

# **SYNEGETIC INNOVATION IN GHERKIN CULTIVATION**

**R24-010**

**Status Document - 1  
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## 01. Screenshots of the Teams Meeting

As per the instructions given by the RP team, the screenshots and the meetings of the MS teams were taken with our supervisor Dr. Dharshana Kasthurirathne and co-supervisor ms.Poojani Gunathilake, which is shown in the figures below.

Firstly, we created Channel for our research team in MS Teams

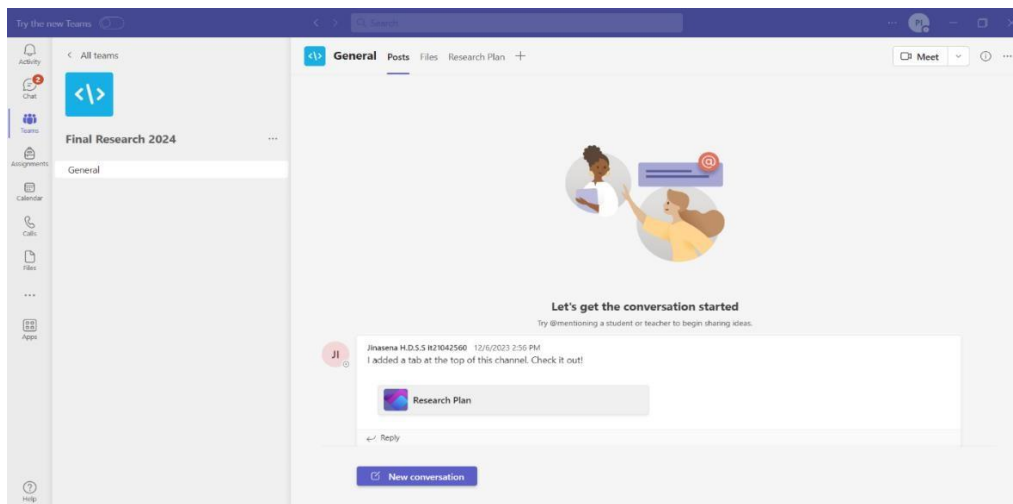


Figure 1 create teams channel.

Schedule a meeting to choose a research topic.

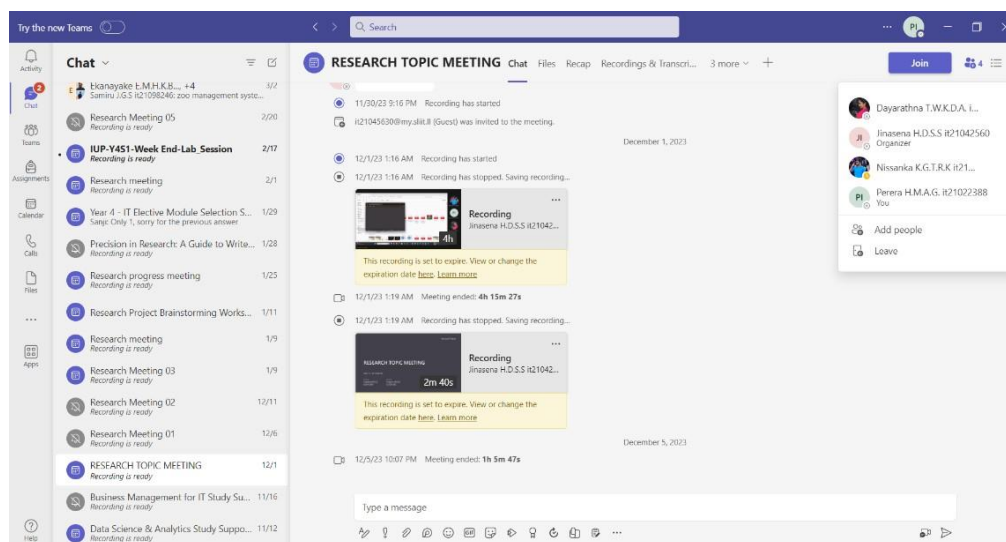


Figure 2 research topic meeting

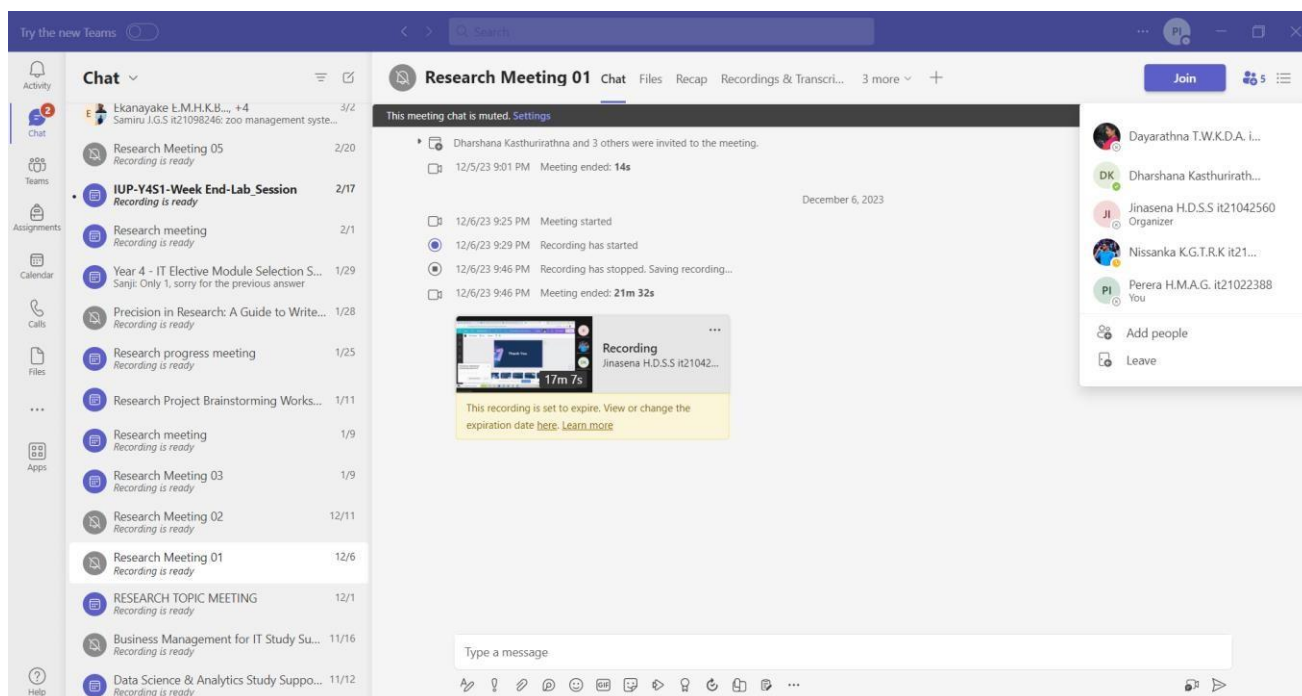


Figure 3 research meeting one

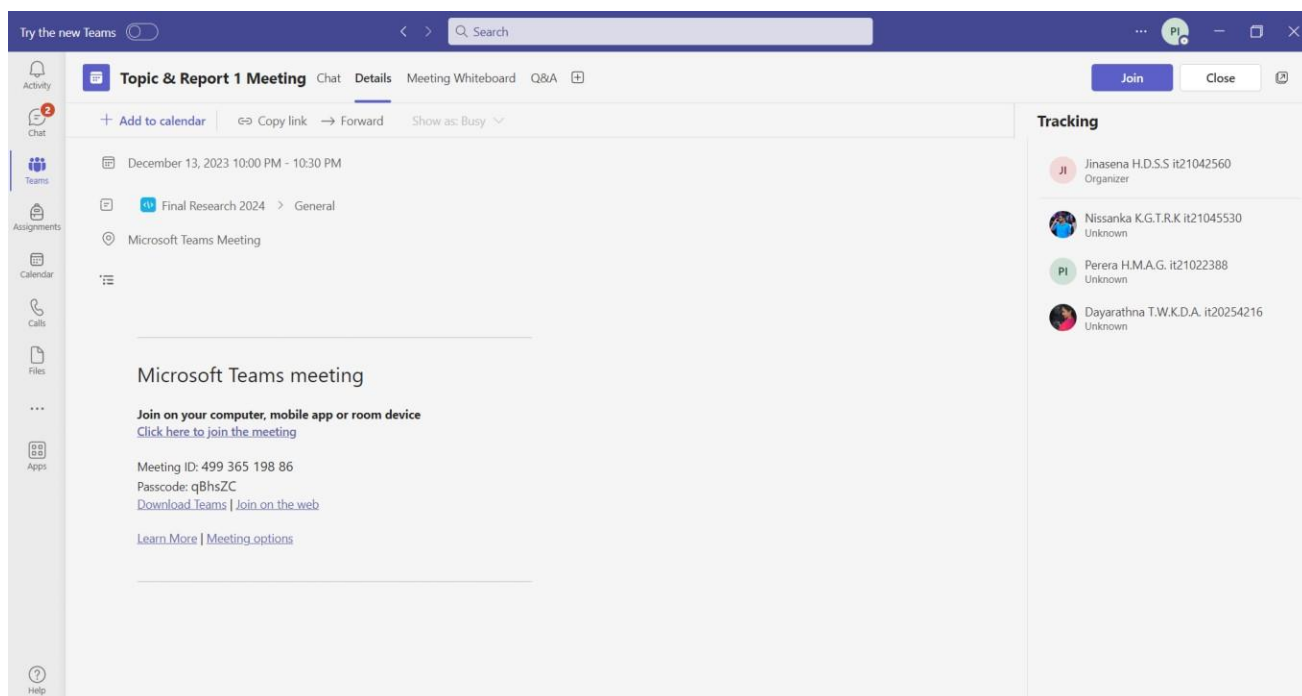


Figure 4 topic and report meeting

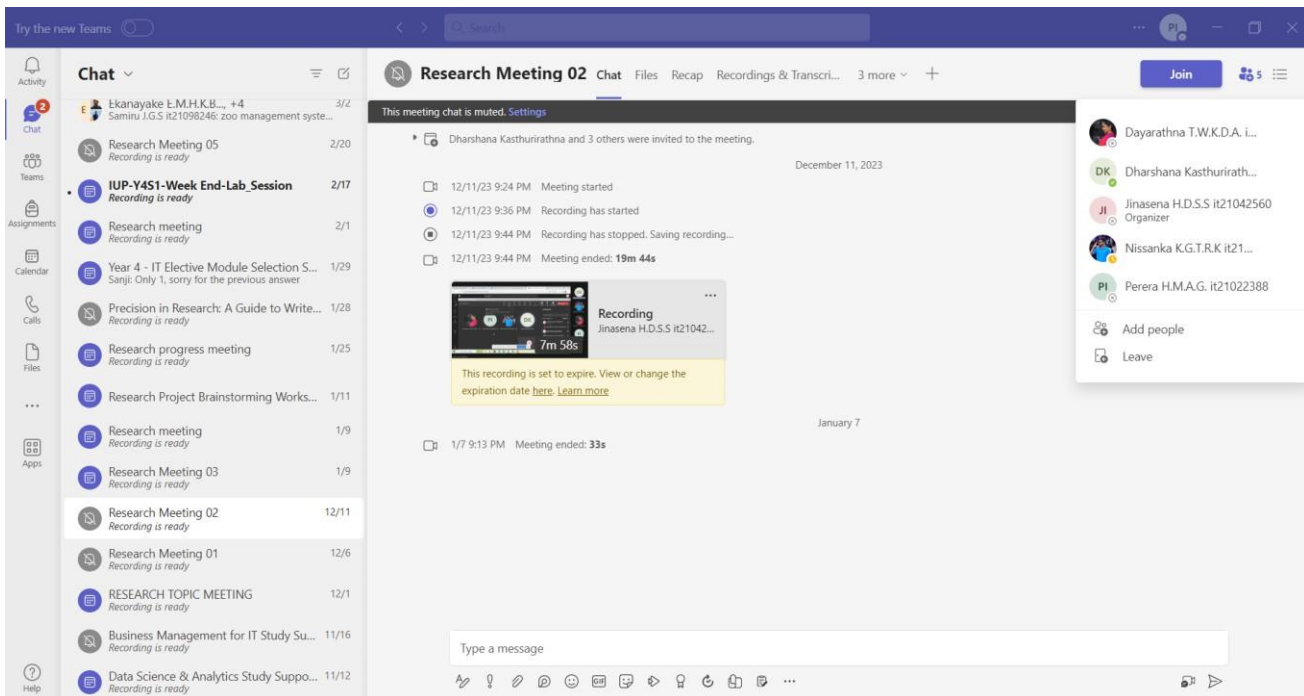


Figure 5 Research meeting 02

Show supervisor to our functions

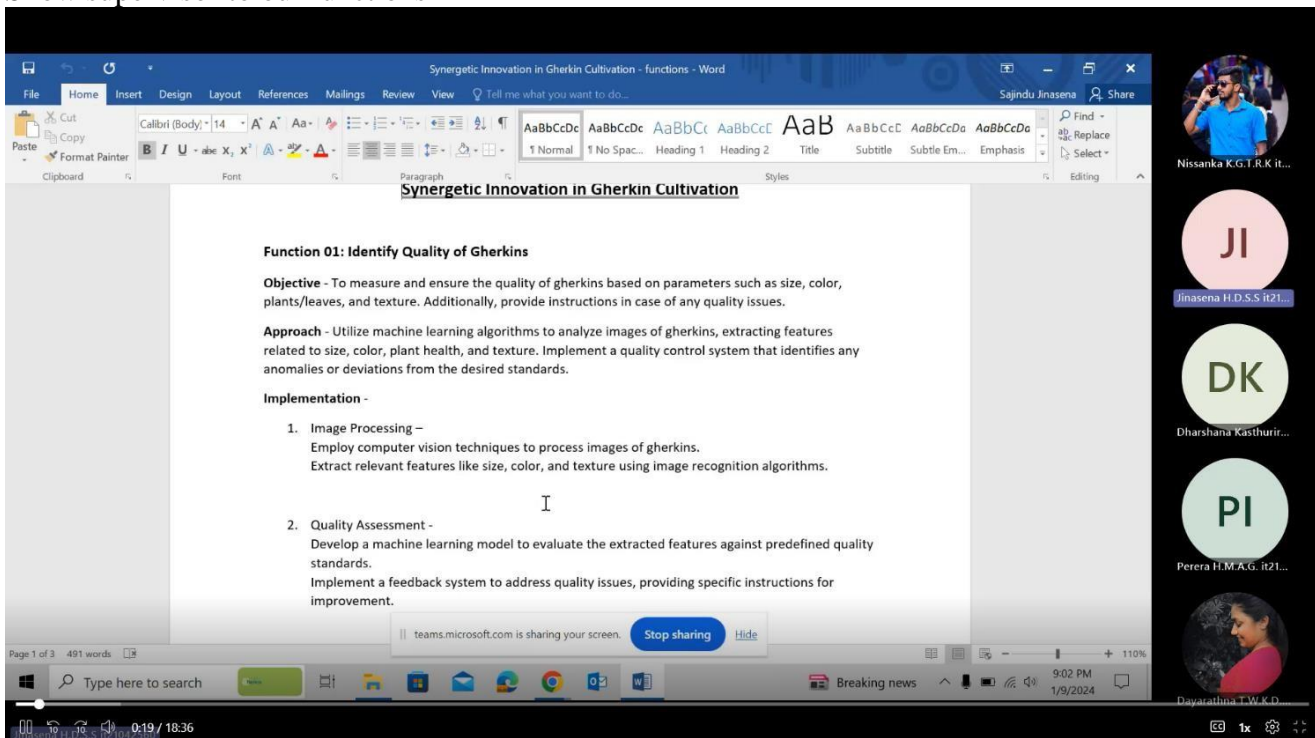


Figure 6 Resrach meeting with supervisor

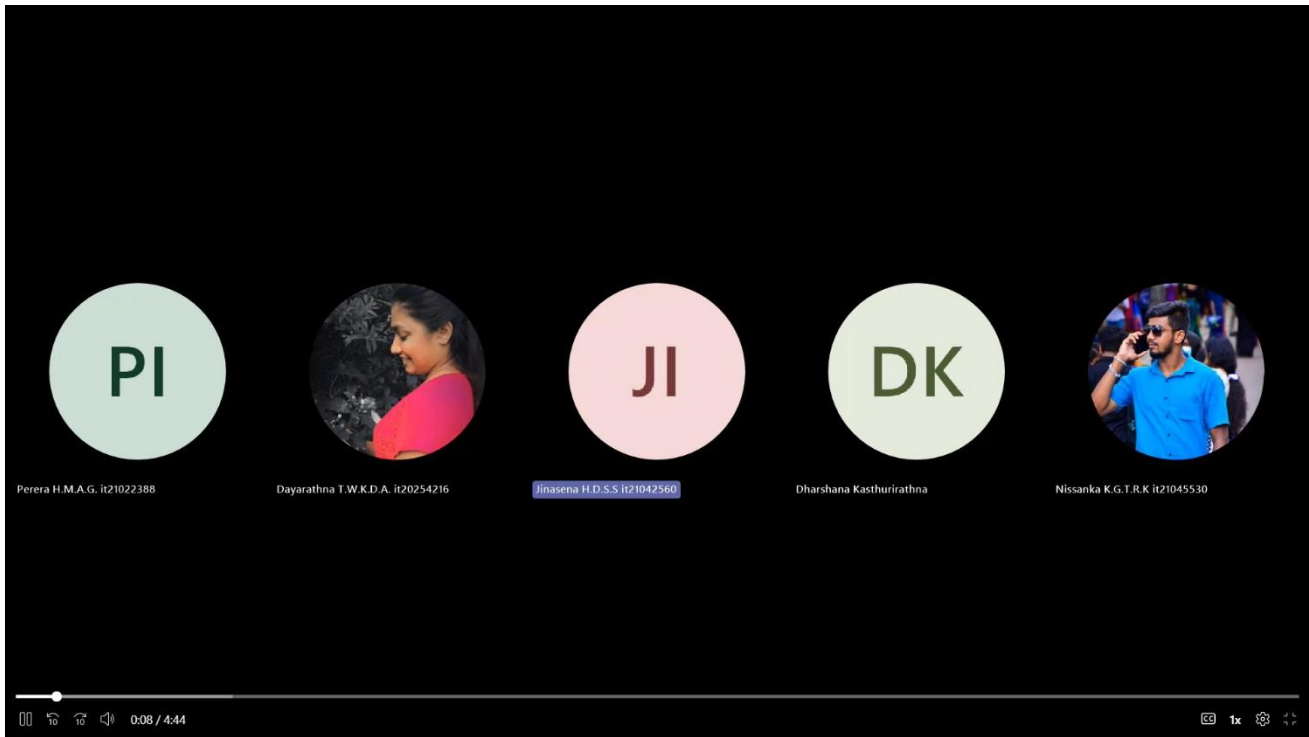


Figure 7 Reserch meeting 03

Clarify issues regarding components.

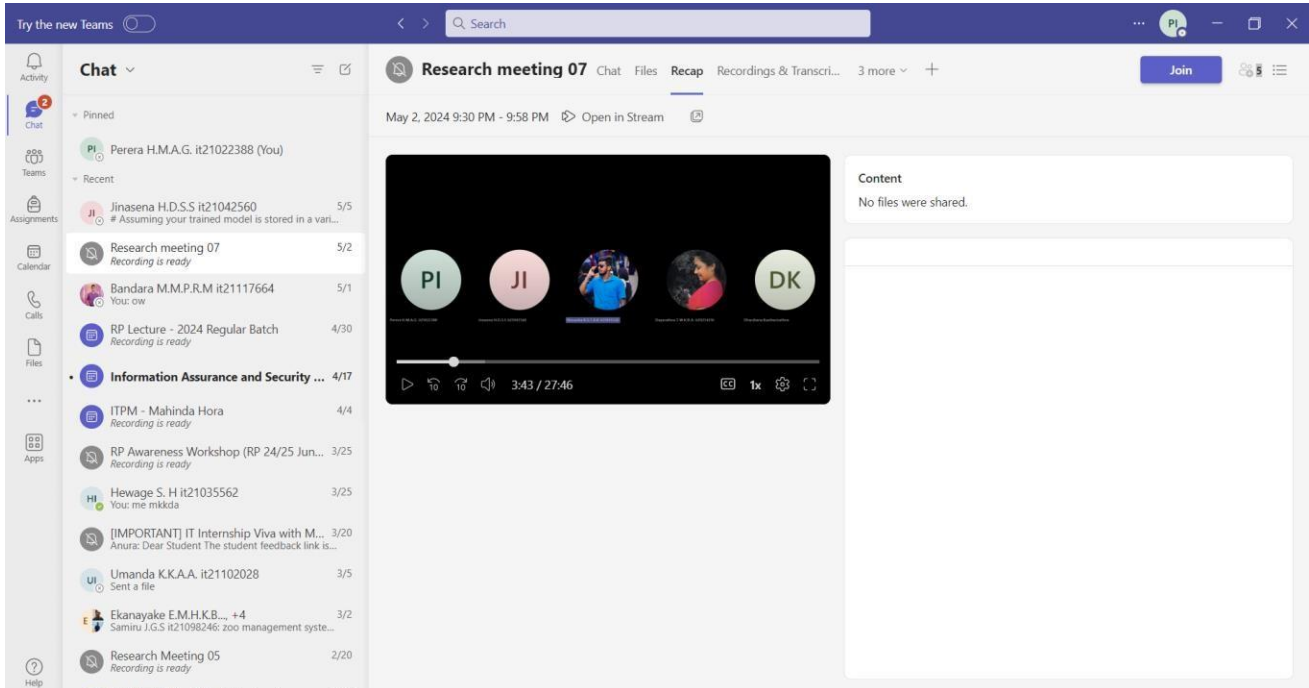


Figure 8 Reserach meeting 07

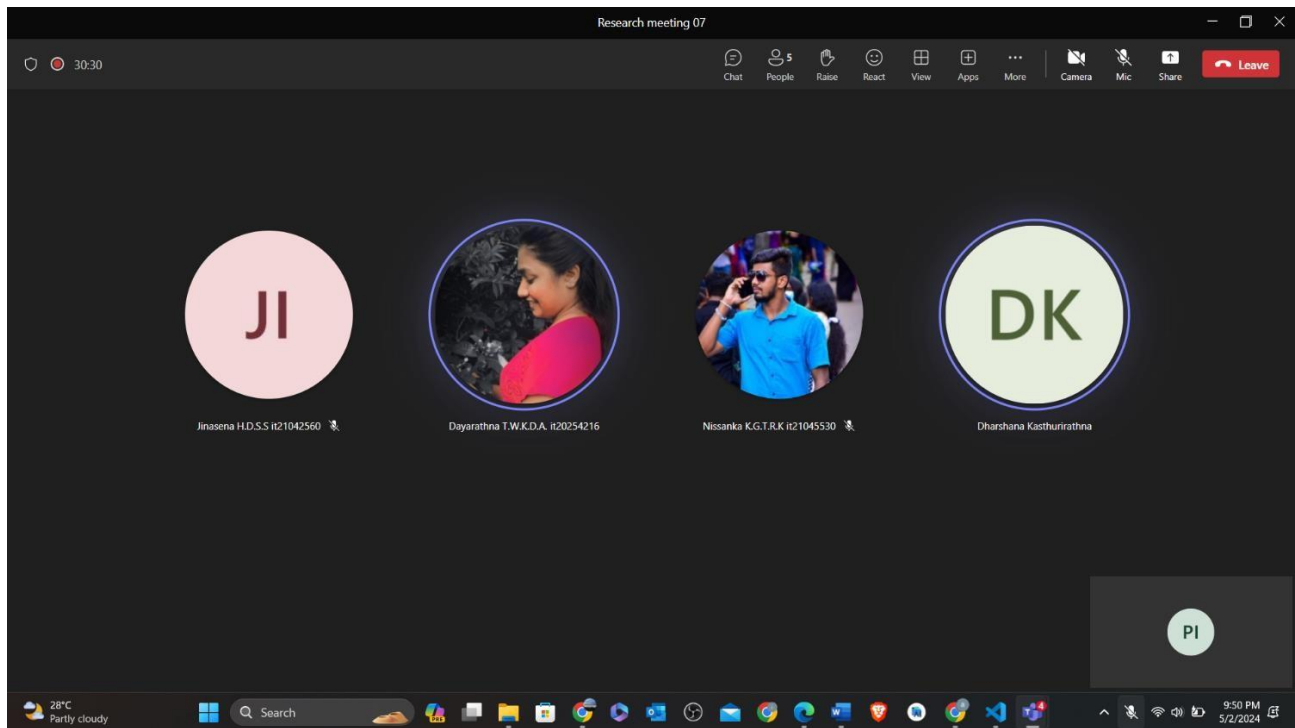


Figure 9 Research meeting with data classification

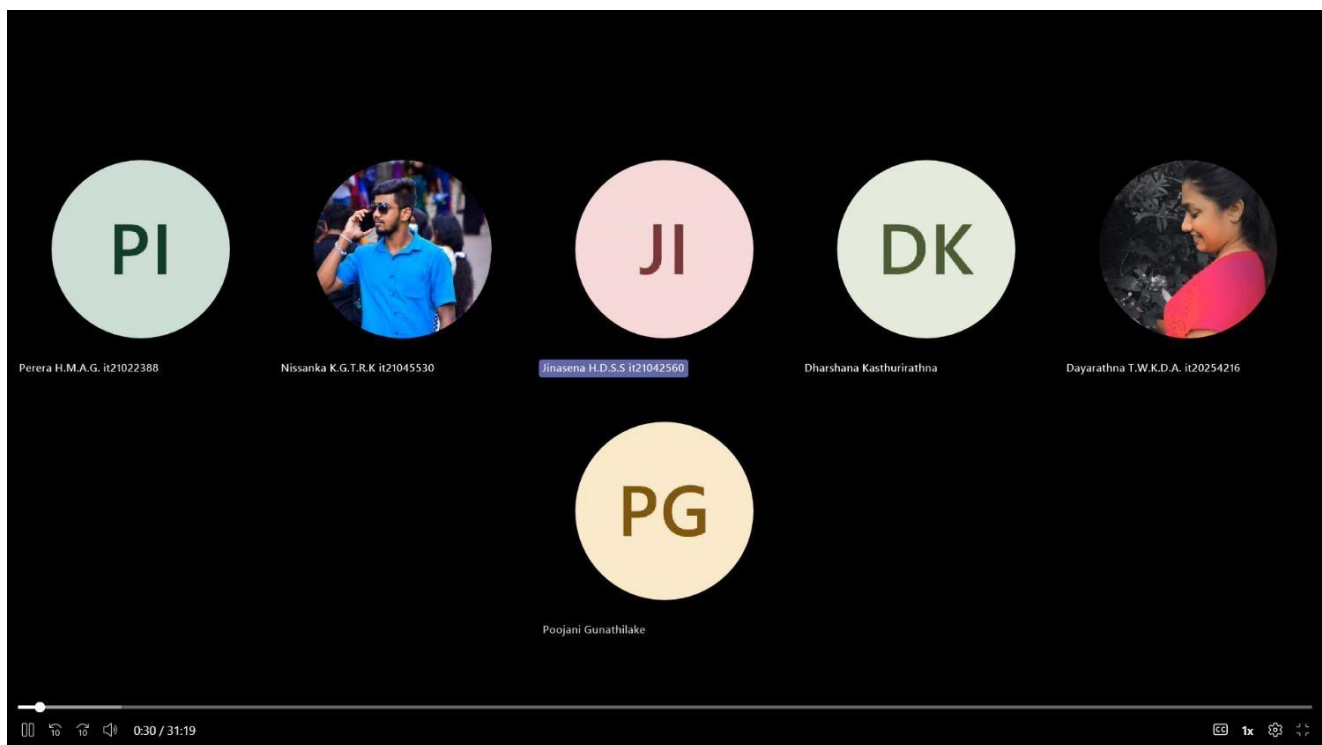


Figure 10 Reserach meeting with supervisor and co-supervisor



## 02. Screenshots of the Whats app group and chats



*Figure 11 Research WhatsApp group*

### 03. Create git Repository and branch.

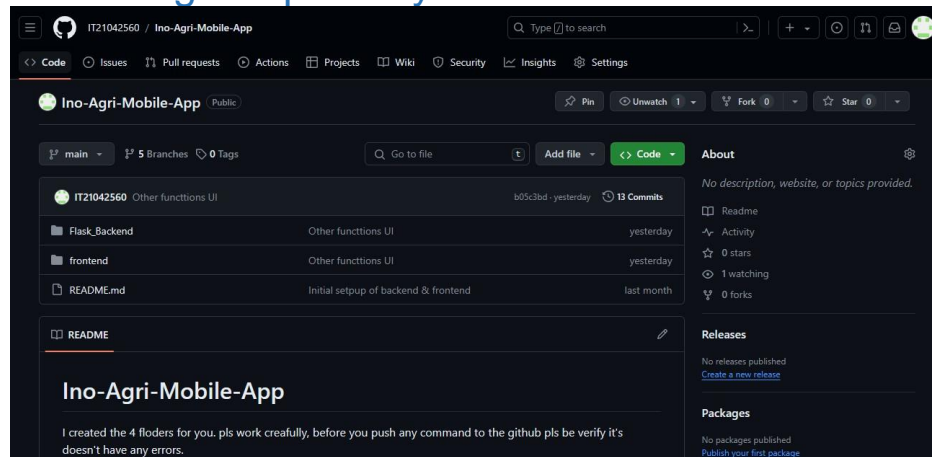
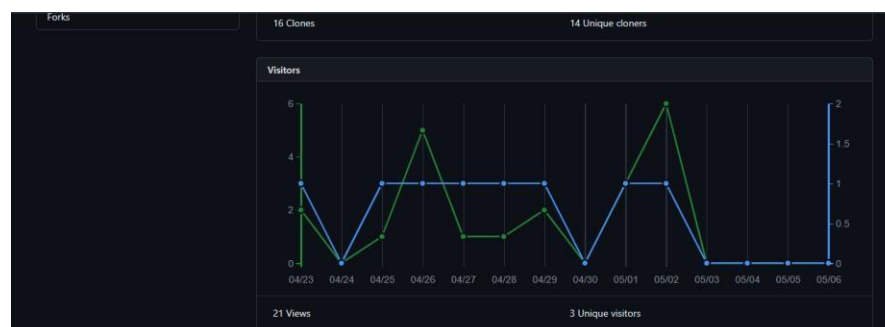
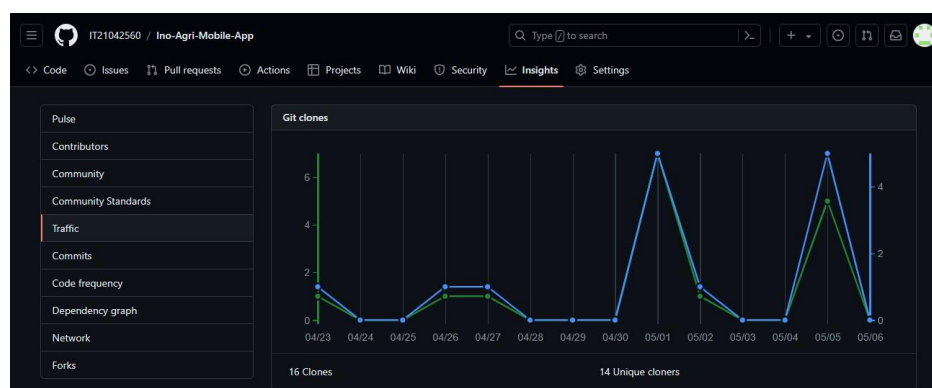


Figure 12 Github



Physical meetings with clients (Hayleys company)



*Figure 13 HJS visit*



*Figure 14 Meeting with hjs company*

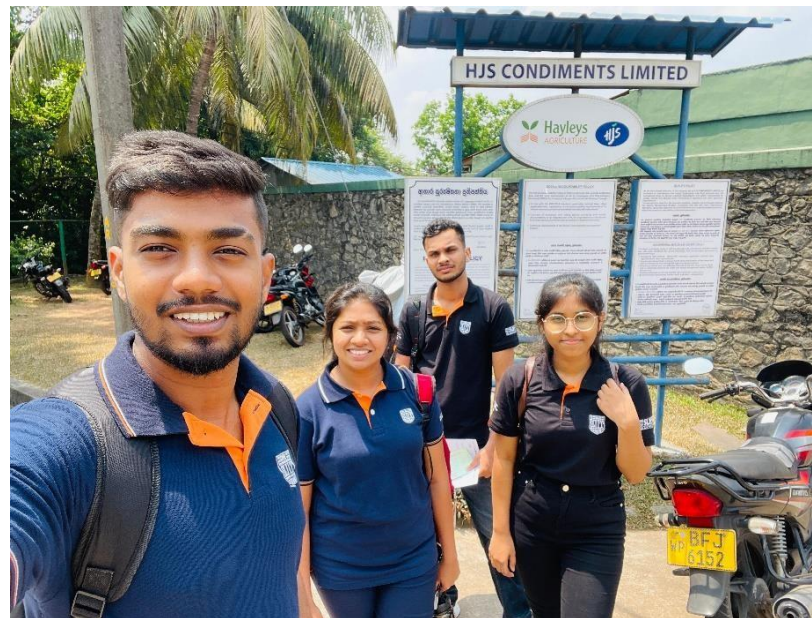


Figure 15 HJS Company



	<b>Board of Investment of Sri Lanka</b> <b>Export Processing Zone - Biyagama</b> <b>Temporary Entry Permit</b>	45/PO/ZM/18
<b>Gate No. :</b>	<b>1 Internal Request</b>	<b>Permit No. : 0003888753</b> <b>Request Ref. No. : 0002240527</b>
<b><u>Visitors / Suppliers / Businessmen / Contractors</u></b>		
<b>Date of Issue :</b>	19/02/2024 09:27AM	<b>Issued to :</b> H.D.S.JINASENA
<b>Identification No. :</b>	200032300967	<b>Place of Visit :</b> H.L.S. CONDEMENTS LTD. 134004363-1
<b>Purpose :</b>	Visitor	<b>Valid From :</b> 19/02/2024 <b>To :</b> 19/02/2024
<b>Rs.110.00/=</b> (Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000		 Authorized Officer
<b>NB : Individuals - National Identity Card to be produced along with the permit</b> <b>Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle</b>		

	<b>Board of Investment of Sri Lanka</b> <b>Export Processing Zone - Biyagama</b> <b>Temporary Entry Permit</b>	45/PO/ZM/18
<b>Gate No. :</b>	<b>1 Internal Request</b>	<b>Permit No. : 0003888754</b> <b>Request Ref. No. : 0002240527</b>
<b><u>Visitors / Suppliers / Businessmen / Contractors</u></b>		
<b>Date of Issue :</b>	19/02/2024 09:27AM	<b>Issued to :</b> H.M.A.G Perera
<b>Identification No. :</b>	200065600216	<b>Place of Visit :</b> H.L.S. CONDEMENTS LTD. 134004363-1
<b>Purpose :</b>	Visitor	<b>Valid From :</b> 19/02/2024 <b>To :</b> 19/02/2024
<b>Rs.110.00/=</b> (Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000		 Authorized Officer
<b>NB : Individuals - National Identity Card to be produced along with the permit</b> <b>Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle</b>		

	<b>Board of Investment of Sri Lanka</b> <b>Export Processing Zone - Biyagama</b> <b>Temporary Entry Permit</b>	45/PO/ZM/18
<b>Gate No. :</b>	<b>1 Internal Request</b>	<b>Permit No. : 0003888755</b> <b>Request Ref. No. : 0002240527</b>
<b><u>Visitors / Suppliers / Businessmen / Contractors</u></b>		
<b>Date of Issue :</b>	19/02/2024 09:27AM	<b>Issued to :</b> K.O.T.R.K. Nimsaka
<b>Identification No. :</b>	20013302165	<b>Place of Visit :</b> H.L.S. CONDEMENTS LTD. 134004363-1
<b>Purpose :</b>	Visitor	<b>Valid From :</b> 19/02/2024 <b>To :</b> 19/02/2024
<b>Rs.110.00/=</b> (Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000		 Authorized Officer
<b>NB : Individuals - National Identity Card to be produced along with the permit</b> <b>Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle</b>		

	<b>Board of Investment of Sri Lanka</b> <b>Export Processing Zone - Biyagama</b> <b>Temporary Entry Permit</b>	45/PO/ZM/18
<b>Gate No. :</b>	<b>1 Internal Request</b>	<b>Permit No. : 0003888756</b> <b>Request Ref. No. : 0002240527</b>
<b><u>Visitors / Suppliers / Businessmen / Contractors</u></b>		
<b>Date of Issue :</b>	19/02/2024 09:27AM	<b>Issued to :</b> T.W.K.D.A. Duganathana
<b>Identification No. :</b>	996040628v	<b>Place of Visit :</b> H.L.S. CONDEMENTS LTD. 134004363-1
<b>Purpose :</b>	Visitor	<b>Valid From :</b> 19/02/2024 <b>To :</b> 19/02/2024
<b>Rs.110.00/=</b> (Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000		 Authorized Officer
<b>NB : Individuals - National Identity Card to be produced along with the permit</b> <b>Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle</b>		

Figure 16 Gate pass for *hjs1*

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003909572	Request Ref. No. : 0002253060
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 11/03/2024 09:27AM	Issued to : Jansena B.D.S		
Identification No. : 20003280967	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 11/03/2024 To : 11/03/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003909573	Request Ref. No. : 0002253060
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 11/03/2024 09:27AM	Issued to : H.M.A.G Perera		
Identification No. : 20006300216	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 11/03/2024 To : 11/03/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003909574	Request Ref. No. : 0002253060
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 11/03/2024 09:27AM	Issued to : Nimesha K.L.L.R.		
Identification No. : 20013102165	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 11/03/2024 To : 11/03/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003909575	Request Ref. No. : 0002253060
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 11/03/2024 09:27AM	Issued to : T.W.A.D.A. Jayarathna		
Identification No. : 090604062V	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 11/03/2024 To : 11/03/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Figure 17 gate pass for hjs 2

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003942950	Request Ref. No. : 0002272573
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 10/04/2024 10:33AM	Issued to : Jansena B.D.S		
Identification No. : 20003280967	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 10/04/2024 To : 10/04/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003942951	Request Ref. No. : 0002272573
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 10/04/2024 10:33AM	Issued to : Prietha B.D.S		
Identification No. : 20006300216	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 10/04/2024 To : 10/04/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003942952	Request Ref. No. : 0002272573
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 10/04/2024 10:33AM	Issued to : Nimesha K.L.L.R.		
Identification No. : 20013102165	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 10/04/2024 To : 10/04/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Board of Investment of Sri Lanka Export Processing Zone - Biyagama		Temporary Entry Permit	
Gate No. : 1	Internal Request	Permit No. : 0003942953	Request Ref. No. : 0002272573
Visitors / Suppliers / Businessmen / Contractors			
Date of Issue : 10/04/2024 10:33AM	Issued to : Dhaneshwari W.K.S.		
Identification No. : 090604062V	Place of Visit : H.J.A. CONDIMENTS LTD. 14060403-1		
Purpose : Visitor	Valid From : 10/04/2024 To : 10/04/2024		
Purpose : Rs.110.00/-			
(Inclusive of applicable VAT) VAT Reg. No. : 409038018-7000			
NB : Individuals - National Identity Card to be produced along with the permit Vehicle - This permit must be displayed on the top left hand corner of the wind screen of the vehicle			

Figure 18 Gate pass for hjs 3

## 04. Agreement with the client to get the dataset.

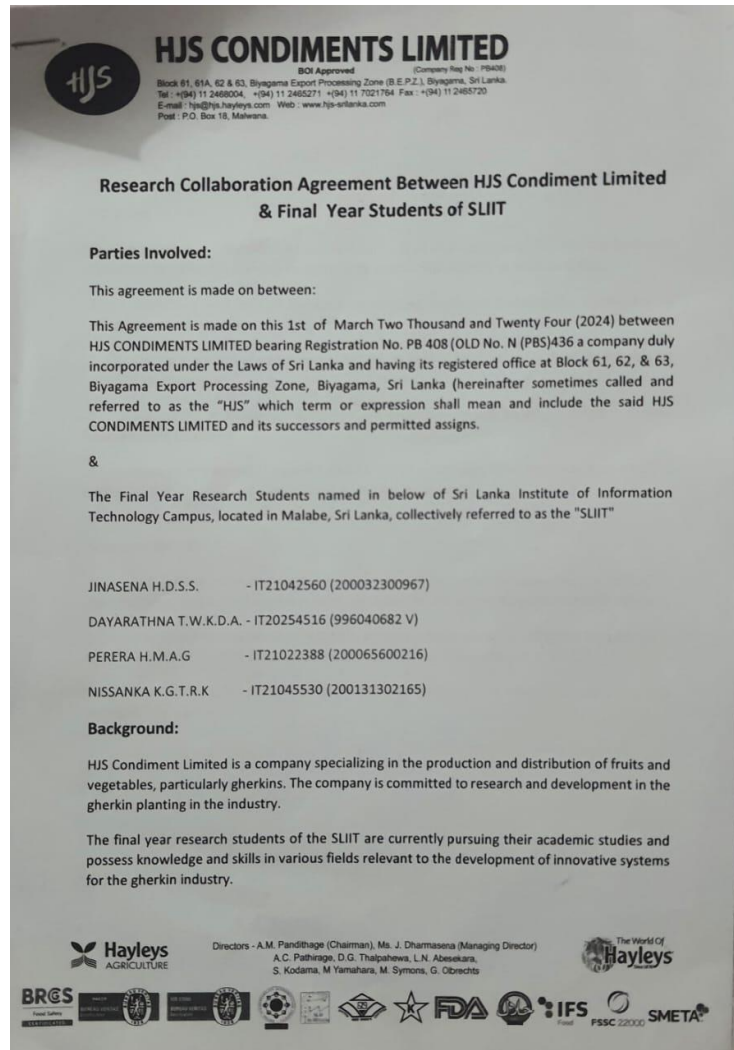
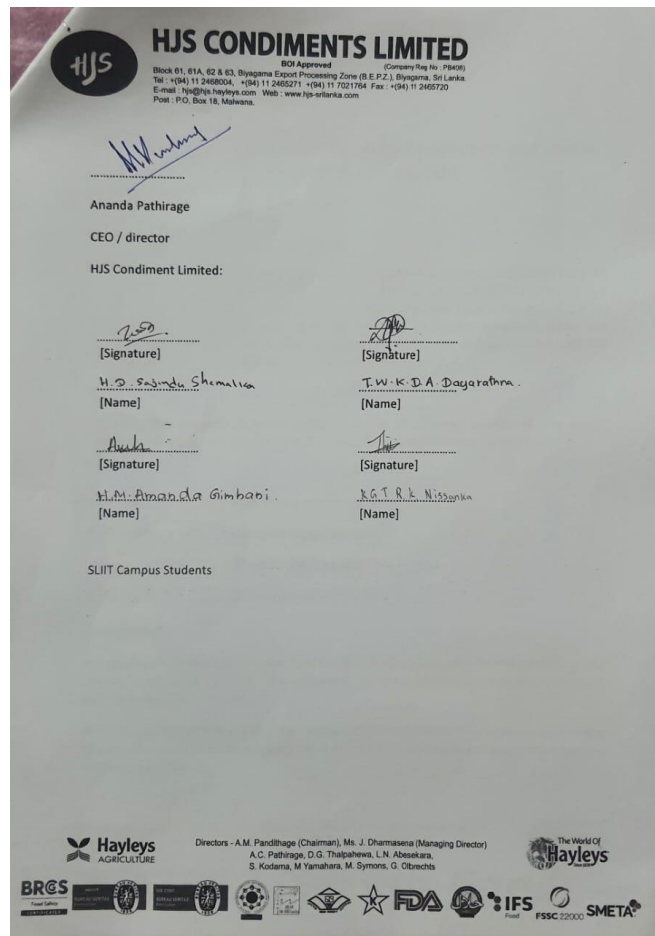


Figure 19 HJS Legal Agreement



## 05. MS Teams meetings and chats with the clients (Hayleys company)

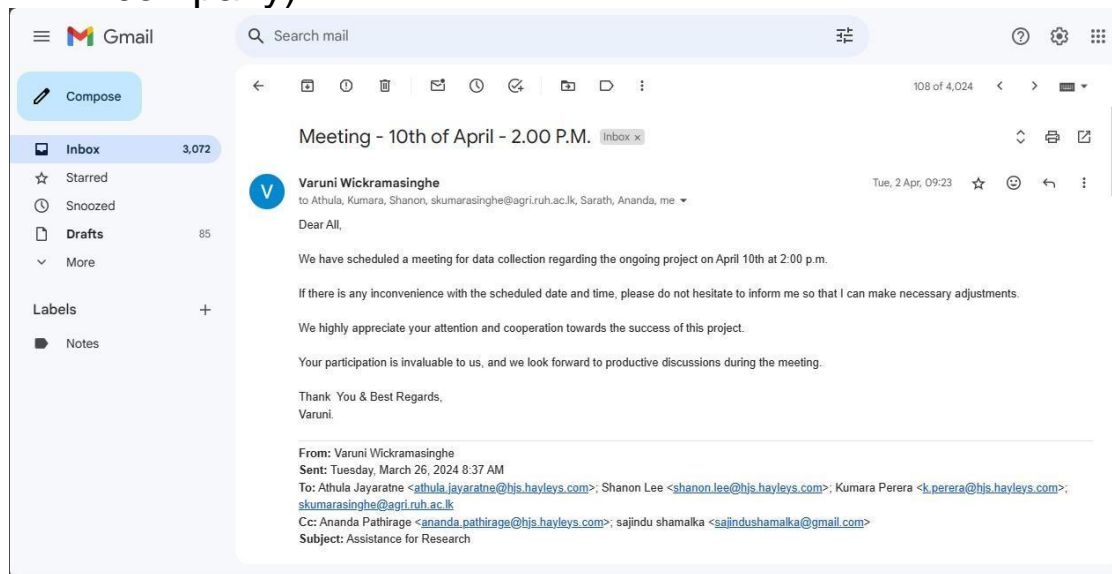


Figure 20 Mail with hjs madam 1



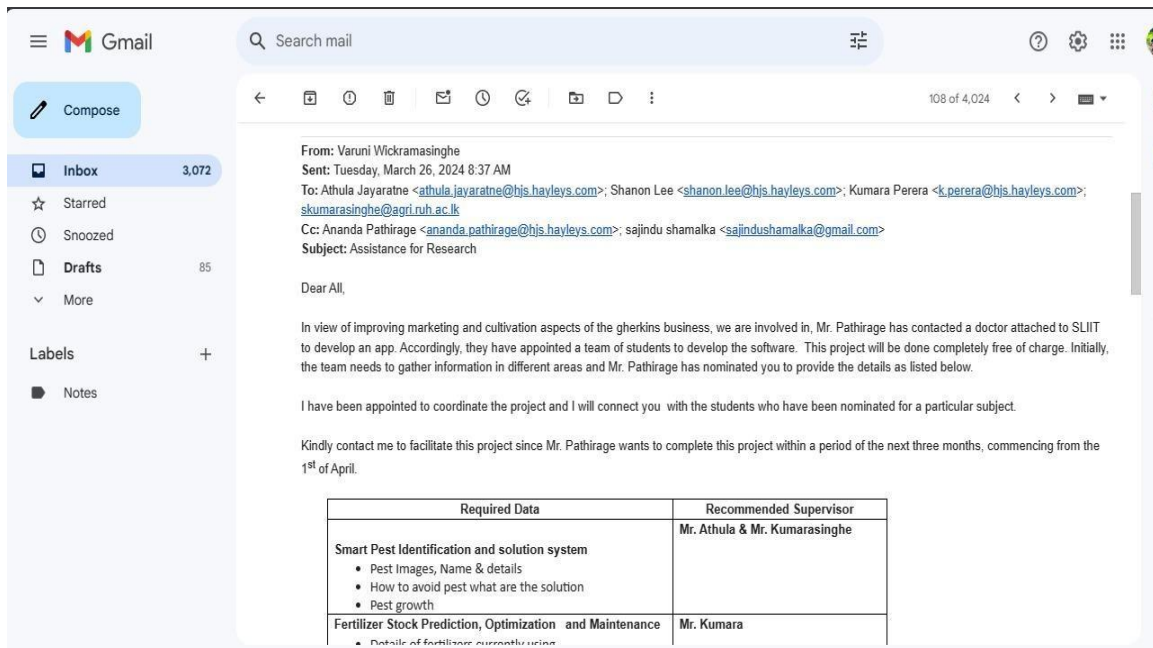
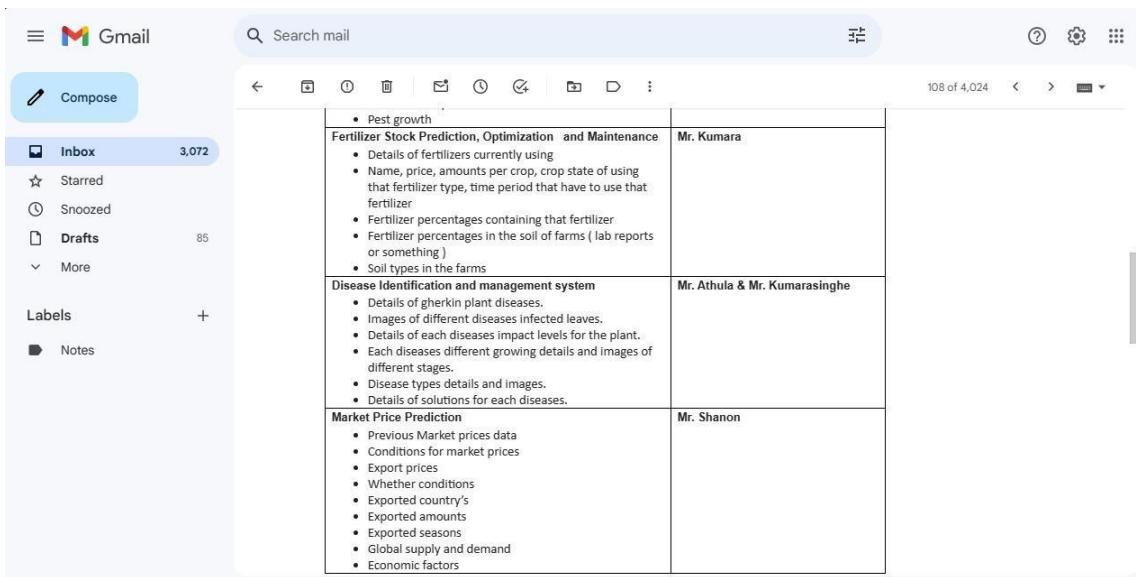
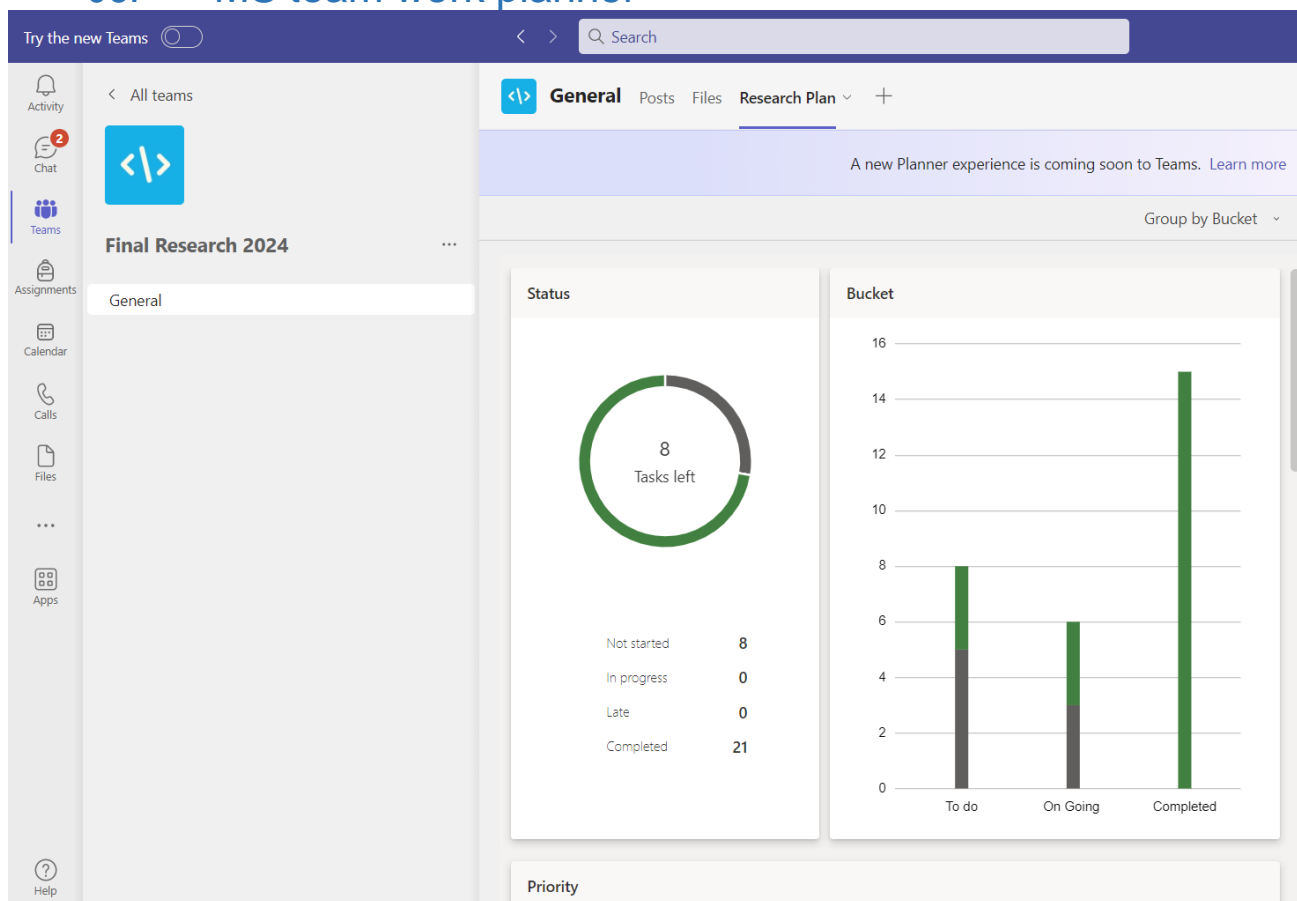


Figure 21 mail with hjs madam



## 06. MS team work planner



## 07. Updated Gantt chart of finalize Design & implementation phases



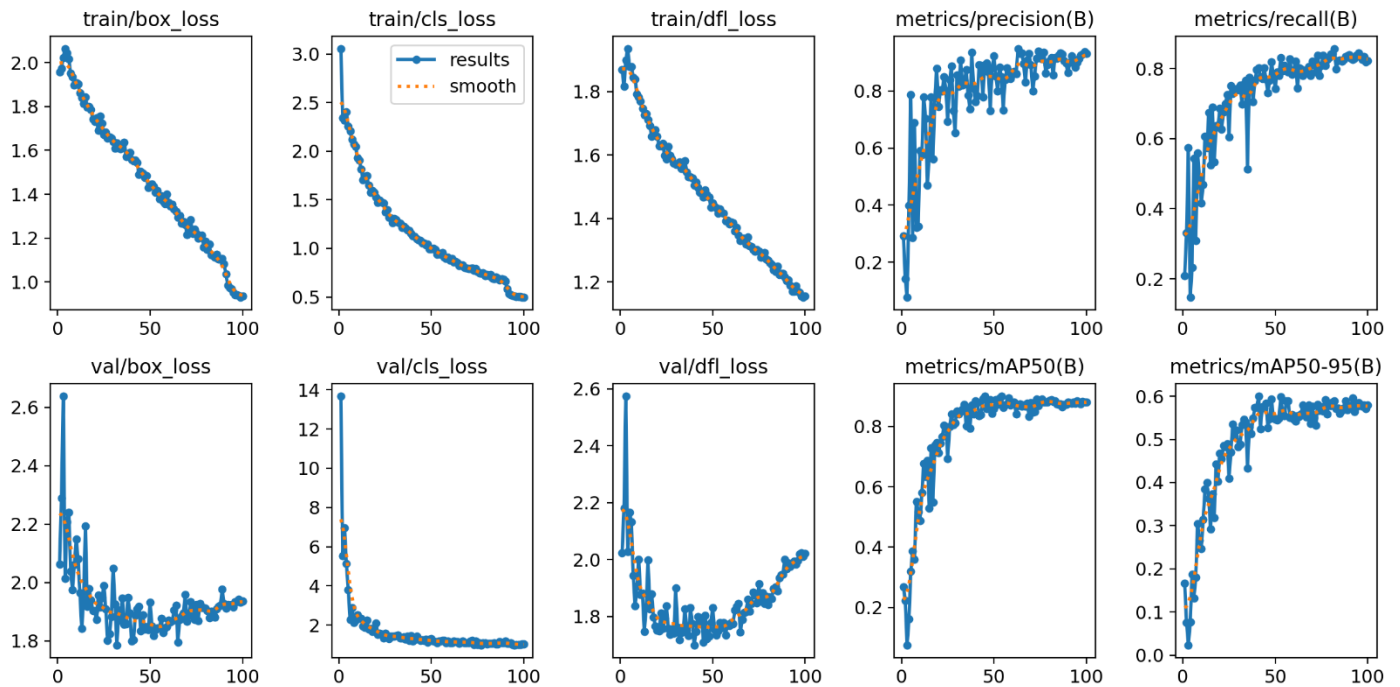
## Data Collection – Field Visits

We went Nikaweratiya to collect data and field visit.



## 08. Project Completion

### Yolov8 Model



24. Result in yolov8

```
# -----Yolov8 object detection-----
# Load yolo model
model = YOLO("pest_model.pt")
# Load input image
results = model.predict(upload_path)
# Get the result
result = results[0]
len(result.bboxes)
box = result.bboxes[0]
cords = box.xyxy[0].tolist()
class_id = result.names[box.cls[0].item()]
conf = round(box.conf[0].item(), 2)

if class_id == "Thirps":
    class_id = "Thrips"

yolo_prediction = {
    'object_type': class_id,
    'probability': conf
}
```

25.Backend model to identify Pest using yolov8

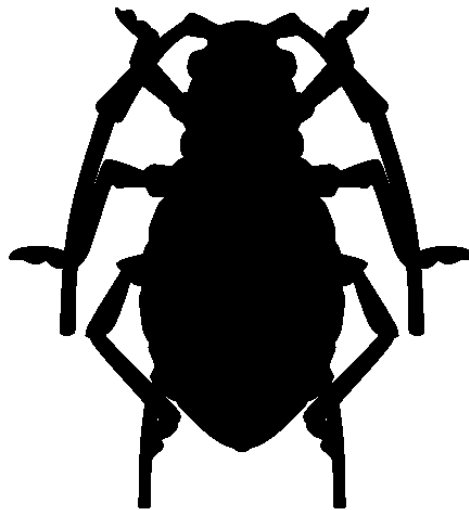
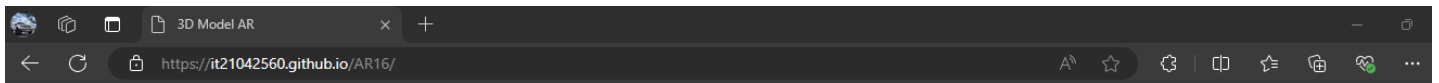


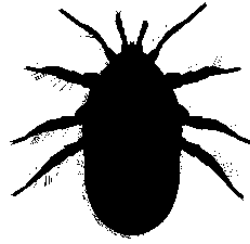
```

# -----Inception V8 computer vision-----
# Load your custom Keras model
model_path = './pest_classify_model.h5'
model = load_model(model_path)
# Create the label names
class_names = ['Apsids', 'Catterpillar', 'Leaf miner', 'Mites', 'Thrips', 'Whiteflies']
# Preprocess the image
preprocessed_image = preprocess_image(upload_path)
# Make prediction
prediction = model.predict(preprocessed_image)
# Get probabilities
predicted_class_index = np.argmax(prediction)
predicted_class = class_names[predicted_class_index]
probability = round(prediction[0][predicted_class_index] * 100, 2) # Converting to percentage

```

26. Backend model to identify pest using inception v3





27. AR Feature to identify each pest





28. Meeting Demo with HJS





29. Meeting Demo with co-supervisor