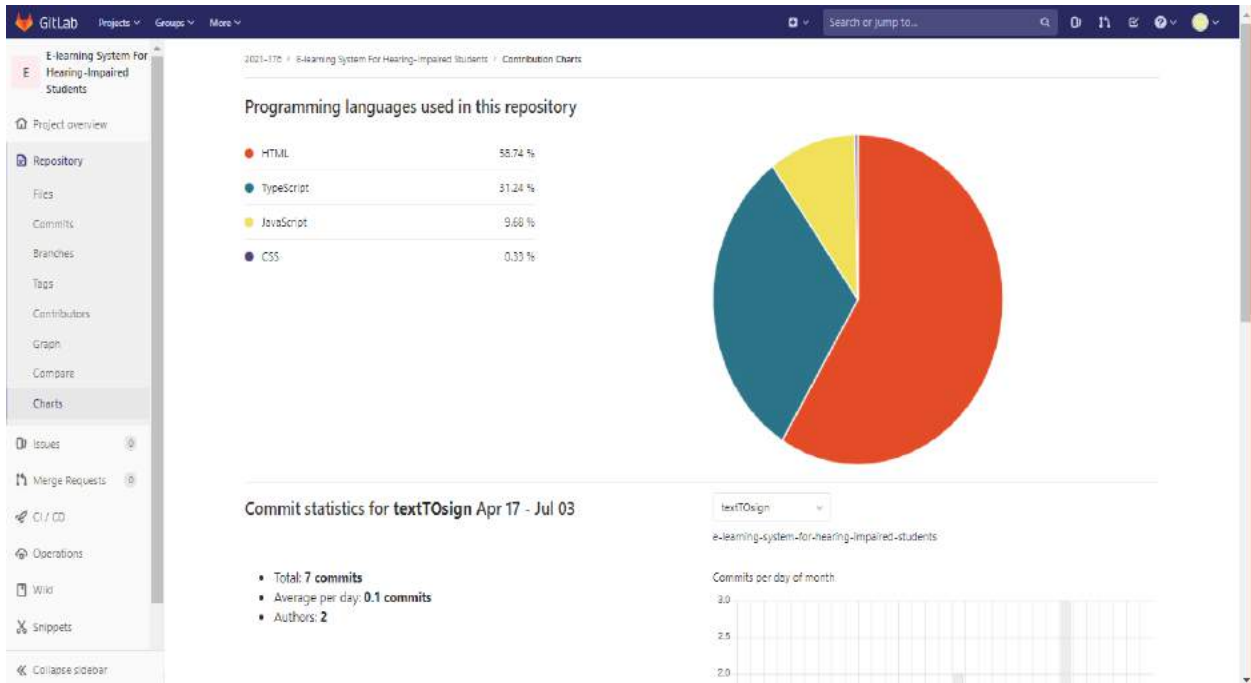
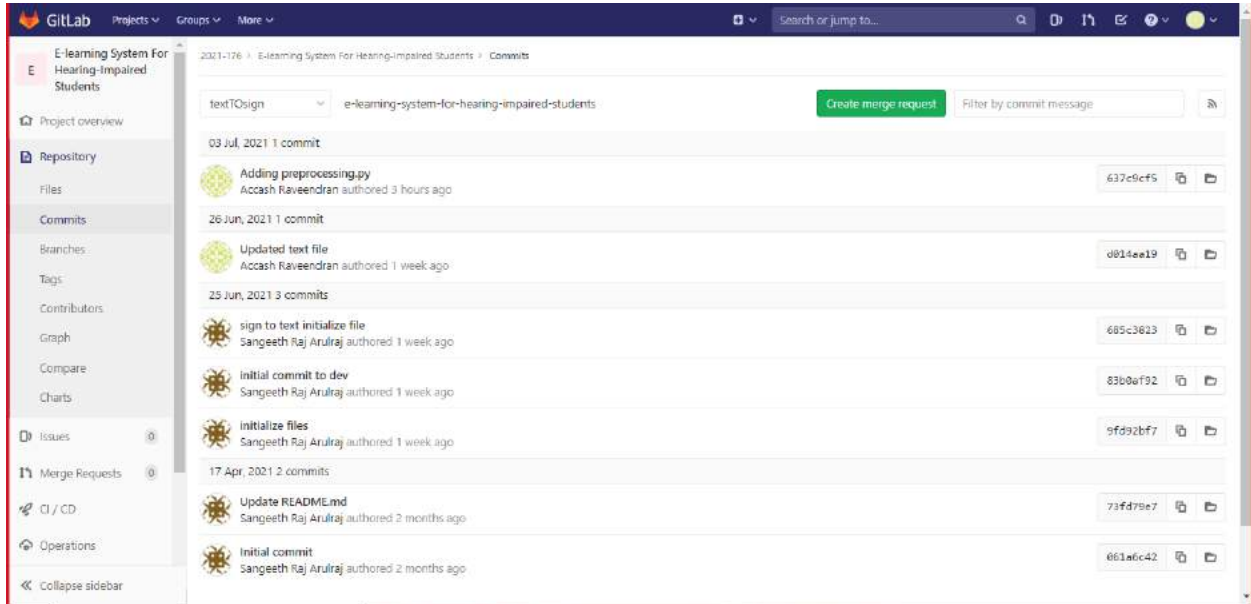
MEMBER 1 IT18152074 – Sangeeth Raj A Detecting the User's motion to analyzing the learning and testing user knowledge by quiz with motion detection. • Recording student's video and detect their motion using "OpenPose" technology. • Checking whether student's video is similar to tutorial using CNN. • If user succeed the task, he/she is given a quiz to check their knowledge in learning using ML. Research Area : Open Pose, CNN and Machine Learning

MEMBER 2 IT18060010 - Poothikaram V Converting sign language video content representation into meaningful caption text. • Taking student's (Deaf and dumb) question video and separate each frame by frame. • eliminate repeated frames and unwanted frames. • Each frame detects hands gestures. • Find out the gestures meaning. • Store in the array of text. • Converted meaning full sentences. Research Area : Machine Learning and Video Processing

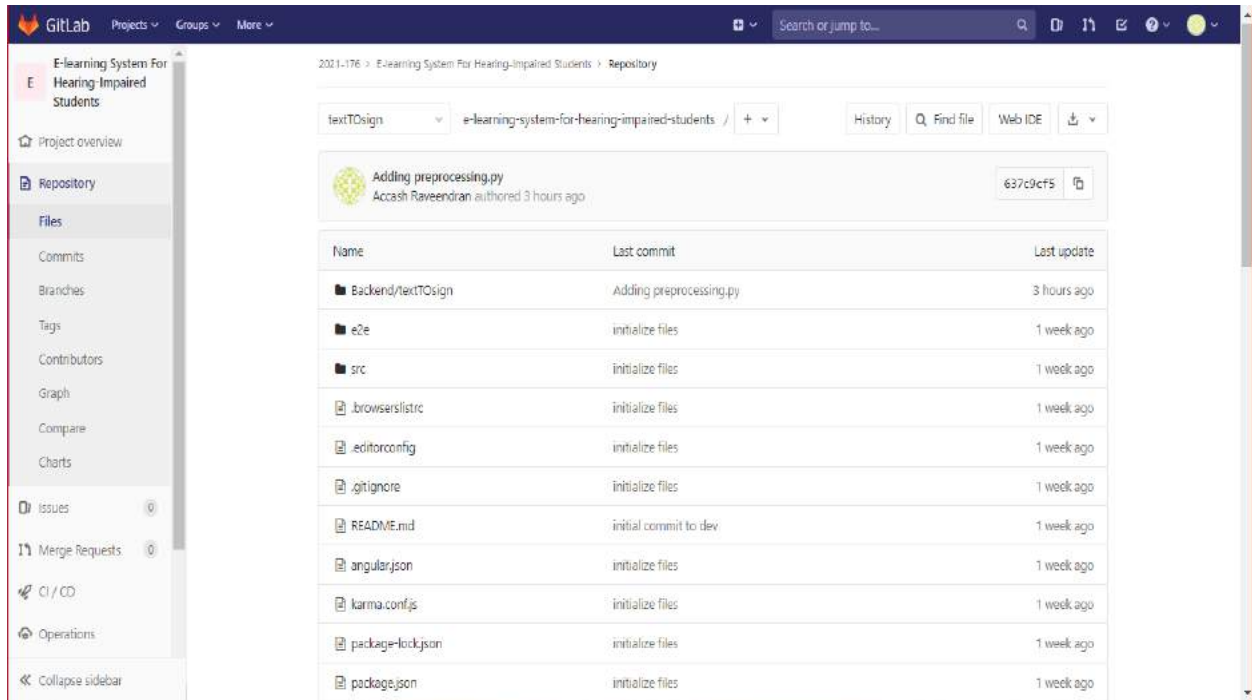
MEMBER 3 IT18144772 – Niroshan K Optimizing the Uploaded video to reduce and producing caption for the video content. • Once tutor uploads the video, the Video is separated frame by frame. • Using Video Enhancing techniques to denoise the uploaded video in each frame. • Then the Audio will be extracted from the uploaded video. • System will generate captions for the extracted speech in the Audio using Speech to Text technique (SCP STT). • Generated captions will be displayed along with the video. Research Area : Machine Learning and Video Processing

MEMBER 4 IT18069600 – Accash B Converting the captioned text into Sign Language and providing a Gallery of sign image for a video content. • Getting the extracted text from the lecture. • Remove unnecessary word from the extracted text using NLP technique - stop words. • Tokenization of the words after remove stop words. • Using Stemming technique to reduce words. • Lemmatization for optimal output ending. • Using ML technique assigning the extracted text to the sign language. • Finally the sign language lecture will be available for the students. Research Area : Machine Learning and Natural Language Processing

3.4 GitLab Commits



3.5 GitLab Folder Structure



4. Diagram

4.1 Gantt Chart

Description	December	January	February	March	April	May	June	July	August	September	October	November	December
Project Initiation													
Evaluation													
Topic Assessment form													
Charter													
Proposal Draft													
Proposal Presentation													
Project Phase													
System Planning													
Collecting Required Data													
Selecting Algorithm technologies													
Implementation Phase													
NLP Preprocessing													
Model Creation													
Connecting Models													
Experimental Analysis													
Testing Phase and Evaluation													
Research Paper													
Testing													
Final report													
Final Evaluation													

4.2 Work-Break Down Chart

