Sri Lanka Institute of Information Technology

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GROUP ID: R24-059

Bandara A M S S

IT21103322

Information Technology

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System diagram

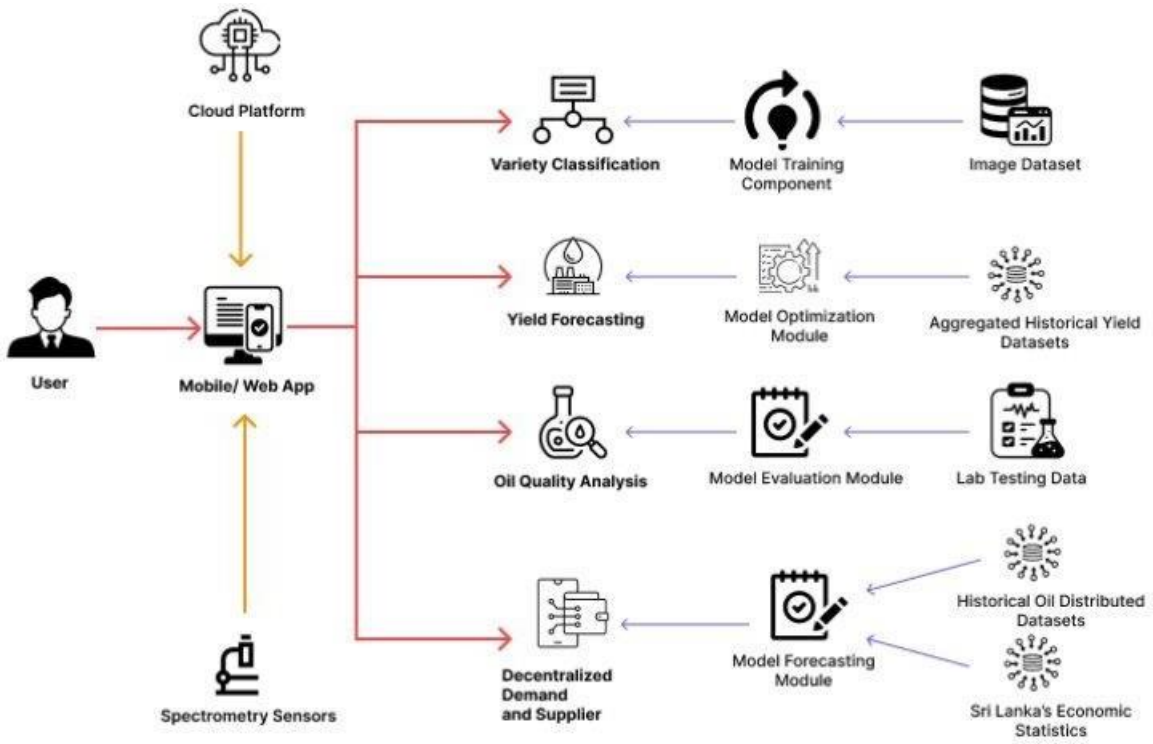

Figure 1-System diagram

Component: live coconut oil quality measuring feature

Progress

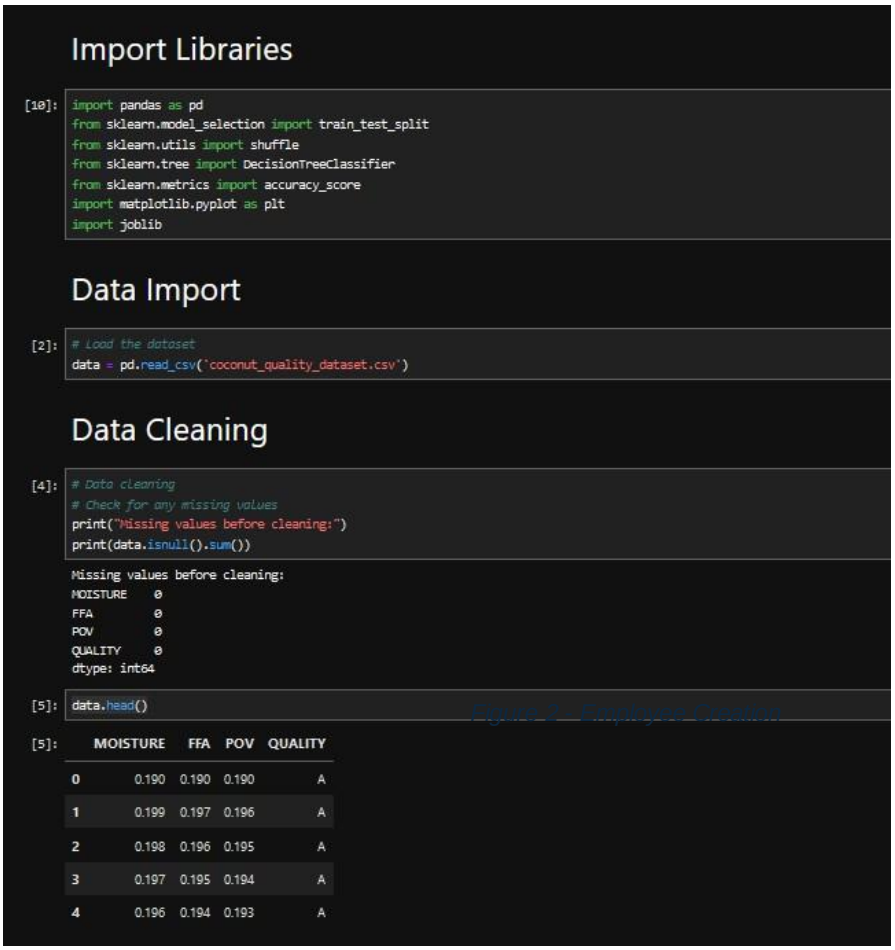

Figure 2-import libraries

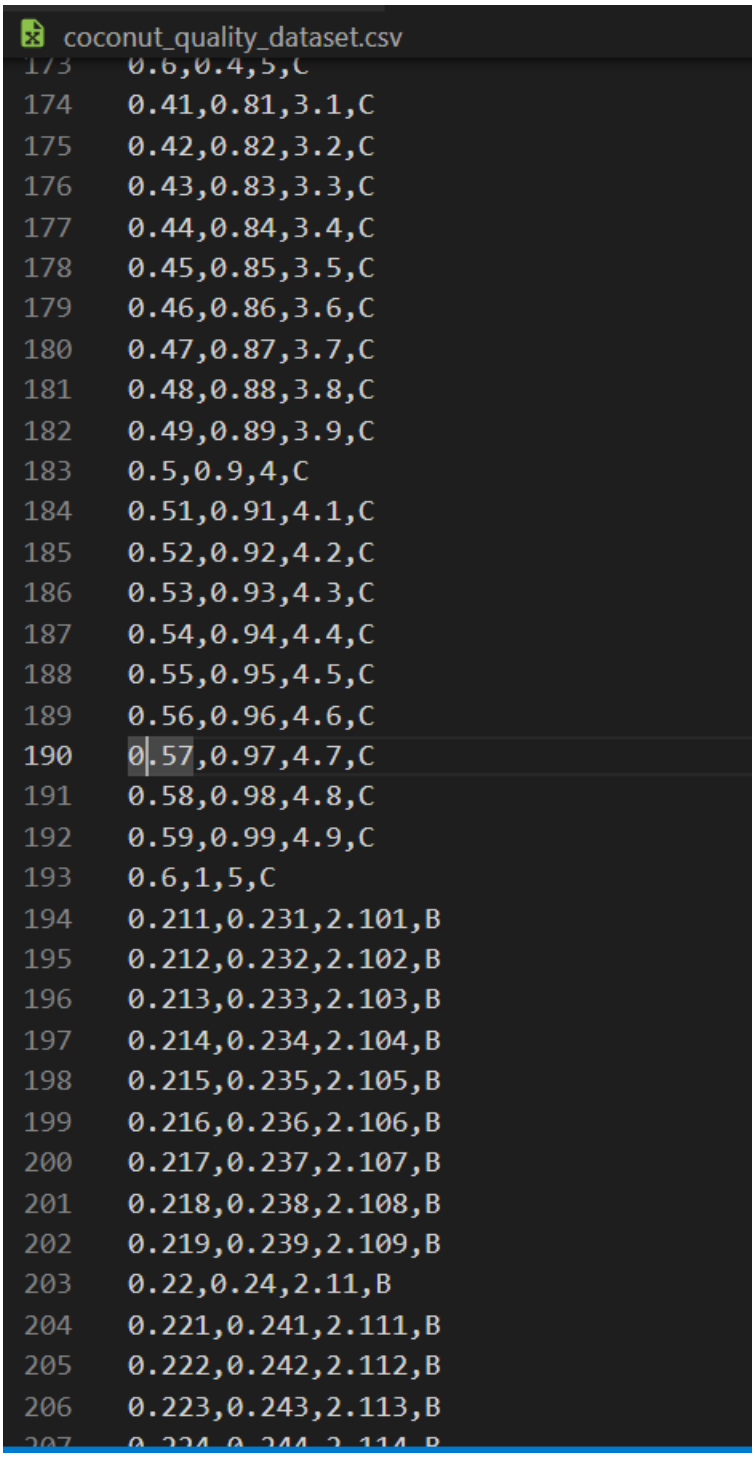

Figure 3-dataset

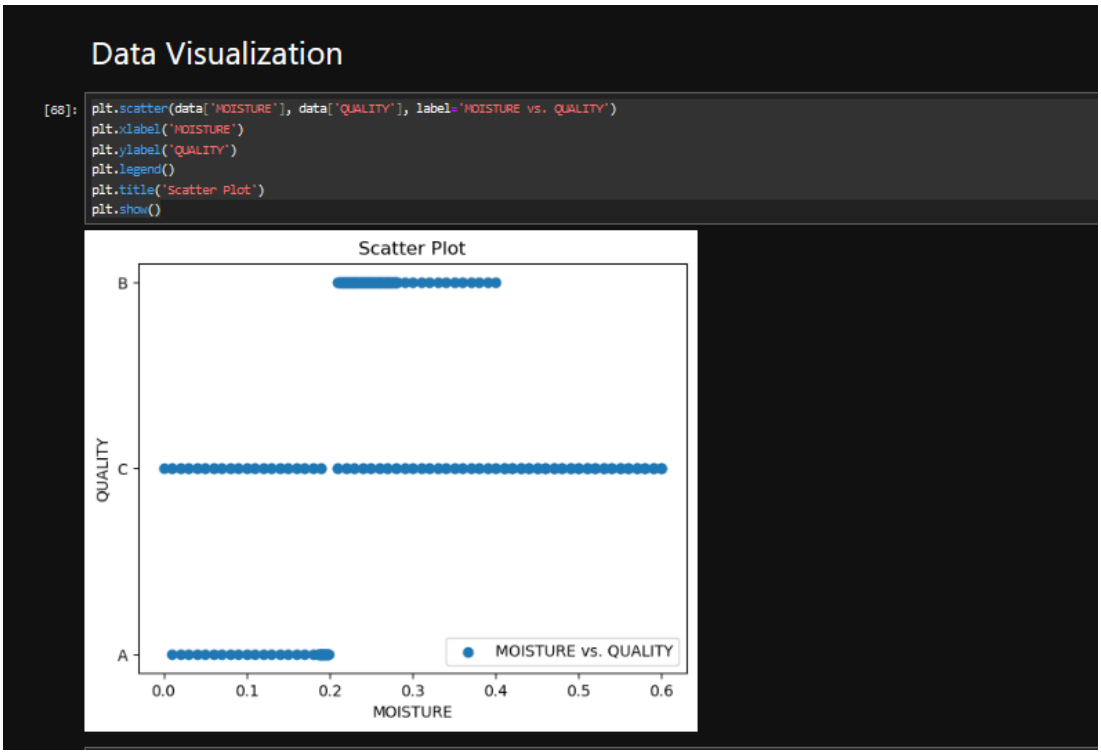

Figure 4-data visualization

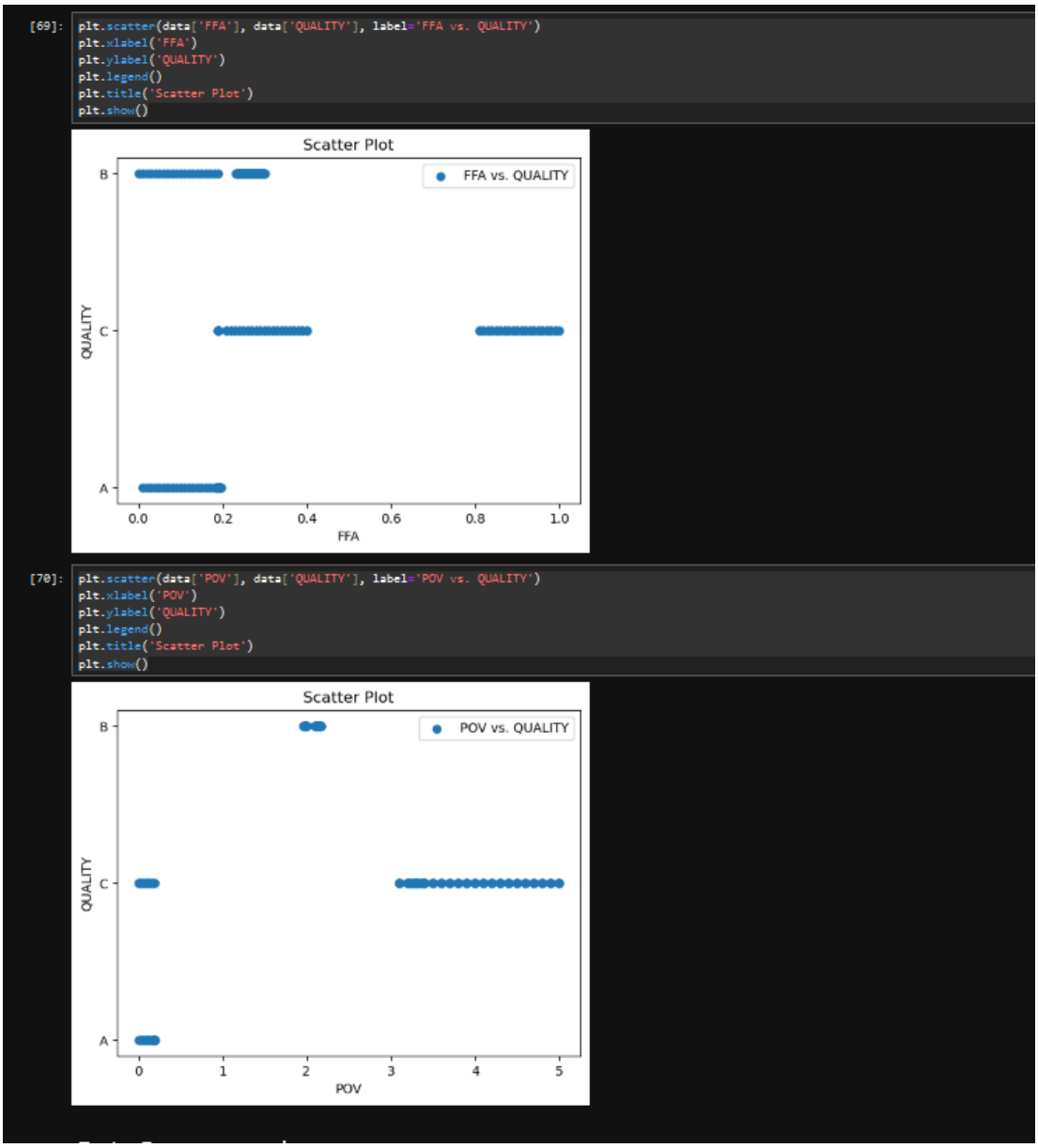

Figure 5-visulization.

Data Pre-processing

```
[71]: # Shuffle the dataset
data_shuffled = shuffle(data, random_state=42)
```

```
[72]: data_shuffled.head()
```

[72]:

	MOISTURE	FFA	POV	QUALITY
115	0.240	0.840	3.400	C
120	0.290	0.890	3.900	C
259	0.278	0.298	2.168	B
226	0.245	0.265	2.135	B
66	0.060	0.940	3.340	C

```
[73]: # Splitting the data into features and target variable
X = data_shuffled.drop(columns=['QUALITY'])
y = data_shuffled['QUALITY']
```

Model Training

```
[74]: # Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Initialize the Decision Tree Classifier
model = DecisionTreeClassifier(random_state=42)

# Train the model
model.fit(X_train, y_train)
```

[74]:
```
DecisionTreeClassifier(random_state=42)
```
In a Jupyter environment, please rerun this cell to show the HTML representation or trust the notebook.
On GitHub, the HTML representation is unable to render, please try loading this page with nbviewer.org.

```
[75]: # Make predictions on the testing set
predictions = model.predict(X_test)

# Evaluate the model
accuracy = accuracy_score(y_test, predictions)
print("Accuracy:", accuracy)
```

```
Accuracy: 1.0
```

Dump Model

```
[82]: joblib.dump(model, 'coconut-oil-quality-classifier.pkl')#Save model to PC
```

```
[82]: ['coconut-oil-quality-classifier.pkl']
```

Test Model

```
[11]: import joblib

model = joblib.load('coconut-oil-quality-classifier.pkl')

prediction = model.predict([[0.35,0.05,1.971
]])
print("Predicted Quality Level: " + prediction[0])
```

```
Predicted Quality Level: B
E:\New folder\Lib\site-packages\sklearn\base.py:439: UserWarning: X does not have valid feature names, but DecisionTreeClassifier was fitted with fe
ature names
  warnings.warn(
```

```
[ ]:
```

Figure 6-model training

Team Communication

The team chose Microsoft Teams as their primary communication channel, forming a dedicated Team with all four group members. We also used Zoom to communicate with supervisors, provide updates, and receive comments on the project's progress.

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Teams Channel

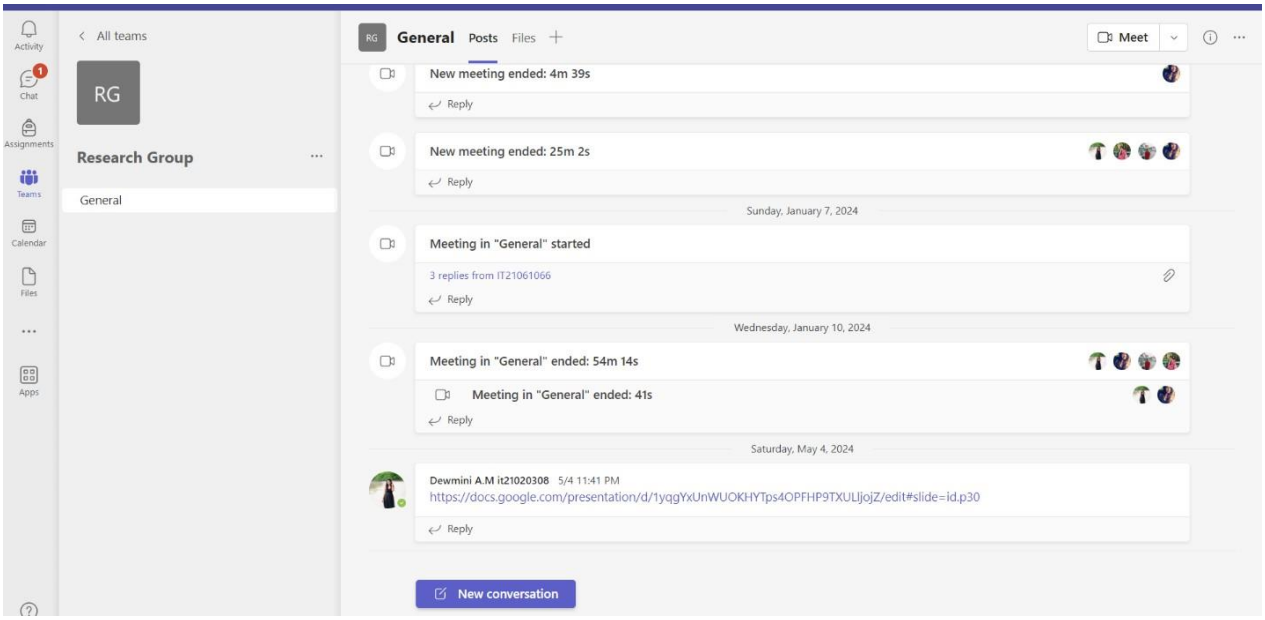

Figure 7-teams channel creation

Teams Calls with the Research Team

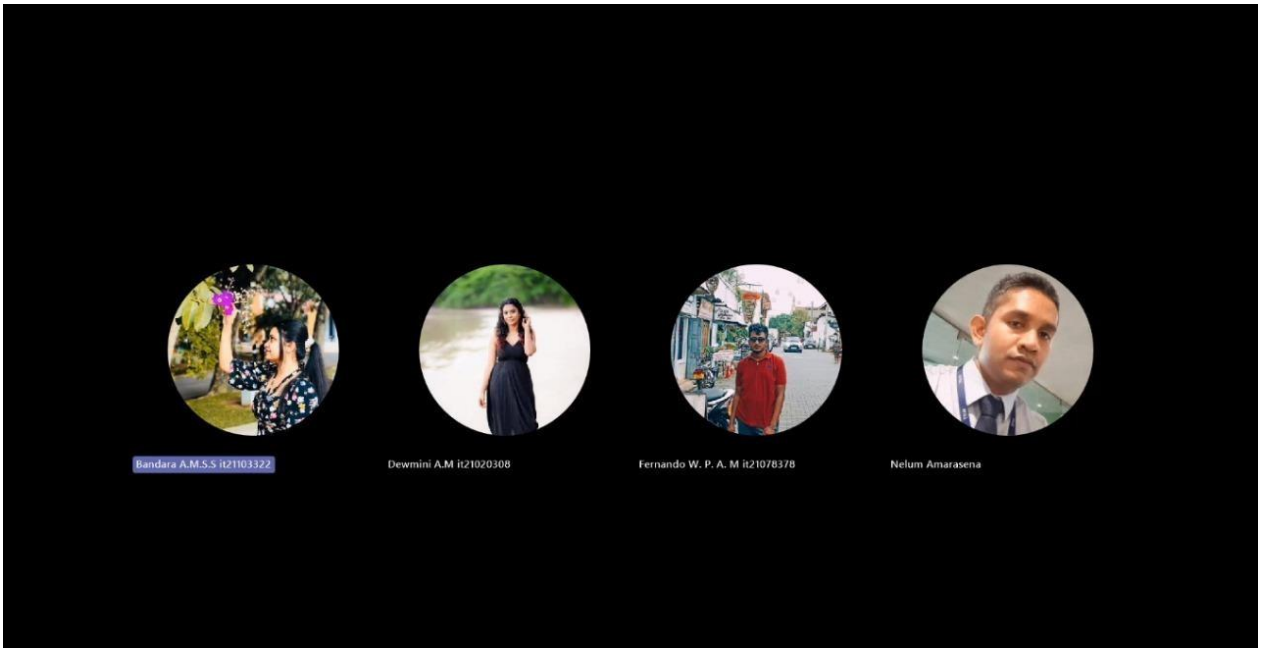

Figure 8-overview of Team Calls and Communication

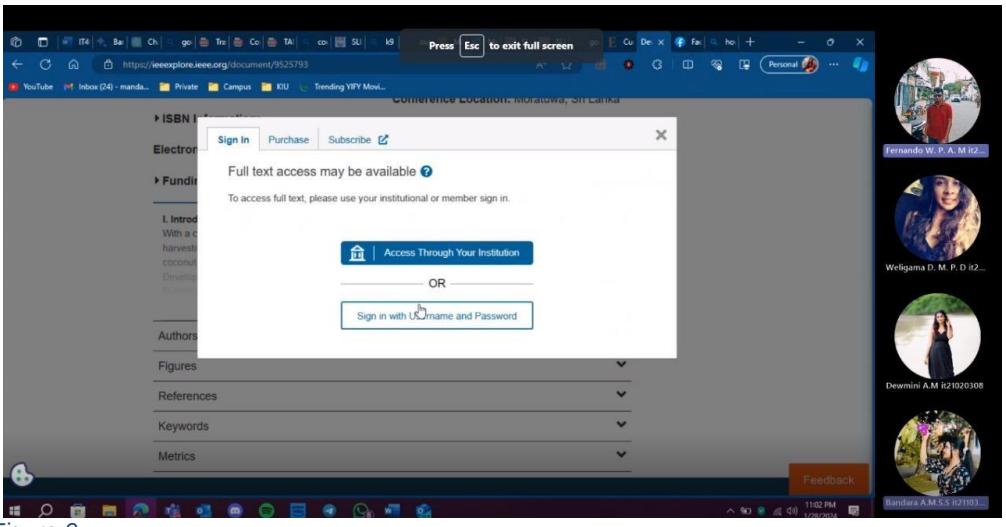

Figure 9

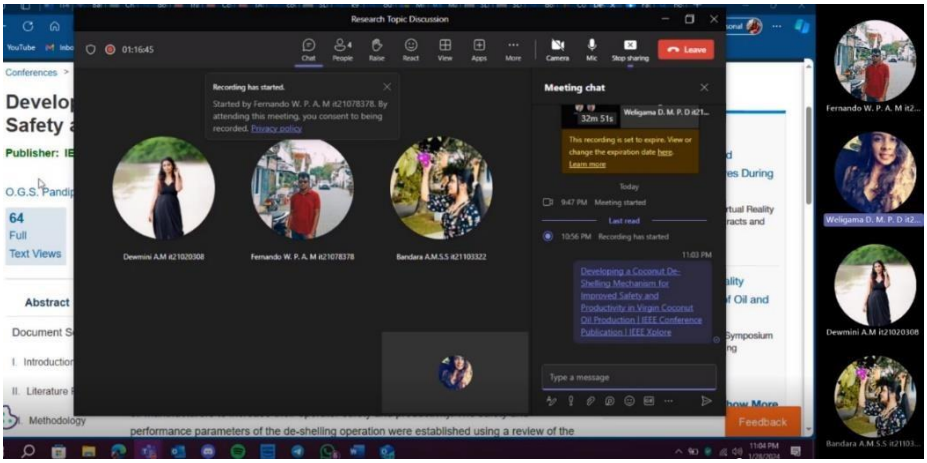

Figure 10-team members call sample 1

WhatsApp Group Creation & meetings

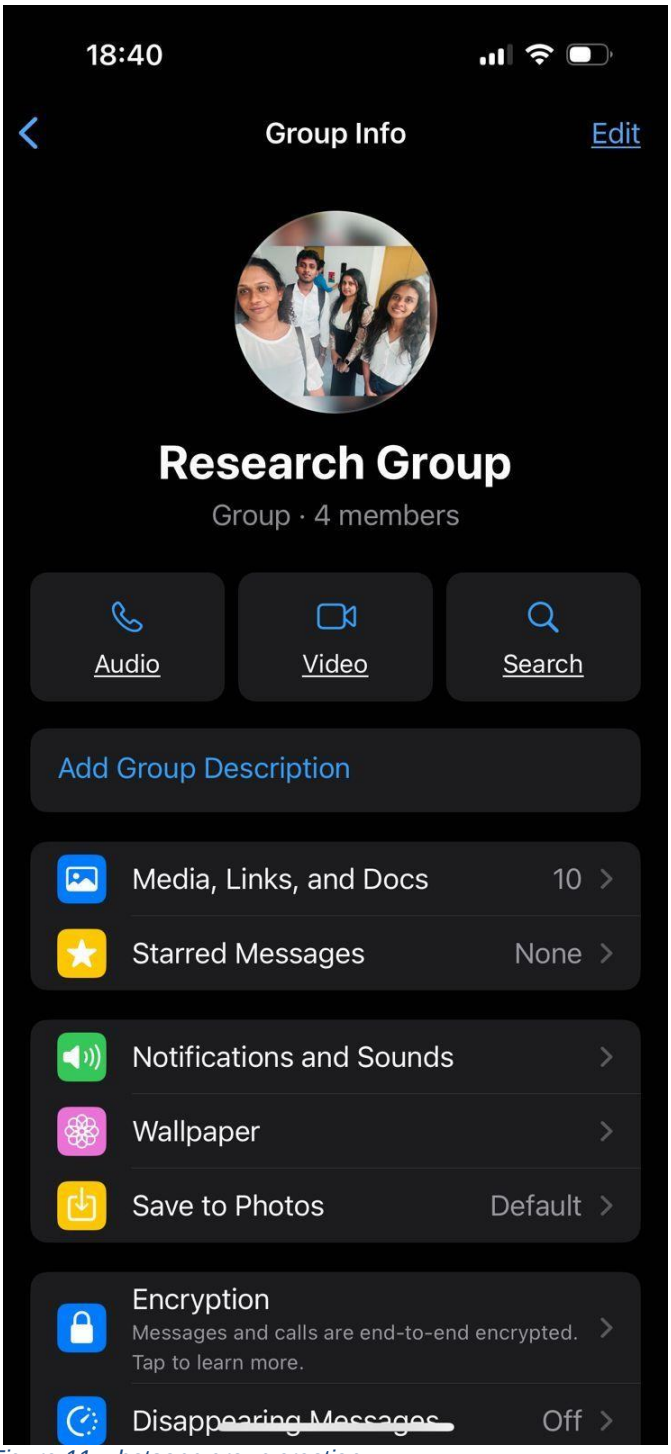

Figure 11-whatsapp group creation

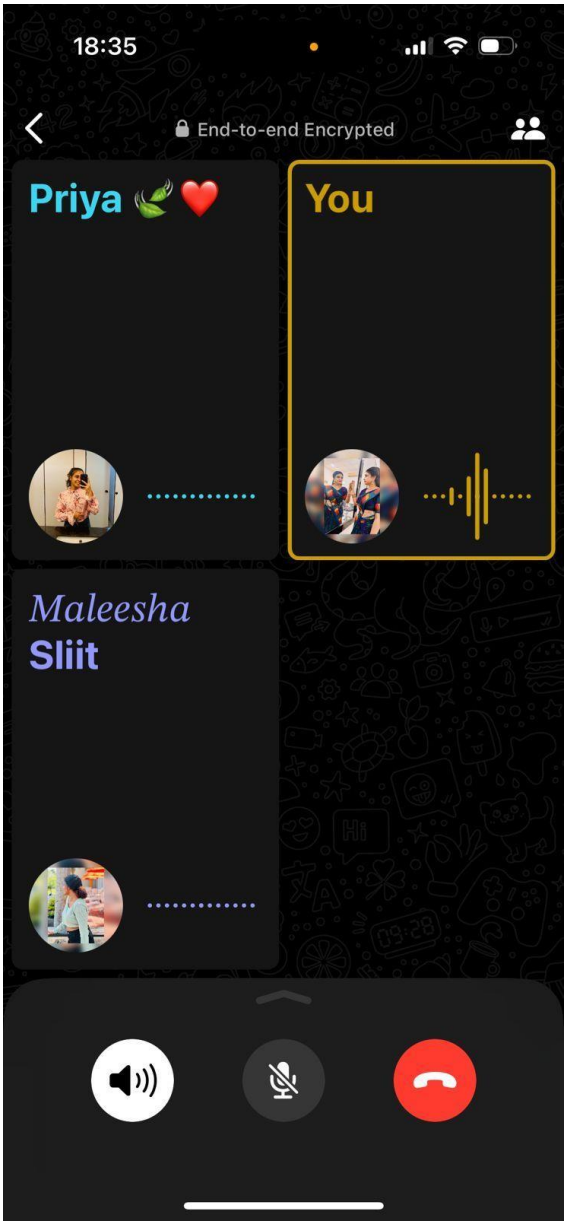

Figure 12-whtsapp call sample1

Figure 13-whtsapp call sample2

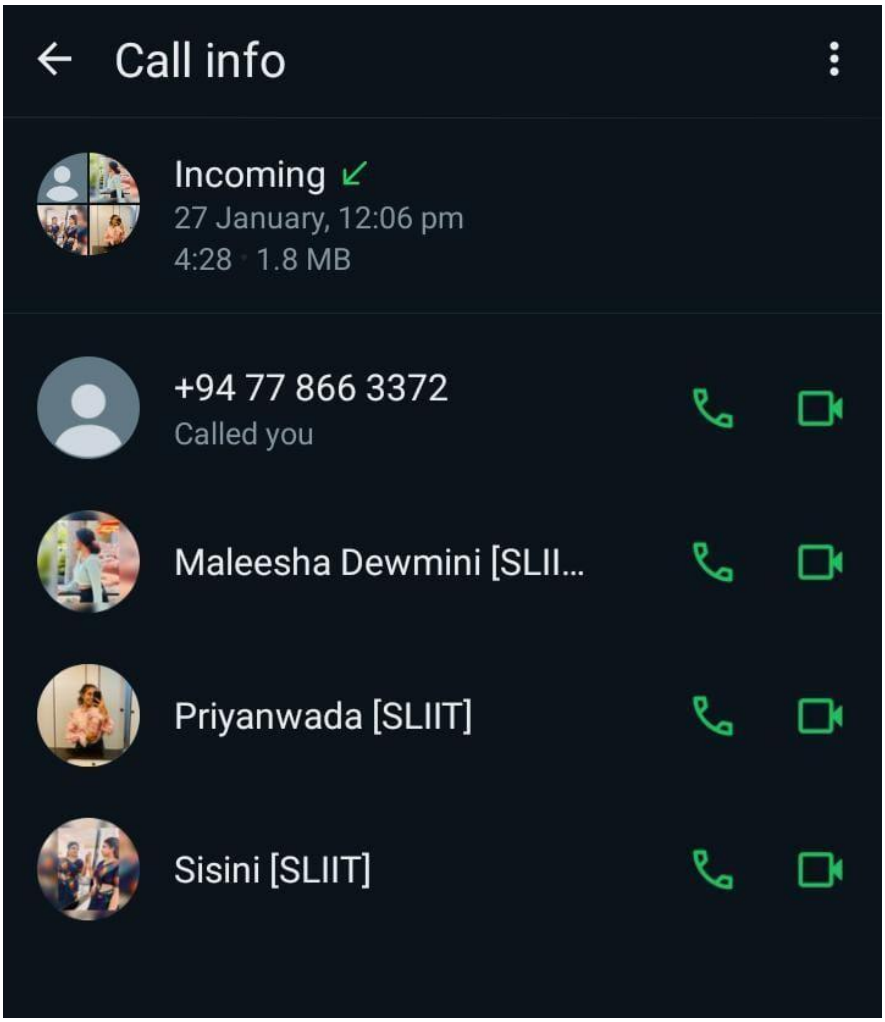

Figure 14-group call 3

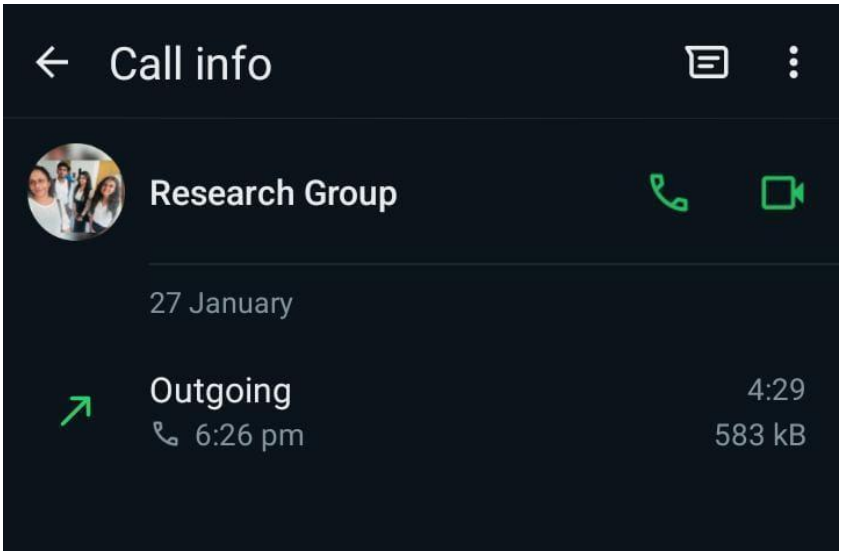

Figure 15-group call 4

Online Calls with Supervisor

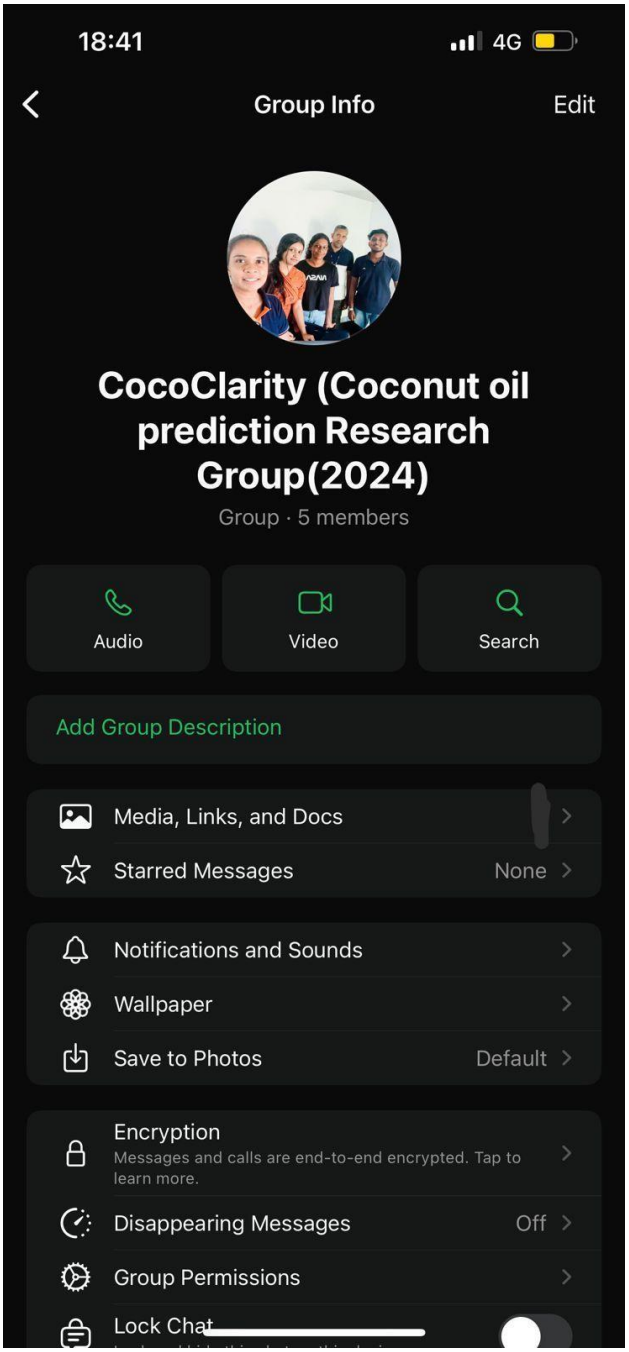

Figure 16-group creation with supervisor

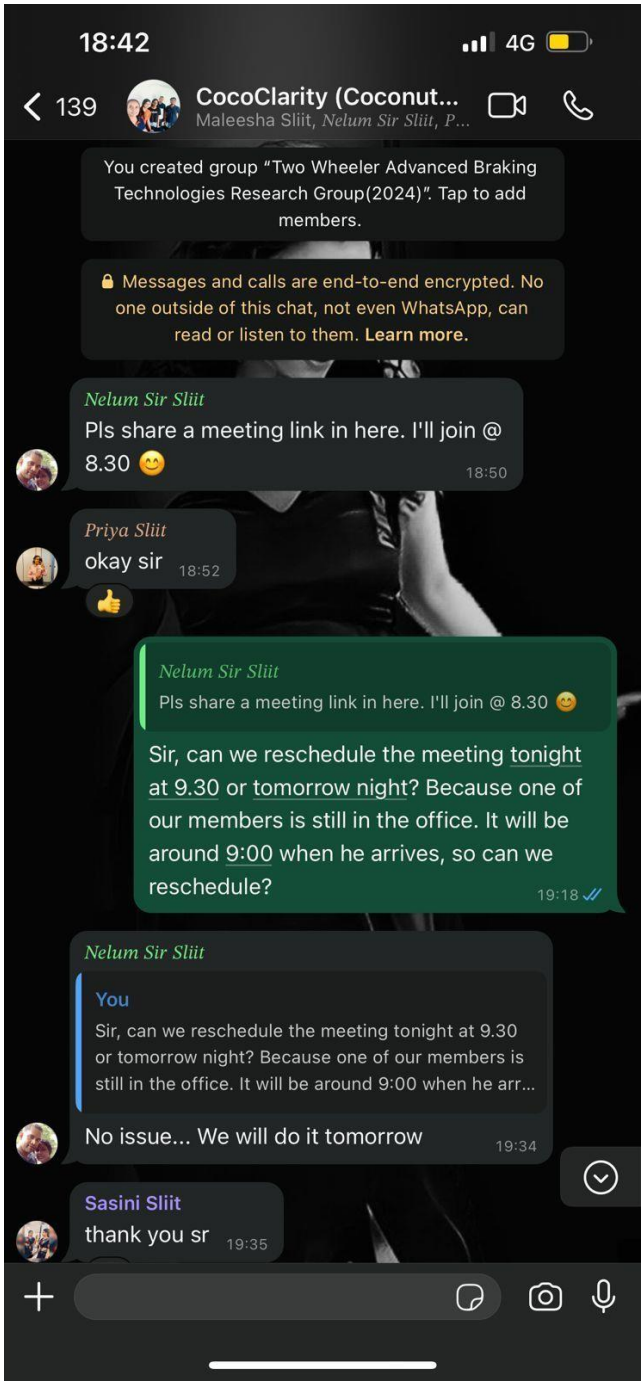

Figure 17-discusson with supervisor

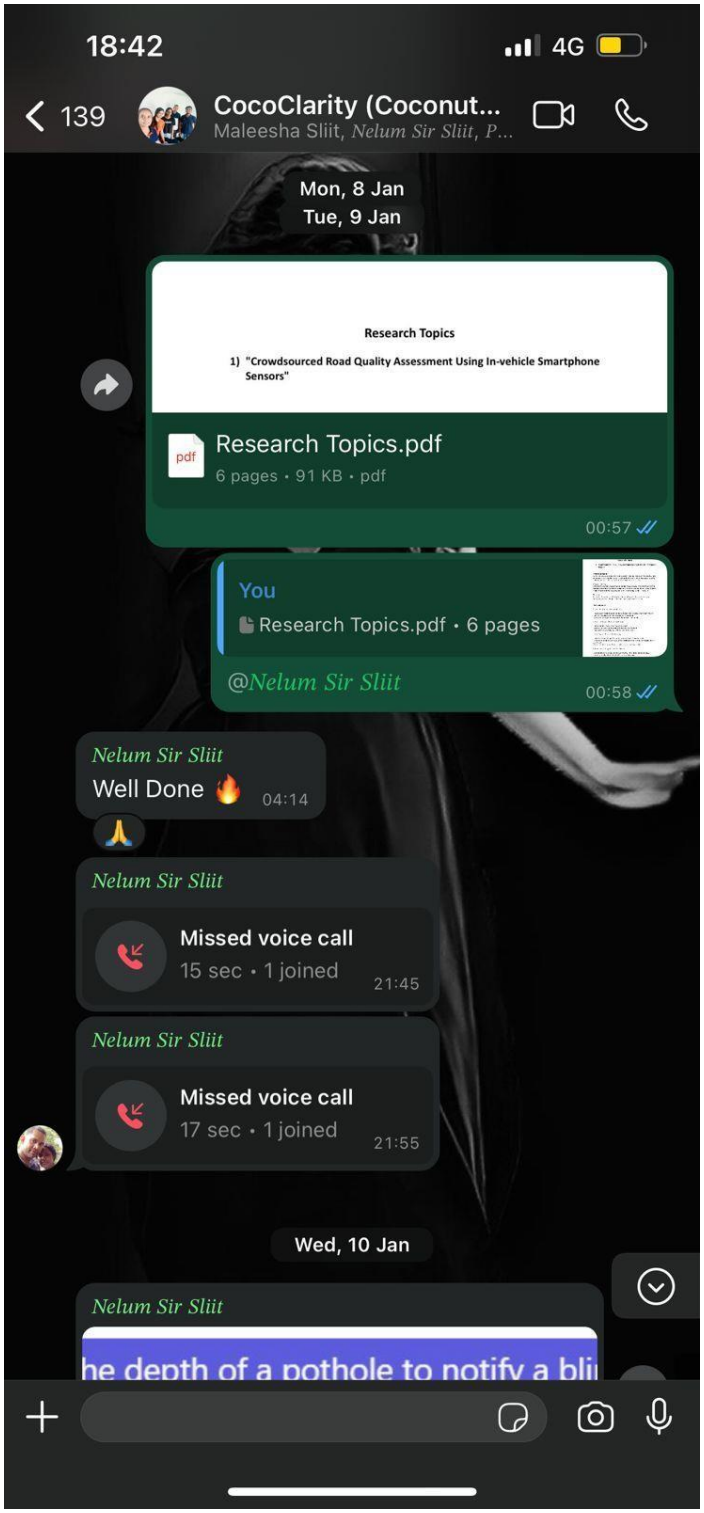

Figure 18-discusson 2

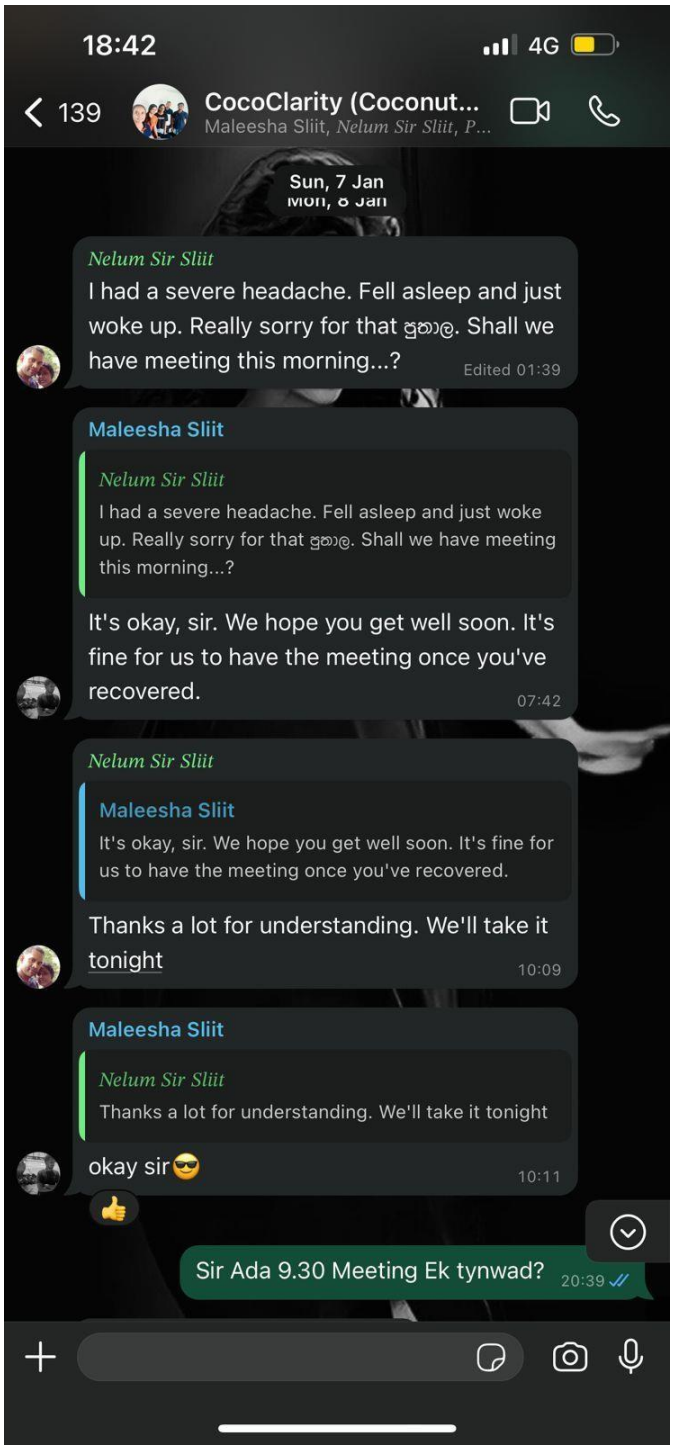

Figure 19-discusson3.

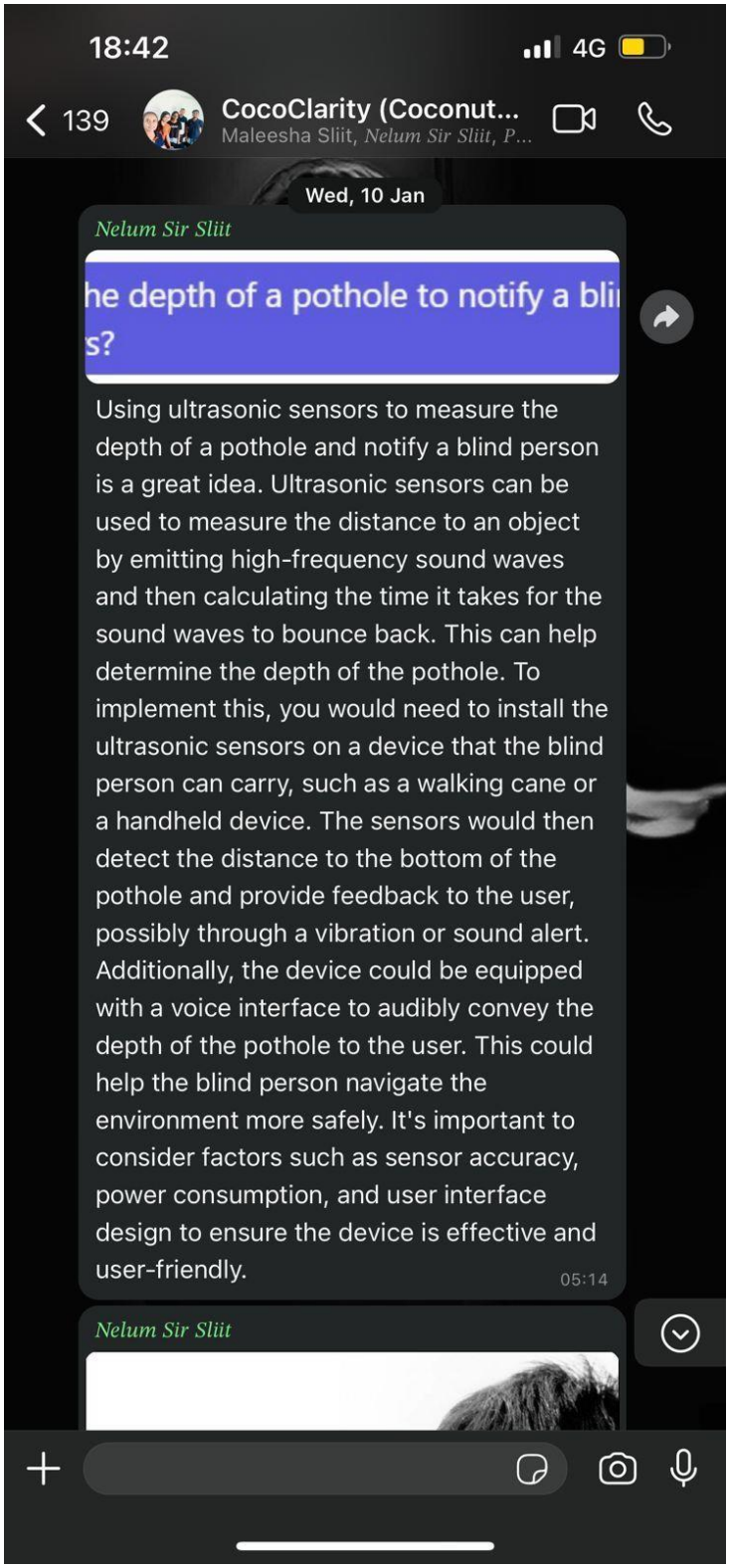

Figure 20-supervisor advising

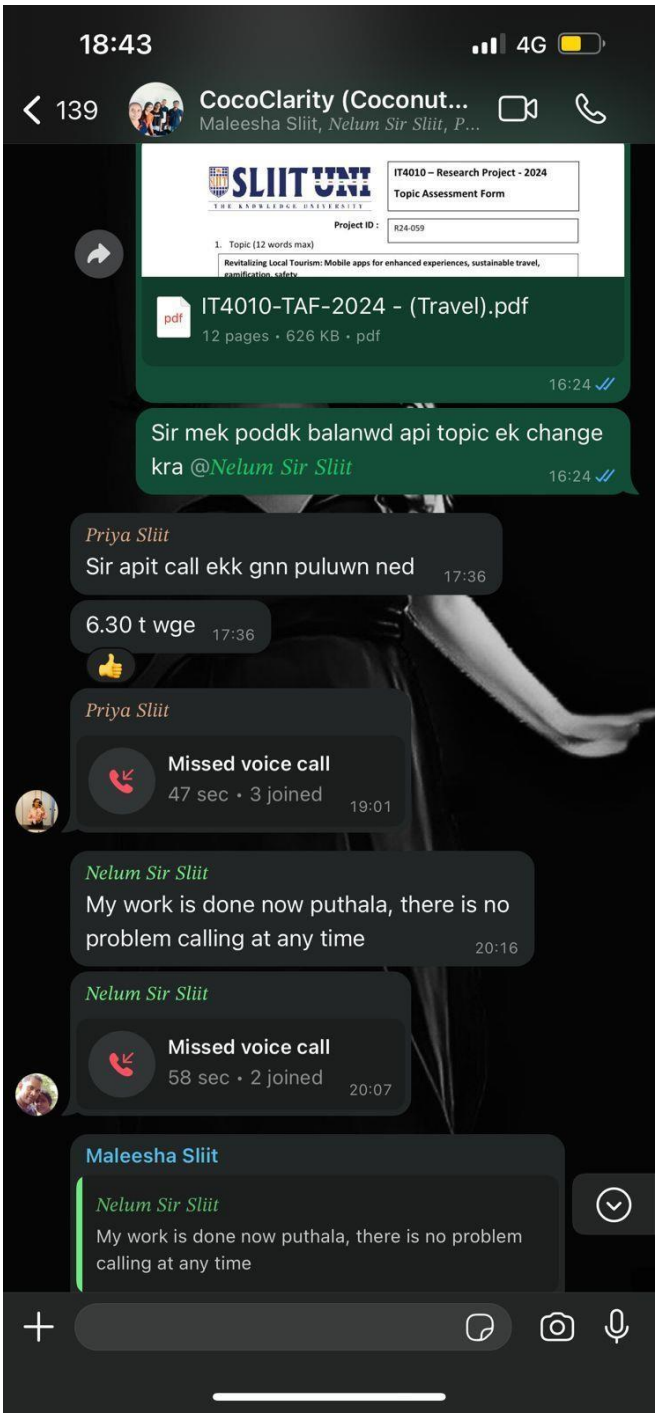

Figure 21-discusson 5

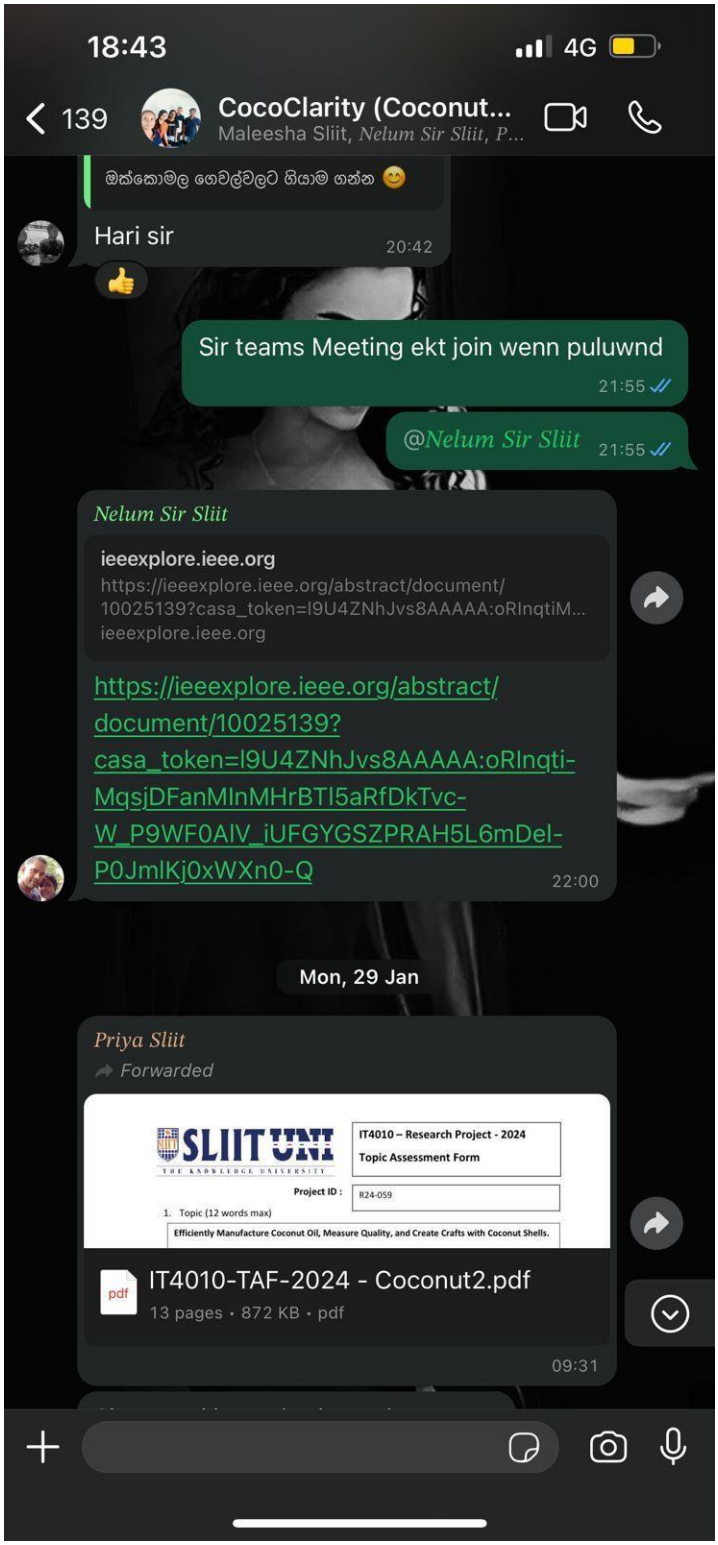

Figure 22-discussion with supervisor

Figure 23-call with supervisor

External supervisor meetings

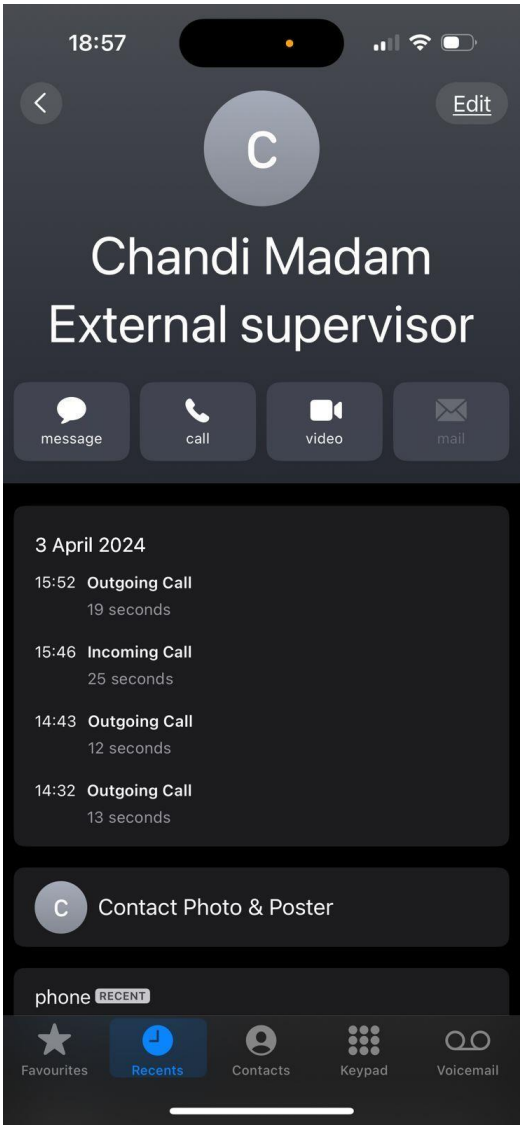

Figure 24-call with external supervisor

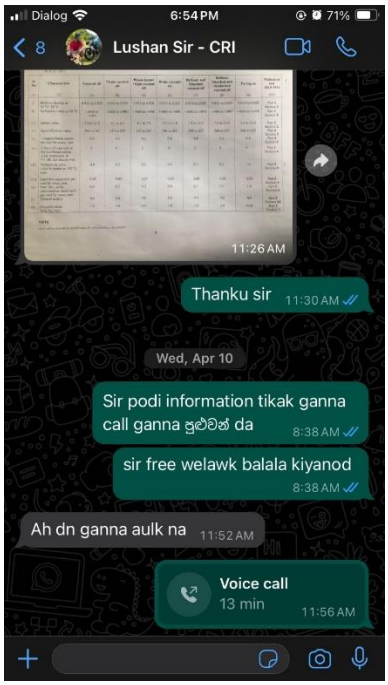

Figure 25-discuss information with CRI officer

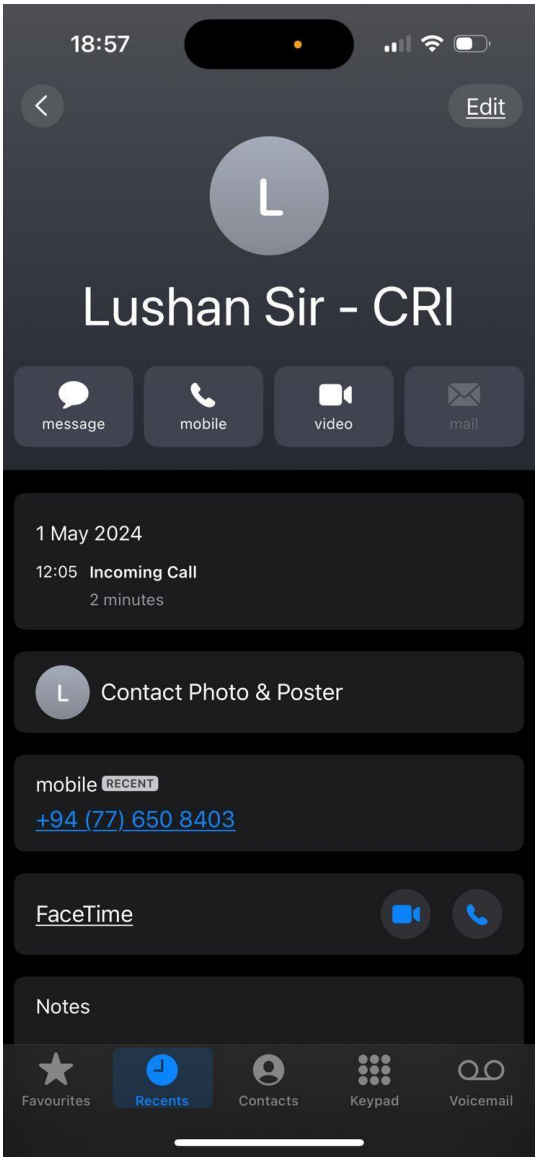

Figure 26-call with CRI officer

Figure 27-meet with CRI officer

Figure 28-meeting with group members

Figure 29-CRI

Figure 30-CRI lab

Figure 31-physical meet up with external supervisor

Teams' meetings with supervisor

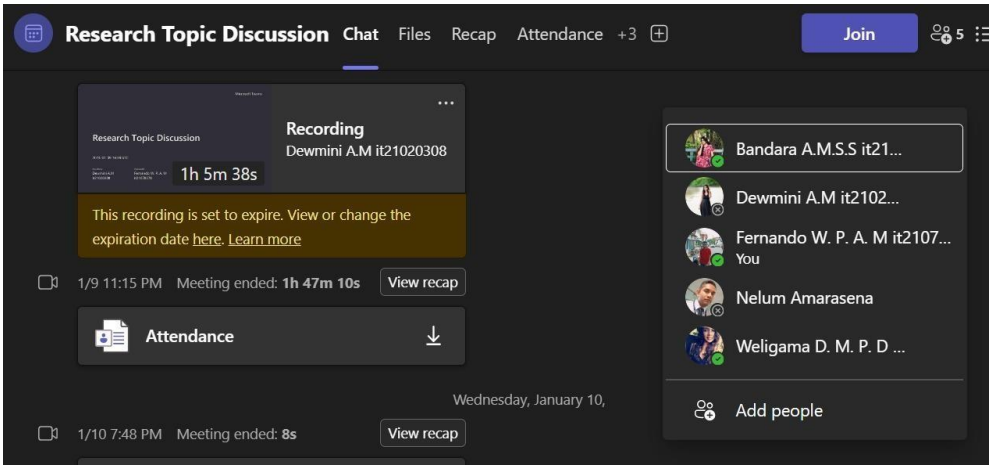

Figure 32-teams meeting with supervisor1

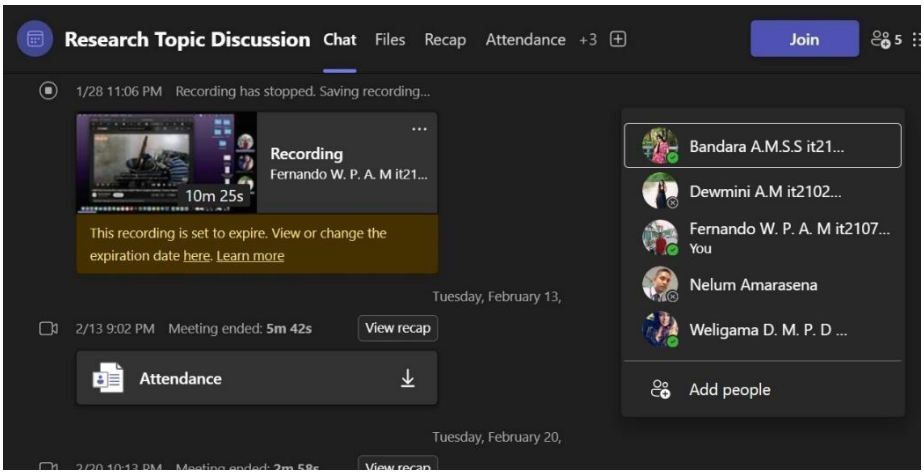

Figure 33-teams meeting with supervisor2

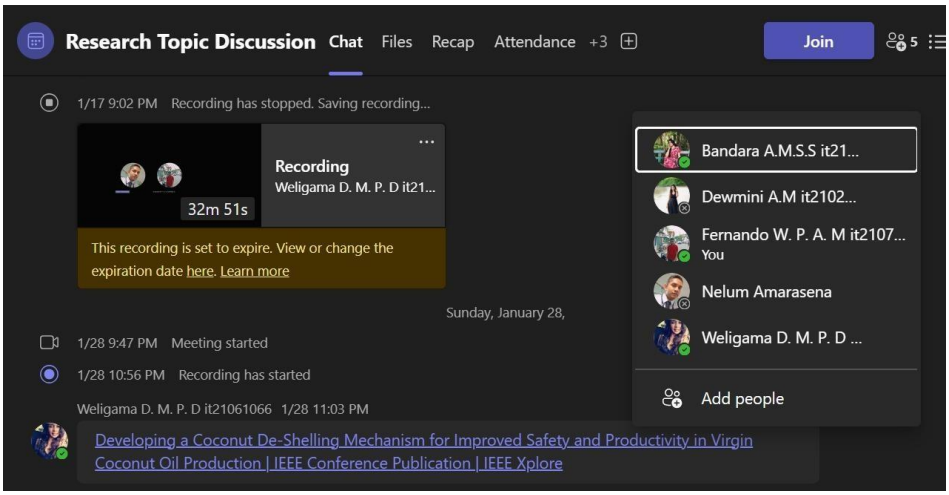

Figure 34-teams meeting with supervisor3

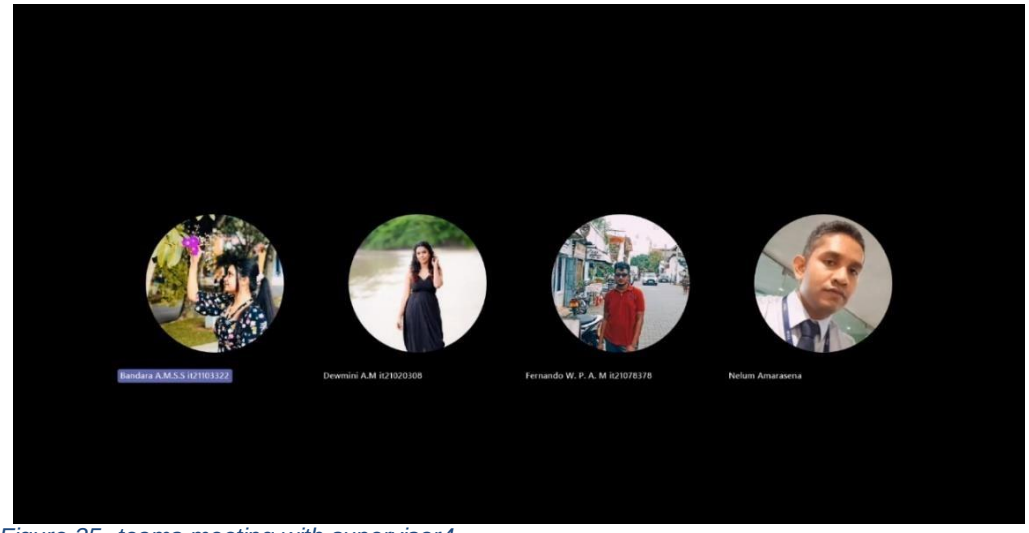

Figure 35--teams meeting with supervisor4

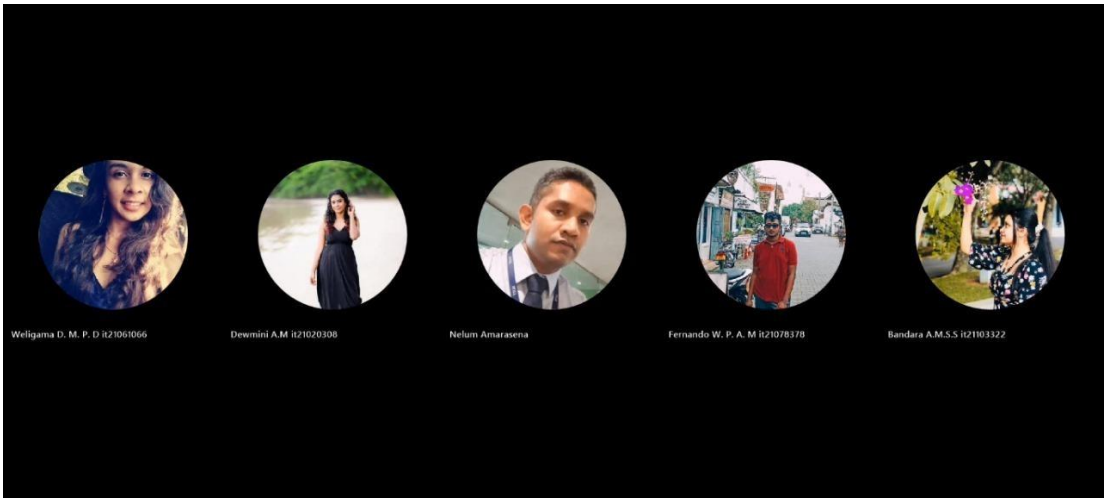

Figure 36-teams meeting with supervisor5

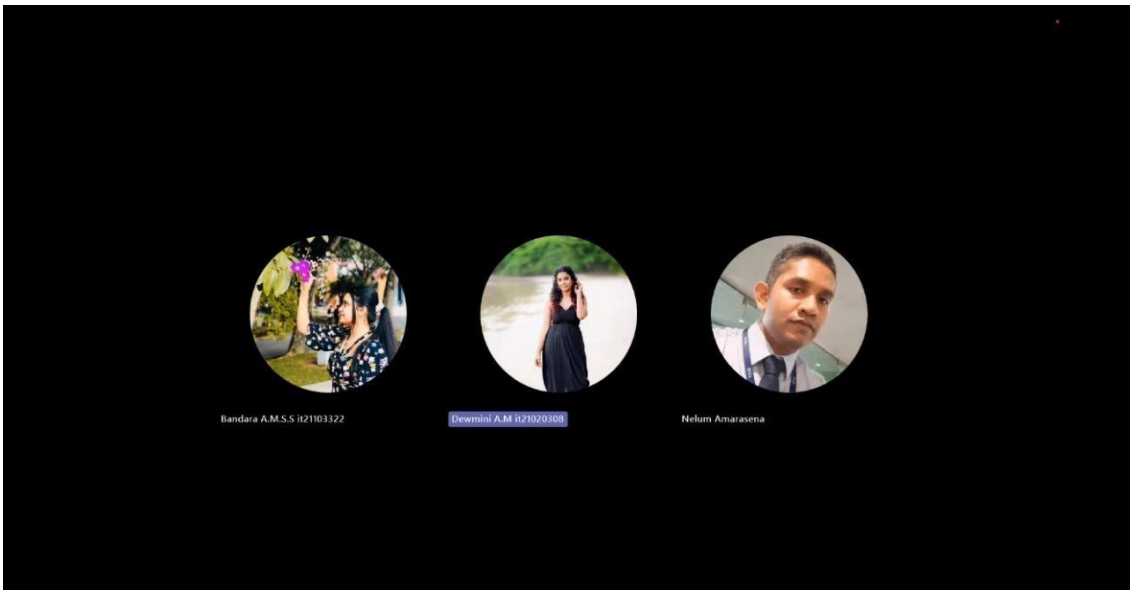

Figure 37-teams meeting with supervisor6

Project Timeline

A Gantt chart is a visual aid for project management that is used to display a project's chronology. It shows the beginning and ending dates of all project components, including tasks, milestones, and stages, along with the dependencies between them.

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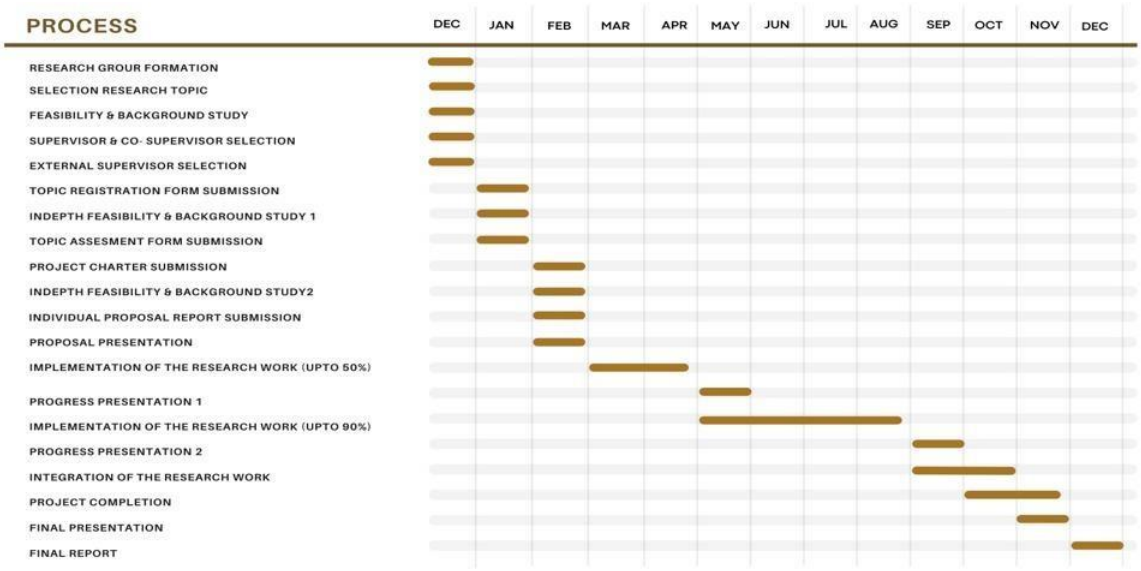

Figure 38-gantt chart

Work Break-Down

A project is broken down into smaller, easier-to-manage components using a hierarchical process called a work breakdown structure, or WBS. It facilitates project planning, execution, and control by breaking the project up into distinct deliverables and work packages.

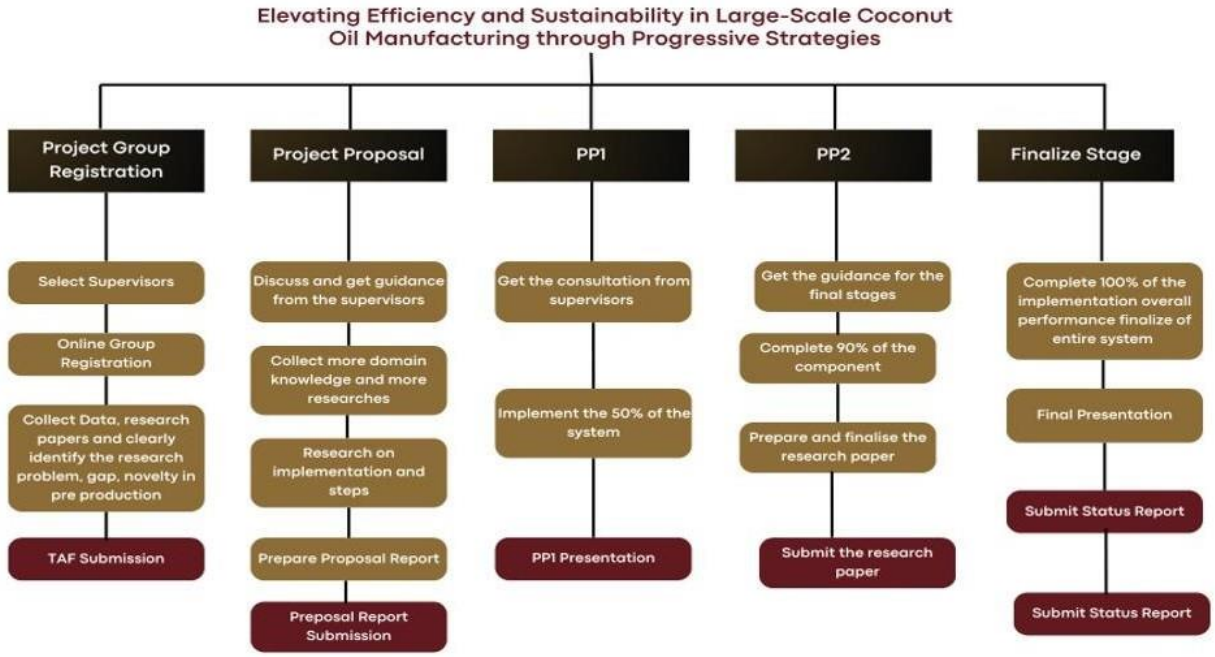

Figure 39-Work Break-Down Structure