



Sri Lanka Institute of Information Technology

E-LEARNING SYSTEM FOR HEARING IMPAIRED STUDENTS

Project ID : 2021-176

STATUS DOCUMENT

Supervised by – Miss. Janani Tharmaseelan

Member Details

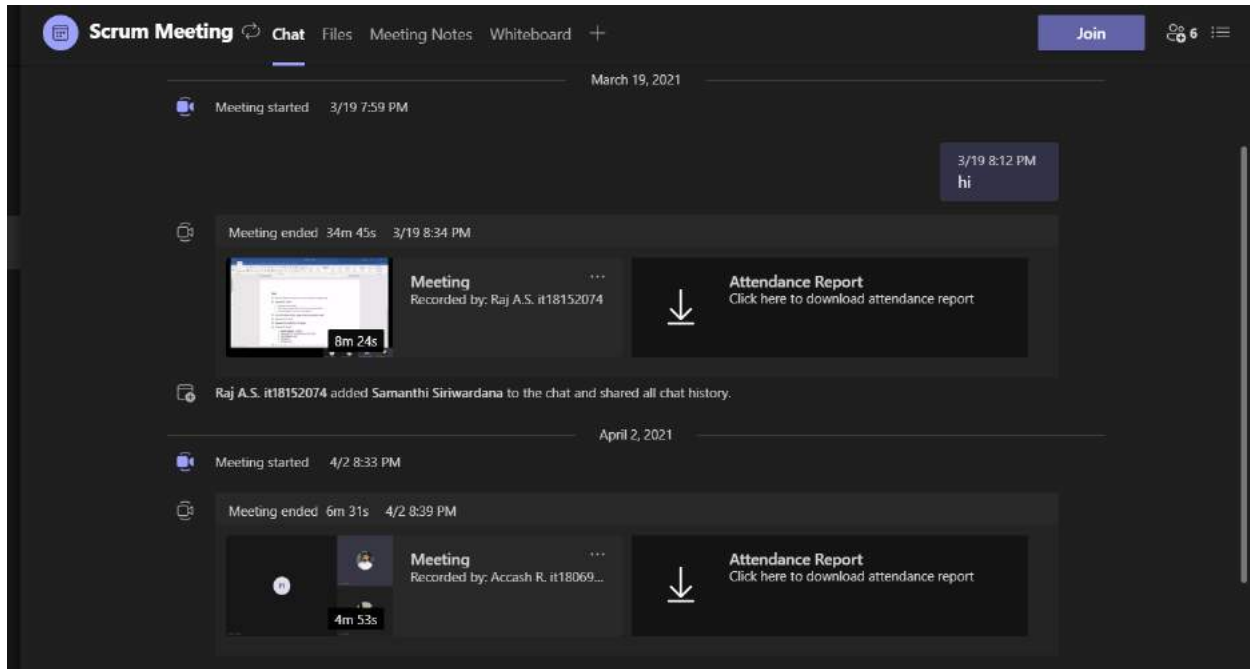
	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	Sangeeth Raj A	IT18152074	0775544651	it18152074@my.sliit.lk
2	Pirathikaran V	IT18068610	0776103254	it18068610@my.sliit.lk
3	Niroshan K	IT18144772	0766404210	it18144772@my.sliit.lk
4	Accash R	IT18069600	0711235673	it18069600@my.sliit.lk

Contents

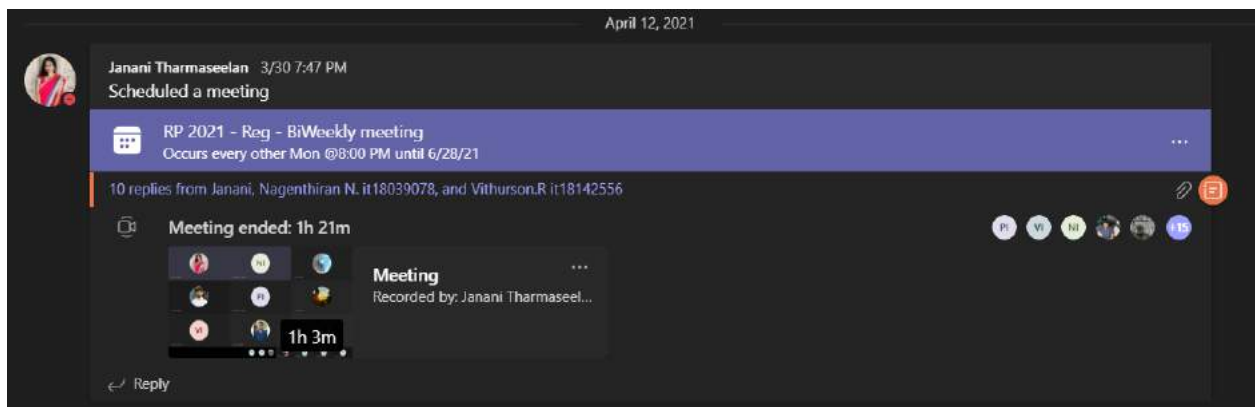
Member Details	ii
1. Screenshots of MS Teams meeting	1
1.1 Weekly Scrum Meeting	1
1.2 Bi-Weekly Scrum Meeting with Supervisor	1
1.3 Shared Documents	2
1.4 Members in Teams	2
2. Screenshots of Planner	3
2.1 Bucket Plan	3
2.2 Assigned Plan	3
2.3 Chart Overview	4
3. Screenshots of GitLab	5
3.1 Group	5
3.1 Members	5
3.1 Project	6

1. Screenshots of MS Teams meeting

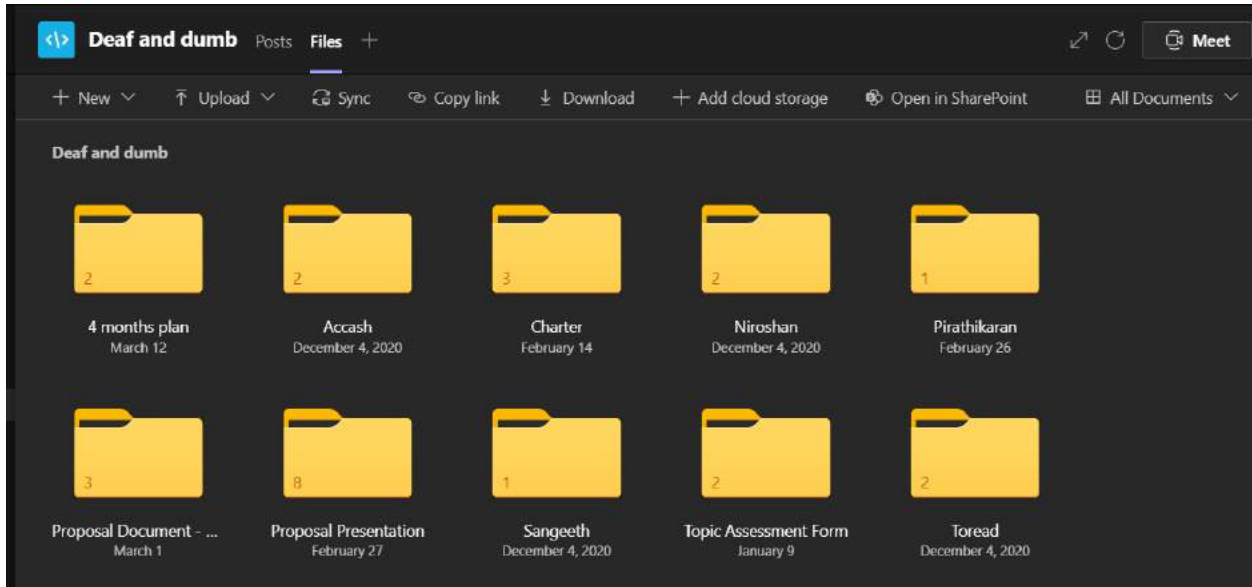
1.1 Weekly Scrum Meeting



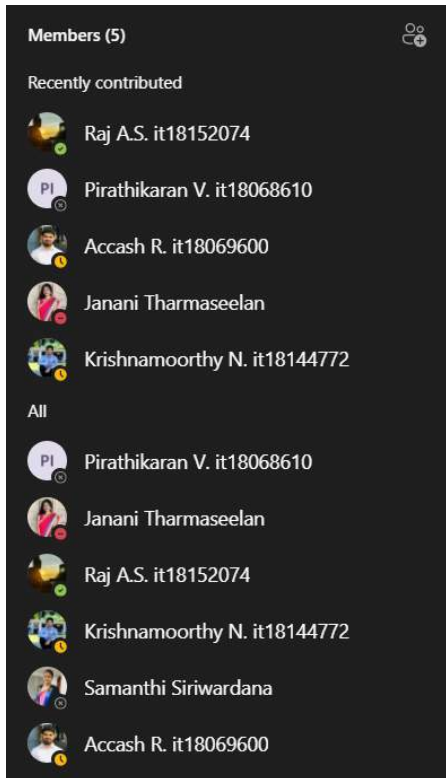
1.2 Bi-Weekly Scrum Meeting with Supervisor



1.3 Shared Documents

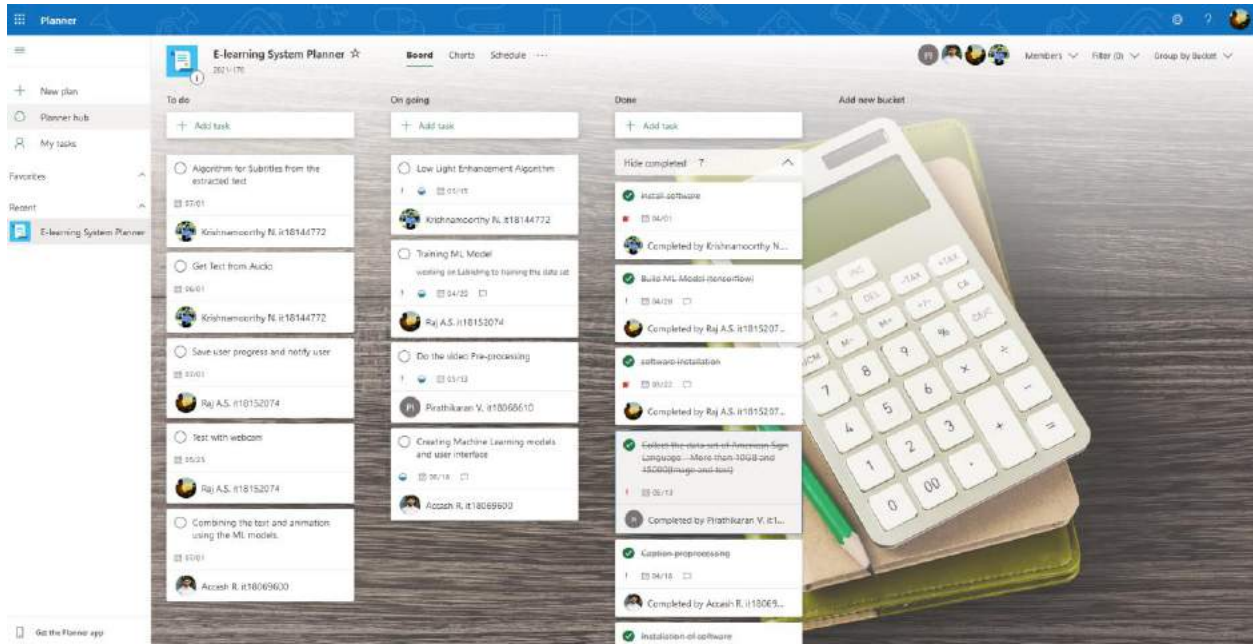


1.4 Members in Teams

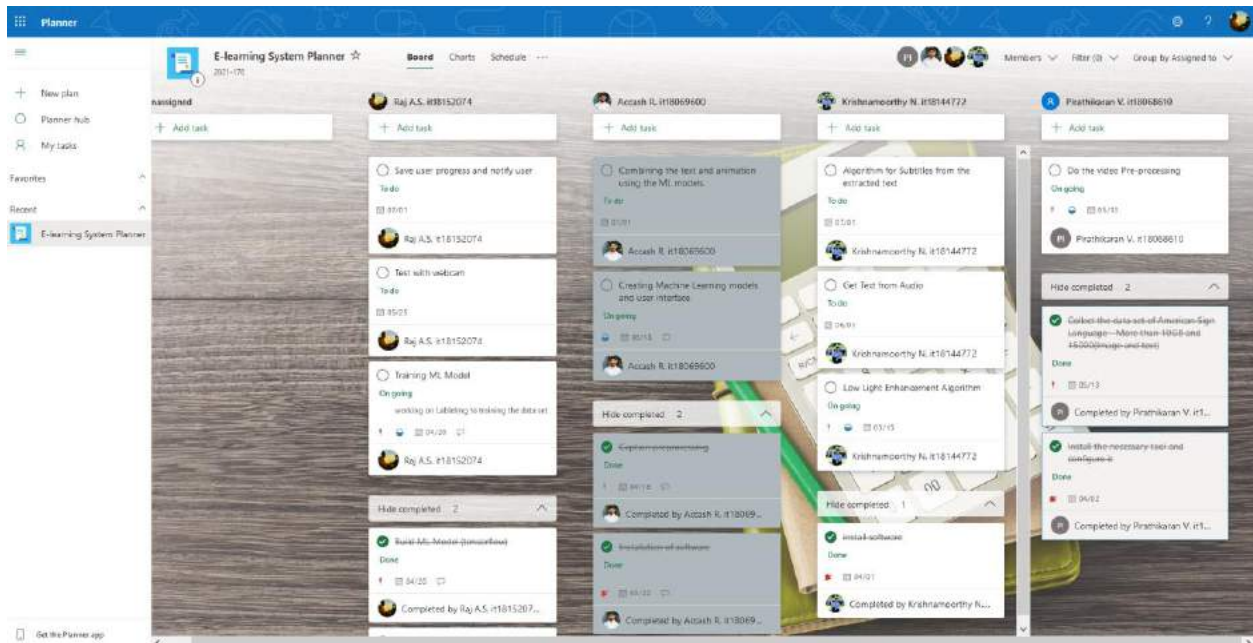


2. Screenshots of Planner

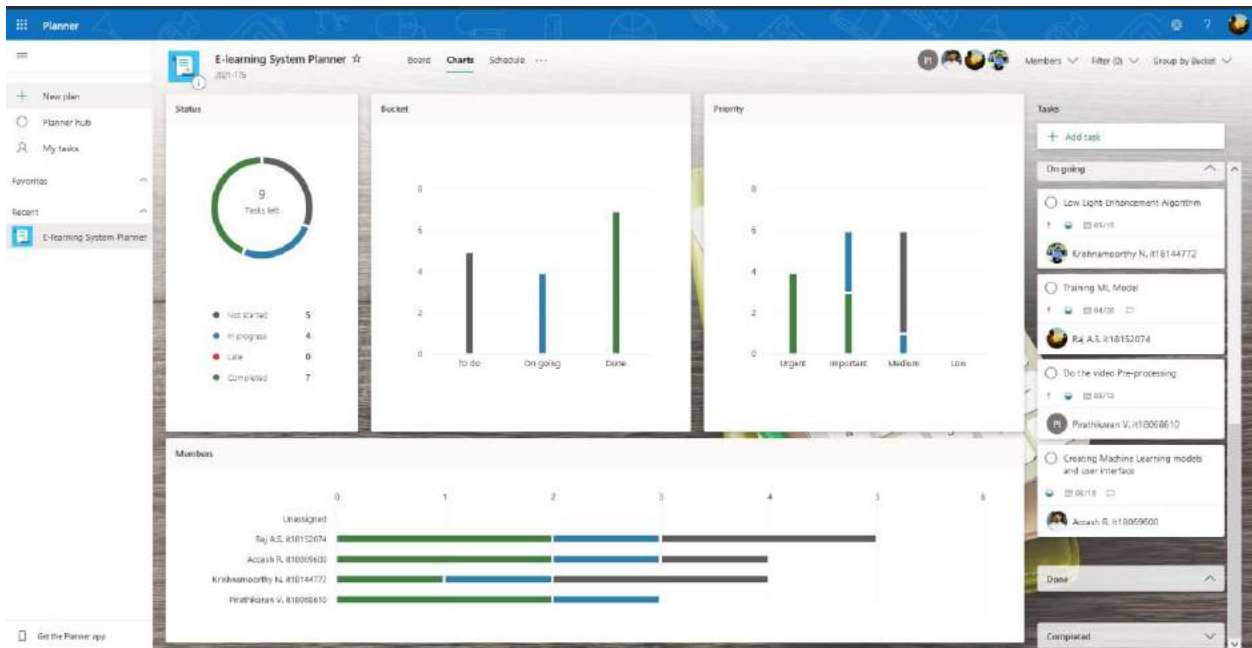
2.1 Bucket Plan



2.2 Assigned Plan

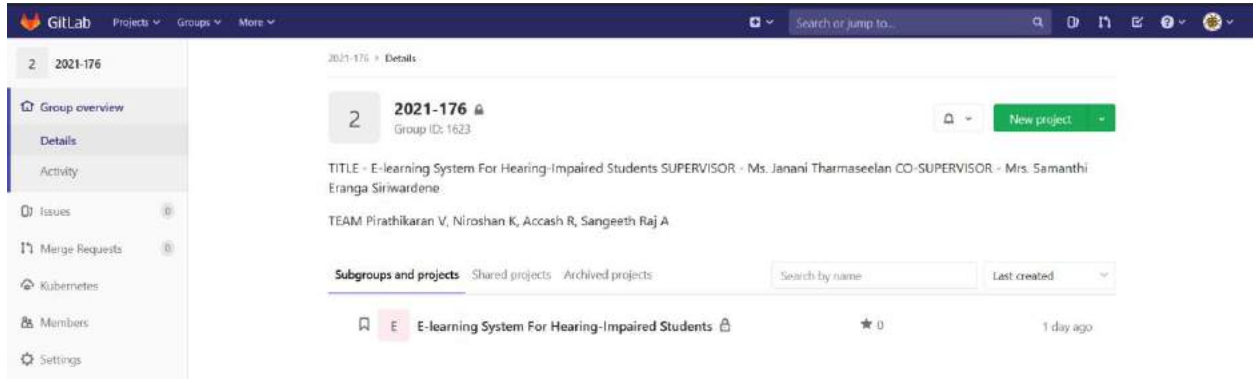


2.3 Chart Overview

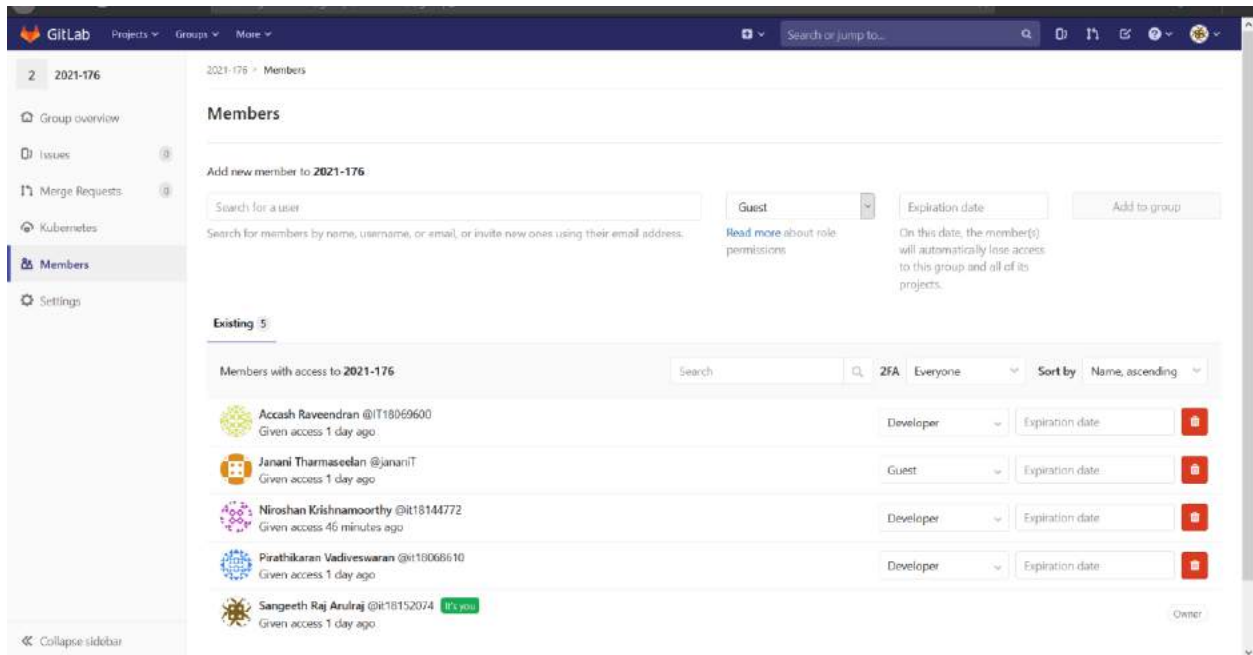


3. Screenshots of GitLab

3.1 Group



3.1 Members



3.1 Project

The screenshot shows a GitLab repository page for a project titled "E-learning System For Hearing-Impaired Students". The page includes a sidebar with navigation options like "Project overview", "Details", "Activity", "Releases", "Cycle Analytics", "Repository", "Issues", "Merge Requests", "CI/CD", "Operations", "Wiki", "Snippets", and "Settings". The main content area displays the repository name, project ID (574), and statistics (2 comments, 1 branch, 0 tags, 113 KB files). It shows the current branch as "master" and a recent commit by "Sangeeth Raj Anuraj" titled "Update README.md" from 1 day ago. Below this, there are buttons for "README", "Add LICENSE", "Add CHANGLOG", "Add CONTRIBUTING", "Enable Auto DevOps", and "Add Kubernetes cluster". A table lists the files in the repository, showing "README.md" with its last commit and update date. The main content area displays the "README.md" file, which contains a detailed description of the project, its objectives, and the roles of its members.

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 telecommunication devices, multimedia software 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 languages 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 that 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 - Prathikaran 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 (GCP STT). • Generated captions will be displayed along with the video. Research Area : Machine Learning and Video Processing

MEMBER 4 IT18060000 – 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