

**MACHINE LEARNING APPROACH TO DETECT &  
ANNOTATE EYE DISEASES USING RETINAL IMAGES**

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Status Document II

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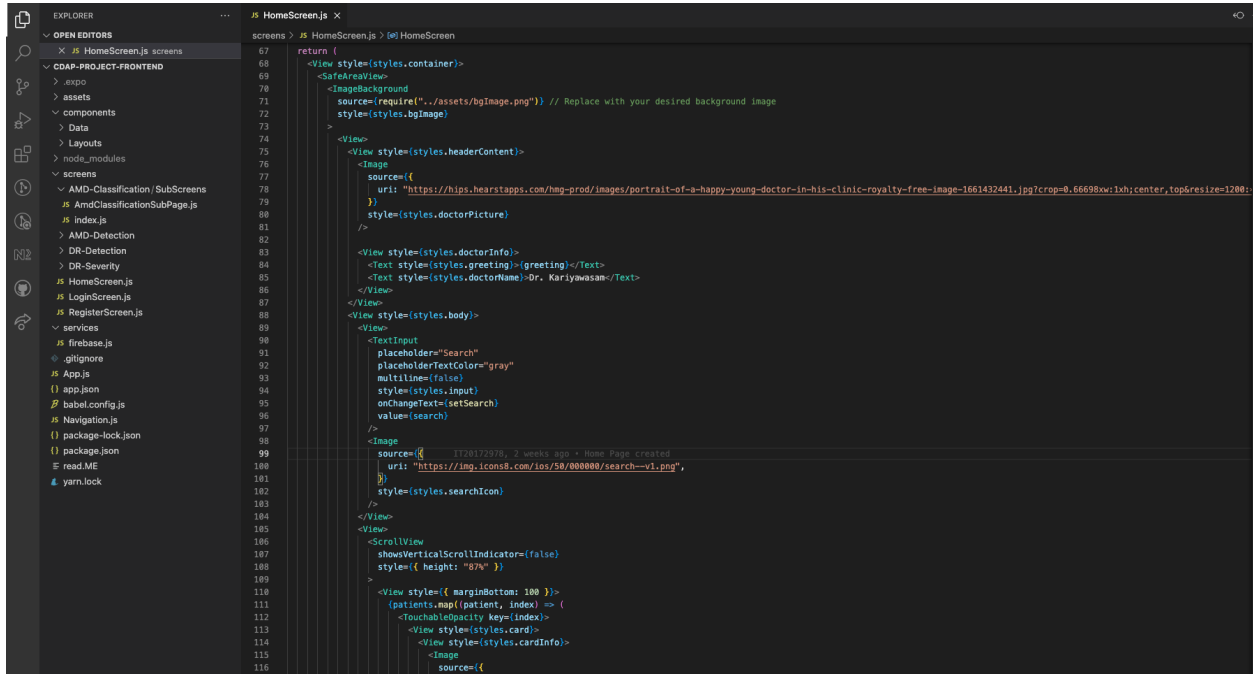
May 2023

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# 1. Project progress

## 1.1 Project Frontend

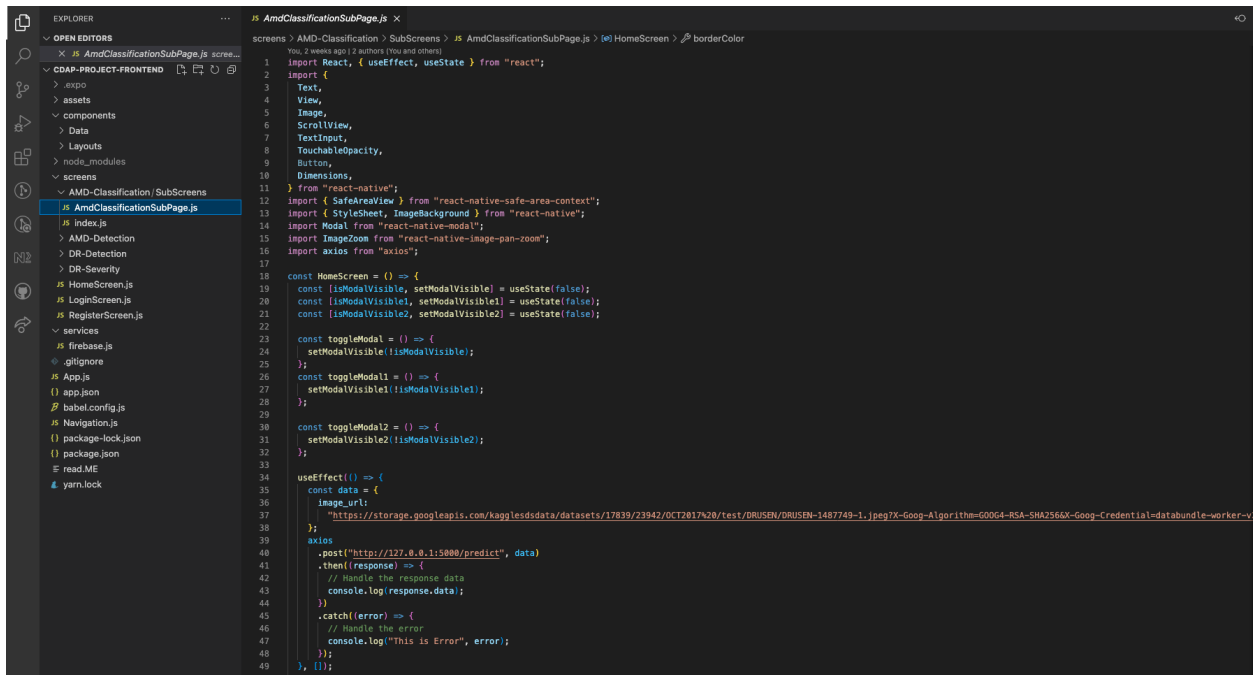


```
67 return (

68 <View style={styles.container}>69 <SafeAreaView>70 <ImageBackground71 source={require("../assets/bgImage.png")} // Replace with your desired background image72 style={styles.bgImage}>73 <View>74 <View style={styles.headerContent}>75 <Image76 source={{77 uri: "https://hips.hearstapps.com/hmg-prod/images/portrait-of-a-happy-young-doctor-in-his-clinic-royalty-free-image-1661432441.jpg?crop=0.66698xw:1xh:center,top&resize=1200:1200",78 }}79 style={styles.doctorPicture}>80 </View>81 <View style={styles.doctorInfo}>82 <Text style={styles.greeting}><greeting></Text>83 <Text style={styles.doctorName}>Dr. Kariyawasam</Text>84 </View>85 </View>86 </View>87 </View>88 <View style={styles.body}>89 <View>90 <TextInput91 placeholder="Search"92 placeholderTextColor="gray"93 multiline={false}94 style={styles.input}95 onChangeText={setSearch}96 value={search}97 </TextInput>98 <Image99 source={{100 uri: "https://img.icons8.com/ios/50/000000/search-v1.png",101 }}102 style={styles.searchIcon}>103 </Image>104 </View>105 <ScrollView106 showsVerticalScrollIndicator={false}107 style={{ height: "80%" }}>108 <View style={{ marginBottom: 100 }}>109 (patients.map(patient, index) => (110 <TouchableOpacity key={index}>111 <View style={styles.card}>112 <View style={styles.cardInfo}>113 <Image114 source={{115 </Image>116


```

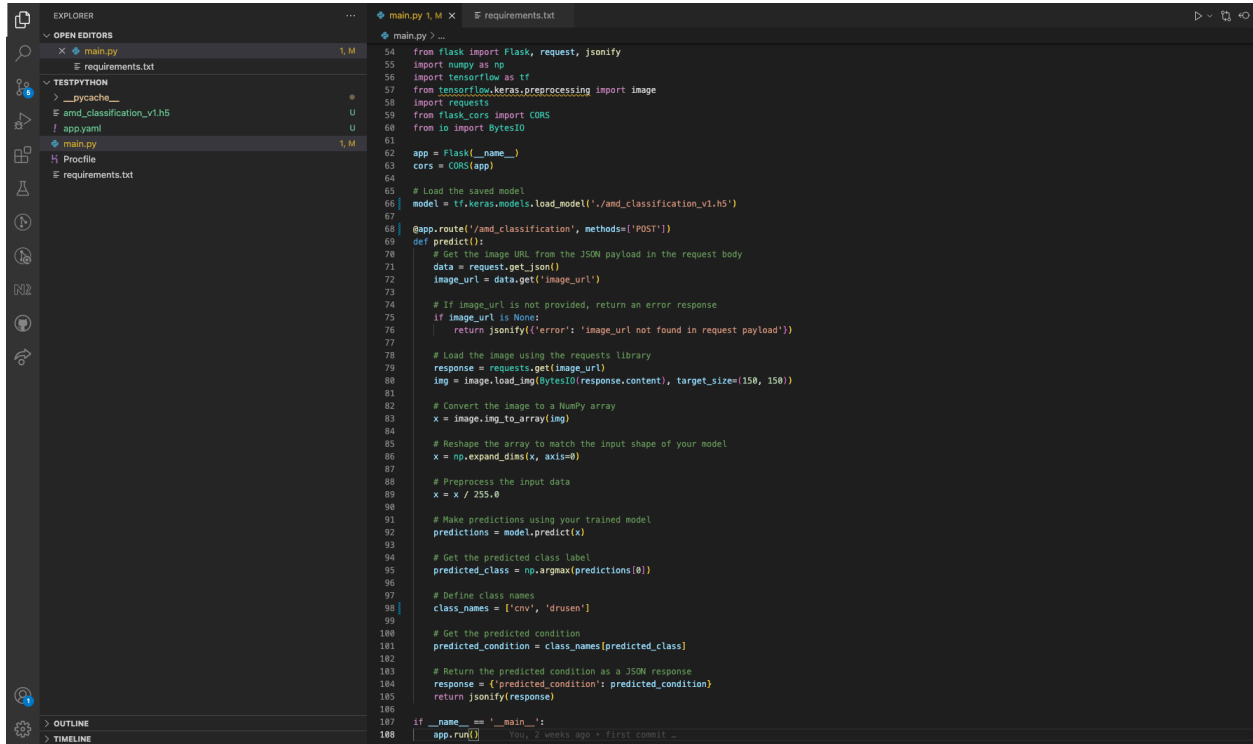
Figure 01: Mobile Application Home Frontend code



```
1 import React, { useEffect, useState } from "react";2 import {3 Text,4 View,5 Image,6 ScrollView,7 TextInput,8 TouchableOpacity,9 Button,10 Dimensions,11 } from "react-native";12 import { SafeAreaView } from "react-native-safe-area-context";13 import { StyleSheet, ImageBackground } from "react-native";14 import Modal from "react-native-modal";15 import ImageZoom from "react-native-image-pan-zoom";16 import axios from "axios";1718 const HomeScreen = () => {19 const [isModalVisible, setIsModalVisible] = useState(false);20 const [isModalVisible1, setIsModalVisible1] = useState(false);21 const [isModalVisible2, setIsModalVisible2] = useState(false);2223 const toggleModal = () => {24 setIsModalVisible(!isModalVisible);25 }26 const toggleModal1 = () => {27 setIsModalVisible1(!isModalVisible1);28 }29 const toggleModal2 = () => {30 setIsModalVisible2(!isModalVisible2);31 }3233 useEffect(() => {34 const data = {35 image_url:36 "https://storage.googleapis.com/kagglestdatasets/17839/23942/OC7817N28/test/DRUSEN/DRUSEN-1487749-1.jpeg?X-Goog-Algorithm=GOOG4-RSA-SHA256&X-Goog-Credential=databundle-worker-v34",37 }38 axios39 .post("http://127.0.0.1:5800/predict", data)40 .then((response) => {41 // Handle the response data42 console.log(response.data);43 })44 .catch((error) => {45 // Handle the error46 console.log("This is Error", error);47 })48 });49 }, []);50
```

Figure 02: Mobile Application AMD Classification Frontend code

## 1.2 Project Backend



```
54 from flask import Flask, request, jsonify
55 import numpy as np
56 import tensorflow as tf
57 from tensorflow.keras.preprocessing import image
58 import requests
59 from flask_cors import CORS
60 from io import BytesIO
61
62 app = Flask(__name__)
63 cors = CORS(app)
64
65 # Load the saved model
66 model = tf.keras.models.load_model('./amd_classification_v1h5')
67
68 @app.route('/amd_classification', methods=['POST'])
69 def predict():
70     # Get the image url from the JSON payload in the request body
71     data = request.get_json()
72     image_url = data.get('image_url')
73
74     # If image_url is not provided, return an error response
75     if image_url is None:
76         return jsonify({'error': 'image_url not found in request payload'})
77
78     # Load the image using the requests library
79     response = requests.get(image_url)
80     img = image.load_img(BytesIO(response.content), target_size=(150, 150))
81
82     # Convert the image to a NumPy array
83     x = image.img_to_array(img)
84
85     # Reshape the array to match the input shape of your model
86     x = np.expand_dims(x, axis=0)
87
88     # Preprocess the input data
89     x = x / 255.0
90
91     # Make predictions using your trained model
92     predictions = model.predict(x)
93
94     # Get the predicted class label
95     predicted_class = np.argmax(predictions[0])
96
97     # Define class names
98     class_names = ['cnv', 'drusen']
99
100     # Get the predicted condition
101     predicted_condition = class_names[predicted_class]
102
103     # Return the predicted condition as a JSON response
104     response = {'predicted_condition': predicted_condition}
105     return jsonify(response)
106
107 if __name__ == '__main__':
108     app.run()
```

Figure 03: Mobile Application AMD Classification Backend code

### 1.3 Mobile Application UIs



Figure 04: Mobile Application Home Page

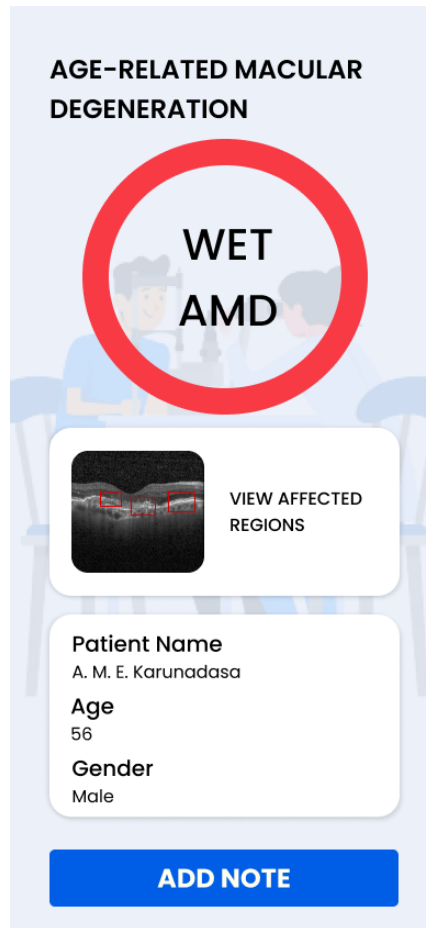


Figure 05: Mobile Application AMD Classification Page

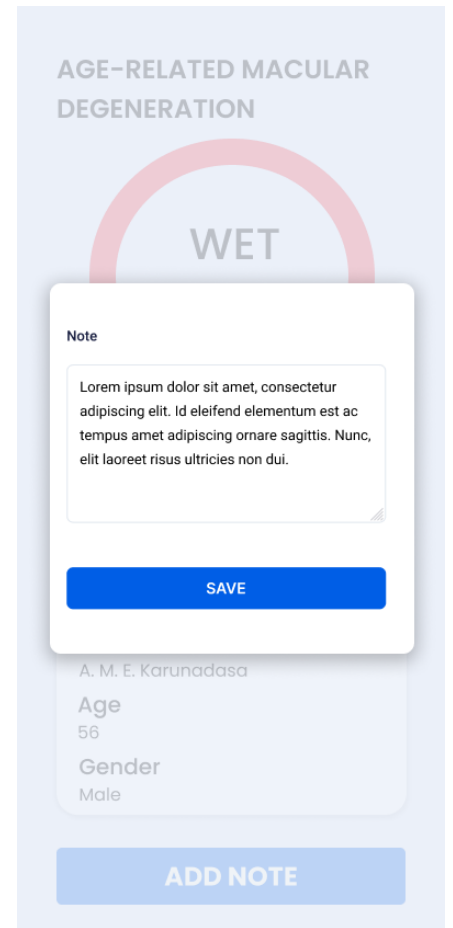


Figure 06: Mobile Application AMD Classification Add Note Popup

## 2. Project View

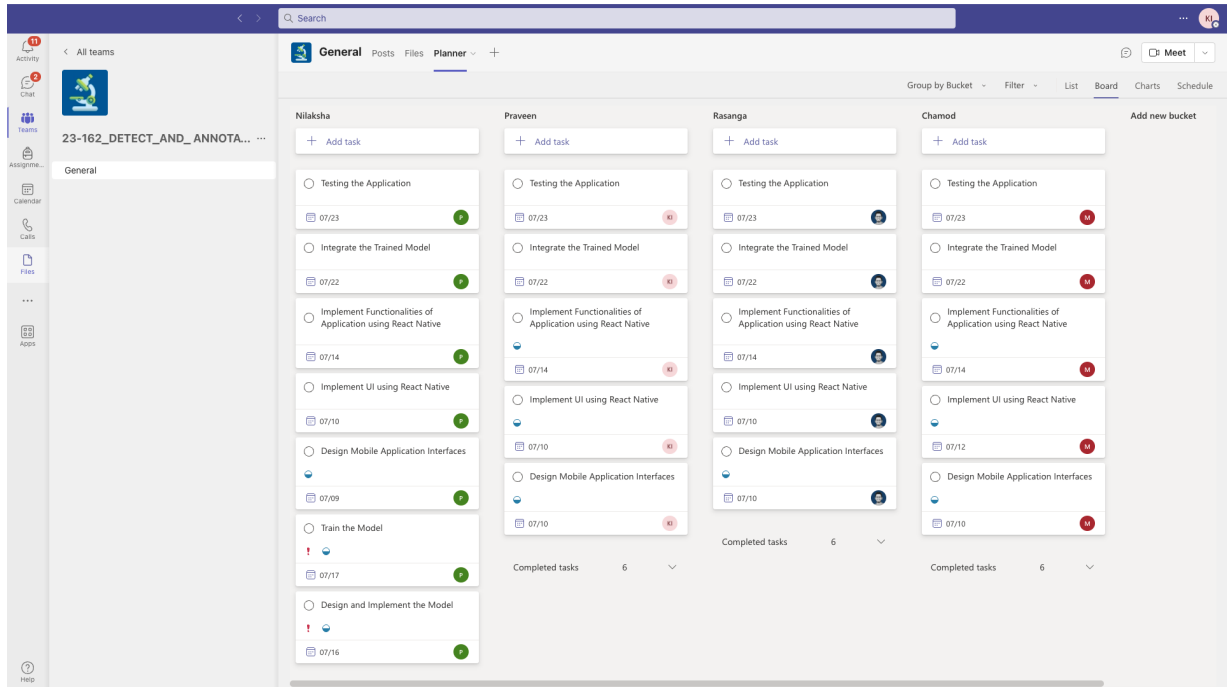


Figure 07: Planner – Board View

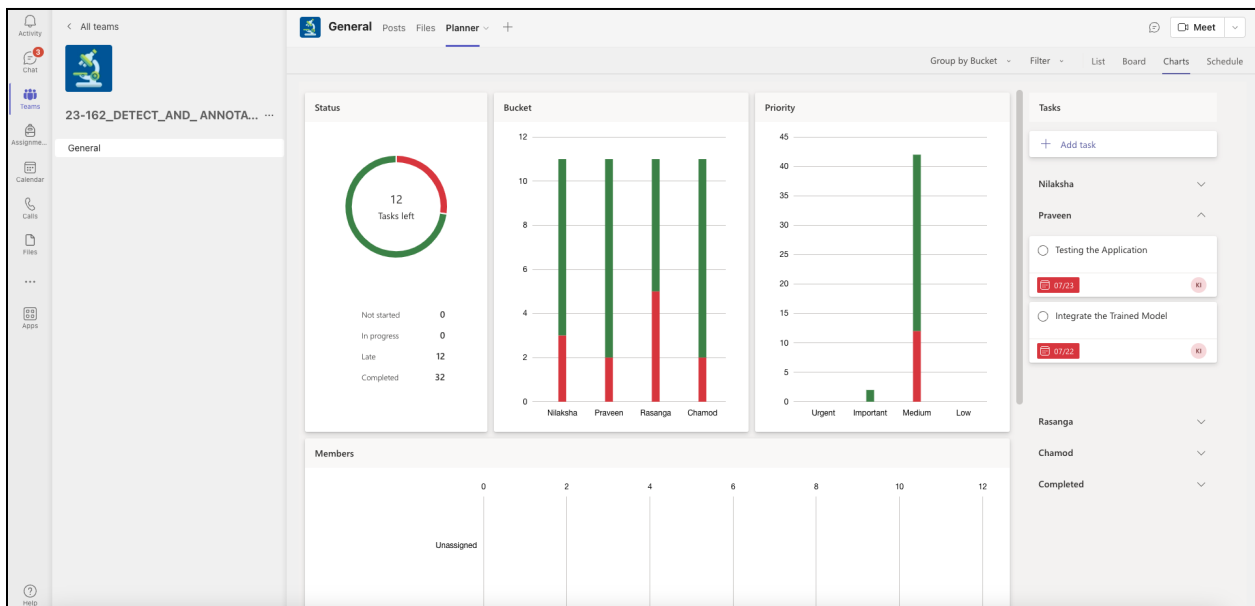


Figure 08: Planner – Chart View

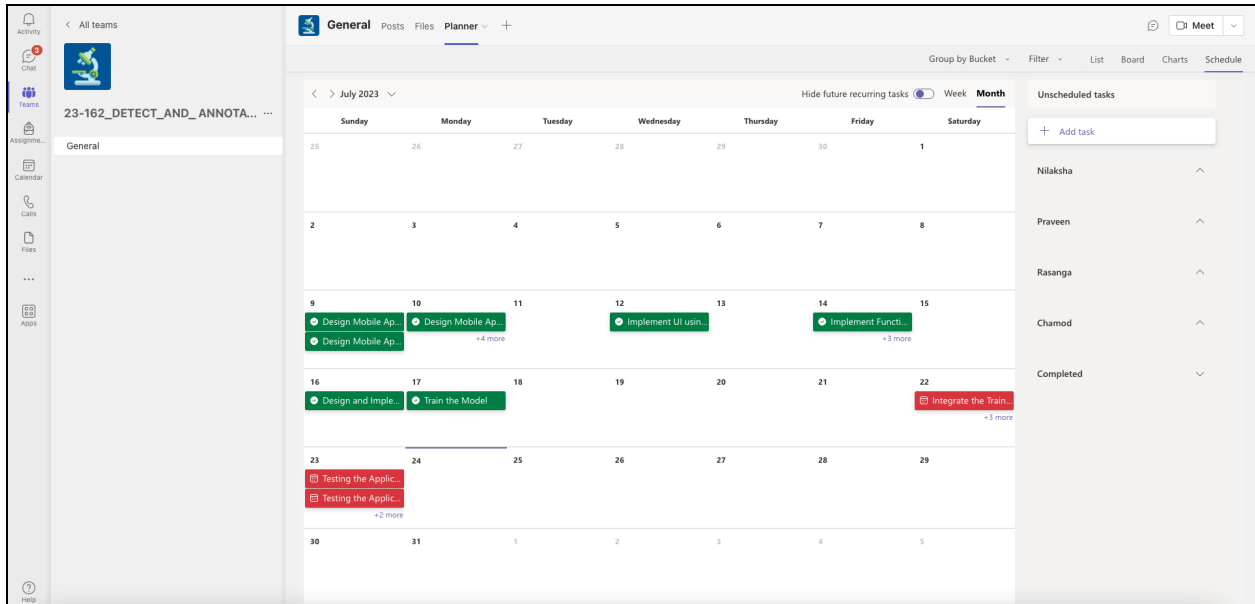


Figure 09: Planner – Schedule View

### 3. Updated Gantt chart

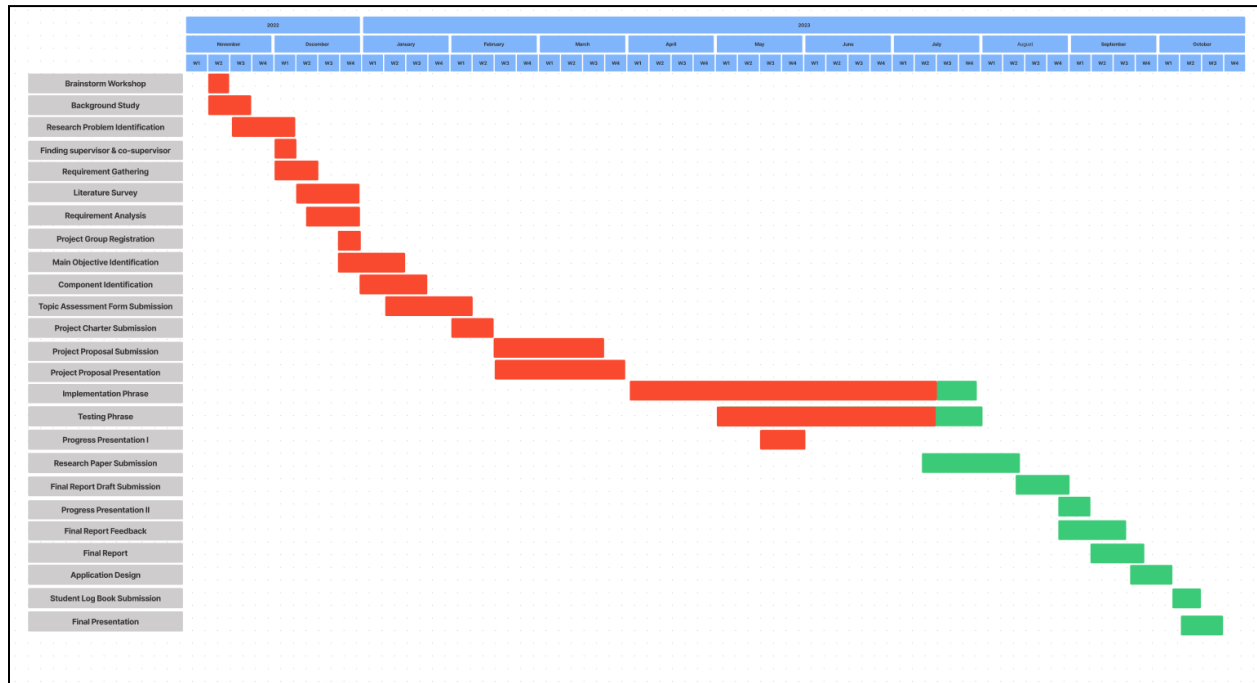


Figure 10: Gantt Chart



## 4. Screenshots of chats and calls of MS Teams

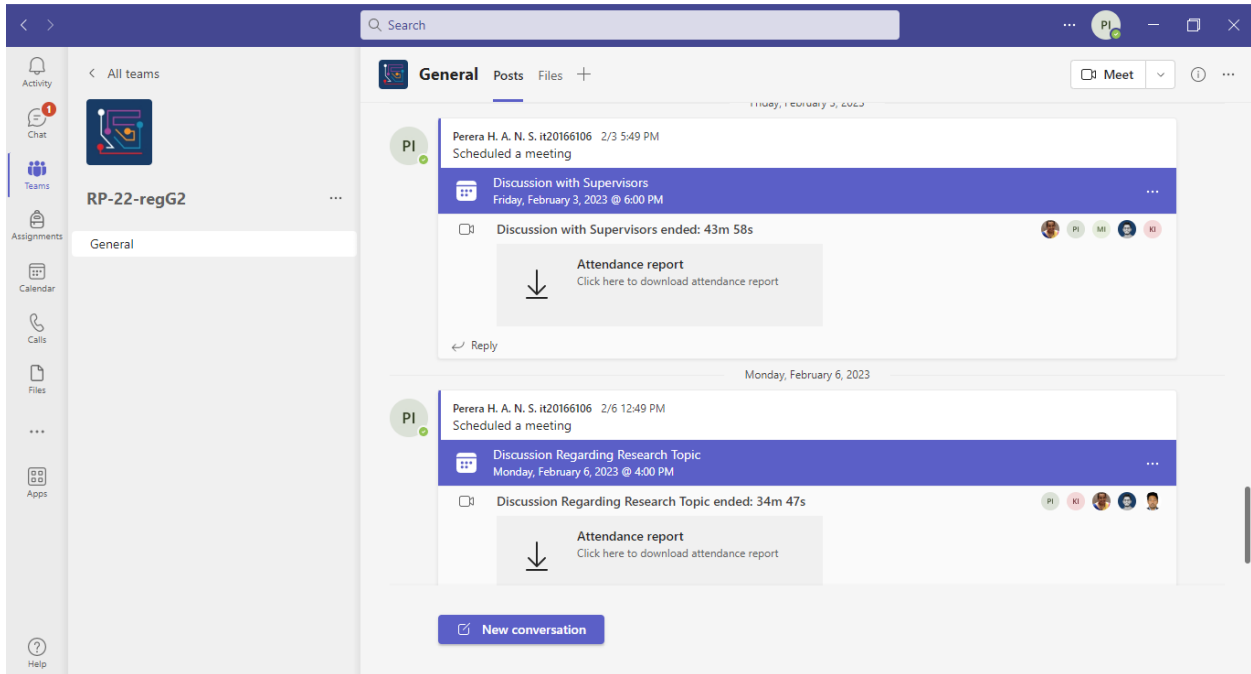


Figure 11: Screenshots of MS Teams Chats

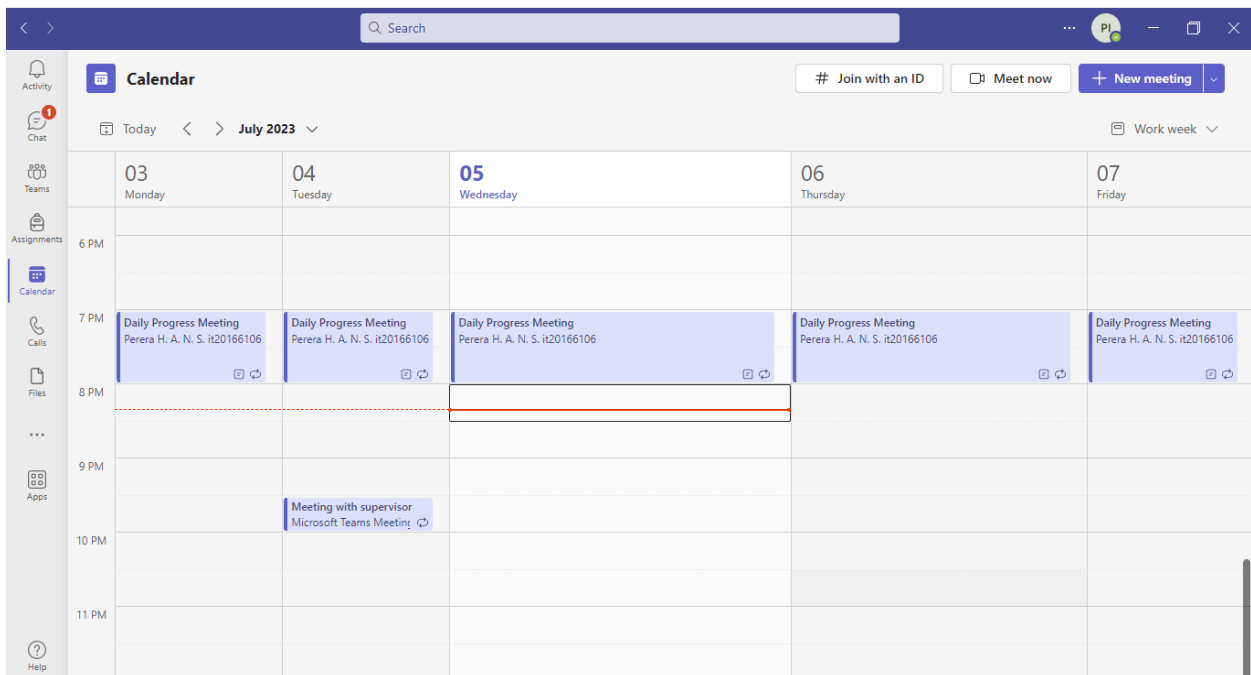


Figure 12: Screenshots of MS Teams Calendar Schedule

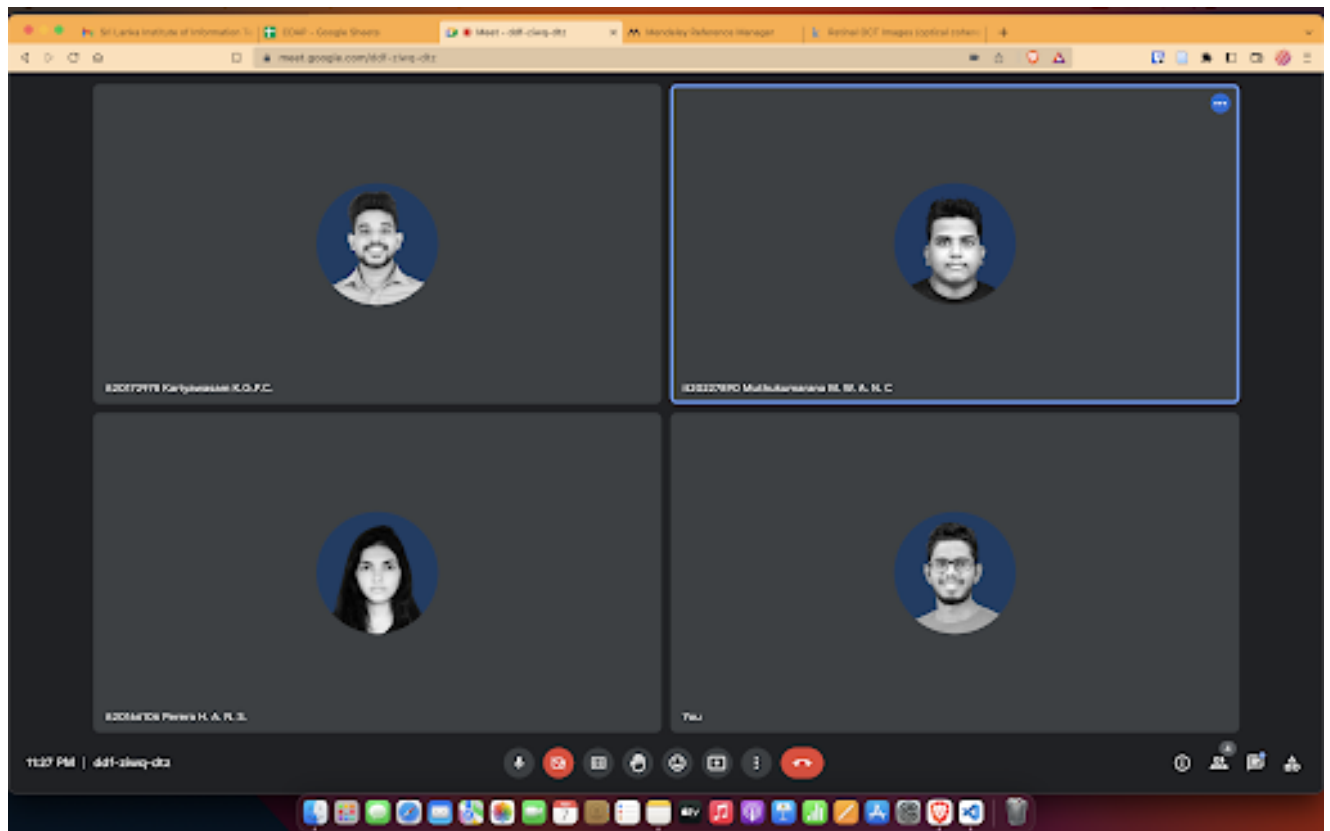


Figure 12: Screenshots of Google Meet Meetings