Multi-Model Approach to Recommend Personalized Music Playlist

TMP – 2023 – 24 - 065

Status Document – 1

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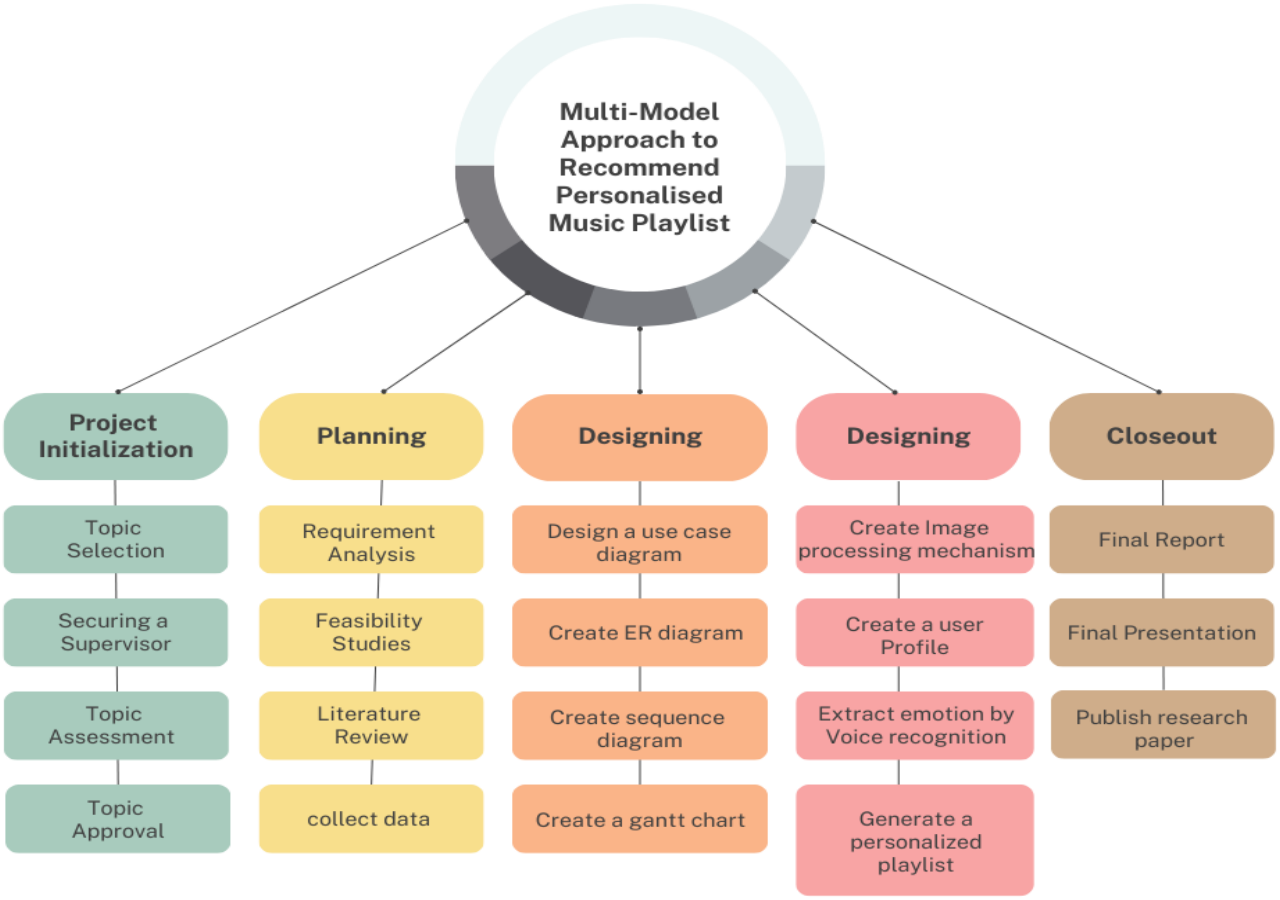
Introduction

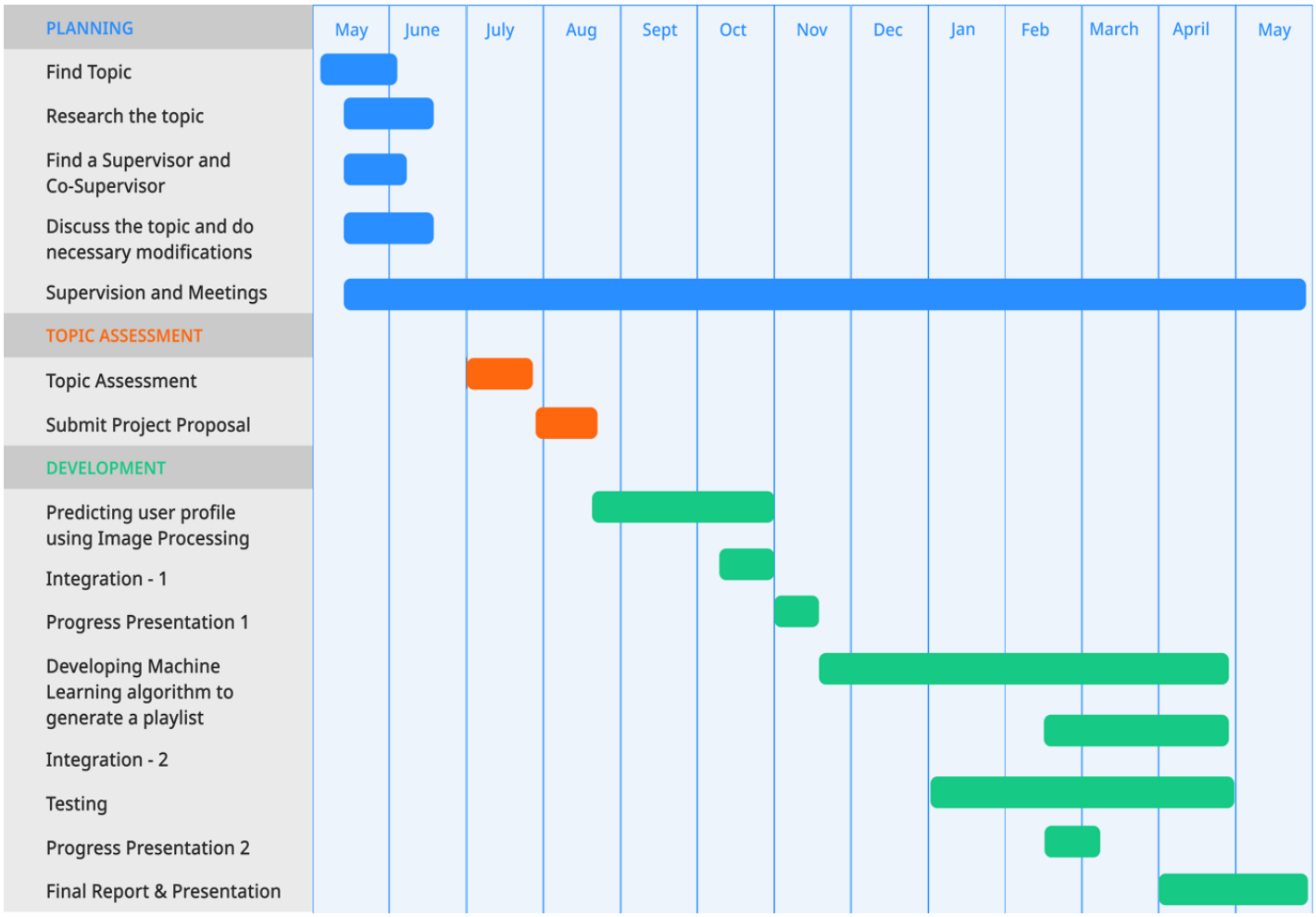
Music recommender systems play a crucial role in assisting users to discover new music that aligns with their preferences, enhancing their overall music consumption experiences. Existing music recommendation systems often overlook the importance of considering the user's immediate surroundings and environment when suggesting songs. The proposed "Music Recommendations Based on the Surroundings of the User" feature aims to create a context-aware music recommendation system that analyzes the user's surroundings. Factors such as the time of day, indoor or outdoor setting, noise level, and other environmental information are considered to understand the user's current mood, activity, and preferences. By bridging the gap between the user's background state and the music they are presented with, this context-aware approach enhances the overall music streaming experience and fosters a more personalized and engaging user journey.

This document is prepared to showcase the status of the project along with the proofs with screenshots of the teamwork within the group.

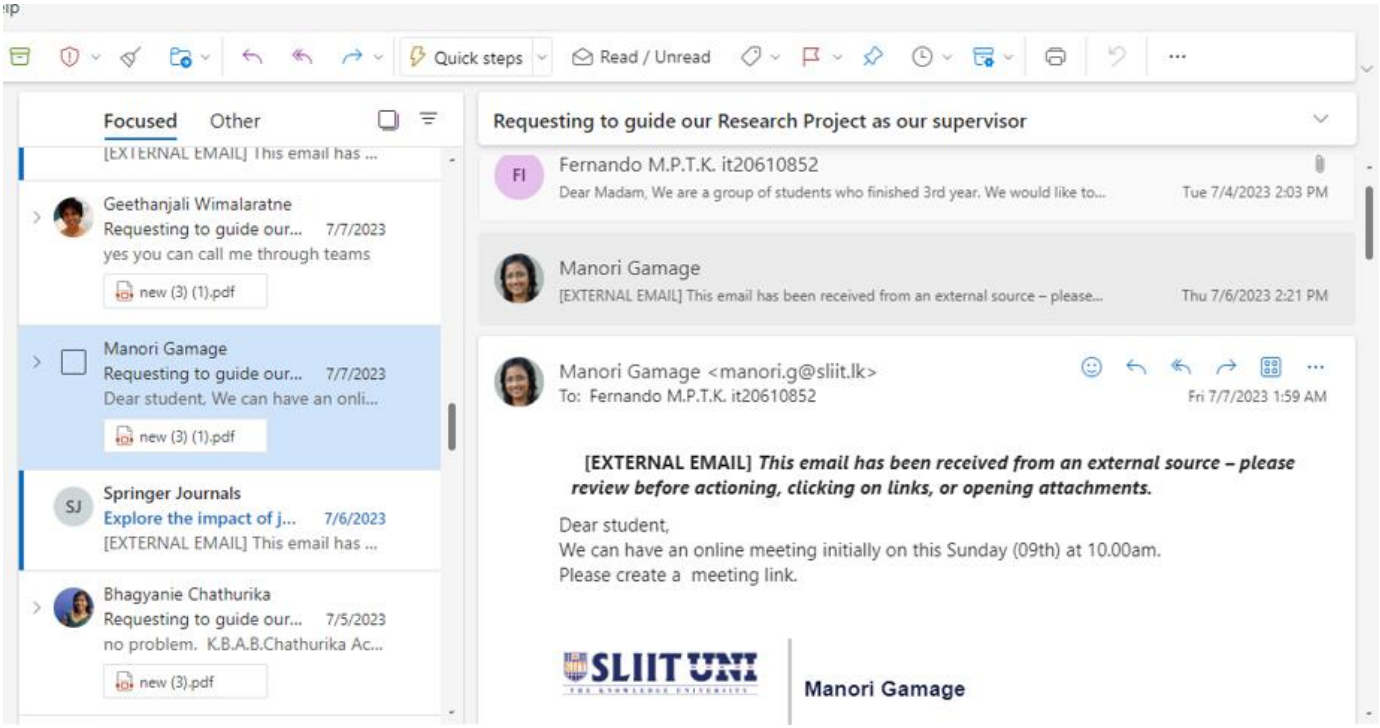
Work Breakdown Chart



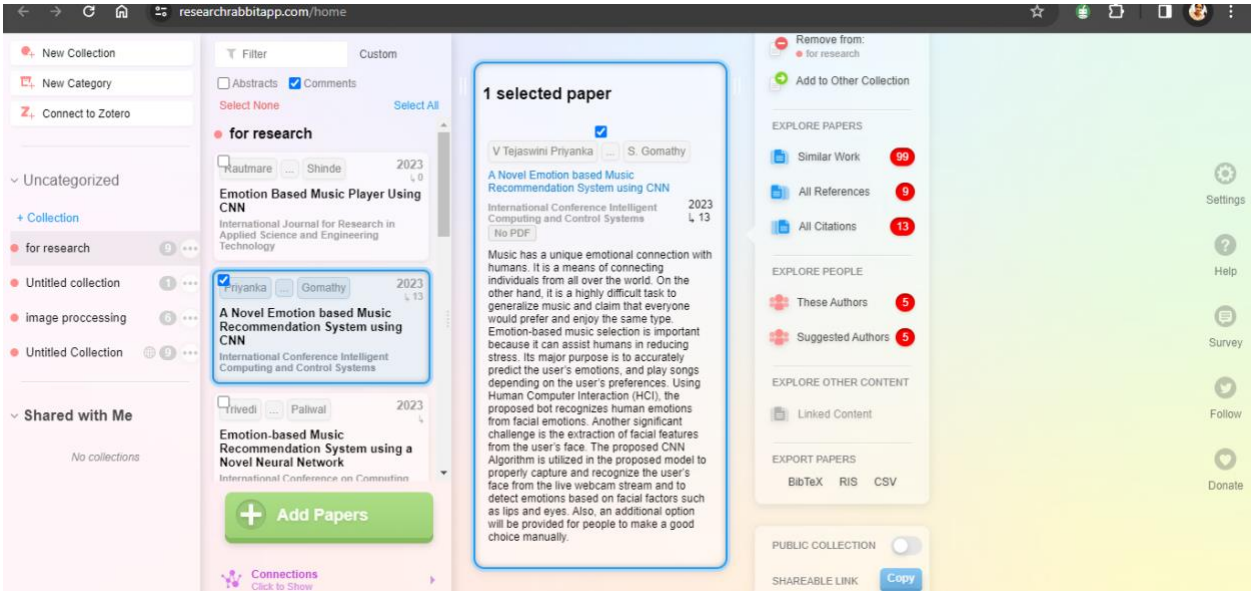
Gantt Chart

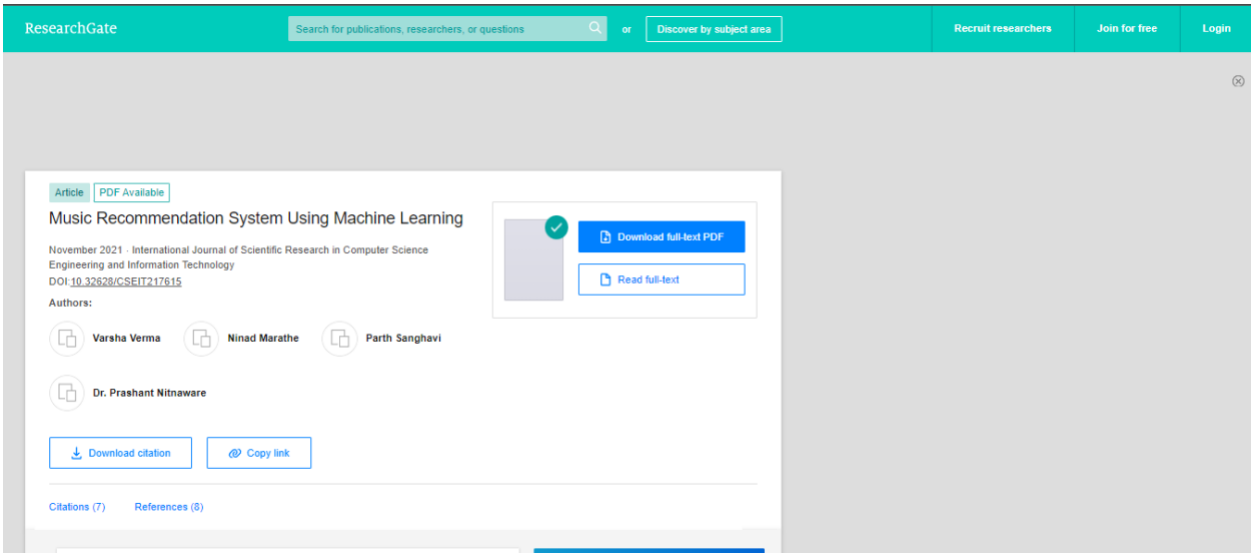

PLANNING
Find Topic
Research the topic
Find a Supervisor and Co-Supervisor
Discuss the topic and do necessary modifications
Supervision and Meetings
TOPIC ASSESSMENT
Topic Assessment
Submit Project Proposal
DEVELOPMENT
Predicting user profile using Image Processing
Integration - 1
Progress Presentation 1
Developing Machine Learning algorithm to generate a playlist
Integration - 2
Testing
Progress Presentation 2
Final Report & Presentation
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Feb
March
April
May

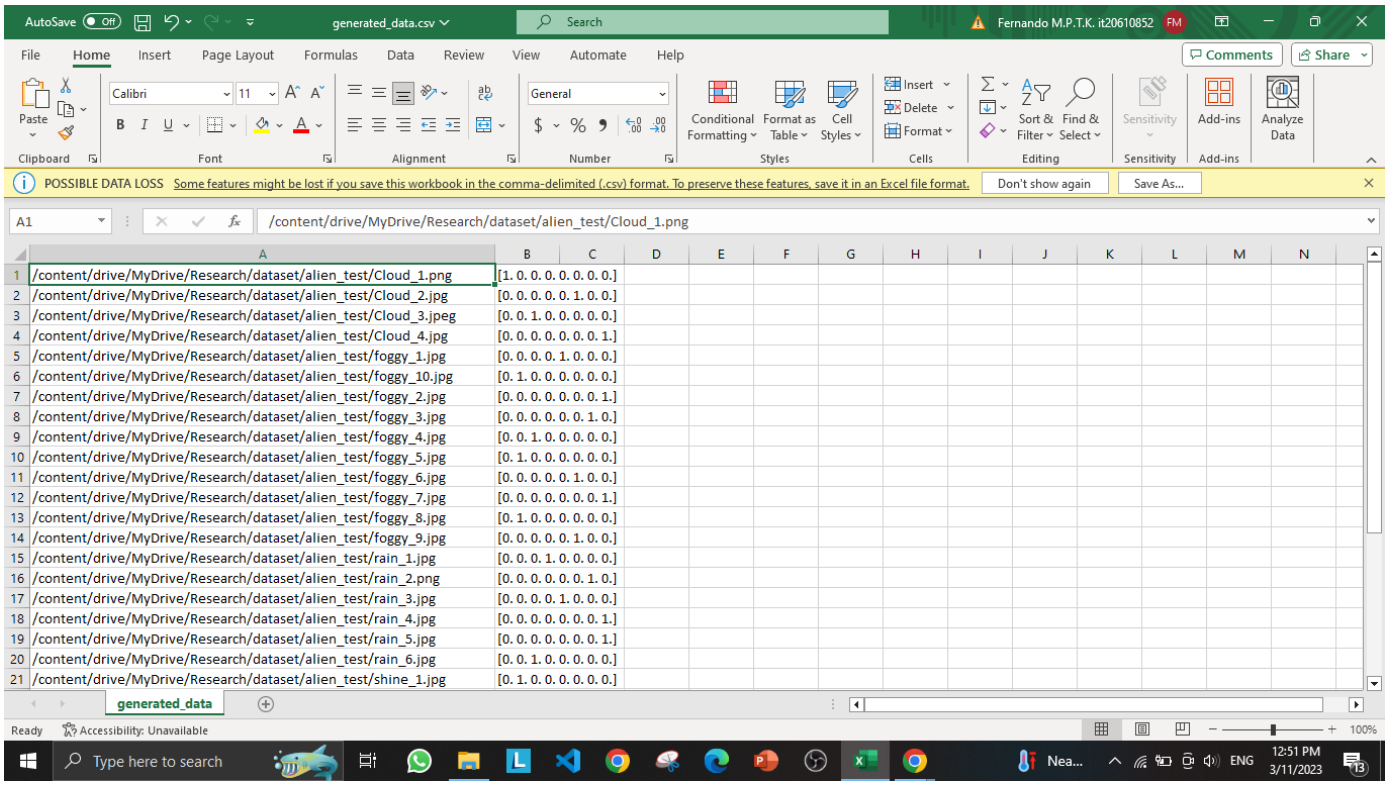
Finding Supervisors and Selecting the research topic



Data Gathering and Research







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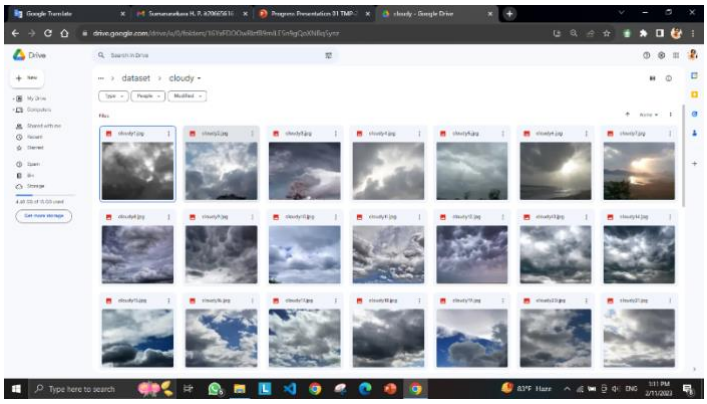
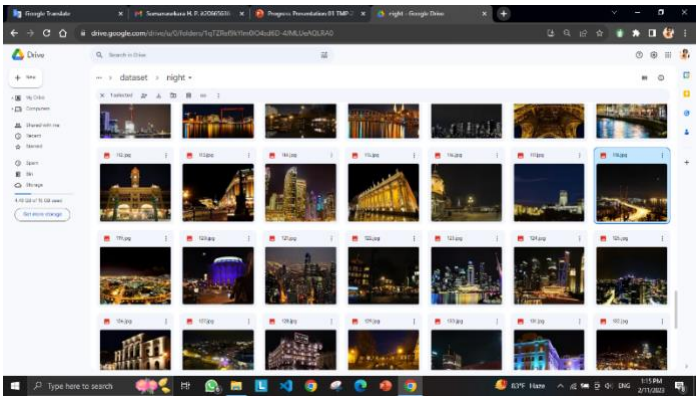
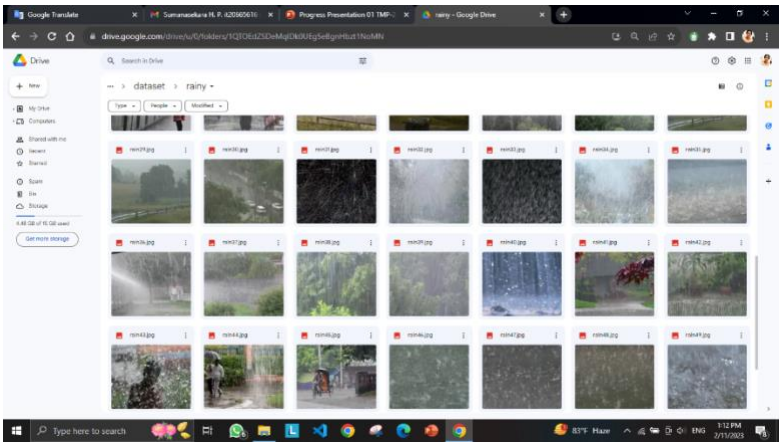
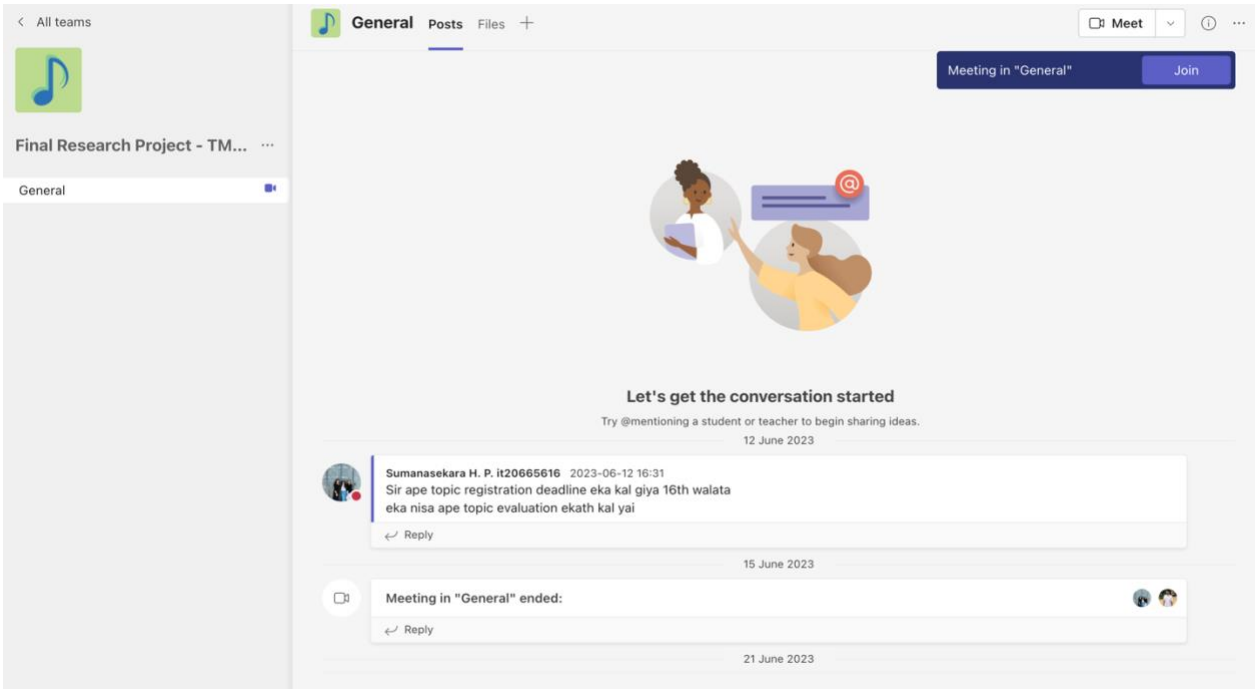
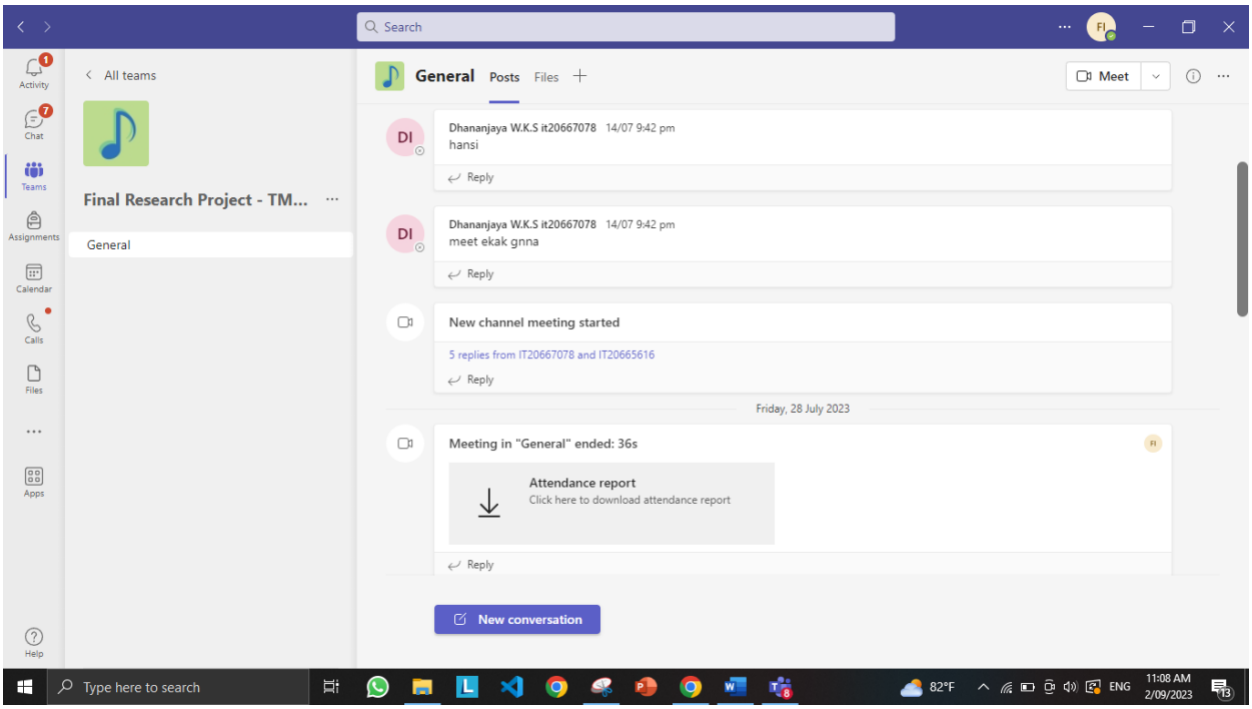






MS Teams Group Creation and continuous meetings

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Dhananjaya W.K.S it20667078 14/07 9:42 pm
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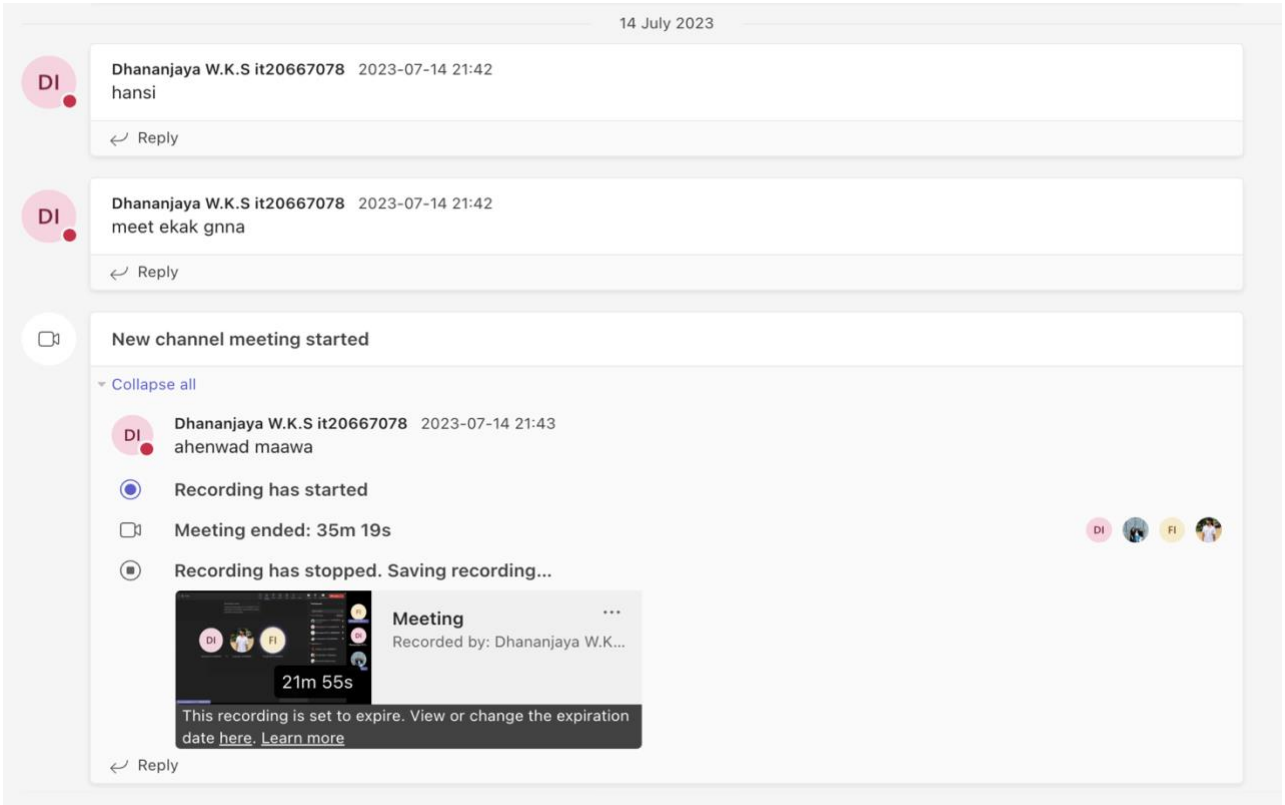
2/09/2023


14 July 2023
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Meeting ended: 35m 19s
Recording has stopped. Saving recording...
21m 55s
Meeting
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This recording is set to expire. View or change the expiration date here. Learn more
Reply

28 July 2023

Meeting in "General" ended:

Reply

Meeting in "General" ended:

Meeting ended:

Reply

Meeting now ended:

Reply

27 September 2023

Meeting in "General" started

4 replies from IT20665852

Reply

11 October 2023

Meeting in "General" started

Collapse all

Recording has started

Thusithanjana Thilakarthna 2023-10-11 20:15
http://www.scholarpedia.org/article/Ensemble_learning

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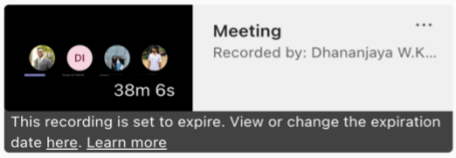
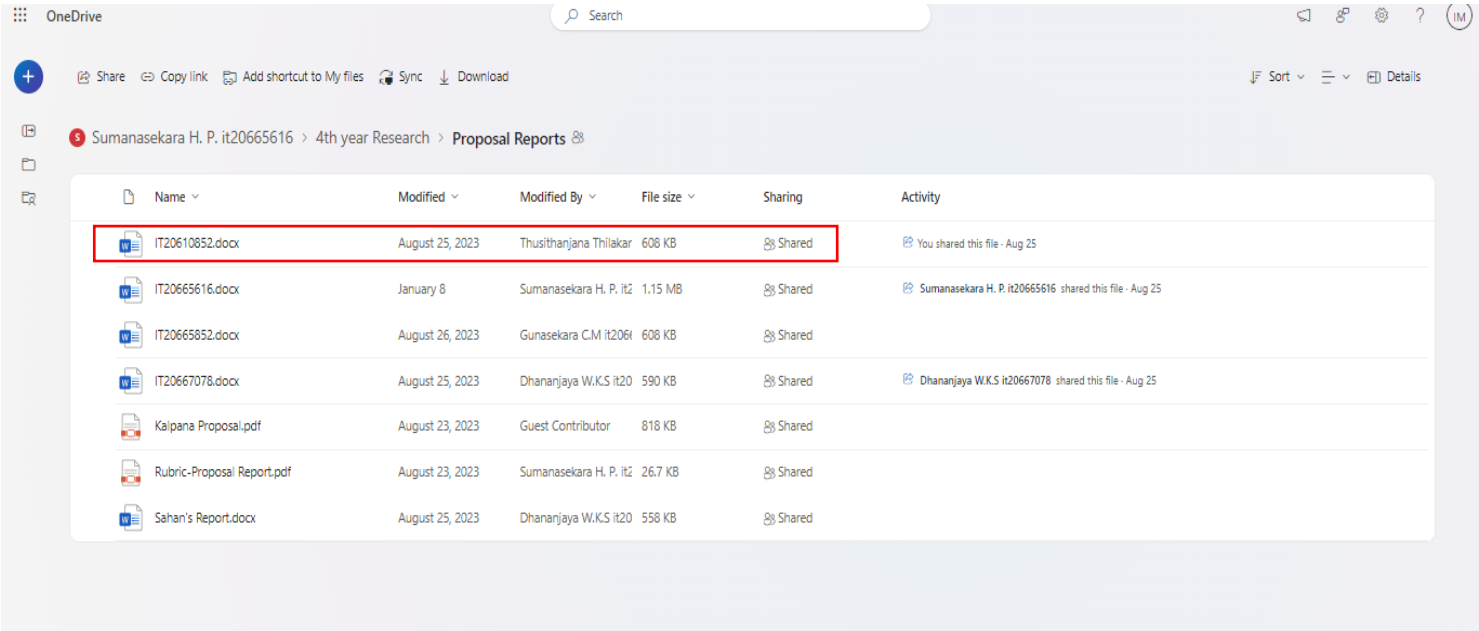
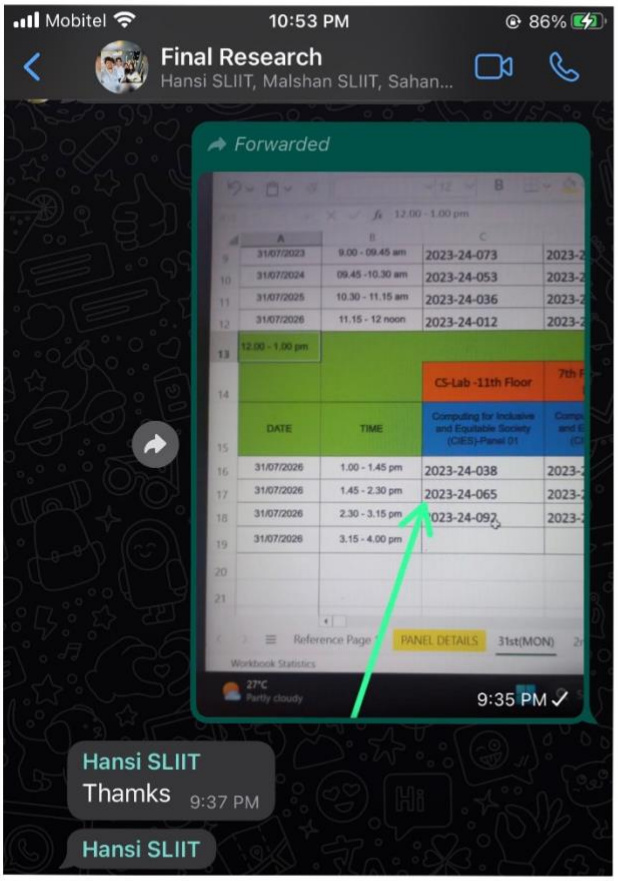


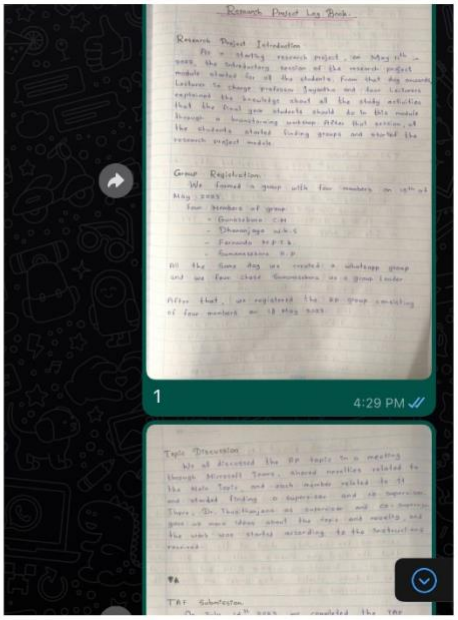
Reply

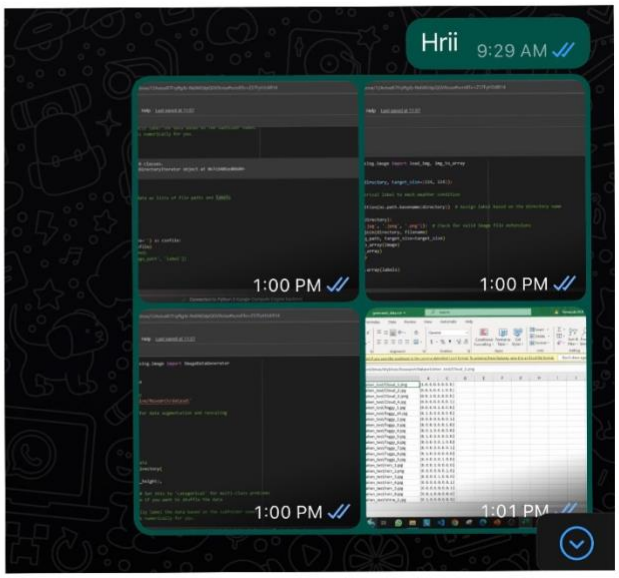
Active with a OneDrive (Cloud) Folder for easy collaboration



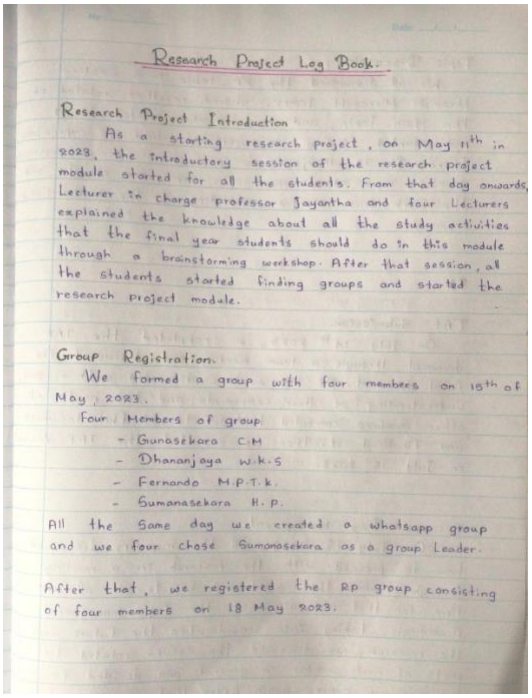
Active with a WhatsApp Group for the Team collaboration







Maintaining a logbook



Research Project Log Book.

Research Project Introduction

As a starting research project, on May 11th in 2023, the introductory session of the research project module started for all the students. From that day onwards, Lecturer in charge professor Jayantha and four Lecturers explained the knowledge about all the study activities that the final year students should do in this module through a brainstorming workshop. After that session, all the students started finding groups and started the research project module.

Group Registration.

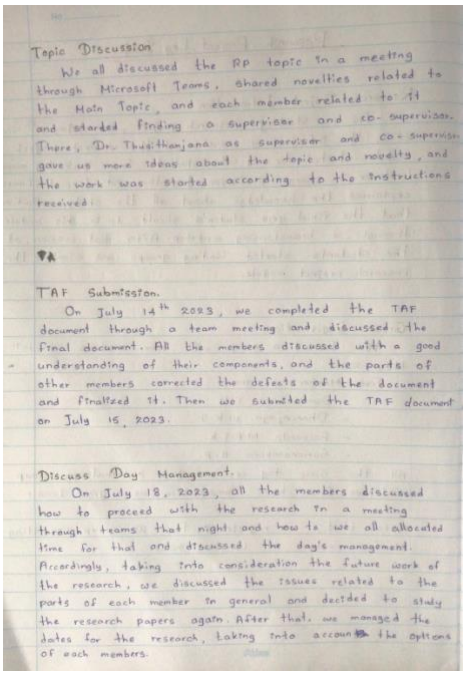
We formed a group with four members on 15th of May, 2023.

Four Members of group

- Gunasekara C.M
- Dhananjaya W.K.S
- Fernando M.P.T.K.
- Sumanasekara H.P.

All the same day we created a whatsapp group and we four chose Sumanasekara as a group Leader.

After that, we registered the RP group consisting of four members on 18 May 2023.



Topic Discussion

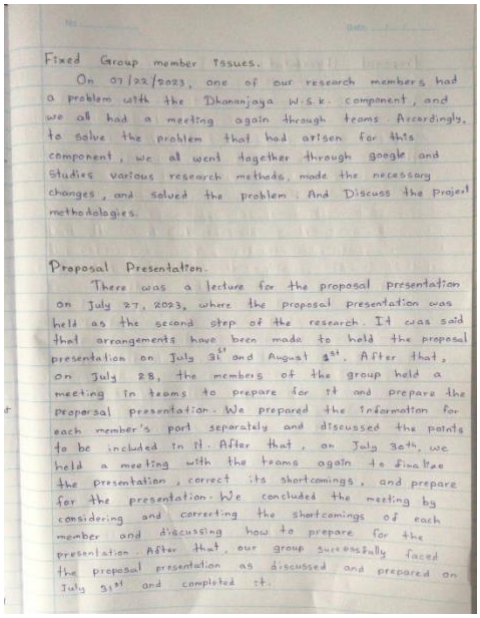
We all discussed the RP topic in a meeting through Microsoft Teams, shared novelties related to the Main Topic, and each member related to it and started finding a supervisor and co-supervisor. There, Dr. Thusithanjana as supervisor and co-supervisor gave us more ideas about the topic and novelty, and the work was started according to the instructions received.

TAF Submission.

On July 14th 2023, we completed the TAF document through a team meeting and discussed the final document. All the members discussed with a good understanding of their components, and the parts of other members corrected the defects of the document and finalized it. Then we submitted the TAF document on July 15, 2023.

Discuss Day Management.

On July 18, 2023, all the members discussed how to proceed with the research in a meeting through teams that night and how to we all allocated time for that and discussed the day's management. Accordingly, taking into consideration the future work of the research, we discussed the issues related to the parts of each member in general and decided to study the research papers again. After that, we managed the dates for the research, taking into account the options of each members.

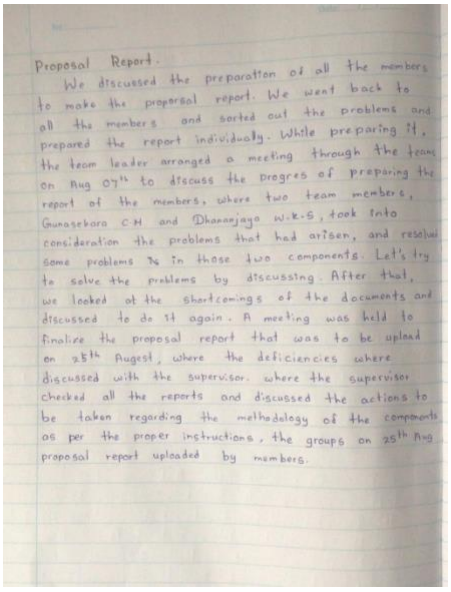


Fixed Group member Issues.

On 07/22/2023, one of our research members had a problem with the Dhananjaya W.S.K. component, and we all had a meeting again through teams. Accordingly, to solve the problem that had arisen for this component, we all went together through google and studies various research methods, made the necessary changes, and solved the problem. And Discuss the Project methodologies.

Proposal Presentation.

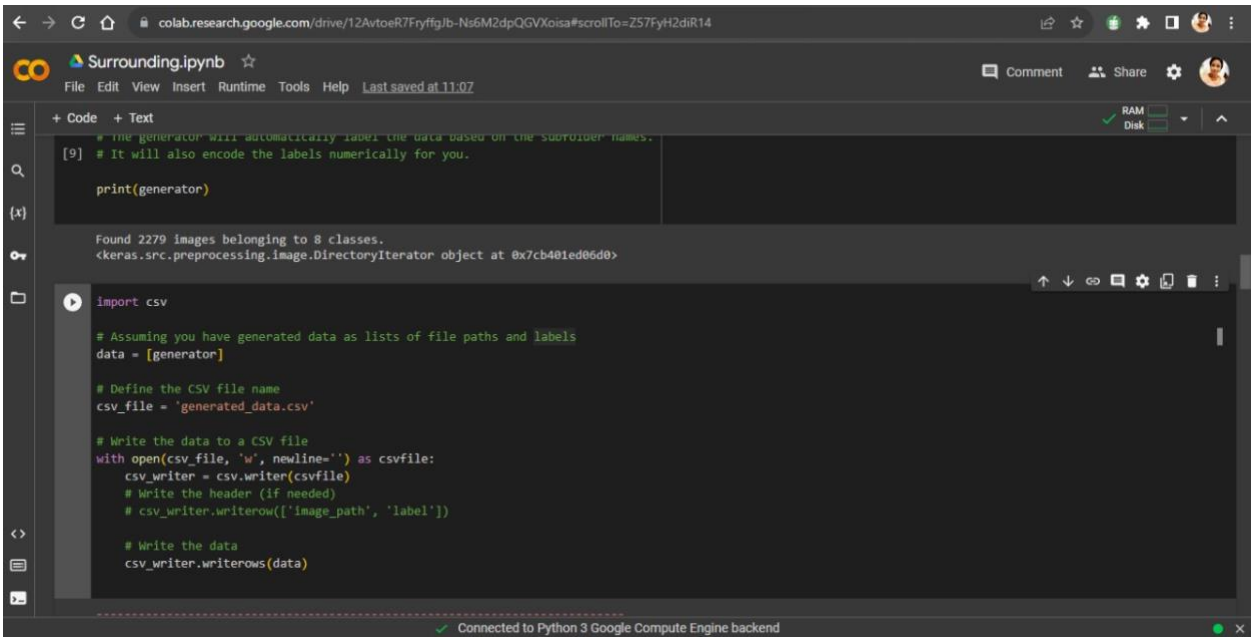
There was a lecture for the proposal presentation on July 27, 2023, where the proposal presentation was held as the second step of the research. It was said that arrangements have been made to hold the proposal presentation on July 31st and August 2nd. After that, on July 28, the members of the group held a meeting in teams to prepare for it and prepare the proposal presentation. We prepared the information for each member's part separately and discussed the points to be included in it. After that, on July 30th, we held a meeting with the teams again to finalize the presentation, correct its shortcomings, and prepare for the presentation. We concluded the meeting by considering and correcting the shortcomings of each member and discussing how to prepare for the presentation. After that, our group successfully faced the proposal presentation as discussed and prepared on July 31st and completed it.

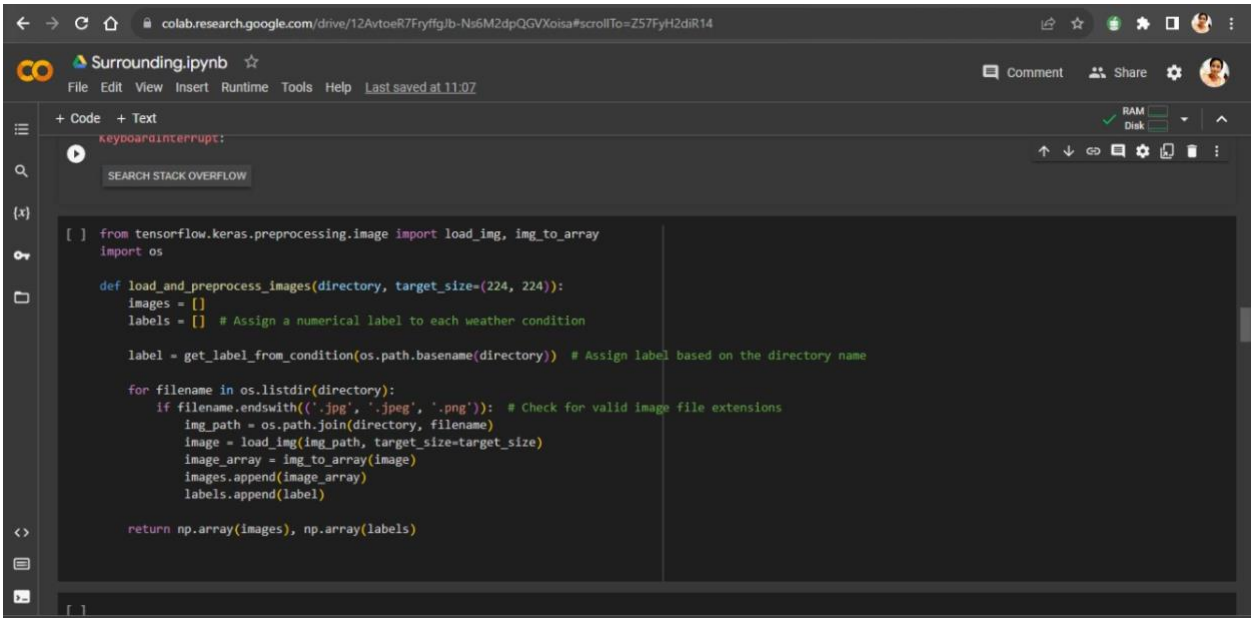


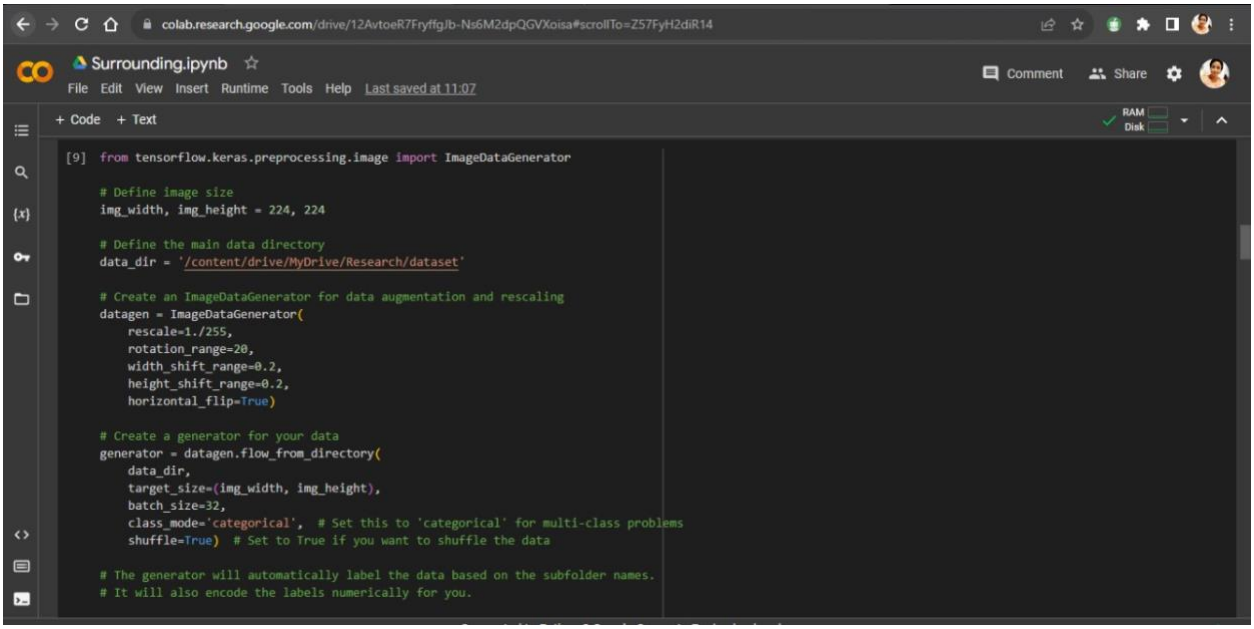
Proposal Report.

We discussed the preparation of all the members to make the proposal report. We went back to all the members and sorted out the problems and prepared the report individually. While preparing it, the team leader arranged a meeting through the teams on Aug 07th to discuss the progres of preparing the report of the members, where two team members, Gunasekara C.M and Dhananjaya W.K.S, took into consideration the problems that had arisen, and resolved some problems as in those two components. Let's try to solve the problems by discussing. After that, we looked at the shortcomings of the documents and discussed to do it again. A meeting was held to finalize the proposal report that was to be upload on 25th August, where the deficiencies where discussed with the supervisor. where the supervisor checked all the reports and discussed the actions to be taken regarding the methodology of the components as per the proper instructions, the groups on 25th Aug proposal report uploaded by members.

Progress so far….



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Surrounding.ipynb
File Edit View Insert Runtime Tools Help Last saved at 11:07
Comment
Share
+ Code + Text
RAM
Disk
[9] from tensorflow.keras.preprocessing.image import ImageDataGenerator
Define image size
img_width, img_height = 224, 224
# Define the main data directory
data_dir = '/content/drive/MyDrive/Research/dataset'
# Create an ImageDataGenerator for data augmentation and rescaling
datagen = ImageDataGenerator(
rescale=1./255,
rotation_range=20,
width_shift_range=0.2,
height_shift_range=0.2,
horizontal_flip=True)
# Create a generator for your data
generator = datagen.flow_from_directory(
data_dir,
target_size=(img_width, img_height),
batch_size=32,
class_mode='categorical', # Set this to 'categorical' for multi-class problems
shuffle=True) # Set to True if you want to shuffle the data
# The generator will automatically label the data based on the subfolder names.
# It will also encode the labels numerically for you.