



Mobile Base Sinhala Book Reader for Visually Impaired Individuals

Project ID: 2023-198

Project Status Document 2 – Individual

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1. Screenshots of the Calls in MS Teams

1.1. MS Teams Calls with Research Team

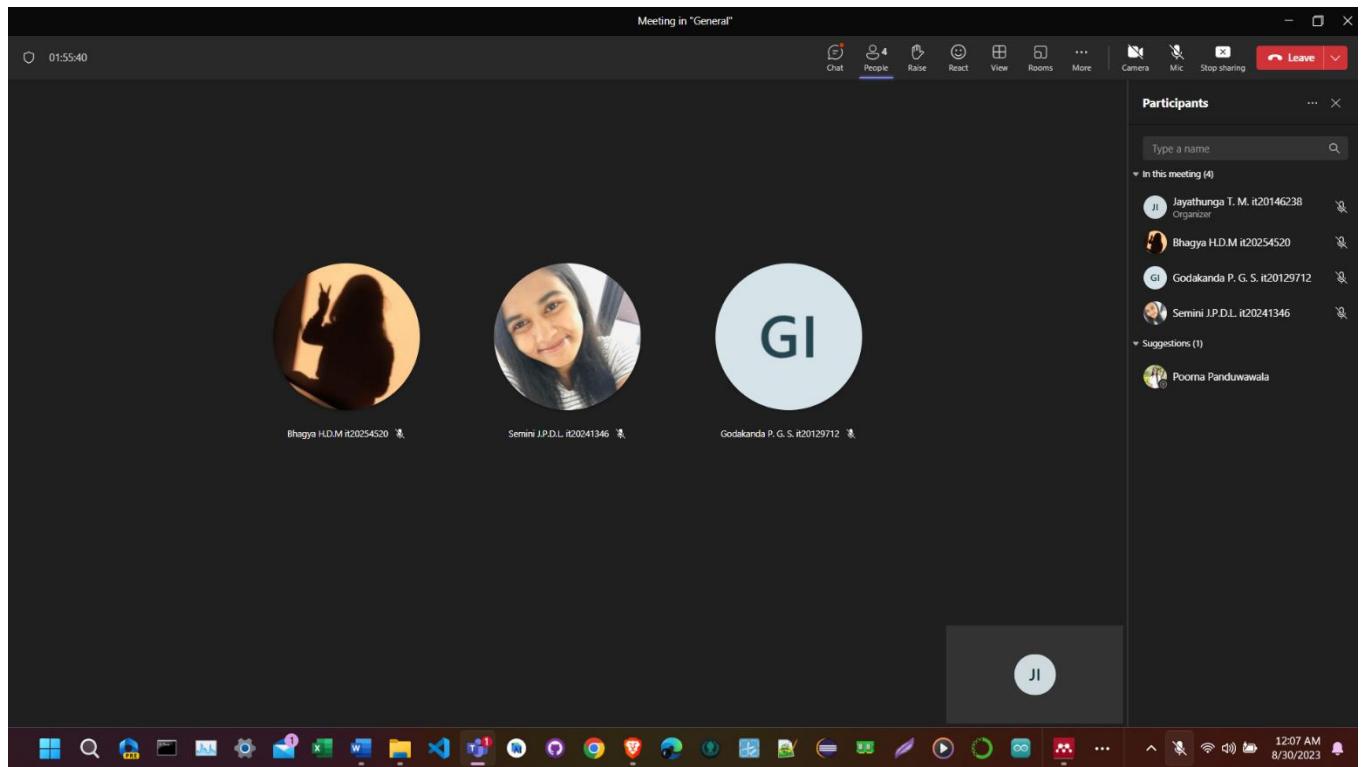


Fig. 1. Teams Call 1 with Research Team

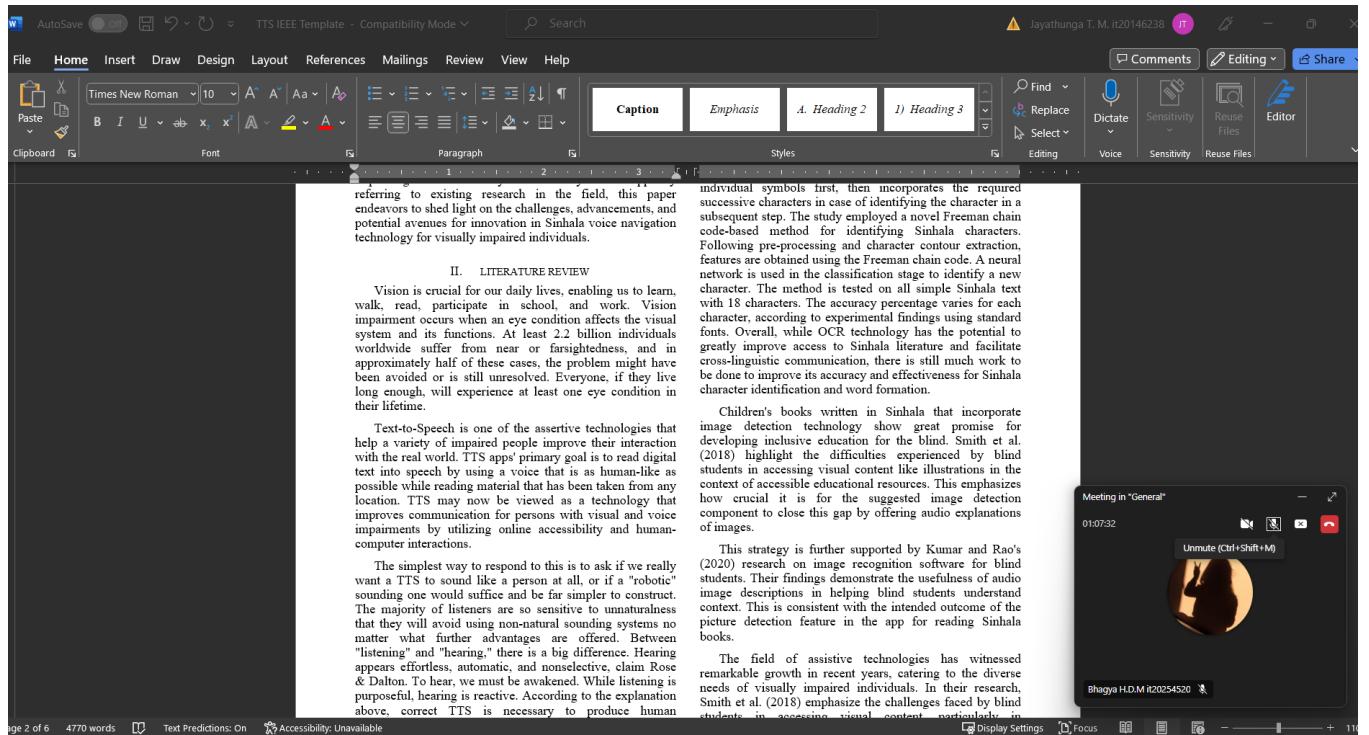


Fig. 2. Teams Call 2 with Research Team Member

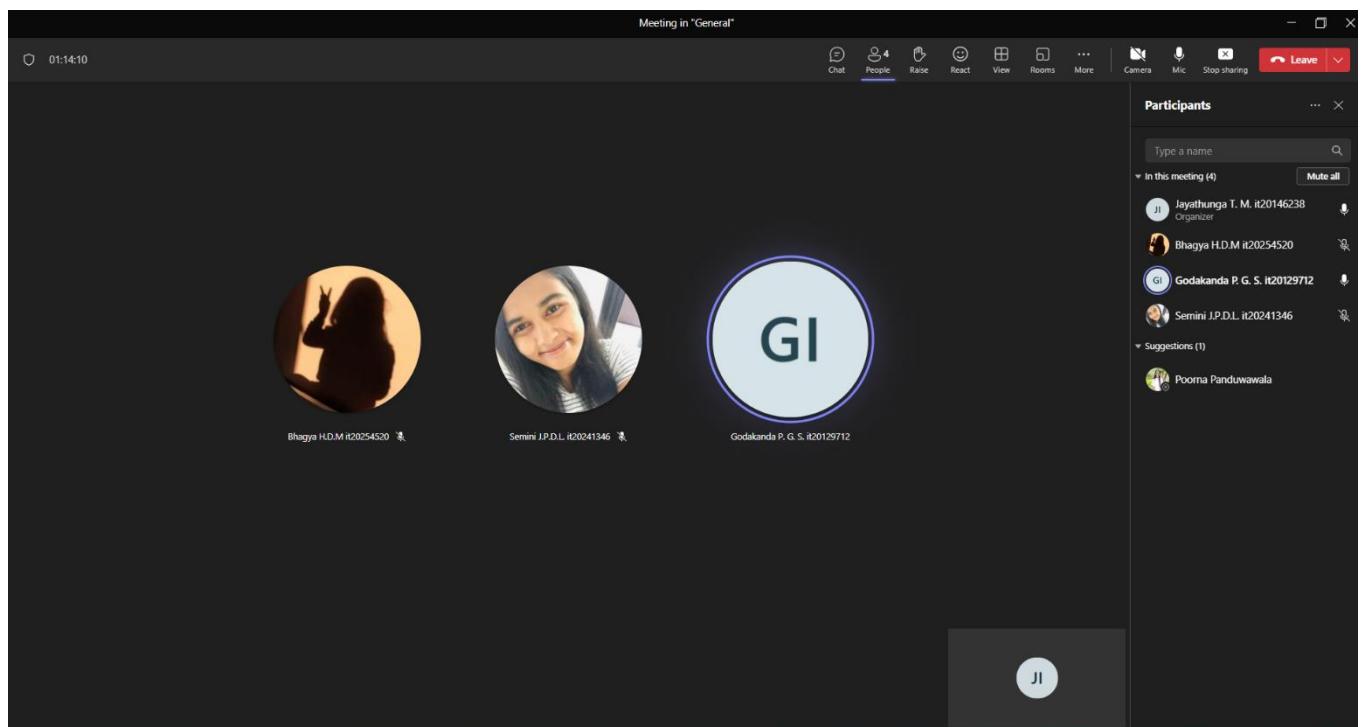


Fig. 3. Teams Call 3 with Research Team

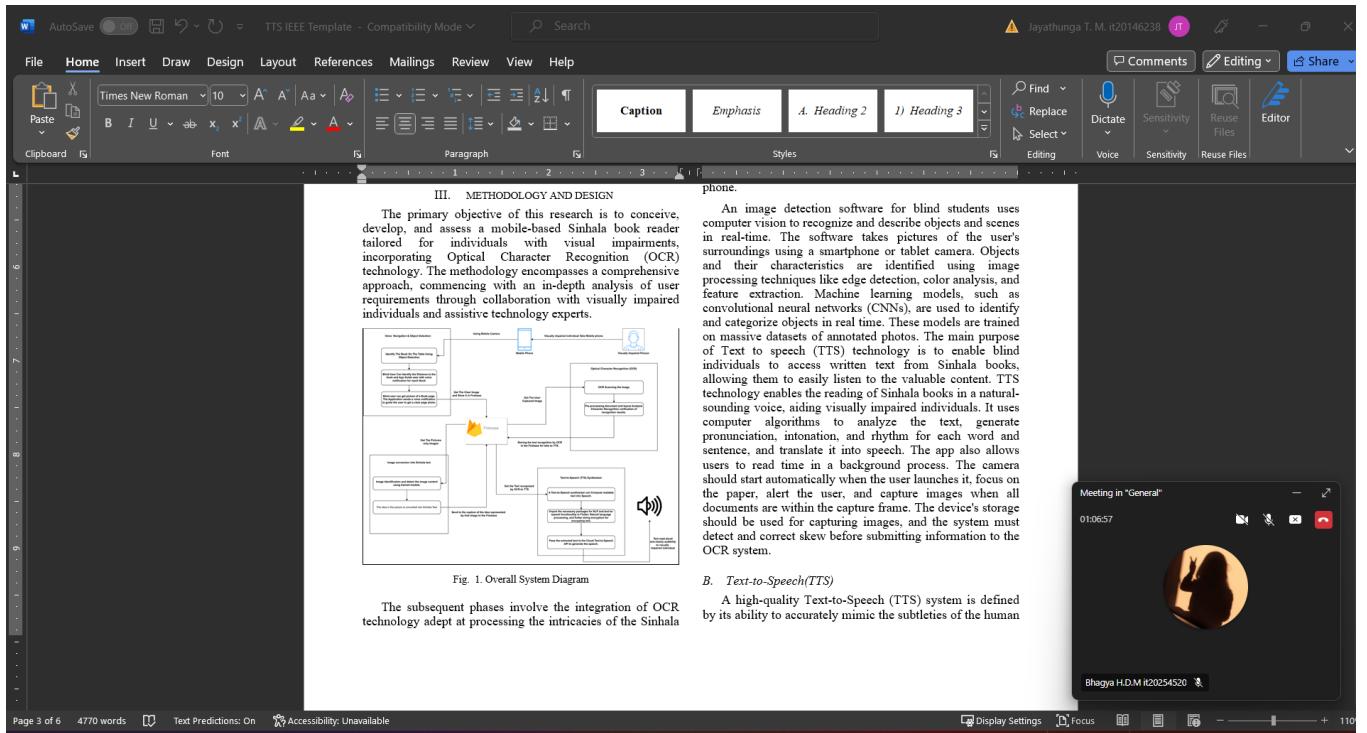


Fig. 4. Teams Call 4 with Research Team Member

The screenshot shows a Microsoft Word document titled "Mobile Base Sinhala Book Reader For The Visually Impaired Individuals". Below the title, there is an "Abstract" section containing text about the project's aim to improve reading experience for visually impaired individuals. To the right of the text, there are five numbered lines of text, likely part of a table or list. A sidebar for "Meeting in 'General'" shows a video feed of a participant. The Word ribbon at the top includes tabs like File, Home, Insert, Design, Layout, References, Mailings, Review, View, and Help.

Fig. 5. Teams Call 5 with Research Team Member

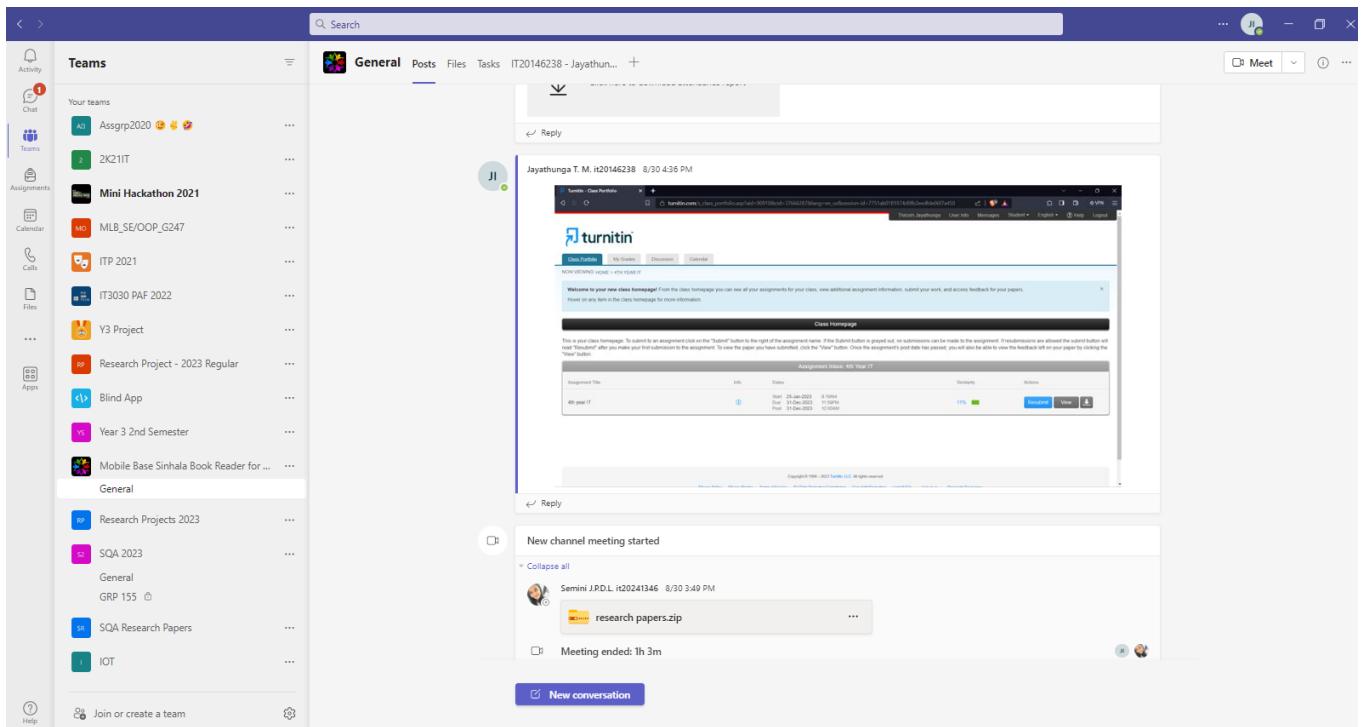


Fig. 6. Teams Call 6 with Research Team

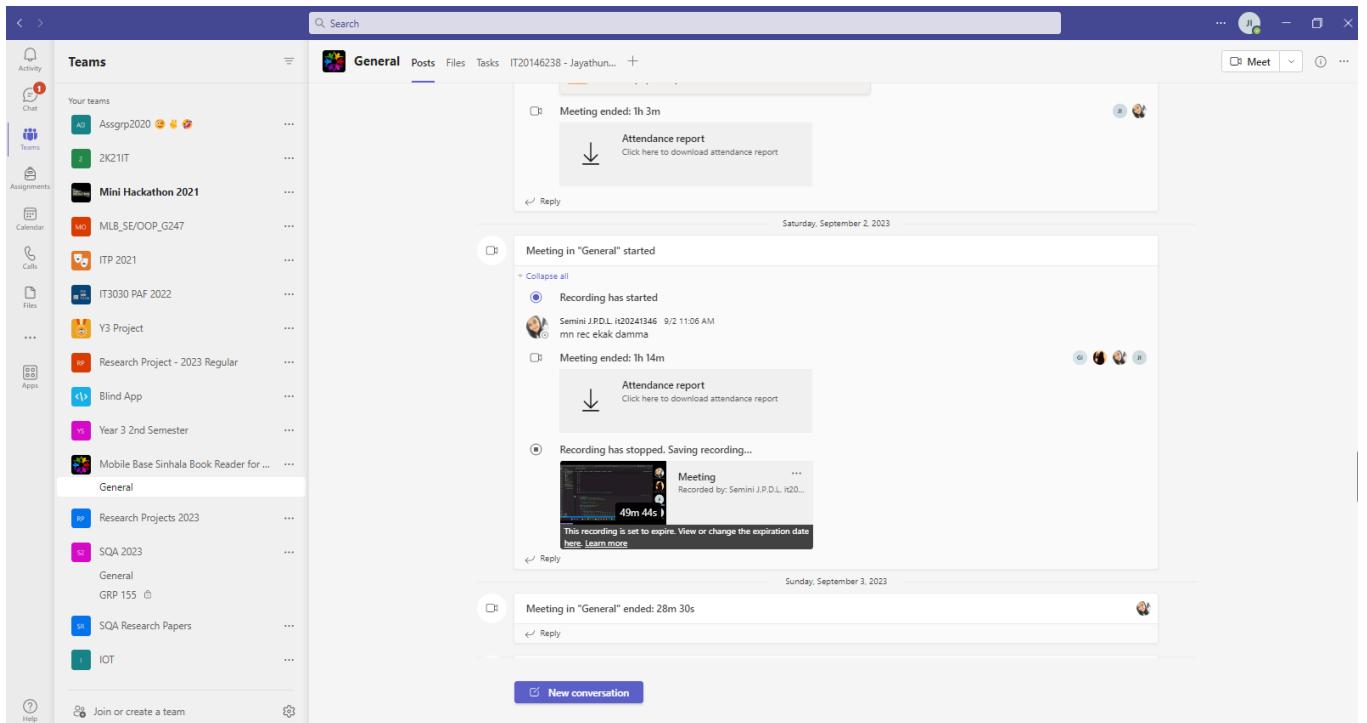


Fig. 7. Teams Call 7 with Research Team

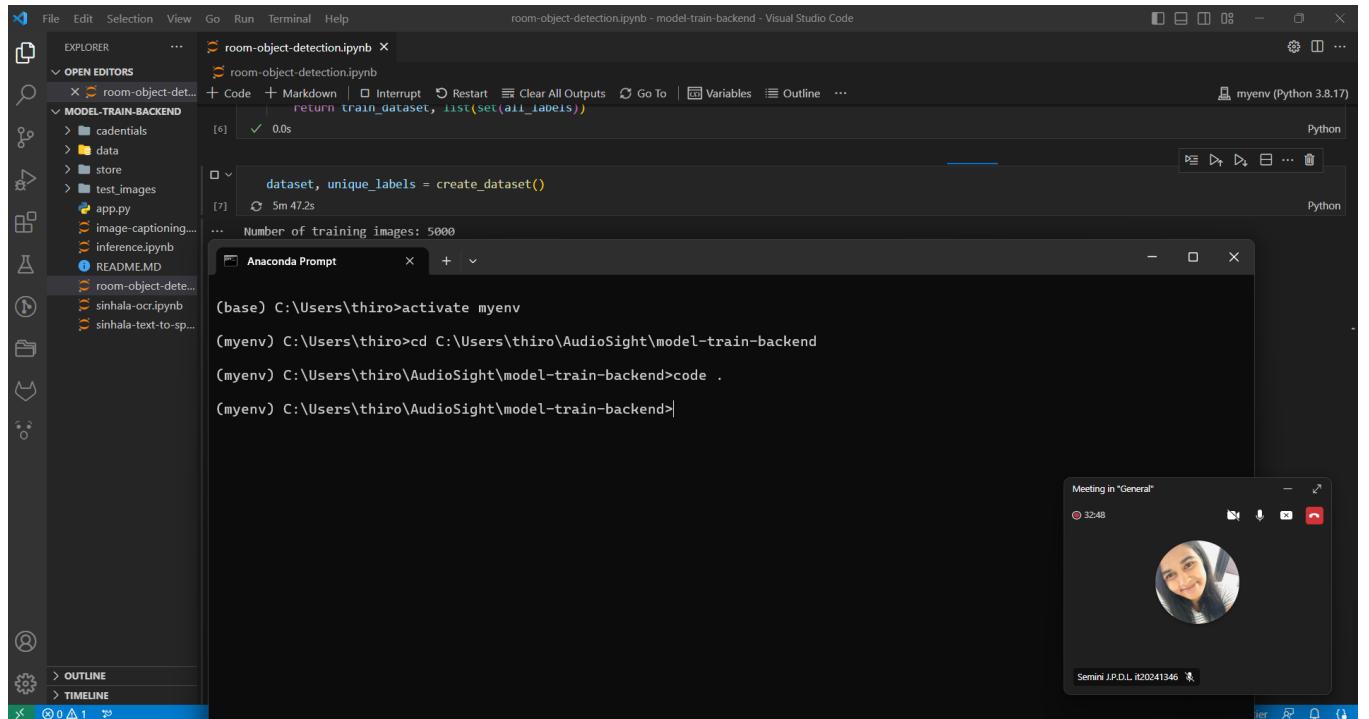


Fig. 8. Teams Call 8 with Research Team Member Model Training

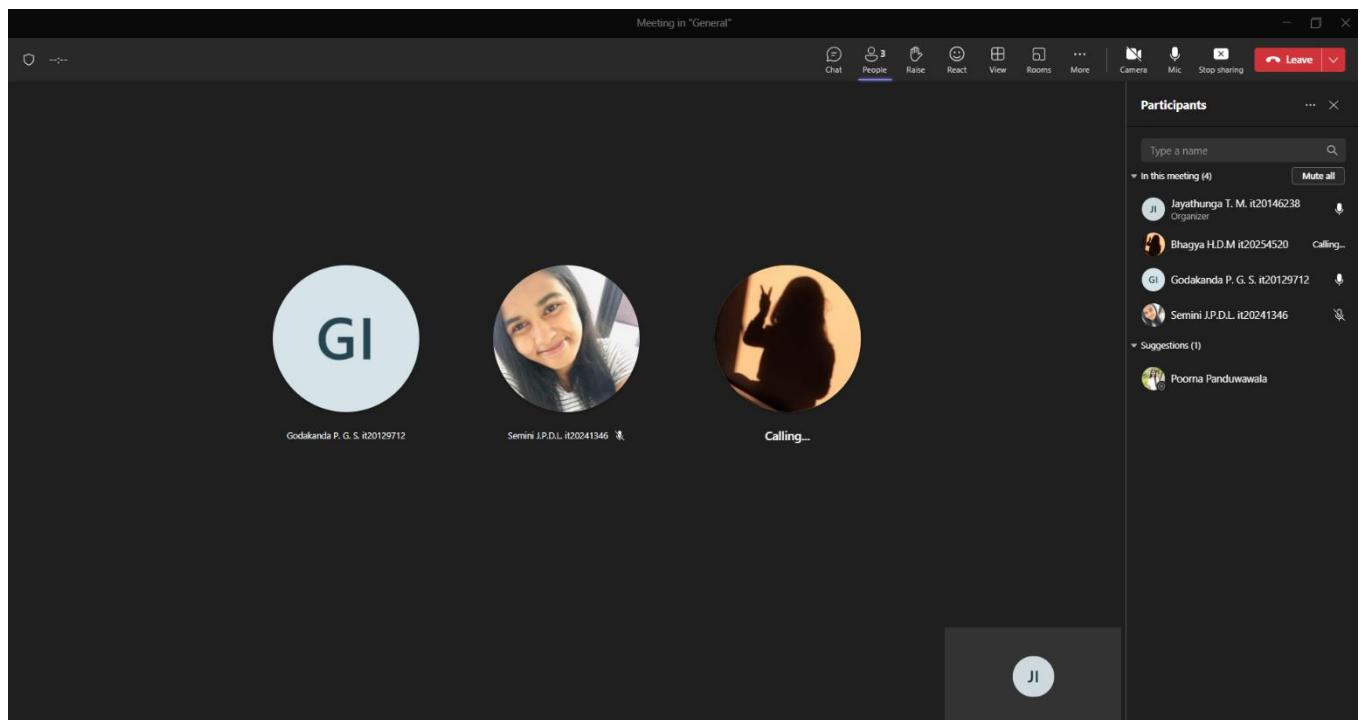


Fig. 9. Teams Call 9 with Research Team

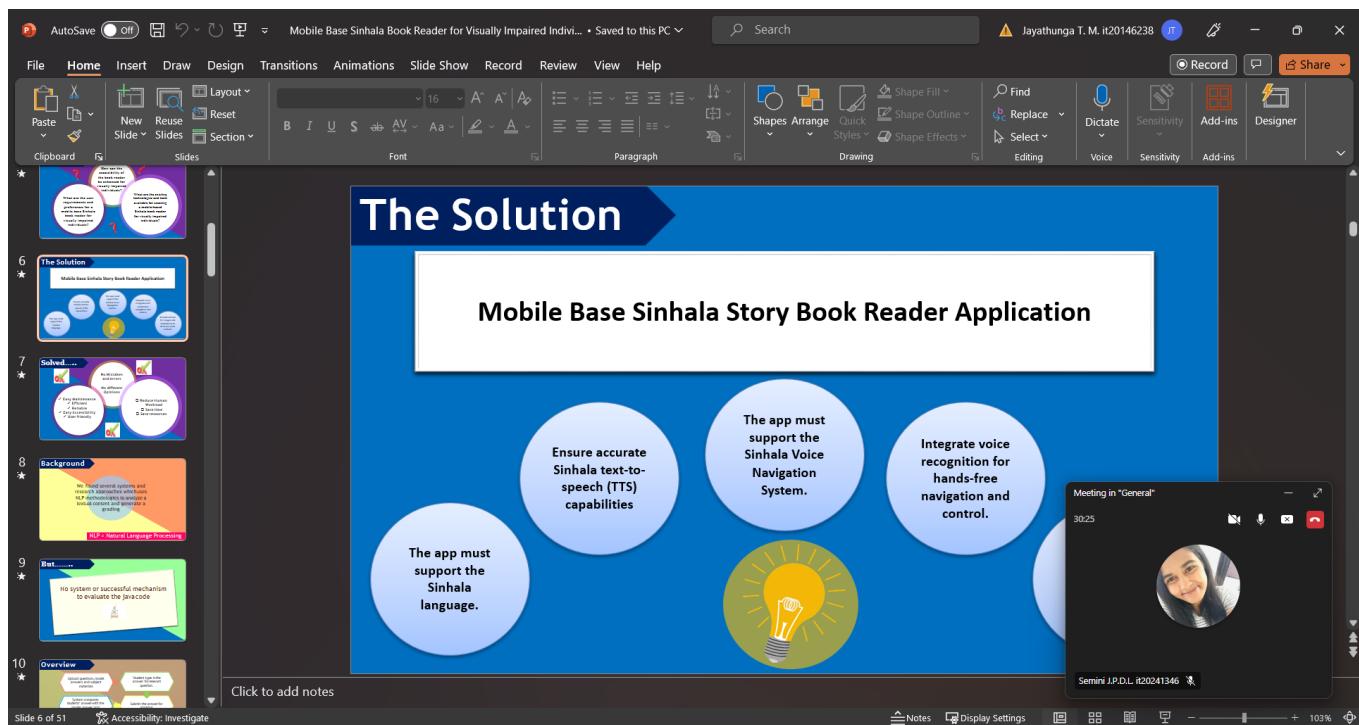


Fig. 10. Teams Call 10 with Research Team Presentation Making

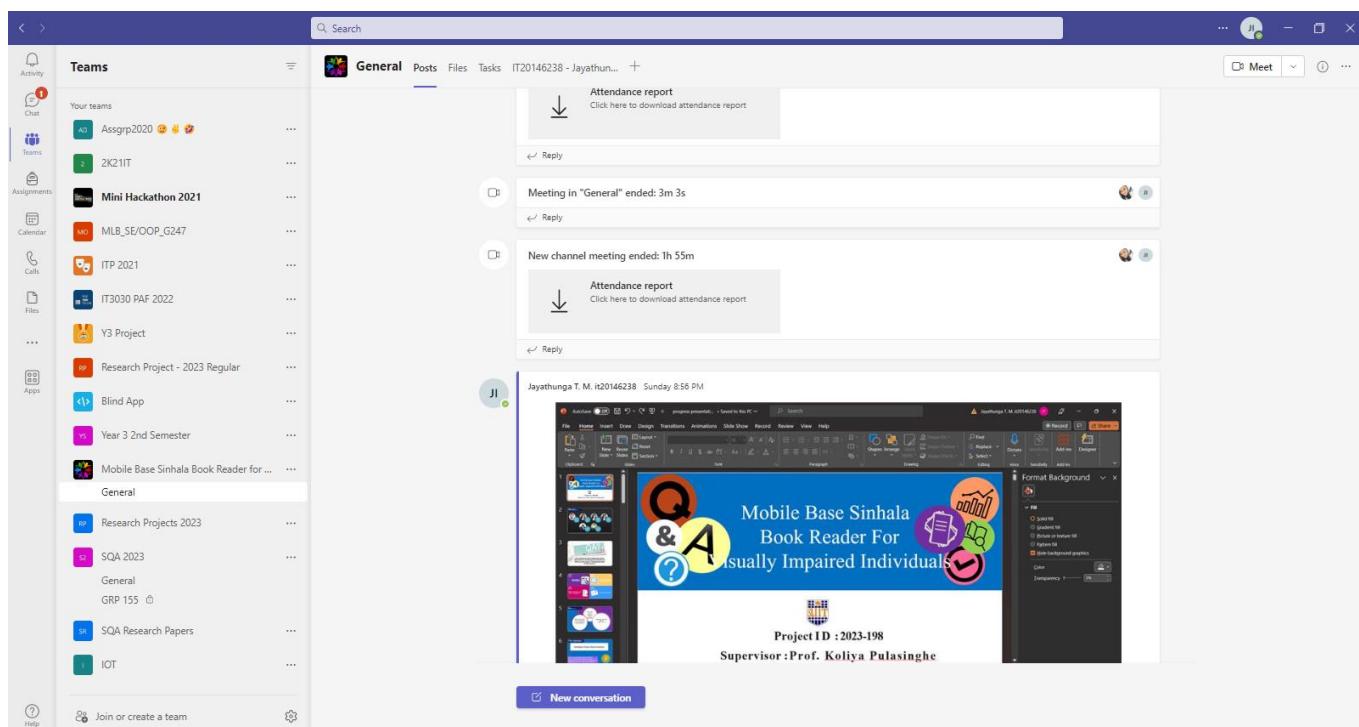


Fig. 11. Teams Call 11 with Research Team

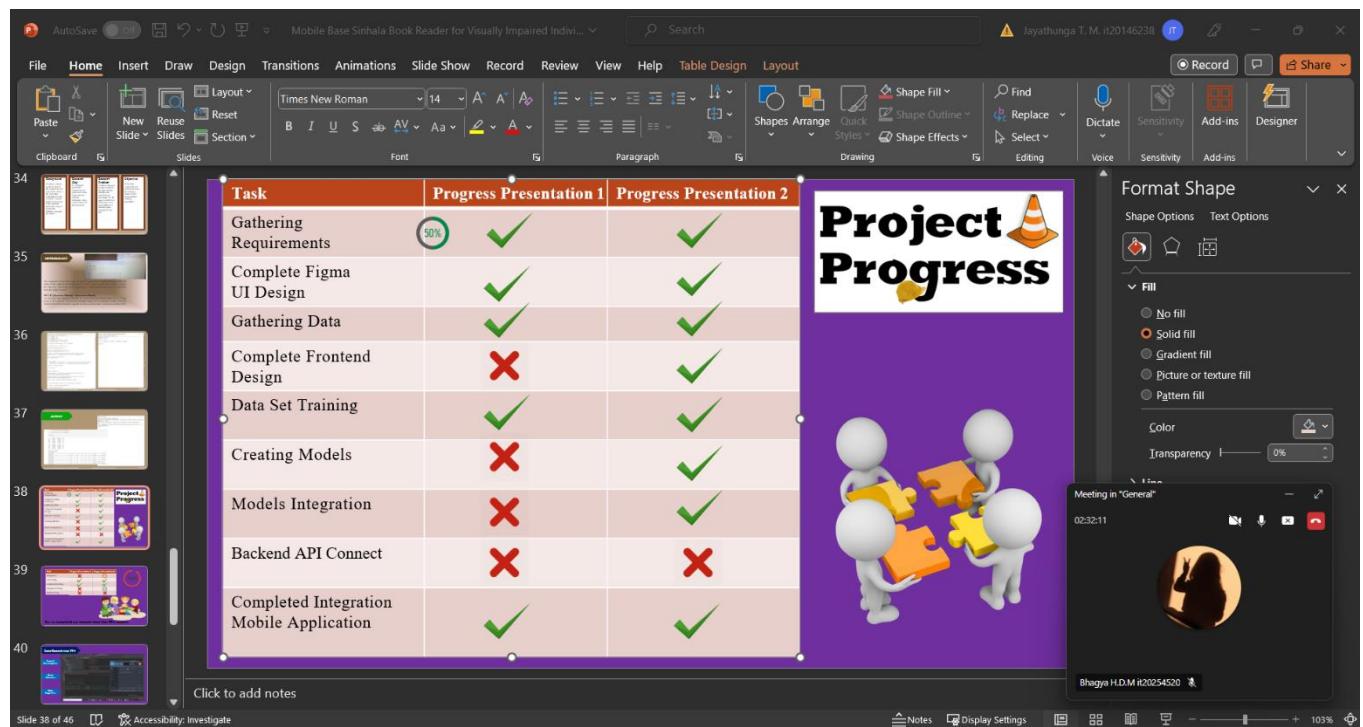


Fig. 12.Teams Call 12 with Research Team Member

Attendance report
Click here to download attendance report

New channel meeting ended: 53m 32s

Attendance report
Click here to download attendance report

Meeting in "General" ended: 3h 41m

Attendance report
Click here to download attendance report

Meeting in "General" started

Jayathunga T. M. It20146238 Monday 10:39 PM

Madushi.txt

Meeting ended: 3h 17m

Attendance report
Click here to download attendance report

Fig. 13. Teams Call 13 with Research Team

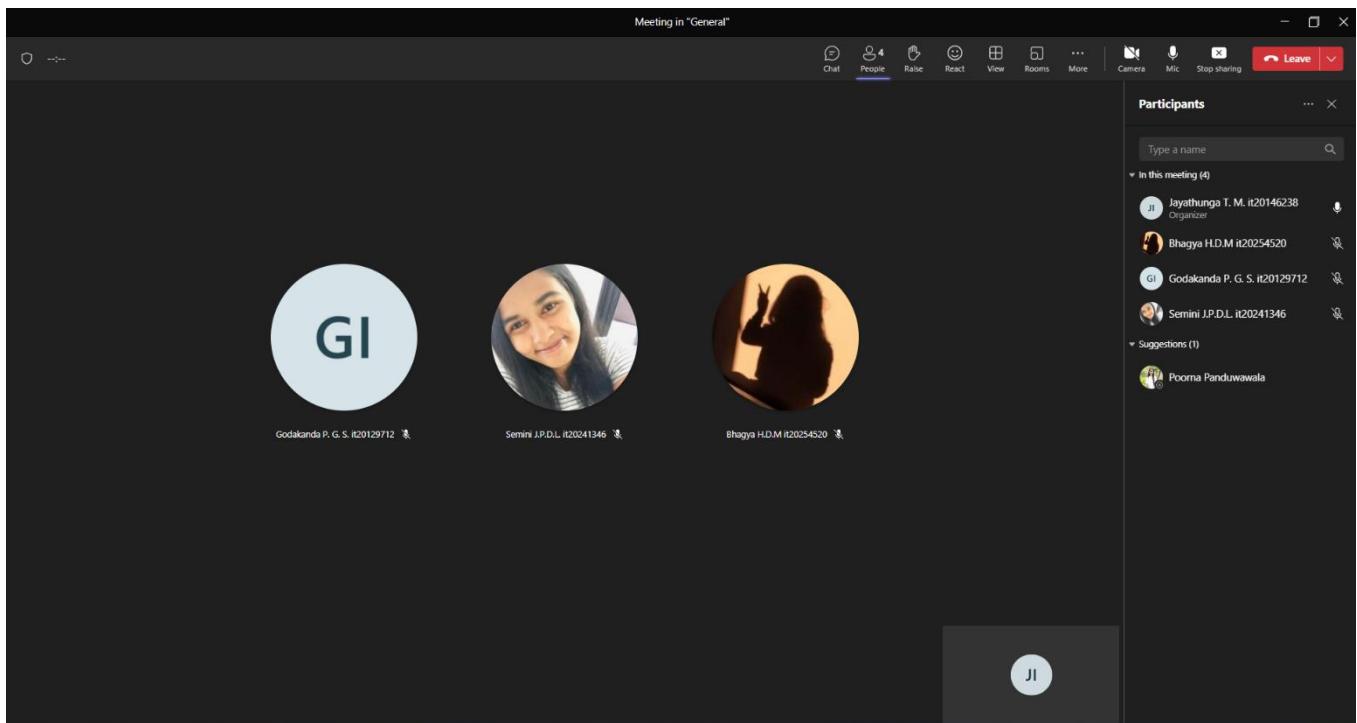


Fig. 14. Teams Call 14 with Research Team

The screenshot shows a Microsoft Teams meeting interface. On the left, the Visual Studio Code editor is open with a Python notebook named 'image-captioning.ipynb'. The code in the editor is as follows:

```

File Edit Selection View Go Run Terminal Help
image-captioning.ipynb - Visual Studio Code
OPEN EDITORS
+ Code + Markdown | Run All | Restart | Clear All Outputs | Variables | Outline ...
myenv (Python 3.8.17)
import glob, os, uuid
from evaluate import load
from datasets import load_dataset
from transformers import TrainingArguments, Trainer
from transformers import AutoProcessor, AutoModelForCausalLM

ModuleNotFoundError Traceback (most recent call last)
Cell In[1], line 2
      1 import glob, os, uuid
----> 2 from evaluate import load
      3 from datasets import load_dataset
      4 from transformers import TrainingArguments, Trainer

ModuleNotFoundError: No module named 'evaluate'

def create_dataset(data_dir = 'data/captioning'):
    all_files = glob.glob(f'{data_dir}/*.*')
    image_files = [f for f in all_files if not f.endswith('.json')]
    image_files = [file.replace('\\', '/') for file in image_files]
    json_files = [f.split('.')[0] + '.json' for f in image_files]

    for image_file, json_file in zip(image_files, json_files):
        if os.path.exists(image_file) and os.path.exists(json_file):
            file_dir, _ = os.path.split(image_file)
            rand_name = str(uuid.uuid4())
            new_image_file = os.path.join(file_dir, rand_name + '.jpg')
            new_json_file = os.path.join(file_dir, rand_name + '.json')

            os.rename(image_file, new_image_file)
            os.rename(json_file, new_json_file)

```

Fig. 15. Teams Call 15 with Research Team Model Error Fixing

```

from gtts import gTTS
import torch, io, cv2, os
from pydub import AudioSegment
from google.cloud import vision
from matplotlib import pyplot as plt
from PIL import Image as ImagePIL, ImageDraw, ImageFont
from google.cloud.vision_v1.types import Image
from google.oauth2.service_account import Credentials
from transformers import DetrImageProcessor, DetrForObjectDetection, \
    VisionEncoderDecoderModel, ViTImageProcessor, AutoTokenizer, \
    SpeechT5Processor, SpeechT5ForTextToSpeech, SpeechT5HifiGan

```

Fig. 16. Teams Call 16 with Research Team Member Model Training

```

dataset, unique_labels = create_dataset()

```

Number of training images: 5000
 Image ID not found: 226111
 Image ID not found: 58636
 Image ID not found: 458790
 Image ID not found: 461275
 Image ID not found: 268996
 Image ID not found: 370999
 Image ID not found: 481404
 Image ID not found: 121153
 Image ID not found: 310622
 Image ID not found: 98497
 Image ID not found: 228771
 Image ID not found: 270386
 Image ID not found: 240767
 Image ID not found: 173183
 Image ID not found: 560371
 Image ID not found: 330554
 Image ID not found: 550939
 Image ID not found: 502910
 Image ID not found: 382734
 Image ID not found: 344611
 Image ID not found: 127135
 Image ID not found: 320706
 Image ID not found: 64574
 Image ID not found: 198915

```

unique_labels

```

Fig. 17. Teams Call 17 with Research Team Member Model Training

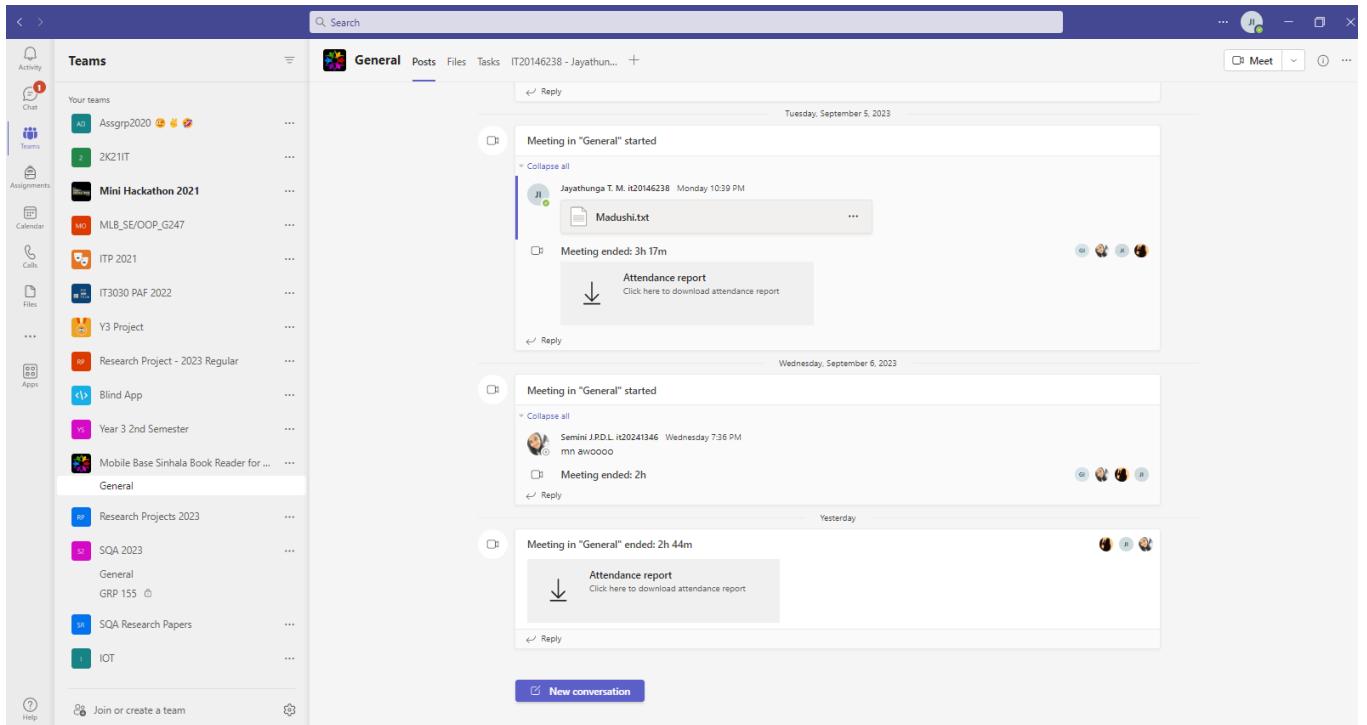


Fig. 18. Teams Call 18 with Research Team

1.2. MS Teams Call with Co-Supervisor

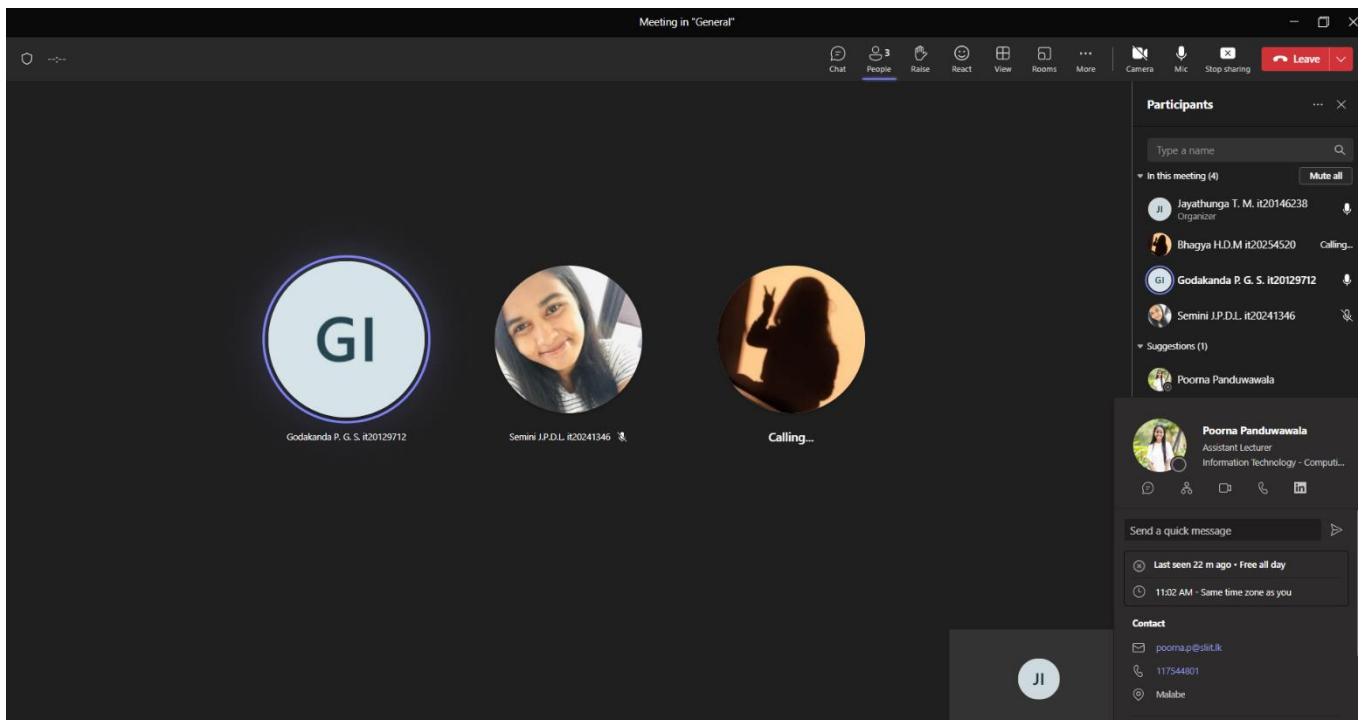


Fig. 19. Teams Call with Research Team Co-Supervisor

2. Screenshots of the Chats in MS Teams

2.1. Physically Progress Meeting Schedule Dates in Supervisor

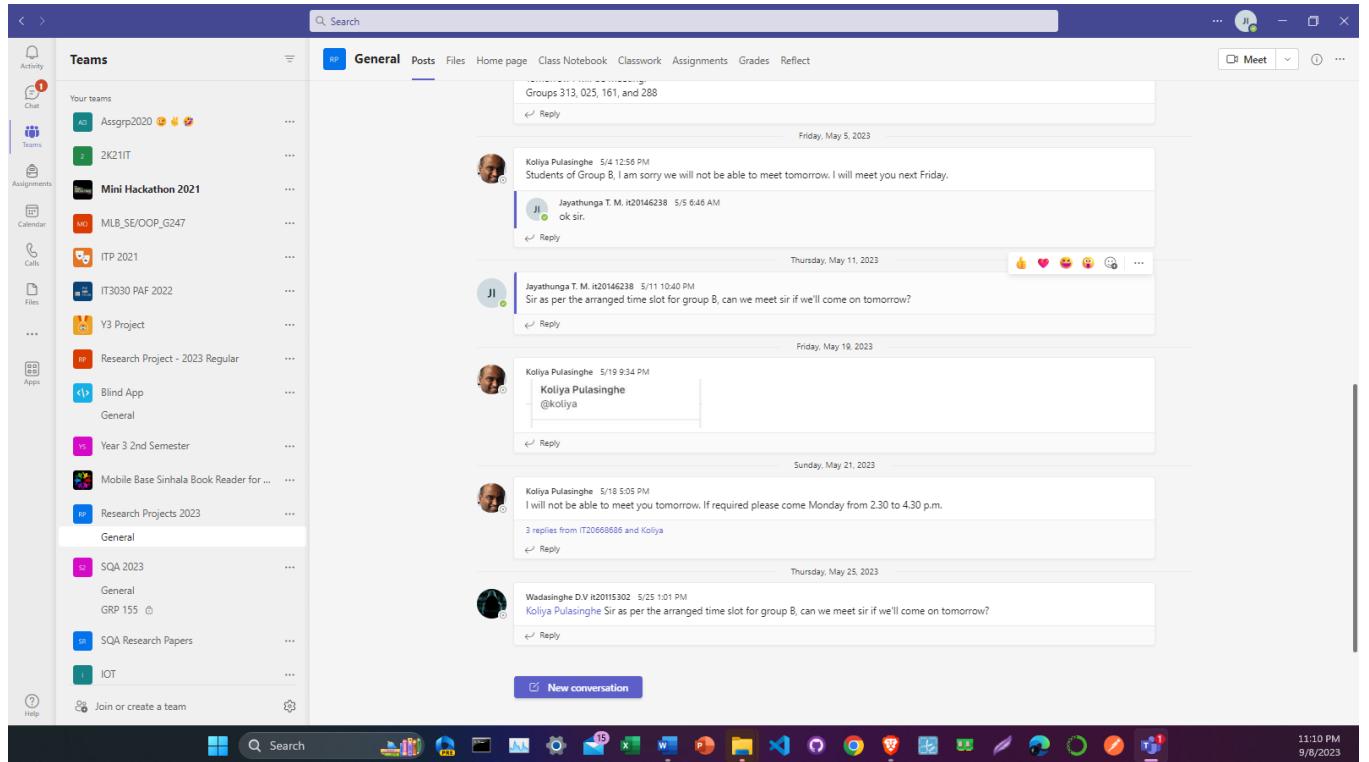


Fig. 20.TEAMS Chat with Research Team Supervisor for Physical Meeting Schedule

2.2. MS Teams Chat with Research Team

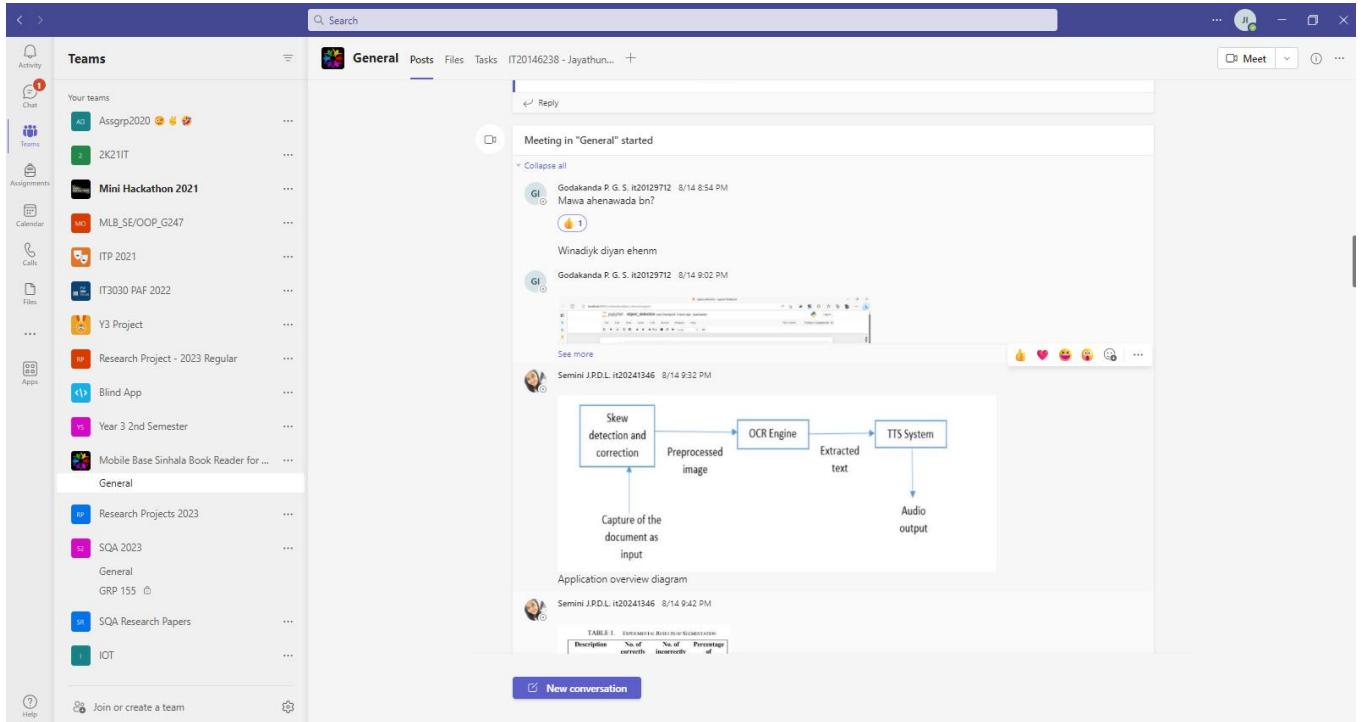


Fig. 21. Teams Chat 1 with Research Team

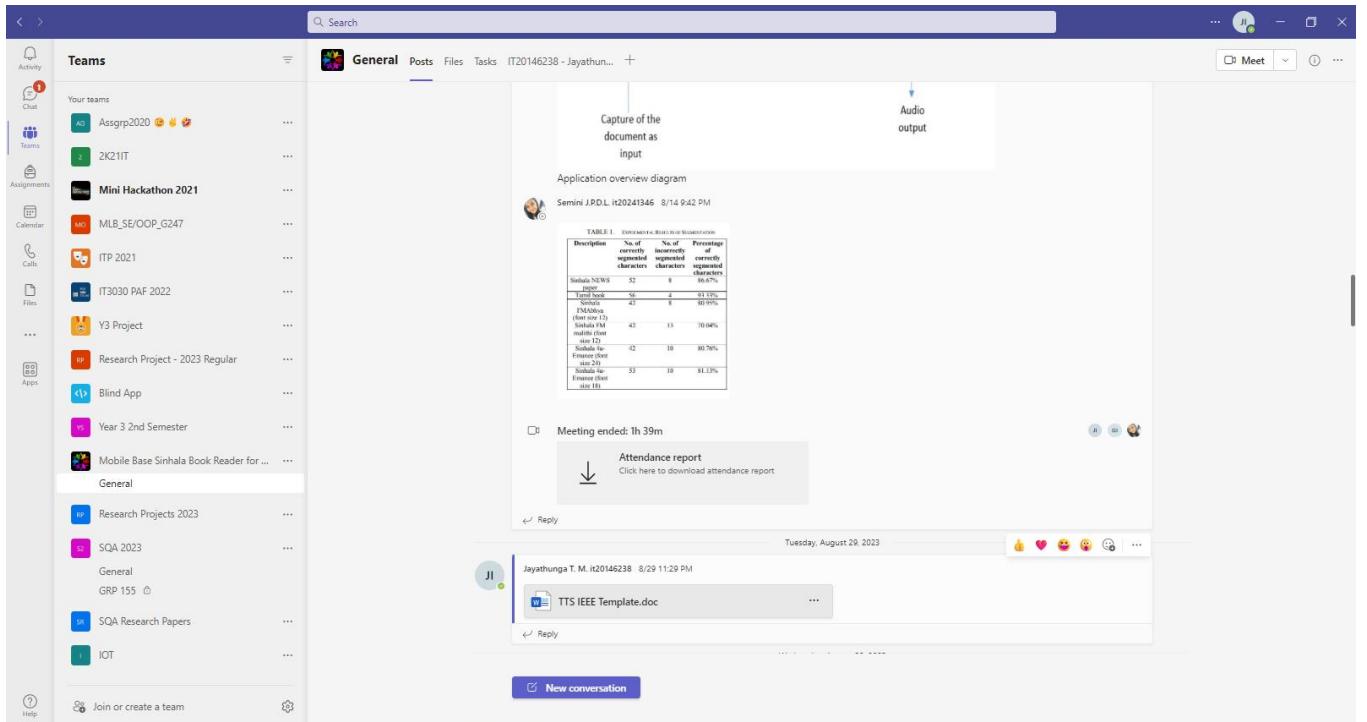


Fig. 22. Teams Chat 2 with Research Team

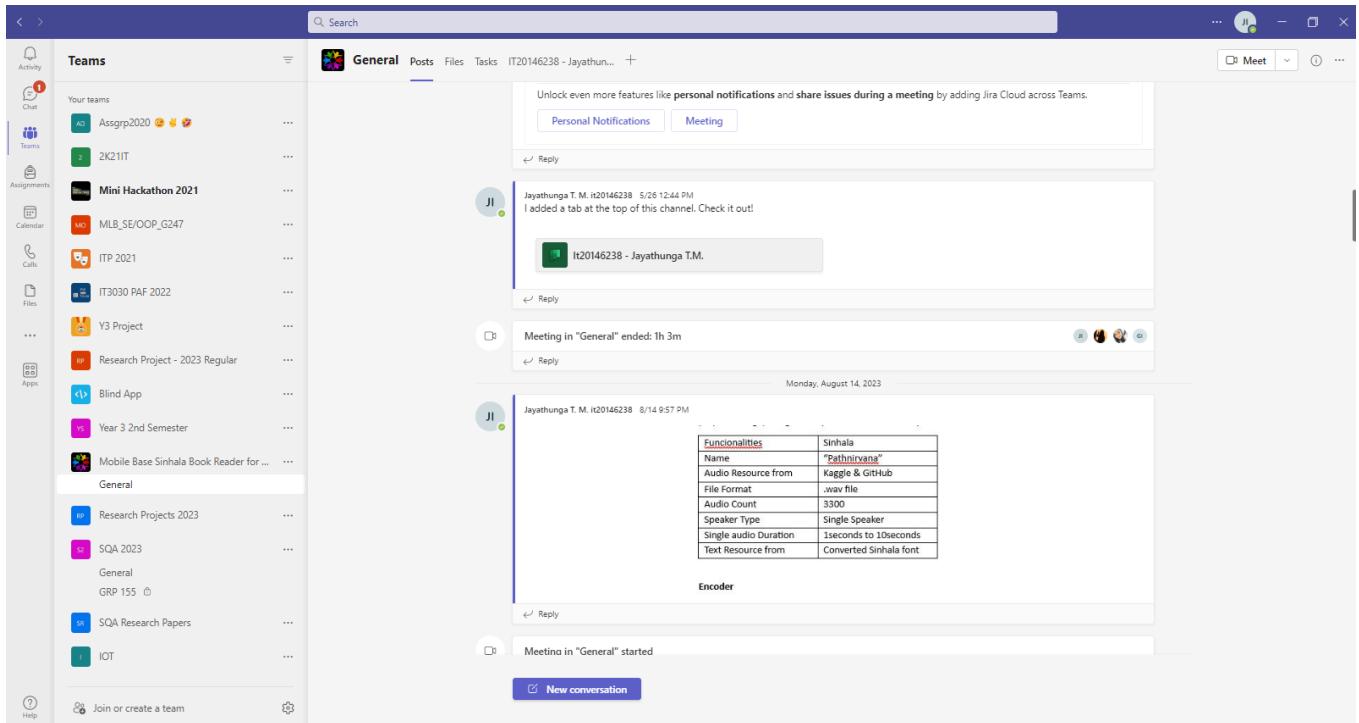


Fig. 23. Teams Chat 3 with Research Team Members

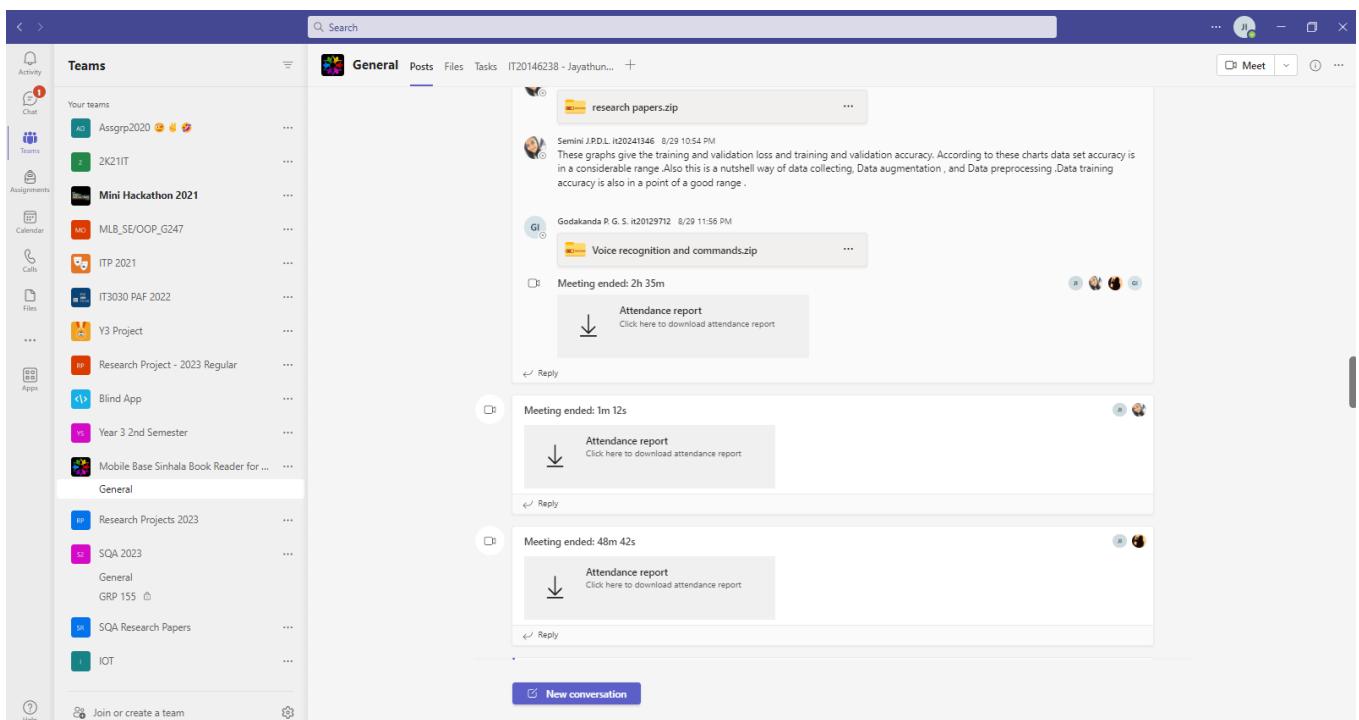


Fig. 24. Teams Chat 1 with Research Team Members

3. Zoom Meeting With team members

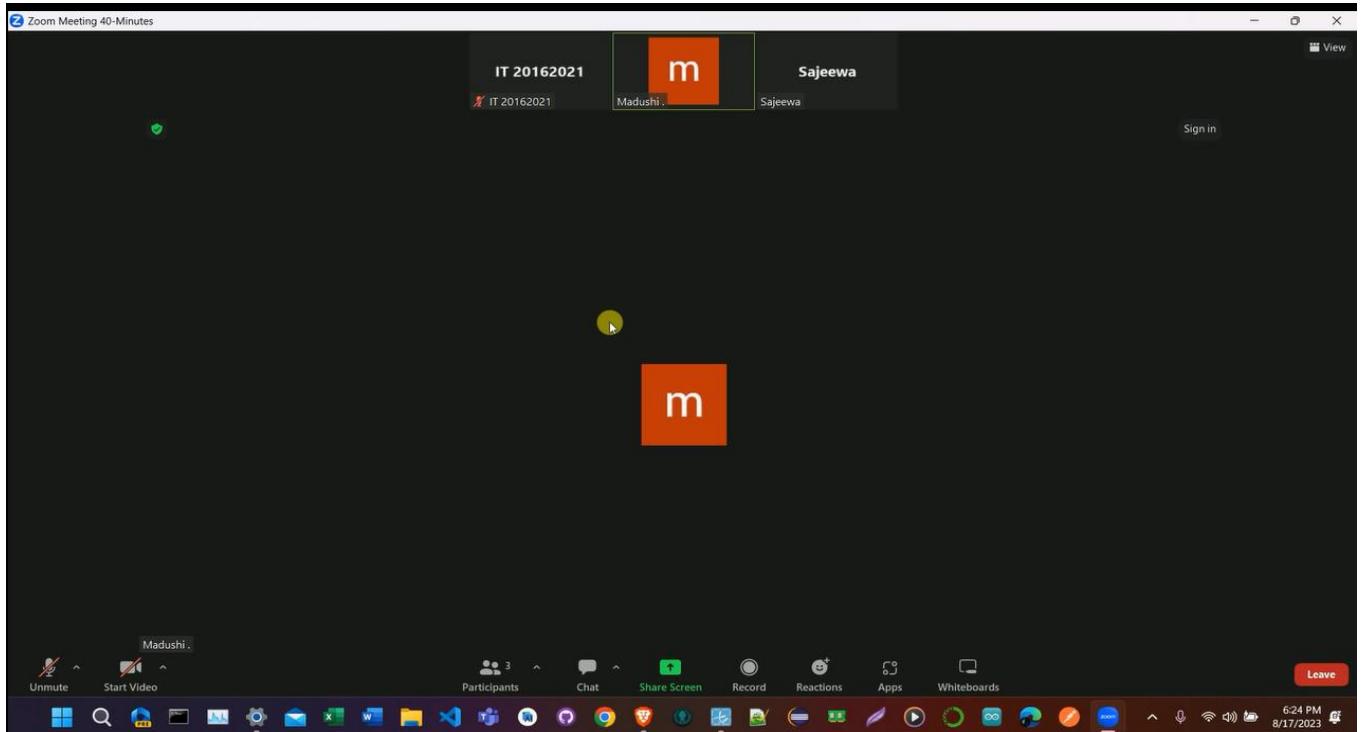


Fig. 25. Zoom Meeting 1 with Team Members

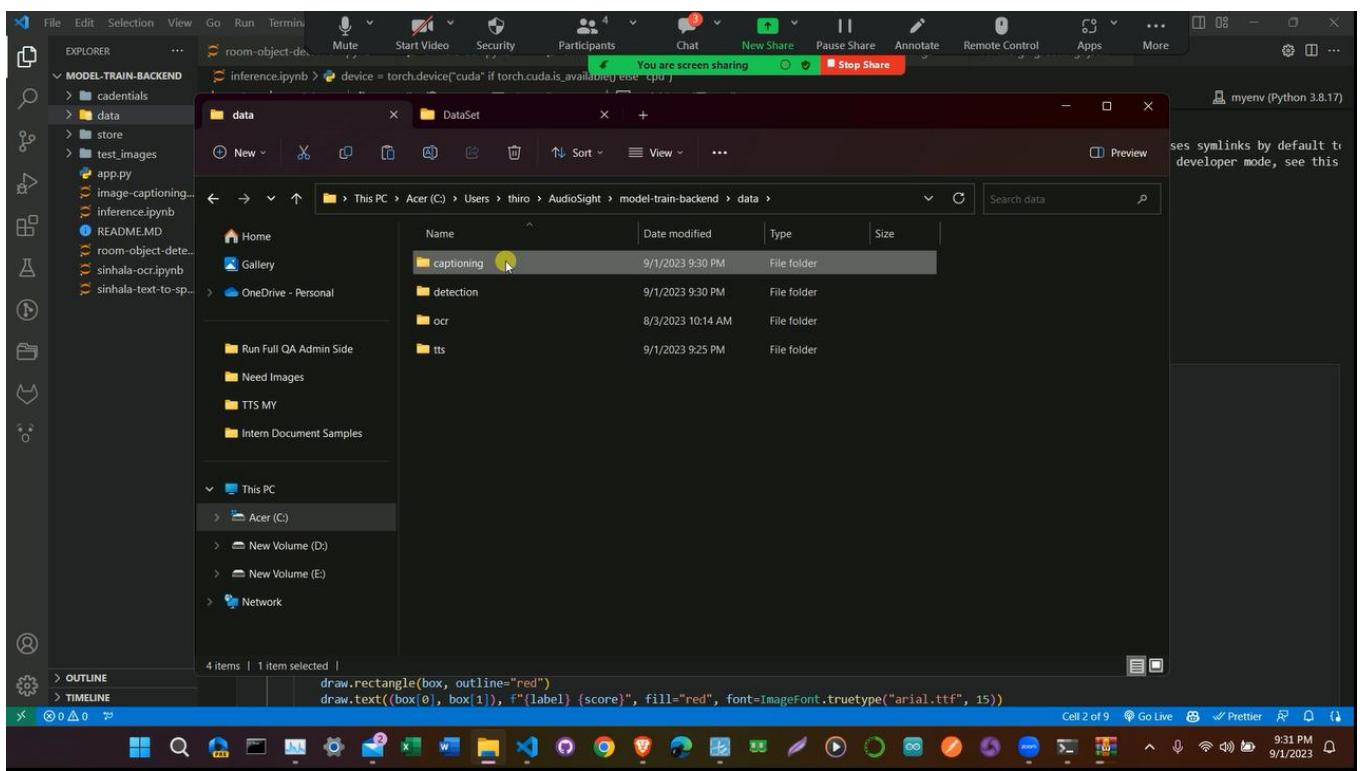


Fig. 26. Zoom Meeting 2 with Team Members Model Creation



Fig. 27. Zoom Meeting 3 with Team Members

```

def inference_audio_book(
    user_id,
    book_id,
    text,
    save_dir = "store/audio_books",
):
    audio_book_path = f"{save_dir}/{user_id}_{book_id}.mp3"
    mp3_fp = inference_tts(text)
    append_audio = AudioSegment.from_mp3(mp3_fp)
    if os.path.exists(audio_book_path):
        existing_audio = AudioSegment.from_mp3(audio_book_path)
        new_audio = existing_audio + append_audio
        new_audio.export(audio_book_path, format="mp3")

    else:
        append_audio.export(audio_book_path, format="mp3")

    return audio_book_path

```

Fig. 28. Zoom Meeting 4 with Team Members for Model Integration

4. Teams Task

4.1. MS Teams Tasks Allocation(Planner Board)

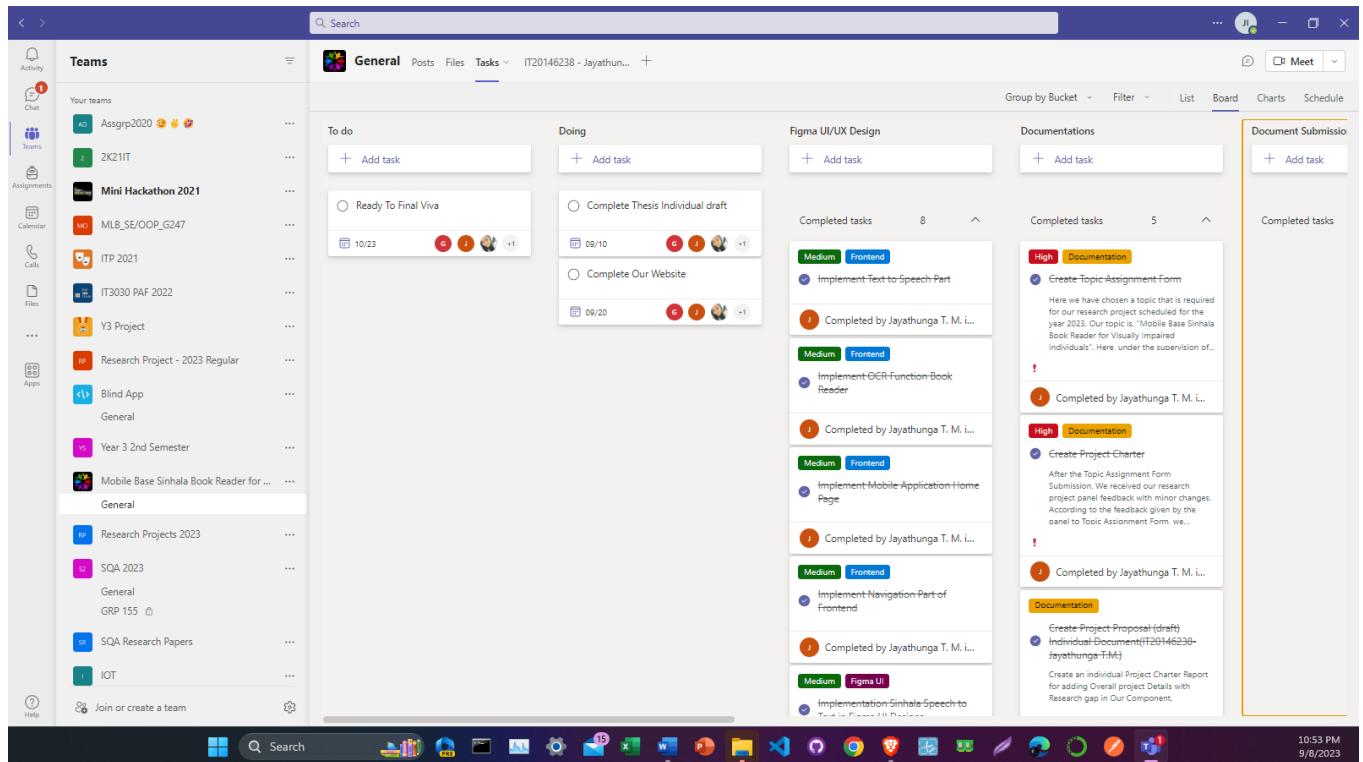


Fig. 29. Planner Board Part 1

Document Submissions

- + Add task
- Completed tasks: 5
- Research Paper Submission (Completed by Jayathunga T. M. i...)
- TAF-Submission (Completed by Jayathunga T. M. i...)
- Project Charter Submit (Completed by Jayathunga T. M. i...)
- Individual Project Charter Document Submission (Completed by Jayathunga T. M. i...)
- Project Charter Confirmation Submission (Completed by Jayathunga T. M. i...)

Backend Development

- + Add task
- Completed tasks: 9
- Model Training (Sinhala Text-to-Speech Model Training) (Completed by Jayathunga T. M. i...)
- Image Captioning Model training (Completed by Jayathunga T. M. i...)
- Find Object Detection Datasets (Completed by Jayathunga T. M. i...)
- Find OCR Datasets (Completed by Jayathunga T. M. i...)
- Find Image Captioning Datasets (Completed by Jayathunga T. M. i...)

Presentations

- + Add task
- Presentation Slides (Proposal Presentation 2 Slides) (Completed by Jayathunga T. M. i...)
- Prepare to Project-Proposal Presentation (Creating Project Proposal Presentation Preparation and Ready to it very Well.) (Completed by Jayathunga T. M. i...)
- Progress Presentation-3 (Completed by Jayathunga T. M. i...)
- Project Proposal Presentation Date (Completed by Jayathunga T. M. i...)

Background Study

- + Add task
- Completed tasks: 1
- Find Text to Speech Sinhala Datasets (Start by searching online for Sinhala Text-to-Speech (TTS) datasets. Look for academic research papers, online repositories, or dedicated websites that provide linguistic resources. Check ocular machine learning...) (Completed by Jayathunga T. M. i...)

Fig. 30. Planner Board Part 2

Background Study

- + Add task
- Completed tasks: 1
- Find Text to Speech Sinhala Datasets (Start by searching online for Sinhala Text-to-Speech (TTS) datasets. Look for academic research papers, online repositories, or dedicated websites that provide linguistic resources. Check ocular machine learning...) (Completed by Jayathunga T. M. i...)

Frontend Developments

- + Add task
- Completed tasks: 1
- Implement Mobile Application Camera View in Navigation Side (Completed by Jayathunga T. M. i...)
- Implement Mobile application Camera View in Book-Reading Side (Completed by Jayathunga T. M. i...)
- Implement Mobile Application Home (Completed by Jayathunga T. M. i...)
- Implement Main Navigation Bar (Completed by Jayathunga T. M. i...)
- Implement Mobile Application Splash Screen (Completed by Jayathunga T. M. i...)

Research Paper

- + Add task
- Completed tasks: 2
- Find Text to Speech Sinhala Datasets (Start by searching online for Sinhala Text-to-Speech (TTS) datasets. Look for academic research papers, online repositories, or dedicated websites that provide linguistic resources. Check ocular machine learning...) (Completed by Jayathunga T. M. i...)
- Research Paper Written (Completed by Jayathunga T. M. i...)
- Research Paper Submission to ICAE (Completed by Jayathunga T. M. i...)

Fig. 31. Planner Board Part 3

4.2. MS Teams List Buckets

This screenshot shows the Microsoft Teams interface with the 'General' tab selected. The left sidebar lists various teams, and the main area displays a list of tasks under the 'General' category. The tasks are organized into columns: Task title, Completed by, Priority, Completed, and Bucket. The 'Bucket' column shows categories like 'Backend Development', 'Frontend Development', 'Research Paper', etc. The task list includes items such as 'Find-Image-Captioning Datasets', 'Find-Object-Detection-Datasets', 'Find-OCR-Datasets', 'Sinhala Voice Navigation Model Complete', 'Research Paper Submission', 'Image Captioning Model training', 'Object-Detection Model Training', 'OCR Model Training', 'Implement Mobile Application Camera View in Navigation Side', 'Implement Mobile Application Home', 'Implement Mobile application Camera View in Book Reading Side', 'Research Paper Written', 'Research Paper Submission to IGCAC', 'Implement Main Navigation Bar', 'Implement Text to Speech Part', 'Implement OCR Function Book Reader', 'Implement Mobile Application Home Page', 'Implement Navigation Part of Frontend', 'Status Document-1', 'Implement Mobile Application Splash Screen', and 'Proposed Project Charter Document'. The status bar at the bottom indicates the date and time as 11:09 PM 9/8/2023.

Fig. 32. MS Team List View 1

This screenshot shows the Microsoft Teams interface with the 'General' tab selected. The left sidebar lists various teams, and the main area displays a list of tasks under the 'General' category. The tasks are organized into columns: Task title, Completed by, Priority, Completed, and Bucket. The 'Bucket' column shows categories like 'Figma UI/UA Desi...', 'Documentations', 'Presentations', etc. The task list includes items such as 'Implement Navigation Part of Frontend', 'Status Document-1', 'Implement Mobile Application Splash Screen', 'Proposal Presentation Individual draft', 'TAF Submission', 'Project Charter Submit', 'Individual Project Charter Document Submission', 'Find-Sinhala TTS Datasets', 'Sinhala Text-to-Speech Model Training', 'Created OCR Figma UI', 'Create Proposal Presentation Document', 'Implementation Sinhala Speech to Text in Figma UI Designs', 'Create Splash Screen of Figma UI Design', 'Select Mobile Application Name', 'Find-Text to Speech Sinhala Datasets', 'Project Charter Confirmation Submission', 'Create Topic Assignment Form', 'Create Project Charter', 'Progress Presentation-1', 'Project Proposal Presentation Date', 'Prepare to Project Proposal Presentation', and 'Create Project Proposal (draft) Individual Document(11020146238-Jayathunga TM)'. The status bar at the bottom indicates the date and time as 11:09 PM 9/8/2023.

Fig. 33. MS Team List View 2

4.3. MS Teams Charts

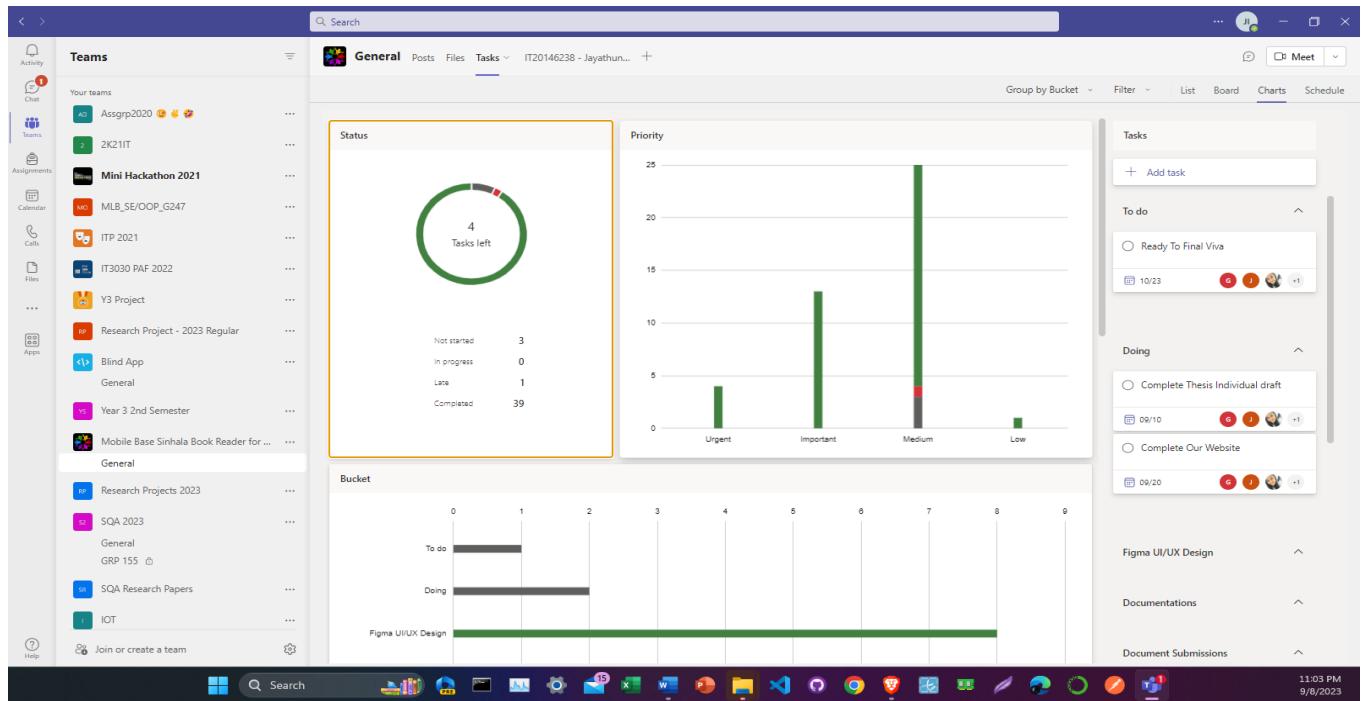


Fig. 34. MS Teams Allocated Task Completed Chart 1

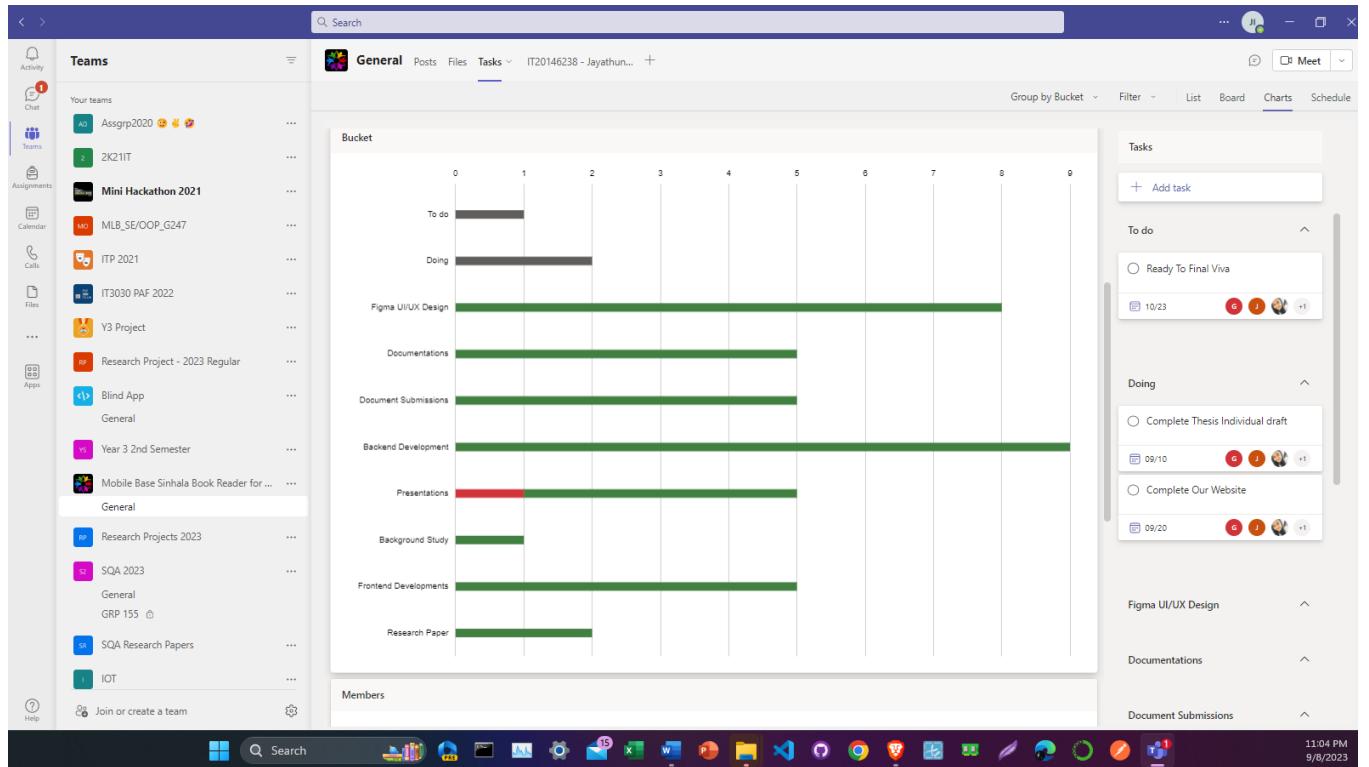
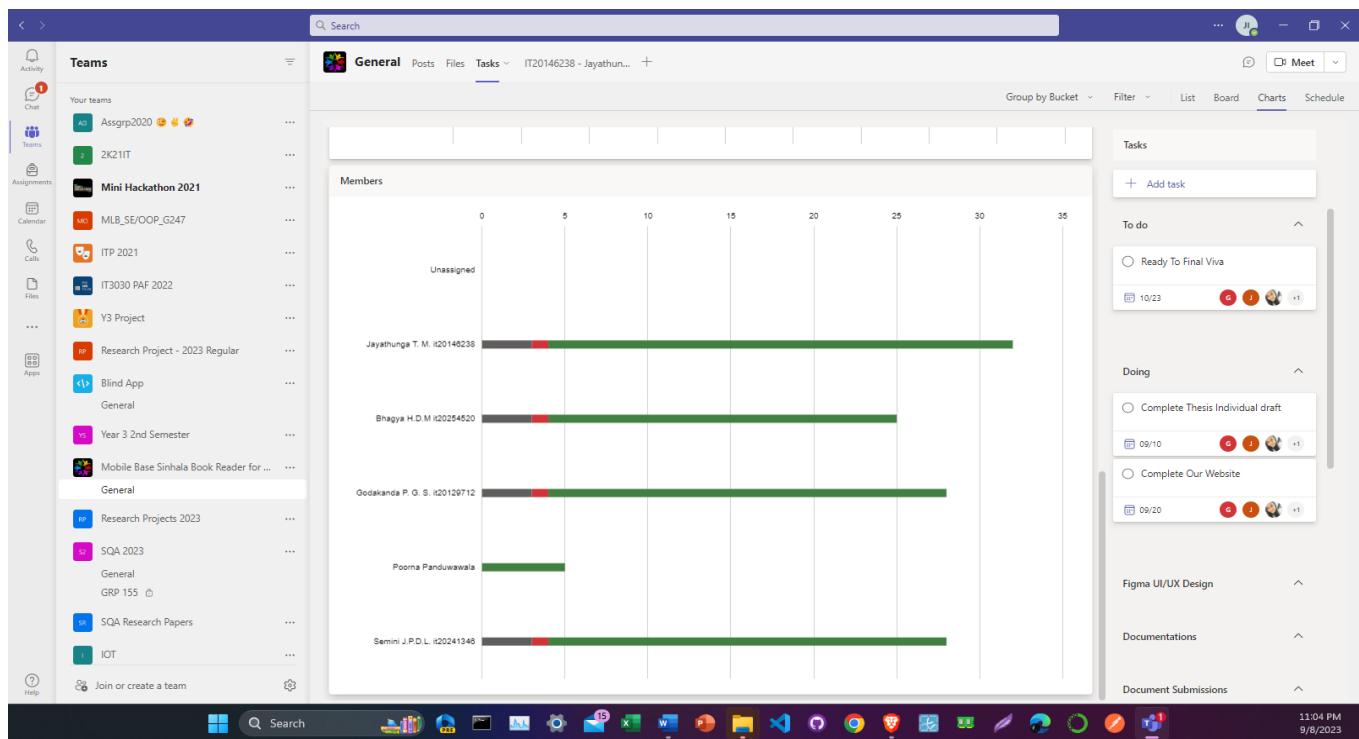
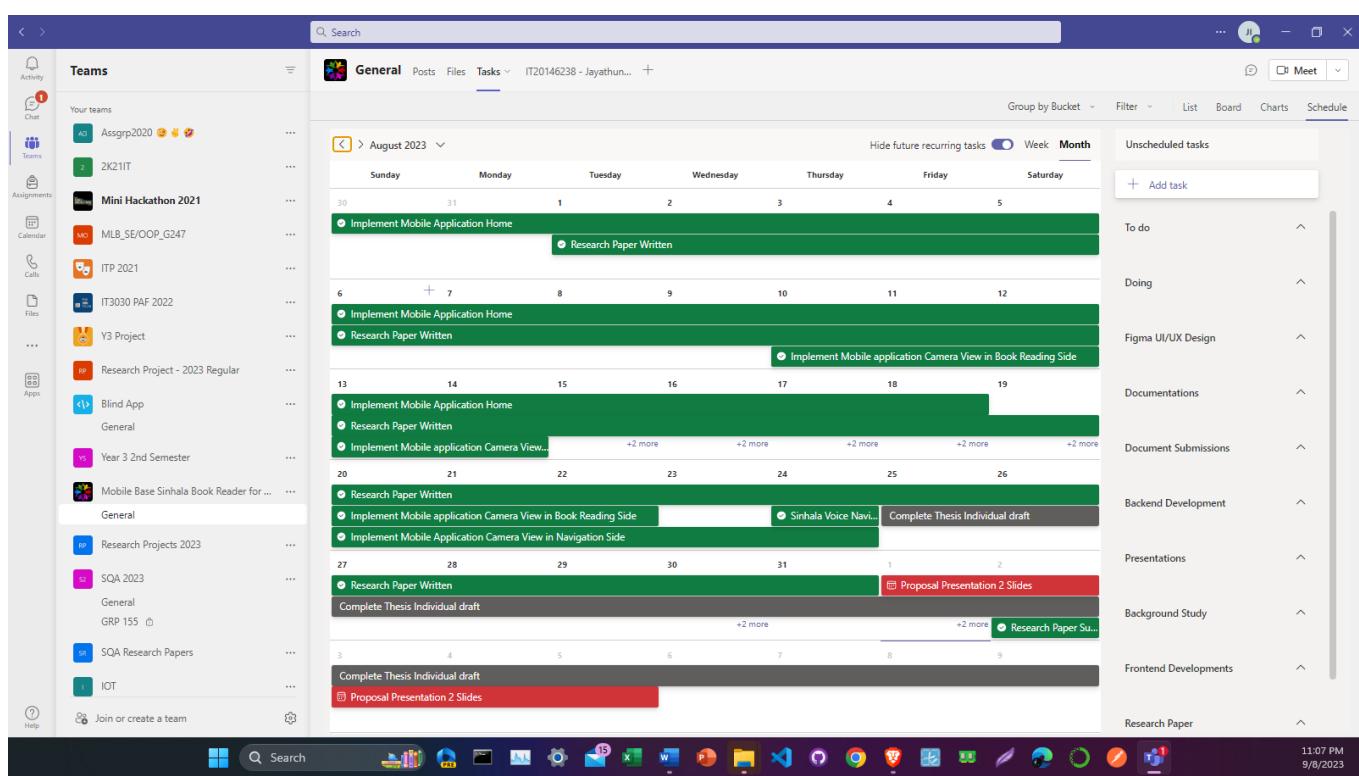


Fig. 35. MS Teams Allocated Task Completed Chart 2



4.4. MS Teams Scheduled



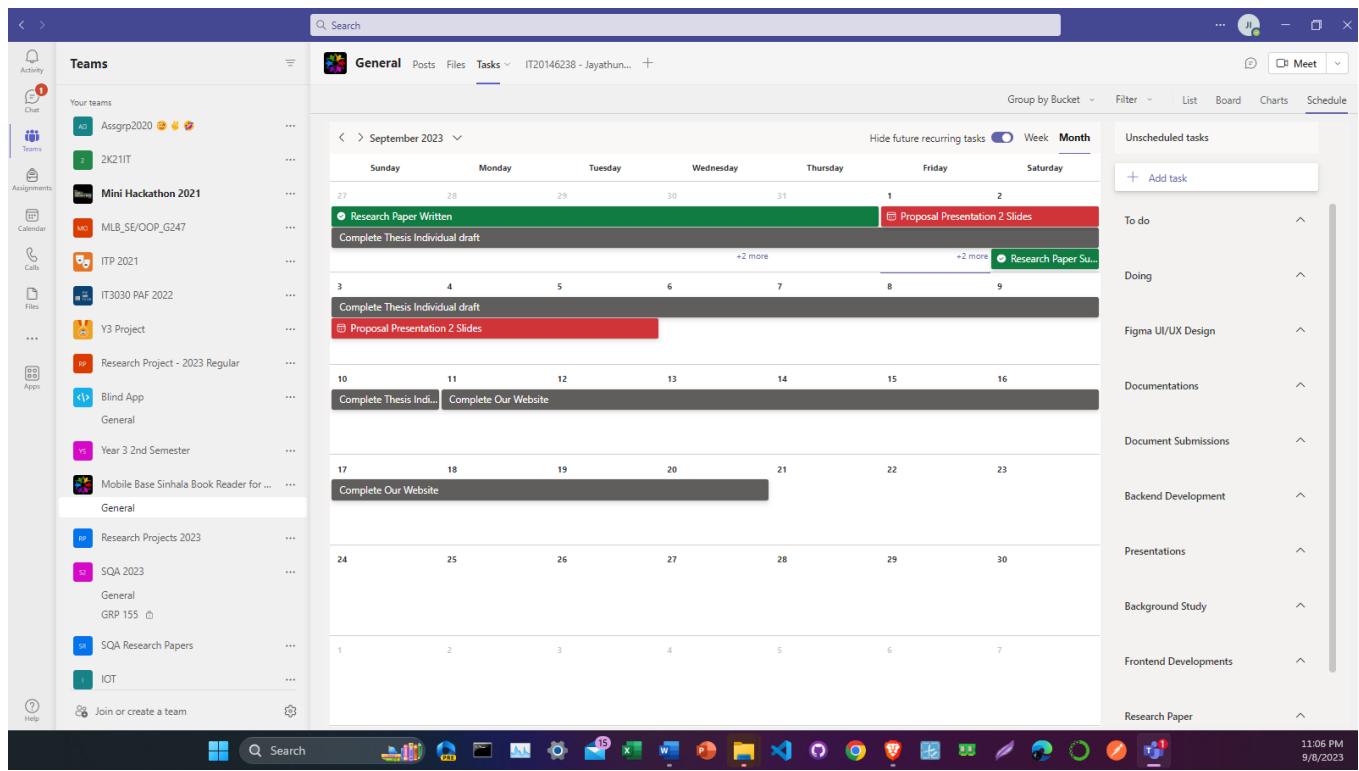


Fig. 38. MS Teams Allocated Task Time Schedule 2

5. GitLab Commitments

5.1. Git Main Branch

The screenshot shows the 'Project overview' section of a GitLab project. The sidebar on the left includes links for Project overview, Details, Activity, Releases, Repository, Issues (14), Merge Requests (0), CI / CD, Operations, Analytics, Wiki, Snippets, and Settings. The main content area displays the project's repository details: Mobile Base Sinhala Book Reader for Visually Impaired Individuals, Project ID: 1947, 44 Commits, 5 Branches, 0 Tags, 2.5 MB Files. It lists a merge branch 'IT20146238' into 'master' by Jayathunga T.M. authored 5 days ago. Below this are sections for README, Auto DevOps enabled, Add LICENSE, Add CHANGELOG, Add CONTRIBUTING, and Add Kubernetes cluster. A table shows recent commits:

Name	Last commit	Last update
Figma UI	Create Flutter Project	2 months ago
audio_sight	Merge branch 'IT20146238' into 'master' Complete main navigation screen co...	5 days ago
README.md	IT20129712 voice navigation	3 months ago

Fig. 39. GitLab Project Overview Details

The screenshot shows the 'Activity' section of the project. The sidebar is identical to Fig. 39. The main content area shows a list of push events:

- Jayathunga T.M. @IT20146238: Pushed to branch master, df7369e5 · Update README.md, 5 days ago
- Jayathunga T.M. @IT20146238: Deleted branch IT20146238, 5 days ago
- Jayathunga T.M. @IT20146238: Pushed to branch master, 32124b76 · Merge branch 'IT20146238' into 'master' ... and 6 more commits. Compare b70c4cf1...32124b76, 5 days ago
- Jayathunga T.M. @IT20146238: Pushed to branch IT20146238, a4c21e0b · Create dot wave design animation ... and 1 more commit. Compare 701d1d3c...a4c21e0b, 5 days ago
- Jayathunga T.M. @IT20146238: Pushed to branch IT20146238, 701d1d3c · update home screen and the dependencies ... and 2 more commits. Compare 59a03f0d...701d1d3c, 5 days ago
- Jayathunga T.M. @IT20146238: Pushed to branch IT20146238, 59a03f0d · Create Audio Player, 5 days ago
- Jayathunga T.M. @IT20146238: Pushed to branch master, 59a03f0d · Pushed to branch master, 6 days ago

Fig. 40. GitLab Push Events Activities

5.2. Git Commits Contributions Graphs

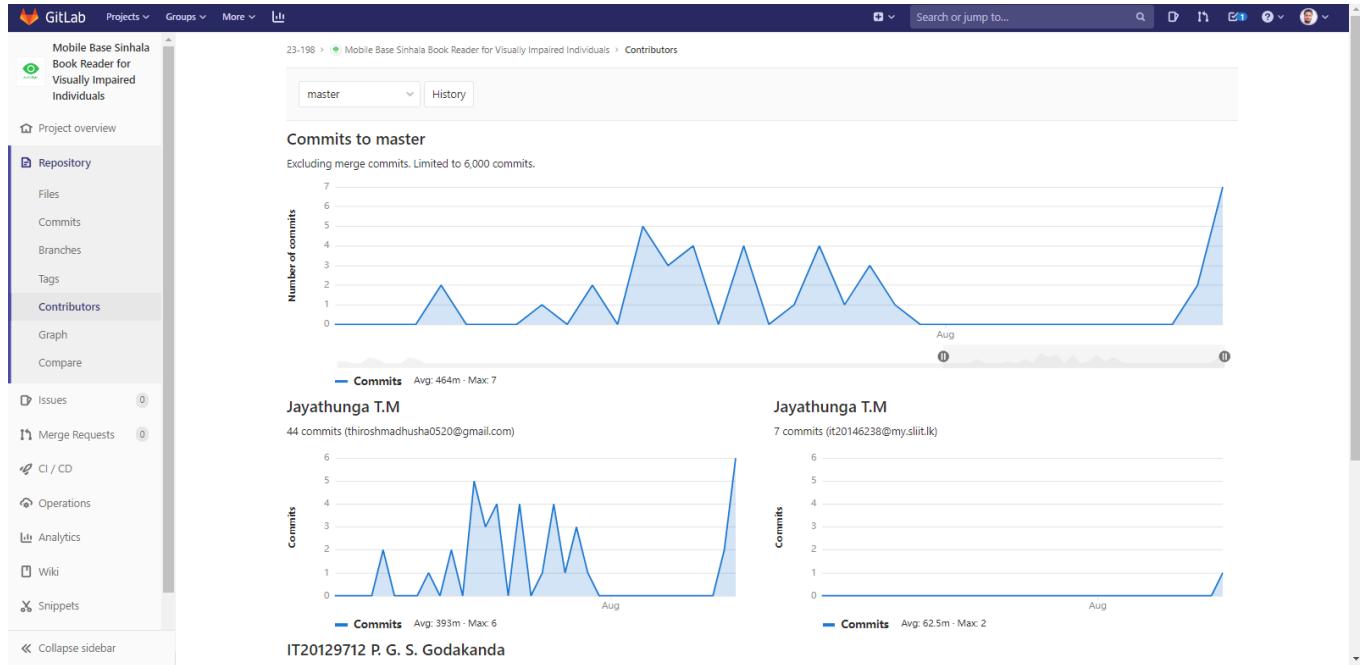


Fig. 41. GitLab Commits Contribution Charts

5.3. GitLab Individual Commits

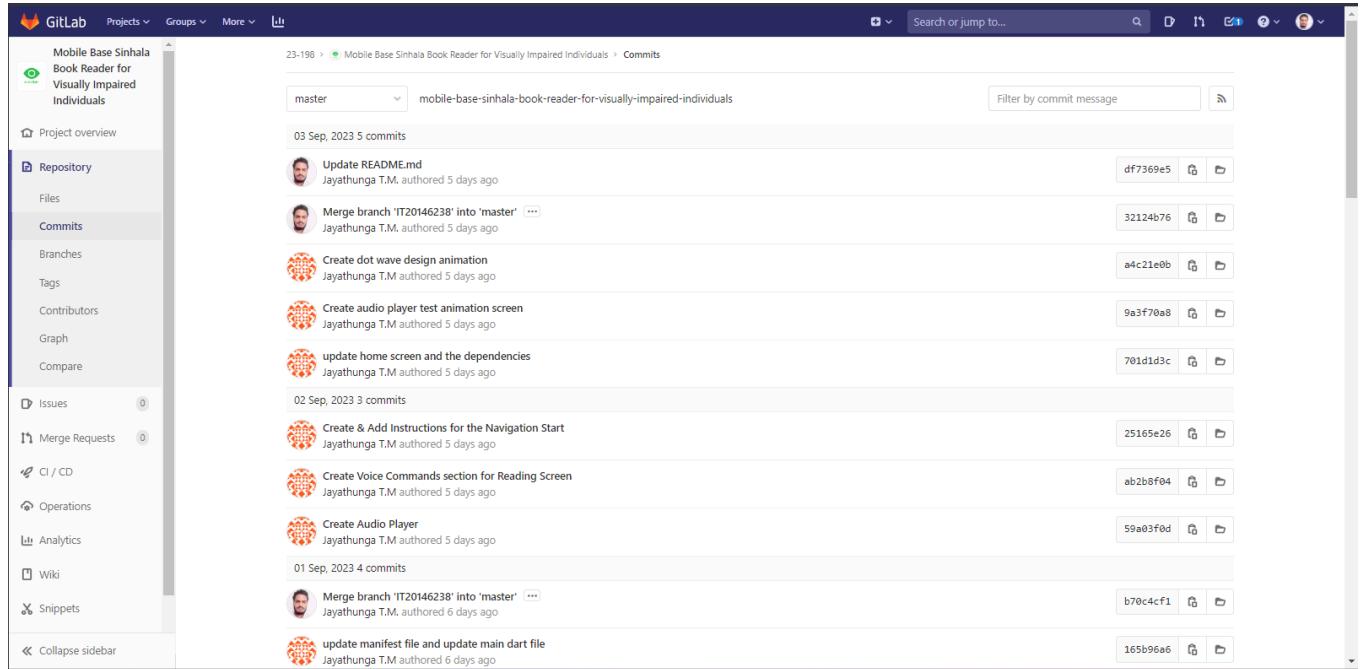


Fig. 42. GitLab Individual Commits Details 1

The screenshot shows the GitLab interface for the project 'Mobile Base Sinhala'. The sidebar on the left includes options like Project overview, Repository (selected), Files, Commits (selected), Branches, Tags, Contributors, Graph, Compare, Issues, Merge Requests, CI / CD, Operations, Analytics, Wiki, and Snippets. The main area displays a list of commits by user 'Jayathunga T.M'.

Commit Message	Author	Date	SHA
add primary voice instructions & update gradle sdk	Jayathunga T.M	authored 6 days ago	6f4eeeb7
Merge branch 'IT20146238' into 'master'	Jayathunga T.M	authored 2 weeks ago	6979ca11
Merge branch 'master' into 'IT20146238'	Jayathunga T.M	authored 2 weeks ago	3688b1a8
Add Comments for each Sections	Jayathunga T.M	authored 2 weeks ago	2683426c
Create a list of cameras and a variable in camera	Jayathunga T.M	authored 2 weeks ago	71b88450
Create a class MyApp which extends StatelessWidget	Jayathunga T.M	authored 2 weeks ago	cebf3529
Create Main Function Widgets	Jayathunga T.M	authored 2 weeks ago	b2ac07d1
Create Listening Container	Jayathunga T.M	authored 2 weeks ago	1d7340e5
Import main packages and add gap between component	Jayathunga T.M	authored 3 weeks ago	e6eb7ffe
Create Main Home Screen Navigation UI Component	Jayathunga T.M	authored 3 weeks ago	fff10dfc
Create Main Home Screen Book Reading UI Interface	Jayathunga T.M	authored 3 weeks ago	e35272c2
Create home screen & update gradle sdk version	Jayathunga T.M	authored 3 weeks ago	14752620

Fig. 43. GitLab Individual Commits Details 2

The screenshot shows the GitLab interface for the project 'Mobile Base Sinhala'. The sidebar on the left includes options like Project overview, Repository (selected), Files, Commits (selected), Branches, Tags, Contributors, Graph, Compare, Issues, Merge Requests, CI / CD, Operations, Analytics, Wiki, and Snippets. The main area displays a list of commits by user 'Jayathunga T.M'.

Commit Message	Author	Date	SHA
Create Reading Screen Interface	Jayathunga T.M	authored 3 weeks ago	799a7638
Merge branch 'IT20146238' into 'master'	Jayathunga T.M	authored 3 weeks ago	ceb6a6bb
import main camera view and material packages	Jayathunga T.M	authored 3 weeks ago	11fa5515
complete navigation screen camerapreview container	Jayathunga T.M	authored 3 weeks ago	fa2d9d81
Build Navigation Screen Widget	Jayathunga T.M	authored 3 weeks ago	e8d1f870
Create Navigation Screen State Class	Jayathunga T.M	authored 3 weeks ago	edad027d
import home screen package & add comments	Jayathunga T.M	authored 3 weeks ago	ff9417d0
Create Home Page Screen StatefulWidget	Jayathunga T.M	authored 3 weeks ago	ccdb8a329
Create Navigation Screen StatefulWidget	Jayathunga T.M	authored 3 weeks ago	6bce8d90
Create Reading Screen StatefulWidget	Jayathunga T.M	authored 3 weeks ago	4ed99c8d
create set flash mode with take picture option	Jayathunga T.M	authored 3 weeks ago	65ed8610
create camera controller with lock capture option			c7069808

Fig. 44. GitLab Individual Commits Details 3

The screenshot shows the GitLab interface for a project titled "Mobile Base Sinhala Book Reader for Visually Impaired Individuals". The sidebar on the left is collapsed. The main area displays a list of commits made by "Jayathunga T.M." over several months. Each commit includes a small profile picture, the commit message, the author, the date, and a copy/paste icon.

Date	Commit Message	Author
09 Aug. 2023	add main application assets svg files and images	Jayathunga T.M.
09 Aug. 2023	Create and extend the splash screen State class	Jayathunga T.M.
09 Aug. 2023	create splash screen StatefulWidget main class	Jayathunga T.M.
07 Aug. 2023	Merge branch 'IT20146238' into 'master'	Jayathunga T.M.
03 Aug. 2023	change the splash screen theme path	Jayathunga T.M.
03 Aug. 2023	add flutter dependencies for camera	Jayathunga T.M.
24 May. 2023	Add User permissions for internet & open camera	Jayathunga T.M.
24 May. 2023	Merge branch 'IT20146238' into 'master'	Jayathunga T.M.
24 May. 2023	Merge branch 'master' into 'IT20146238'	Jayathunga T.M.
24 May. 2023	Add home screen Nav Bar Design	Jayathunga T.M.
24 May. 2023	change home screen format	Jayathunga T.M.

Fig. 45. GitLab Individual Commits Details 4

5.4. GitLab Merge Requests

The screenshot shows the GitLab interface for the same project. The sidebar on the left is collapsed. The main area displays a list of merge requests accepted by "Jayathunga T.M." over several months. Each entry shows the user, the merge request ID, the title of the merge request, and the time ago it was accepted.

Accepted By	Merge Request ID	Title	Time Ago
Jayathunga T.M. @IT20146238	i14	"Complete Audio Sight Application Frontend Side"	5 days ago
Jayathunga T.M. @IT20146238	i13	"Add primary voice assets and update android manifest file plugins and gradle file sdk version"	6 days ago
Jayathunga T.M. @IT20146238	i12	"Complete main Home screen Designs"	2 weeks ago
Jayathunga T.M. @IT20146238	i11	"Complete main navigation screen component"	3 weeks ago
Jayathunga T.M. @IT20146238	i10	"Mobile application Splash Screen New Design Added"	4 weeks ago
Jayathunga T.M. @IT20146238	i9	"Add Camera user permissions and Change dev dependencies and Splash screen Added path"	4 weeks ago
Jayathunga T.M. @IT20146238	i8	"Accepted merge request i8"	1 month ago
Jayathunga T.M. @IT20146238	i7	"Create Splash Screen"	3 months ago
Jayathunga T.M. @IT20146238	i6	"Create Flutter Project"	3 months ago
Jayathunga T.M. @IT20146238			3 months ago

Fig. 46. GitLab Individual Merge Requests Details

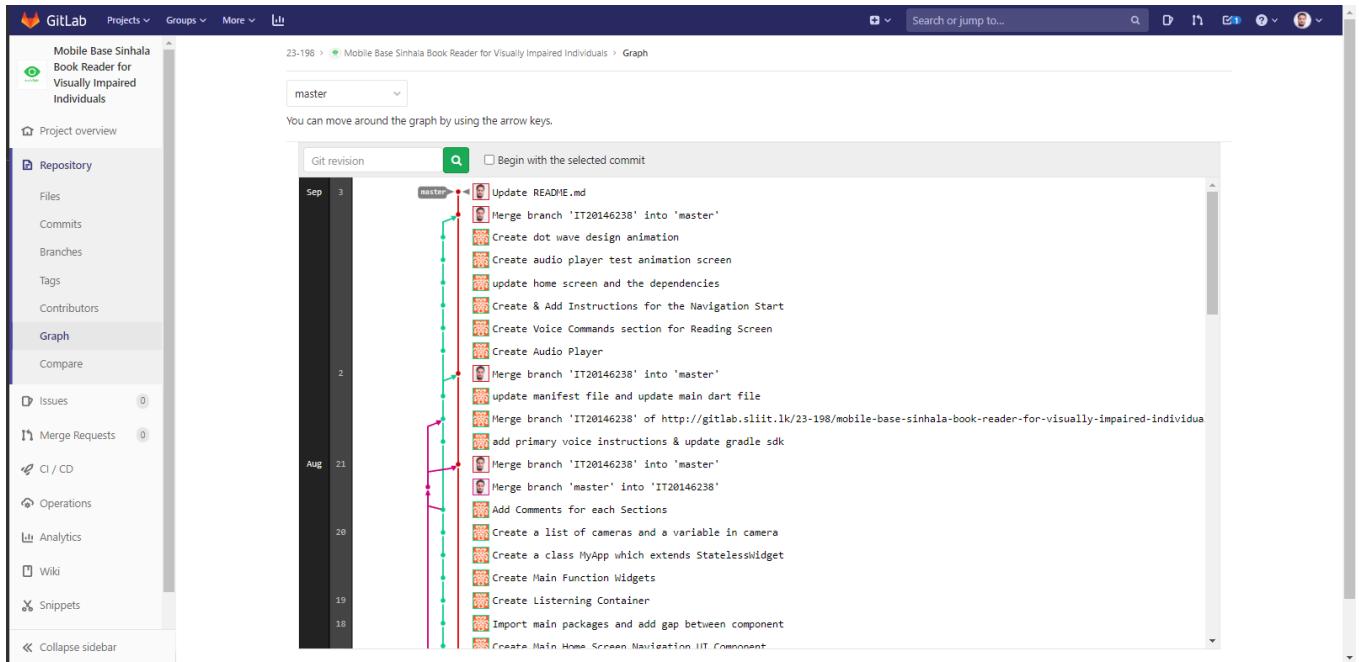


Fig. 47. GitLab Merge Requests Chart

5.5. GitLab Listed Issues

Project Overview		Issues		Analytics	
Repository		Issues		Wiki	
Merge Requests		List		Snippets	
Open 0	Closed 25	All 25			
Recent searches	Search or filter results...			Created date	
Application Backend API Connect					
#25 · opened 27 minutes ago by Jayathunga T.M.	Mobile Application Backend	Sep 12, 2023	BackendFeature	Bhavya H.D.M. - IT20254520	CLOSED 0 0 updated 24 minutes ago
Create Application Launching Instructions	Godakanda P.G.S. - IT20129712	Group	Semini J.P.D.L - 20241346		
Application Instructions Guidance Making					
#24 · opened 2 weeks ago by Jayathunga T.M.	Application Instructions Guidance Making	Sep 3, 2023	FrontEndFeatures	Group	Semini J.P.D.L - 20241346
					CLOSED 0 0 updated 5 days ago
Add Frontend Application Response Voice Command					
#23 · opened 1 month ago by Jayathunga T.M.	Mobile Application Frontend	Aug 23, 2023	FrontEndFeatures	Frontend Voice instructions	Group
					CLOSED 0 0 updated 2 weeks ago
Create Application Frontend Loading Home Screen Instructions Voices.					
#22 · opened 1 month ago by Jayathunga T.M.	Mobile Application Frontend	Aug 16, 2023	FrontEndFeatures	Frontend Voice Instructions	Group
					CLOSED 0 0 updated 4 weeks ago
Audio Book Save					
#21 · opened 1 month ago by Jayathunga T.M.	Mobile Application Backend	Sep 3, 2023	BackendFeature	Individual Components	Jayathunga T.M. - IT20146238
					CLOSED 0 0 updated 25 minutes ago
User Guidance					
#20 · opened 1 month ago by Jayathunga T.M.	Mobile Application Frontend	Aug 21, 2023	FrontEndFeatures	Group	Semini J.P.D.L - 20241346
					CLOSED 0 0 updated 2 weeks ago
Navigation Design in Home Screen - Frontend					
#19 · opened 1 month ago by Jayathunga T.M.	New Frontend Changes	Aug 13, 2023	FrontEndFeatures	Group	
					CLOSED 0 0 updated 2 weeks ago
Book Reading Main Home Component Design - Frontend					
#18 · opened 1 month ago by Jayathunga T.M.	New Frontend Changes	Aug 15, 2023	FrontEndFeatures	Group	
					CLOSED 0 0 updated 2 weeks ago
Text-to-Speech(Pitch Changing)					
#17 · opened 1 month ago by Jayathunga T.M.	Mobile Application Backend	Sep 1, 2023	BackendFeature	Individual Components	Jayathunga T.M. - IT20146238
					CLOSED 0 0 updated 26 minutes ago
Book Image Object Identification - Model Creation					
#16 · opened 1 month ago by Jayathunga T.M.	Mobile Application Backend	BackendFeature	Godakanda P.G.S. - IT20129712	Individual Components	
					CLOSED 0 0 updated 6 days ago

Fig. 48. GitLab All Completed and Closed Issues 1

Fig. 49. GitLab All Completed and Closed Issues 2

6. Data Set Collections

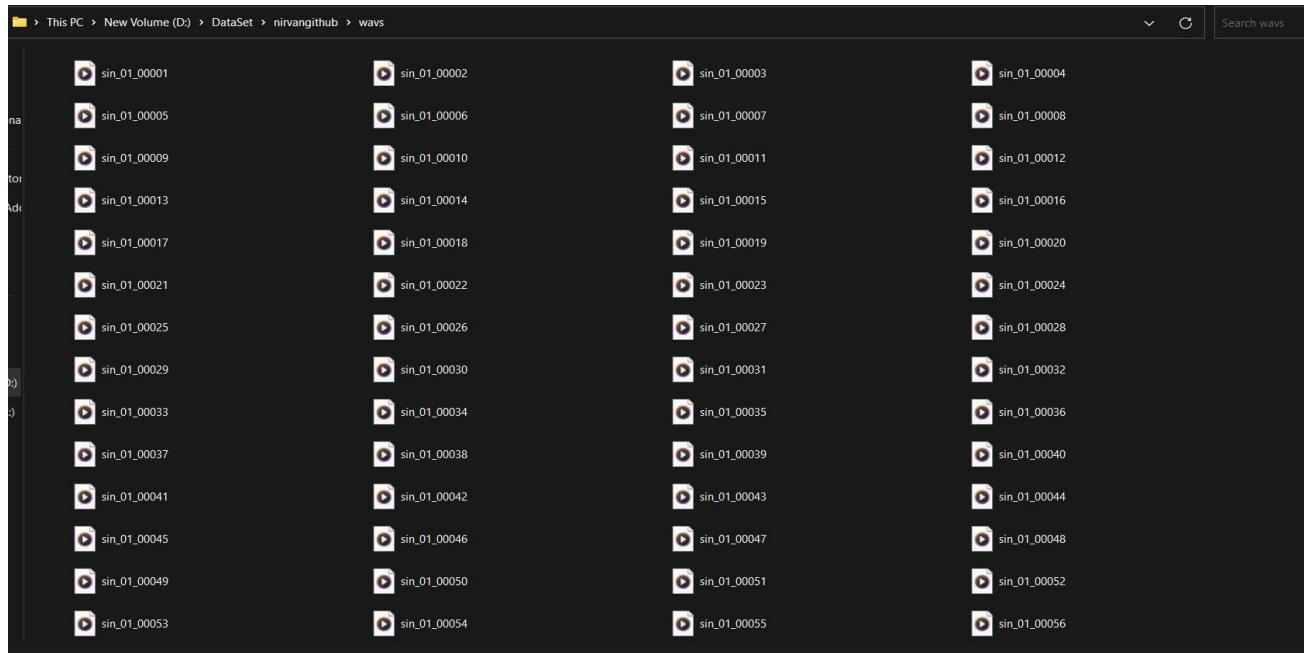


Fig. 50. Text-to-speech(TTS) Voice Datasets

7. WhatsApp Group & Calls

7.1. Research Team WhatsApp Group Call



Fig. 51. Collaborate with Team Members via WhatsApp Group Calls

7.2. Research Team Group

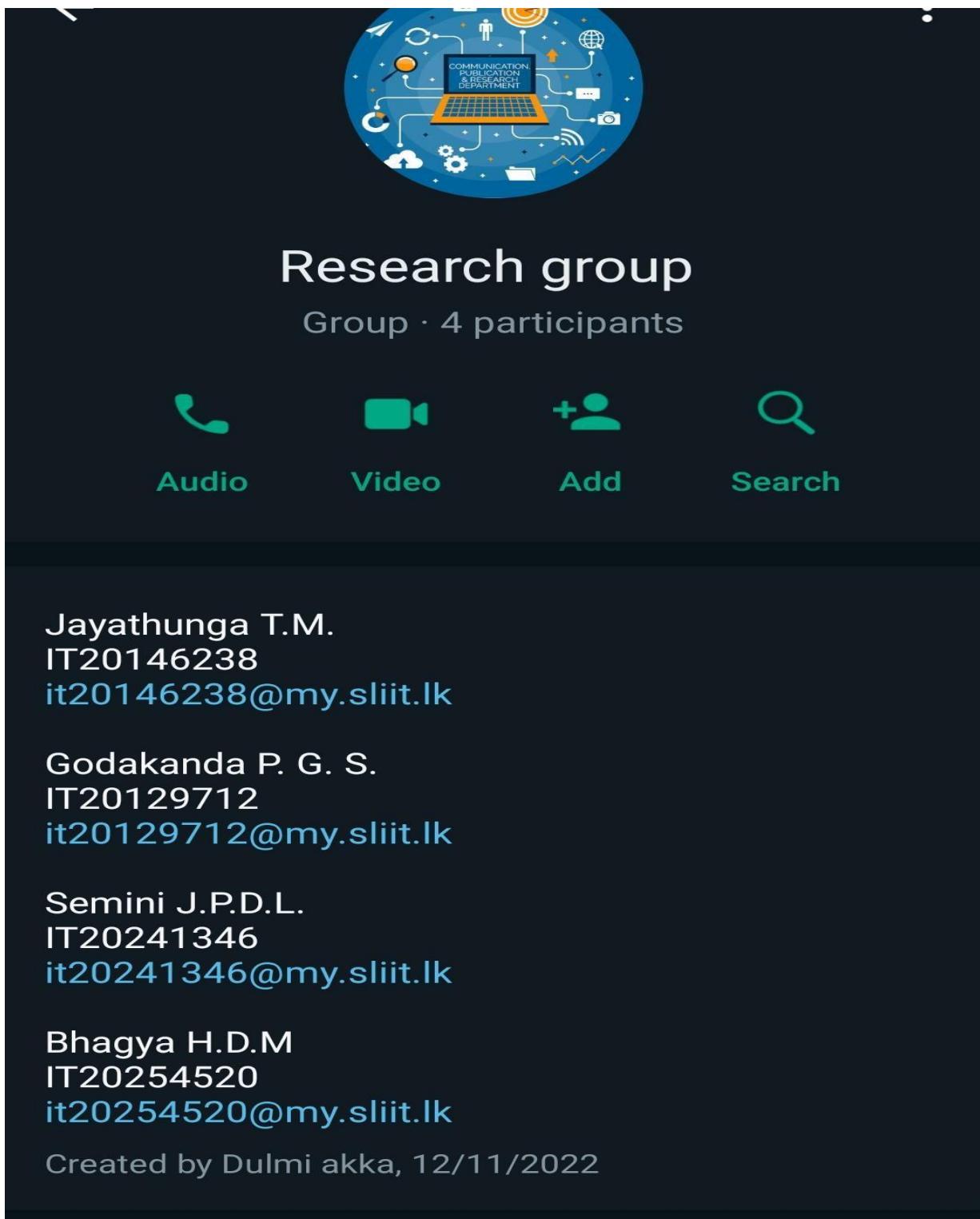


Fig. 52. WhatsApp Research Project Group Details

8. Work Breakdown Structure & Allocate Resources for Each Area.

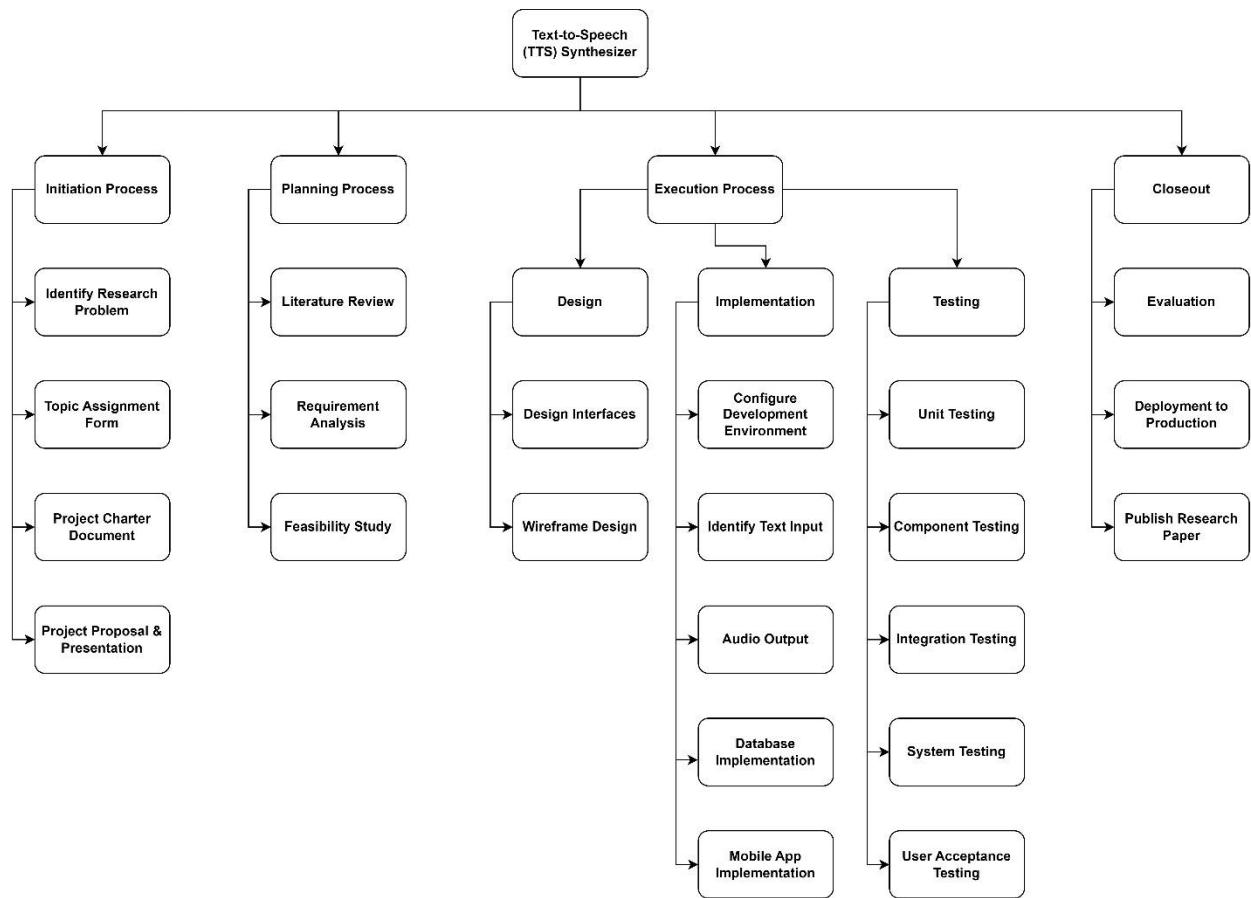


Fig. 53. Individual Work Breakdown Chart

9. Research Paper Submission

AUTHORS *
You may add your collaborators.

Primary Contact	Email	First Name	Last Name	Organization	Country/Region
<input checked="" type="radio"/>	thiroshmadhusha0520@gmail.com	Thirosh	Jayathunga	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
<input type="radio"/>	koliya.p@slilit.lk	Koliya	Pulasinghe	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
<input type="radio"/>	poorna.p@slilit.lk	Poorna	Panduwawala	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
<input type="radio"/>	madushihd@gmail.com	Madushi	Bhagya	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
<input type="radio"/>	sajeewagodakanda@gmail.com	Sajeewa	Godakanda	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>
<input type="radio"/>	dulmilaknasewmz9811@gmail.com	Dulmi	Semini	Sri Lanka Institute of Information Technology	<input type="button" value="X"/> <input type="button" value="↑"/> <input type="button" value="↓"/>

FILES

You can upload from 1 to 1 files. Maximum file size is 50 Mb. We accept pdf formats.
Mobile Base Sinhala Book Reader For Visually Impaired Students.pdf (376 Kb, 8/30/2023, 11:46:44 PM)

Drop files here
-or-

ADDITIONAL QUESTIONS

1. Author Consent *
By submitting this paper, I agree that all authors are aware of and consent to this submission.
 I agree

Fig. 54. Fill the Authors Details to Submitted to The Research Paper

Submissions 5ICAC2023 ▾ Thirosh Jayathunga ▾

Submission Summary

Conference Name	5th International Conference on Advancements in Computing 2023	<input type="button" value="Print"/> <input type="button" value="Email"/>
Track Name	Health Care and Assistive Technologies	
Paper ID	481	
Paper Title	Mobile Base Sinhala Book Reader For Visually Impaired Students	
Abstract	The project aims to improve the reading experience and skills of visually impaired students in Sri Lanka by creating a mobile application that allows them to easily read printed books and stationery in Sinhala. The mobile application uses optical character recognition (OCR) technology and voice navigation, incorporating text-to-speech features of the event synthesis framework. The application accurately captures characters on a page of a Sinhala book and distinguishes them using OCR technology, enabling visually impaired people to convert text into accessible digital formats. The extracted text is then made audible via text-to-speech. Sinhala Voice Navigation support is provided for users to navigate the app, get feedback from the user, and identify objects in the surrounding room. The application uses image recognition and description algorithms to describe pictures in Sinhala, helping visually impaired children understand the visual content and improve their reading skills. The platform also offers features to adjust reading speed and choose between male or female voices.	
Created on	8/30/2023, 11:48:46 PM	
Last Modified	8/30/2023, 11:48:46 PM	
Authors	Thirosh Jayathunga (Sri Lanka Institute of Information Technology) <thiroshmadhusha0520@gmail.com> <input checked="" type="checkbox"/> Koliya Pulasinghe (Sri Lanka Institute of Information Technology) <koliya.p@slilit.lk> <input checked="" type="checkbox"/> Poorna Panduwawala (Sri Lanka Institute of Information Technology) <poorna.p@slilit.lk> <input checked="" type="checkbox"/> Madushi Bhagya (Sri Lanka Institute of Information Technology) <madushihd@gmail.com> <input checked="" type="checkbox"/> Sajeewa Godakanda (Sri Lanka Institute of Information Technology) <sajeewagodakanda@gmail.com> <input checked="" type="checkbox"/> Dulmi Semini (Sri Lanka Institute of Information Technology) <dulmilaknasewmz9811@gmail.com> <input checked="" type="checkbox"/>	
Submission Files	Mobile Base Sinhala Book Reader For Visually Impaired Students.pdf (376.7 Kb, 8/30/2023, 11:46:44 PM)	
Submission Questions Response	1. Author Consent <i>By submitting this paper, I agree that all authors are aware of and consent to this submission.</i> Agreement accepted	
	2. Declaration <i>I declare that the content of this paper is solely my/our own work and the paper is not published elsewhere.</i> <i>(Note: Please note that the papers with similarity score beyond 20% will be desk-rejected)</i> Agreement accepted	

Fig. 55. Research Paper Submission Summary

The screenshot shows the ICAC Author Console interface. At the top, there are navigation links for 'Submissions', 'Help Center', 'Select Your Role', and user information ('5ICAC2023', 'Thirosh Jayathunga'). Below the header, a message says 'Please click here to view Welcome Message & Instructions.' A button for 'Create new submission...' is visible. The main area displays a table with one row of data:

Paper ID	Title	Track	Files	Actions
481	Mobile Base Sinhala Book Reader For Visually Impaired Students Show abstract	Health Care and Assistive Technologies	Submission files: Mobile Base Sinhala Book Reader For Visually Impaired Students.pdf	Submission: <input checked="" type="checkbox"/> Edit Submission <input checked="" type="checkbox"/> Edit Conflicts <input checked="" type="checkbox"/> Delete Submission

At the bottom of the page, there are copyright notices and social media links.

Fig. 56. Research Paper Submitted to The ICAC Conference

10. Current Progress Up to Now

The screenshot shows the Postman application interface. The left sidebar lists collections: 'My Workspace' (with 'Real-Estate', 'Blind App', 'POST detection', 'POST captioning', 'POST books'), 'Environments' (empty), and 'History' (empty). The main workspace shows a POST request for 'Blind App / books' with the URL 'http://127.0.0.1:5000/api/books'. The 'Body' tab is selected, showing form-data parameters: 'image' (value: '20.png'), 'user_id' (value: 'U3'), and 'book_id' (value: 'B3'). The response status is '200 OK' with a size of '252 B'. The response body is displayed in JSON format:

```

1 "audio_book_path": "store/audio_books/U3_B3.mp3"
2
3

```

Fig. 57. Get The Audio Book Output in Backend Postman Response

```
from transformers import Seq2SeqTrainer
trainer = Seq2SeqTrainer(
    args=training_args,
    model=model,
    train_dataset=dataset["train"],
    eval_dataset=dataset["test"],
    data_collator=data_collator,
    tokenizer=processor.tokenizer,
)
trainer.train()
... 80%
...
{'eval_loss': 1.190988982772827, 'eval_runtime': 550.0506, 'eval_samples_per_second': 0.6, 'eval_steps_per_second': 0.3, 'epoch': 0.01}
...
{'eval_loss': 1.1043614149093628, 'eval_runtime': 516.7115, 'eval_samples_per_second': 0.639, 'eval_steps_per_second': 0.319, 'epoch': 0.03}
{'loss': 1.1563, 'learning_rate': 5.000000000000001e-07, 'epoch': 0.03}
...
{'eval_loss': 1.0136581659317017, 'eval_runtime': 526.7695, 'eval_samples_per_second': 0.626, 'eval_steps_per_second': 0.313, 'epoch': 0.04}
...
98%
```

Fig. 58. Text-to-Speech Model Training

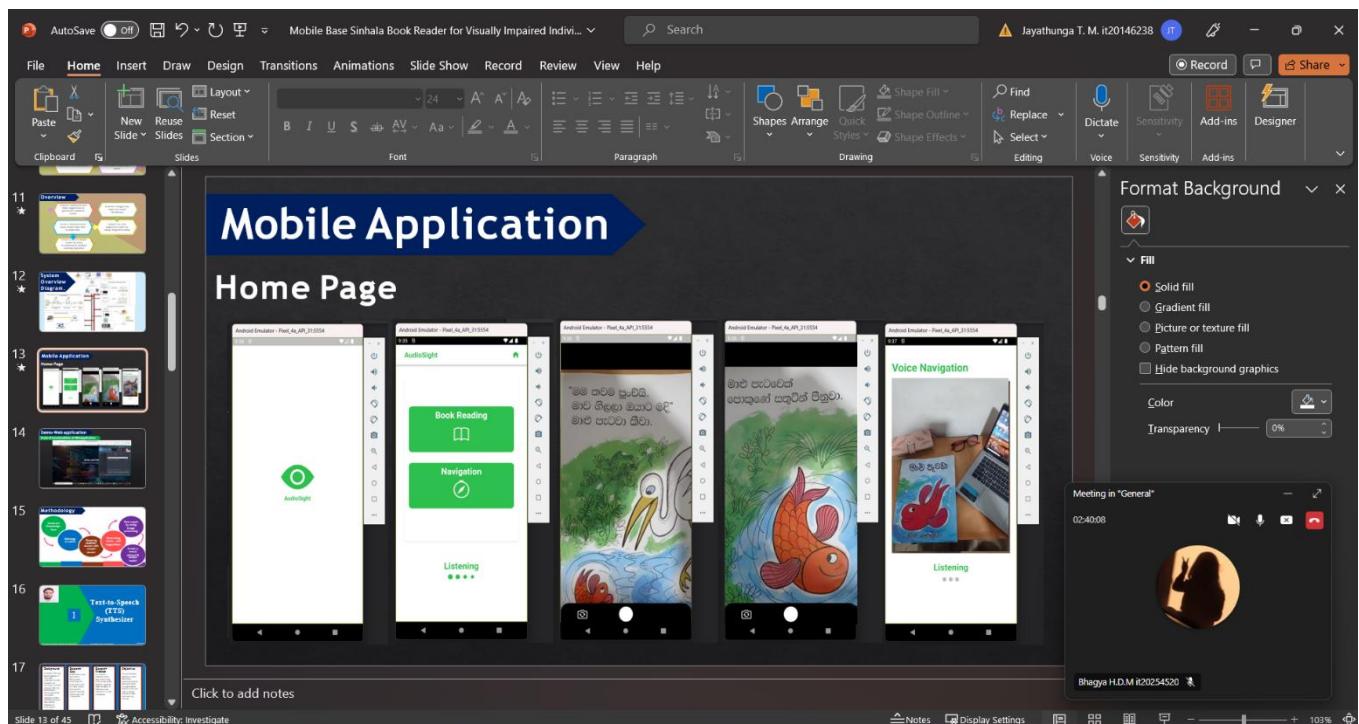


Fig. 59. Prepare for Progress Presentation 2 with Team Members

11. Online Helping Resources

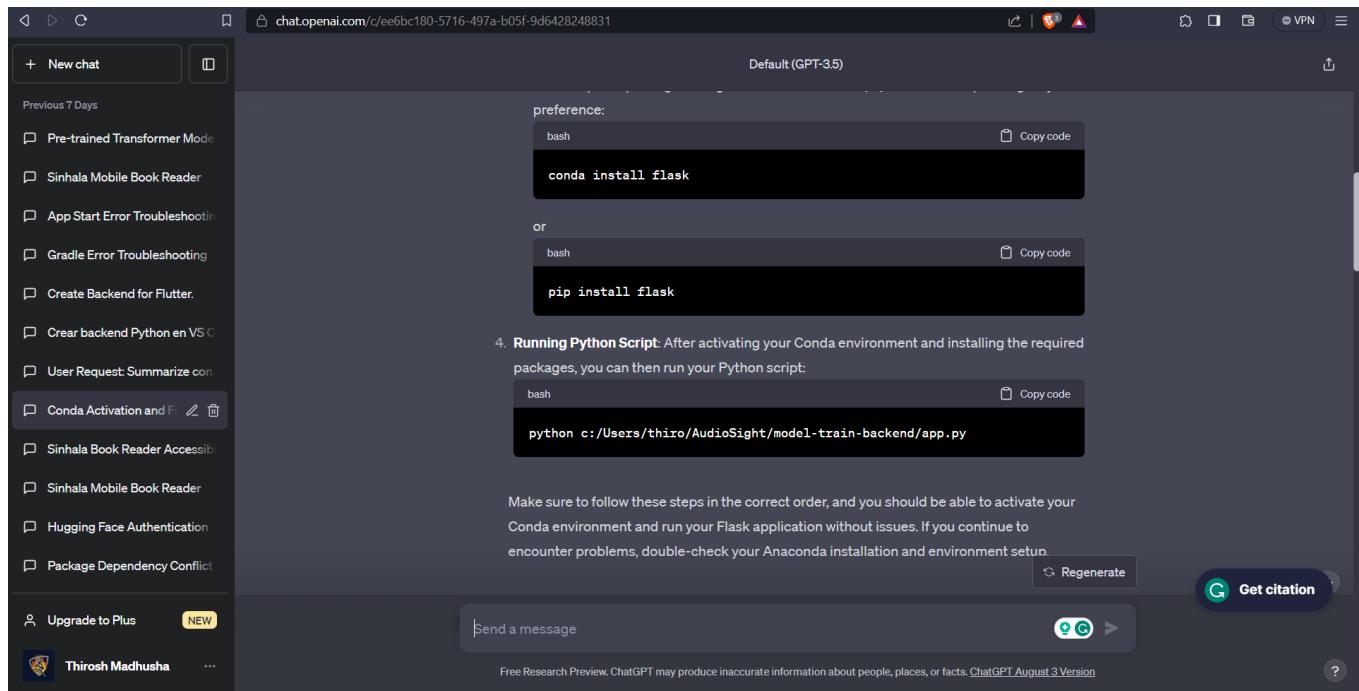


Fig. 60. Get Online Help Using ChatGPT to Solve Our Problems



Fig. 61. Learn Flutter for Create Frontend of Our Application

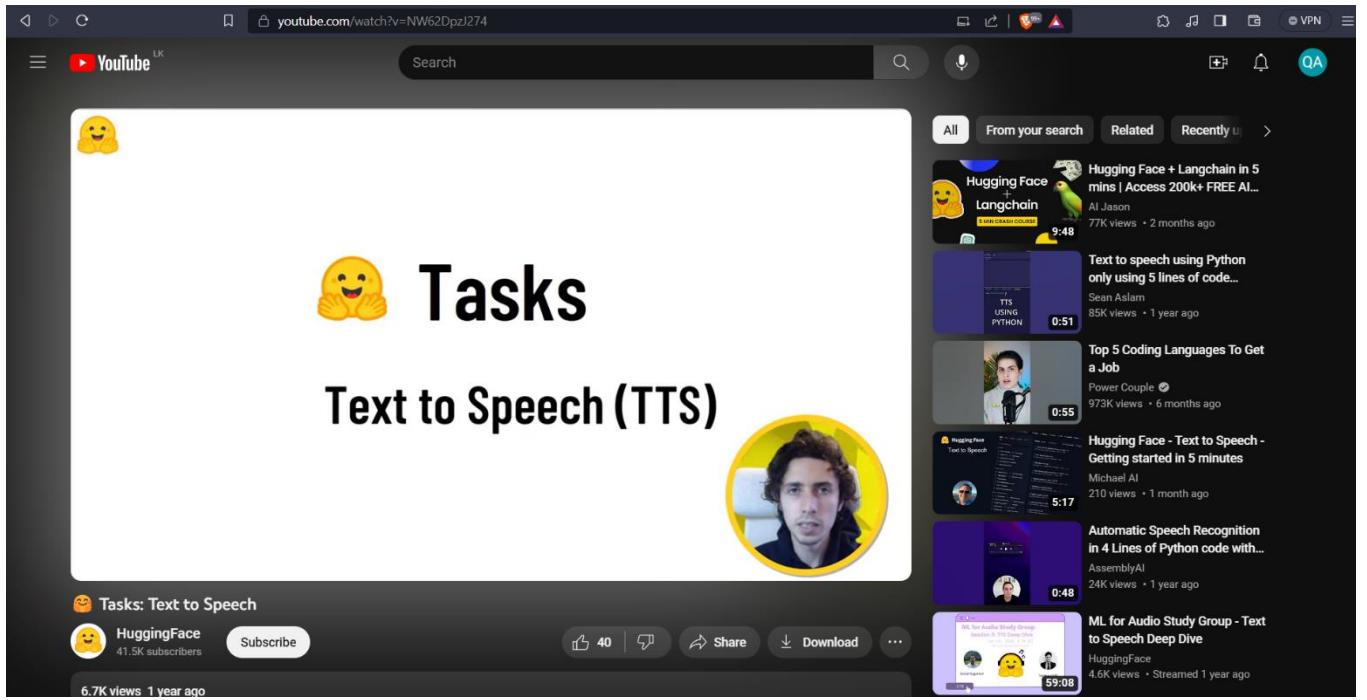


Fig. 62. Refer The Text-to-Speech Model Training Videos via YouTube Tutorials

12. Gantt Chart of Finalize Design & Implementation Phase

Gantt Chart

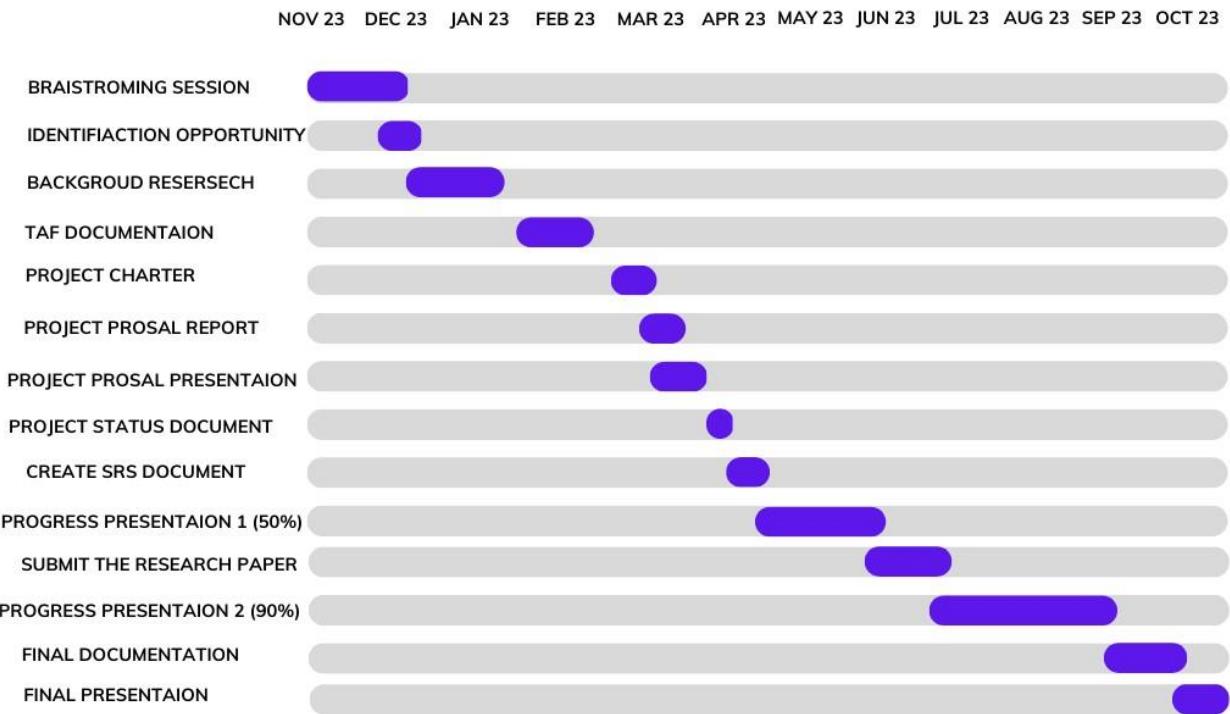


Fig. 63. Gantt Chart