

UNIFIED DLP SOLUTIONS FOR EMAIL SYSTEM

Project Id: TMP-2023-24-082

Status Document - 01

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Specialization in Cyber Security

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December 2023

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Screenshots of Microsoft Teams Meetings

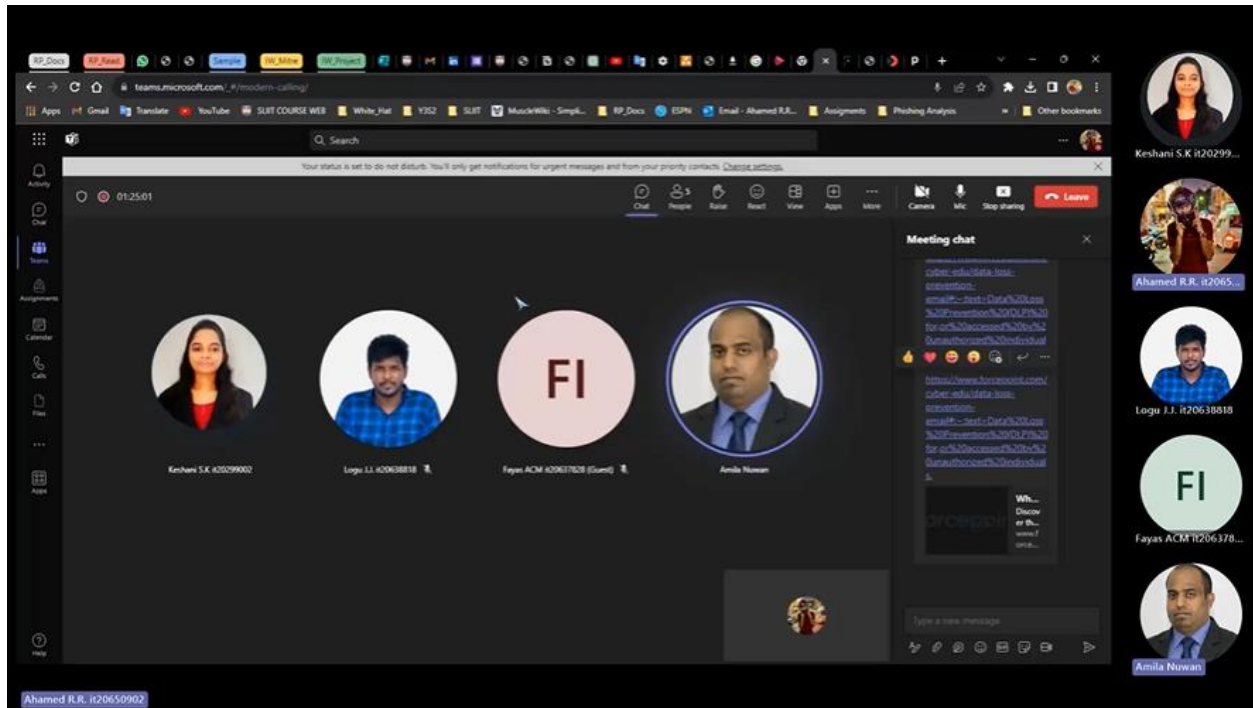


Figure 1: MS Teams Meeting with Supervisor

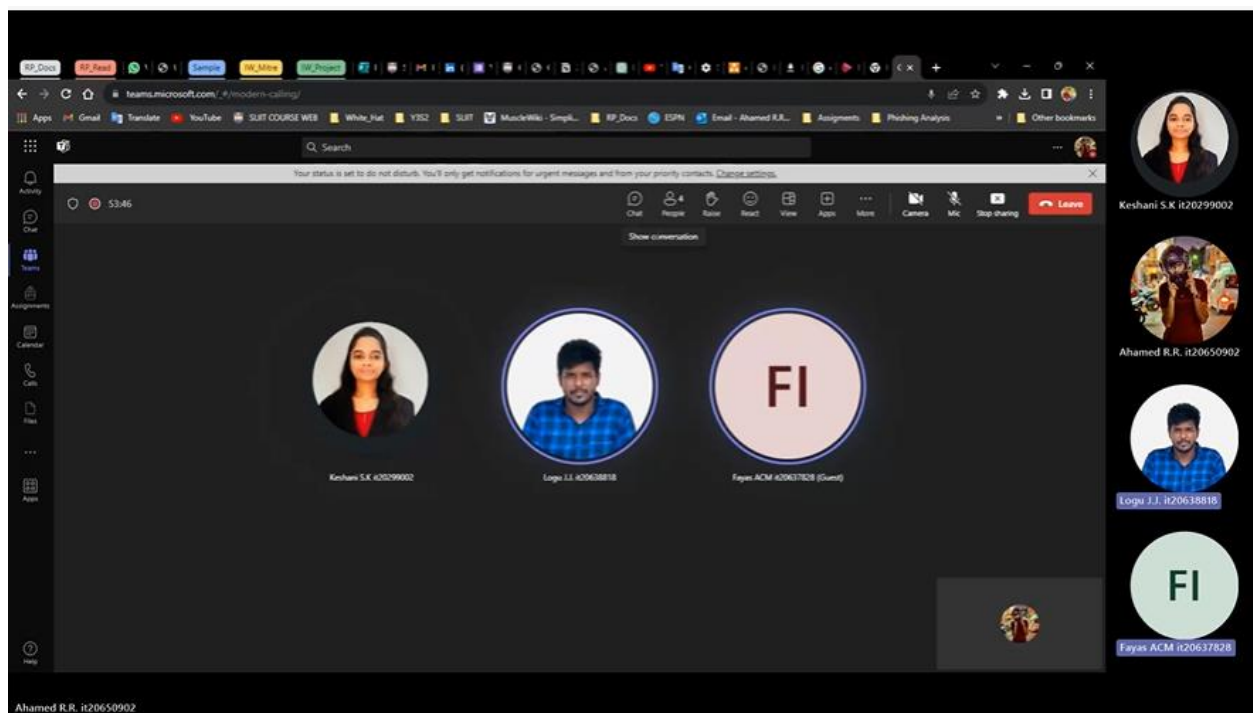


Figure 2: MS Teams Meeting with Team Members

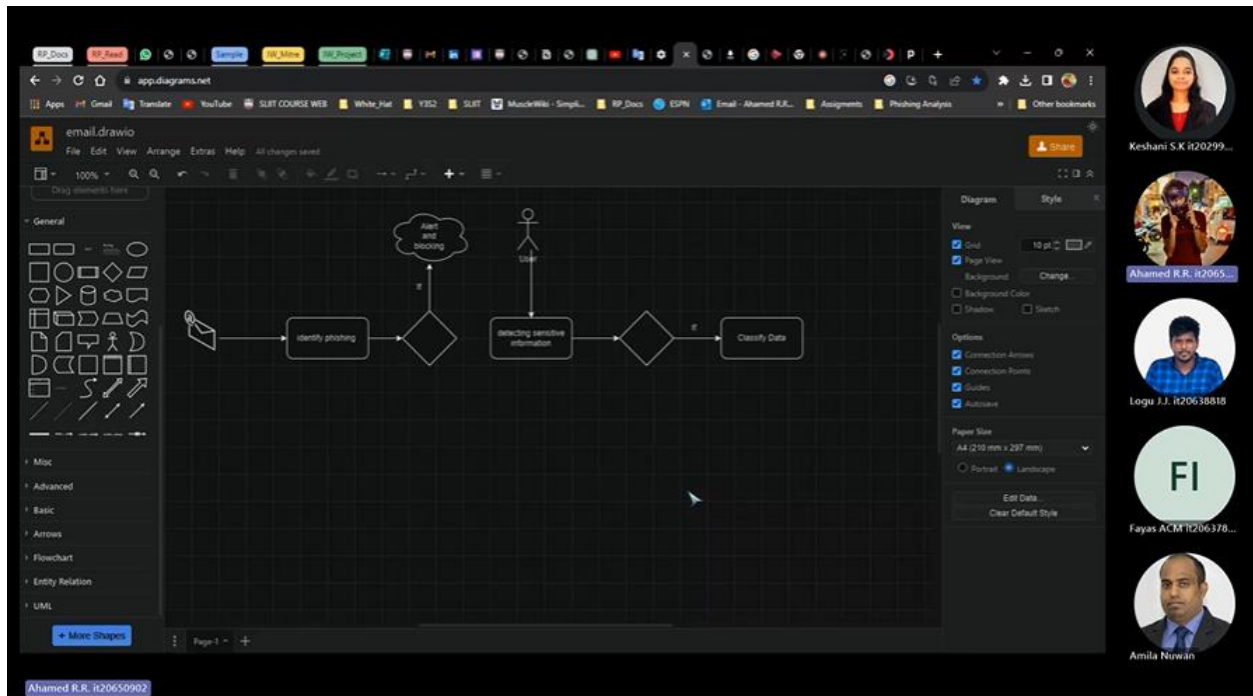


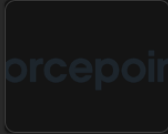
Figure 3: Ms Teams Meeting with Supervisor

Project components Discussion
Wednesday, September 20, 2023 7:30 PM

Join all on time.
Thank you

4 replies from Keshani S.K it20299002 and Amila Nuwan

Amila Nuwan 9/20 7:46 PM
[https://www.forcepoint.com/cyber-edu/data-loss-prevention-email#:~:text=Data%20Loss%20Prevention%20\(DLP\)%20for,or%20accessed%20by%20unauthorized%20individuals.](https://www.forcepoint.com/cyber-edu/data-loss-prevention-email#:~:text=Data%20Loss%20Prevention%20(DLP)%20for,or%20accessed%20by%20unauthorized%20individuals.)
[https://www.forcepoint.com/cyber-edu/data-loss-prevention-email#:~:text=Data%20Loss%20Prevention%20\(DLP\)%20for,or%20accessed%20by%20unauthorized%20individuals.](https://www.forcepoint.com/cyber-edu/data-loss-prevention-email#:~:text=Data%20Loss%20Prevention%20(DLP)%20for,or%20accessed%20by%20unauthorized%20individuals.)



What Is Data Loss Prevention for Email?
Discover the power of Data Loss Prevention for Email in protecting your valuable data and explore Forcepoint's...
www.forcepoint.com

9/20 11:02 PM Meeting ended: 4h 31m 23s

Figure 4: MS Teams Chat

WhatsApp Group Chats...

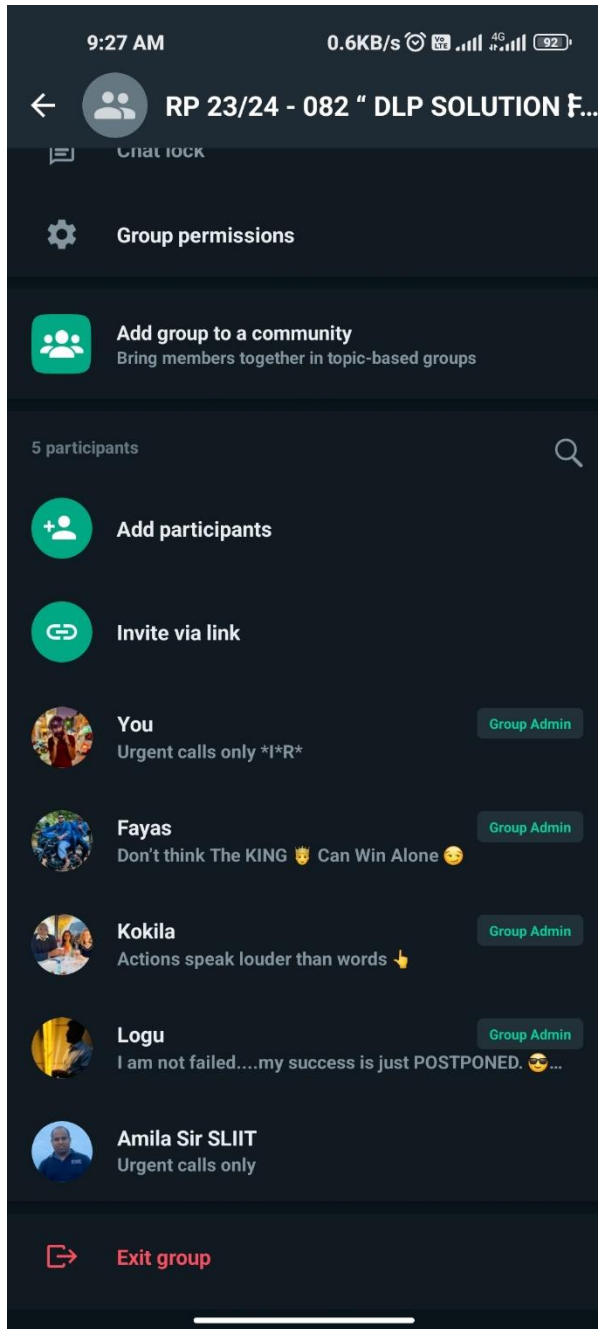


Figure 5: WhatsApp Group with Supervisor

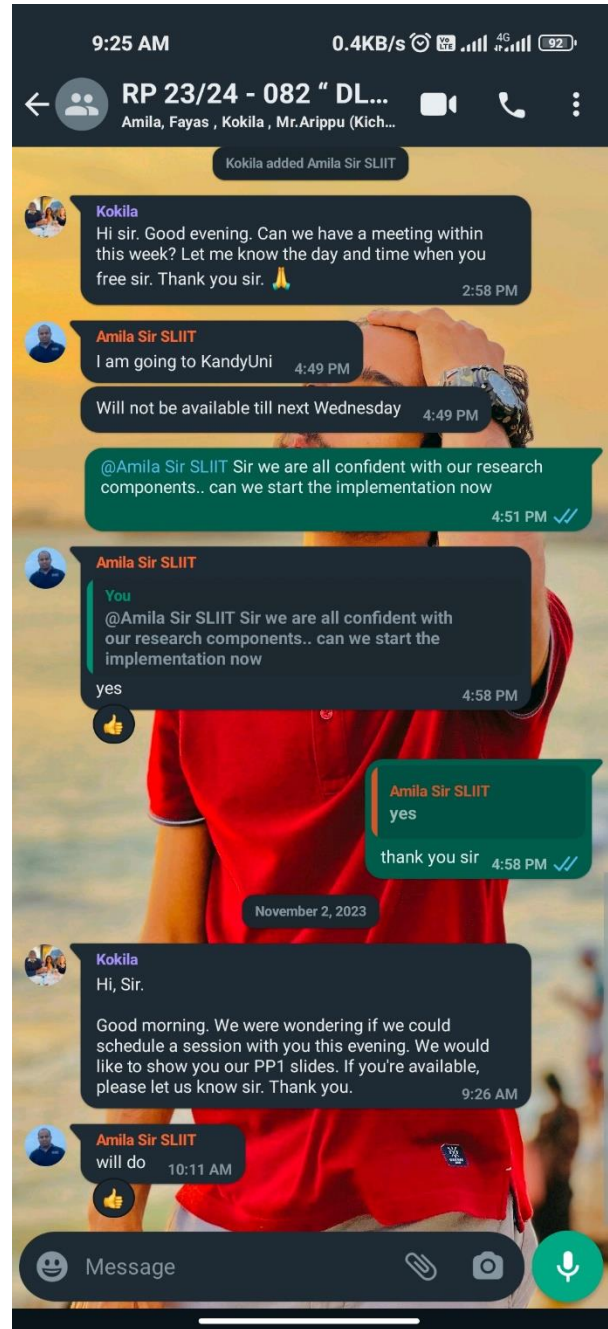


Figure 6: WhatsApp Group chats with Supervisor

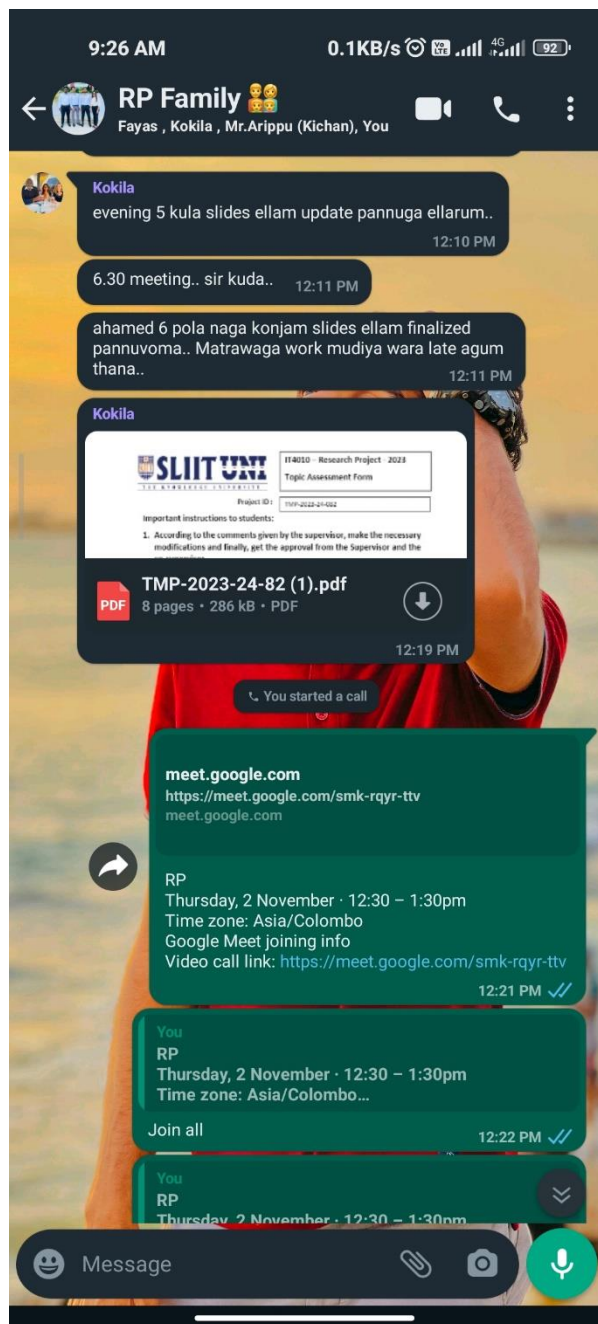


Figure 7: WhatsApp Group Chats Group Members

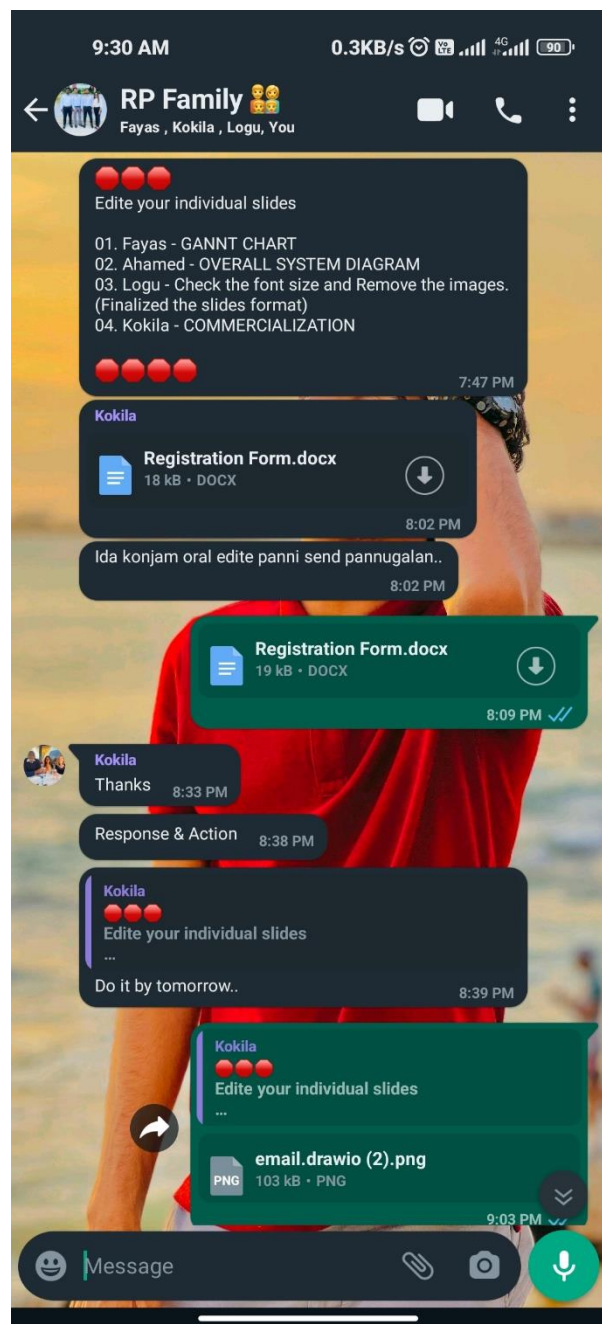


Figure 8: WhatsApp Group Chats Group Members

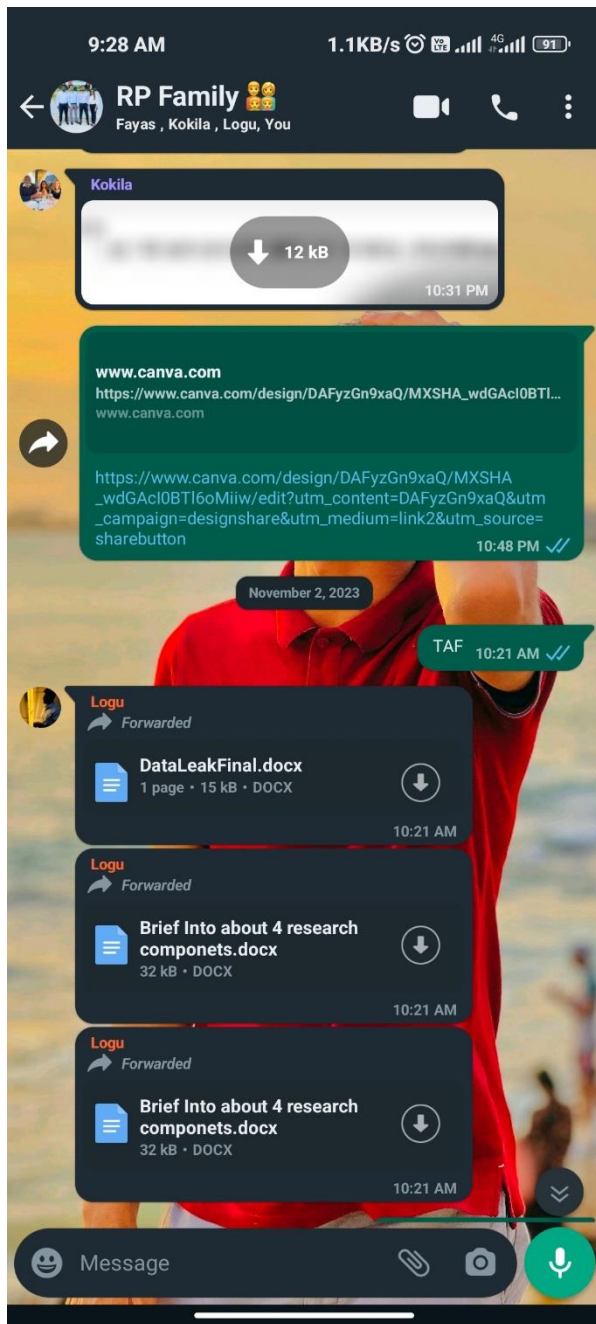


Figure 9: WhatsApp Group Chats Group Members

Emails and planned Teams Events

The screenshot shows a Microsoft Teams meeting invitation titled "Final Project Discussion". It includes a "Follow up" button and a clock icon indicating the event occurred 2 months ago (Thu 21/09/2023 21:00 - 23:00). The meeting is a Microsoft Teams Meeting. The organizer is TMP-2023-24-082_A COMPREHENSIVE APP, sent on Thursday, 21/09/2023 at 20:39. The invitation is for Keshani S.K. it20299002 <it20299002@my.sliit.lk> on behalf of STRENGTHENING CYBERSECURITY <RP_Fan>. The meeting details show a message: "[EXTERNAL EMAIL] This email has been received from an external source – please review before actioning, clicking on links, or opening attachments." The meeting is scheduled for 9 pm. The meeting title is "Microsoft Teams meeting".

Figure 10: Planned MS Teams Meeting

The screenshot shows an email from Keshani S.K. it20299002 <it20299002@my.sliit.lk> to Amila Nuwan. The email is dated Tue 03/10/2023 22:13. The subject is "Brief Into about 4 research c..." (273 KB). The email body contains a warning: "[EXTERNAL EMAIL] This email has been received from an external source – please review before actioning, clicking on links, or opening attachments." The email is addressed to "Dear Sir," and contains the following text: "I hope this message finds you well. I wanted to update you on our progress regarding the research project. We have initiated the implementation of the following four components: 01. Abnormal Login Analysis for Email-Based DLP Systems 02. Natural Language Processing for Phishing Email Detection 03. Utilizing NLP Techniques for Content Analysis 04. Classify Data Leakage Level with Machine Learning". The email concludes with: "I've attached a detailed document outlining our approach, methodology, and progress on each of these components for your review. If you have any concerns or feedback regarding these components or if you believe there are additional aspects we should consider, please do not hesitate to share your insights. Your guidance is invaluable to us, and we aim to ensure the system we develop is both comprehensive and effective."

Figure 11: Email Communication with Supervisor

PP1 Discussion with Supervisor

Follow up ▾

🕒

This event occurred **1 month ago** (Thu 02/11/2023 20:00 - 22:00)

📍

Microsoft Teams Meeting;
Teams meeting

👤

Keshani S.K it20299002 <it20299002@my.sliit.lk> on behalf of IMP-2023-24-082_Unified DLP Solutions fo
Accepted 1, Didn't respond 4

Messages

Meeting Details

🕒

Keshani S.K it20299002 <it20299002@my.sliit.lk> on behalf of
TMP-2023-24-082_Unified DLP Solutions for Email System <RP_Family@sliit.lk> updated the meeting time
Thu 02/11/2023 20:00 - 22:00 Thu 02/11/2023 19:00 – 21:00

T

Keshani S.K it20299002 <it20299002@my.sliit.lk> on behalf of TMP-2023-24-082_Ur

😊

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📎

⋮

To: Keshani S.K it20299002; Ahamed R.R. it20650902; Logu J.J. it20638818; Amila Nuwan; +2 others

Thu 02/11/2023 17:50

[EXTERNAL EMAIL] This email has been received from an external source – please review before actioning, clicking on links, or opening attachments.

Please join all at 8pm today to discuss the PP1.

Thank you..

Figure 12: PP1 Discussion Meeting with Supervisor

Research Project - Update the Power point Slides

Follow up ▾

🕒

This event occurred **1 month ago** (Wed 04/10/2023 19:00 - 20:00)

📍

Microsoft Teams Meeting;
Teams meeting

👤

TMP-2023-24-082_A COMPREHENSIVE APP

Keshani S.K it20299002 <it20299002@my.sliit.lk> on behalf of STRENGTHENING CYBERSECURITY <RP_Fan

Didn't respond 4

Messages

Meeting Details

☰

[EXTERNAL EMAIL] This email has been received from an external source – please review before actioning, clicking on links, or opening attachments.

Please join at 7 pm.

Thank you..

Organiser

T

TMP-2023-24-082_A COMPRE...

Sent on Wednesday, 04/10/2023 at 18:52

👤

Keshani S.K it20299002
Required

👤

Fayas A.C.M. it20637828
Required

👤

Ahamed R.R. it20650902
Required

👤

Logu J.J. it20638818
Required

Microsoft Teams meeting

Figure 13: PP1 Slides Updating Meeting with Team Members

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Project view of Microsoft Planner

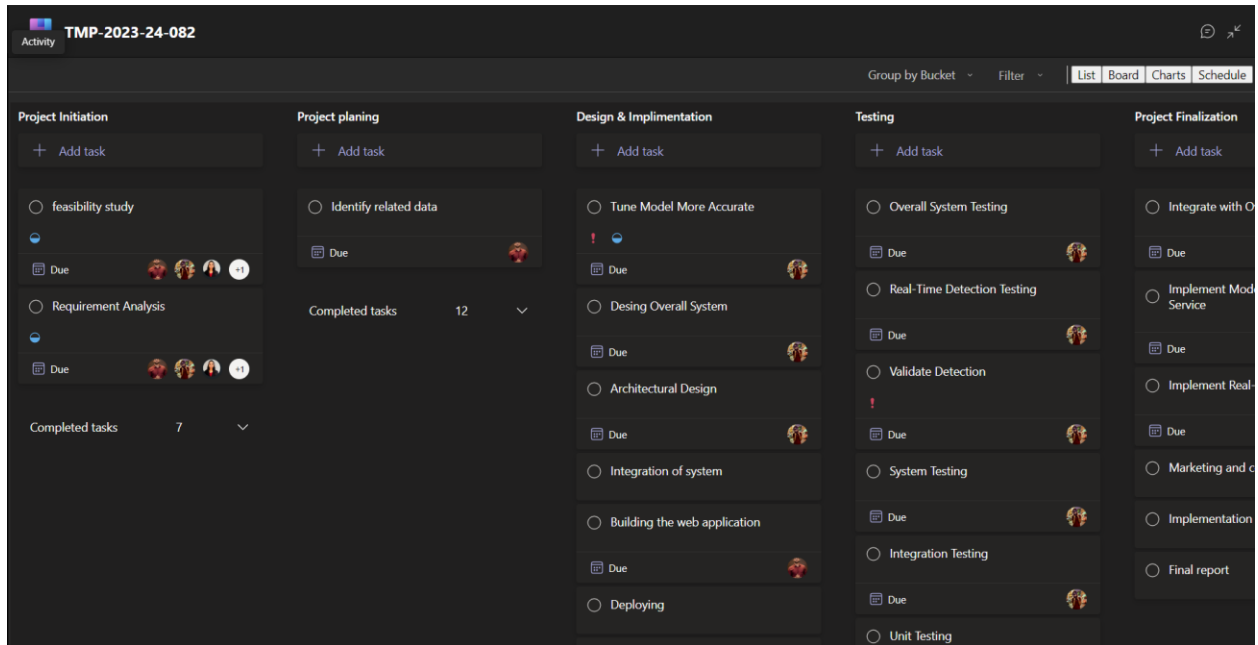


Figure 14: Project Task View of Microsoft Planner

Task title	Assigned to	Priority	Due	Bucket
<input type="radio"/> New task				Project Initiation
<input type="radio"/> Requirement Analysis				Project Initiation
<input type="radio"/> feasibility study				Project Initiation
<input type="radio"/> Tune Model More Accurate	Ahamed R.R. it206509...			Design & Implim...
<input type="radio"/> Desing Overall System	Ahamed R.R. it206509...			Design & Implim...
<input type="radio"/> Architectural Design	Ahamed R.R. it206509...			Design & Implim...
<input type="radio"/> Overall System Testing	Ahamed R.R. it206509...			Testing
<input type="radio"/> Real-Time Detection Testing	Ahamed R.R. it206509...			Testing
<input type="radio"/> Validate Detection	Ahamed R.R. it206509...			Testing
<input type="radio"/> System Testing	Ahamed R.R. it206509...			Testing
<input type="radio"/> Integration Testing	Ahamed R.R. it206509...			Testing
<input type="radio"/> Unit Testing	Ahamed R.R. it206509...			Testing
<input type="radio"/> Integrate with Overall System	Ahamed R.R. it206509...			Project Finalization
<input type="radio"/> Implement Model to Email Hosting Service	Ahamed R.R. it206509...			Project Finalization
<input type="radio"/> Implement Real-Time Monitoring	Ahamed R.R. it206509...			Project Finalization
<input type="radio"/> Final Presentation	Ahamed R.R. it206509...			Documentations ...
<input type="radio"/> BP2	Ahamed R.R. it206509...			Documentations ...

Figure 15: Tasks Assign to My self.

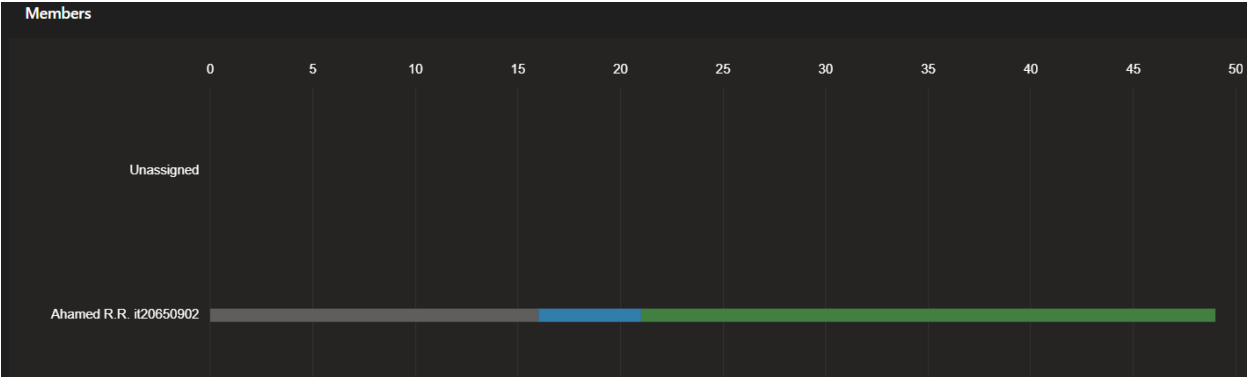


Figure 16: Graph View of Assigned Tasks.

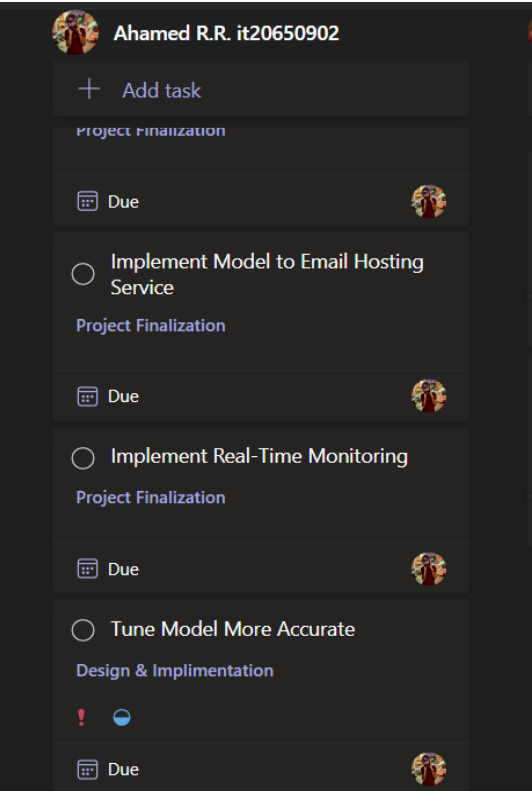


Figure 17: Tasks to be done.

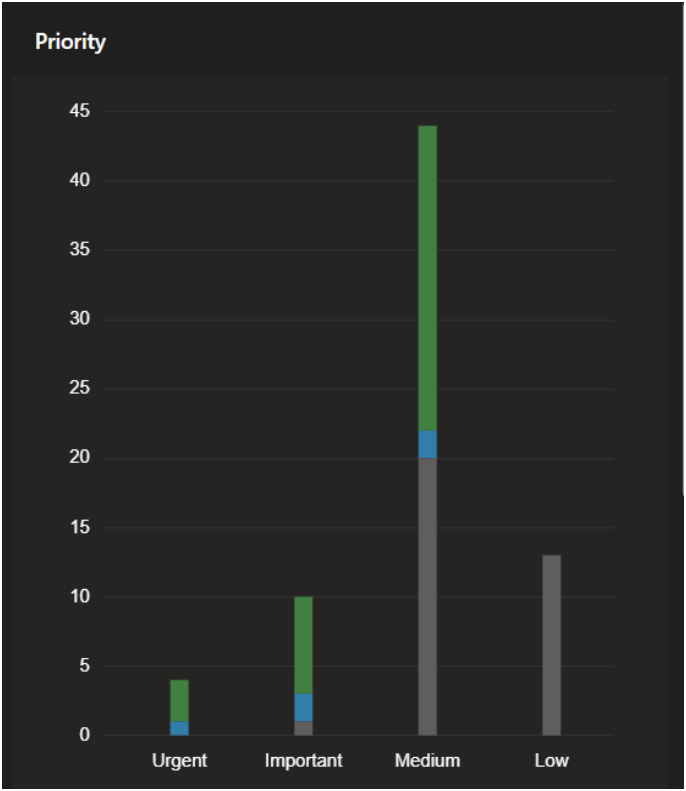


Figure 18: Task Priority Level Graph

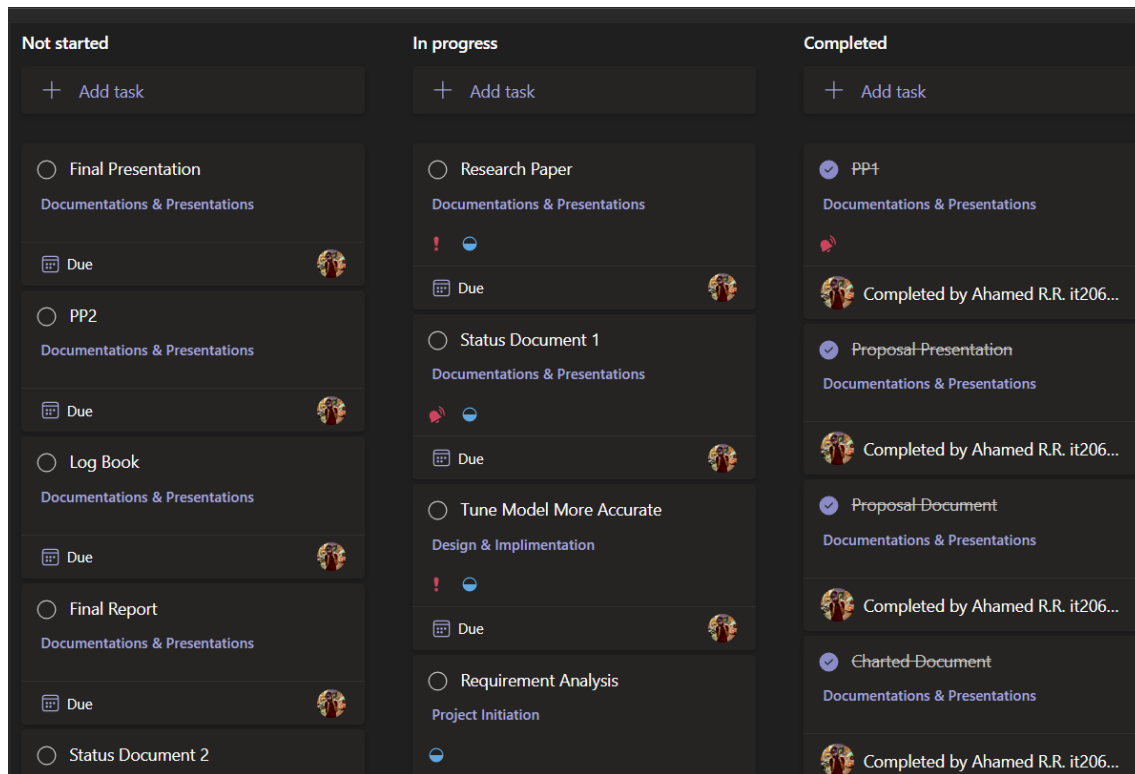


Figure 19: Tasks Not started, in progress, Completed.



Figure 20: Status & Bucket Graph view of Tasks

Gantt chart

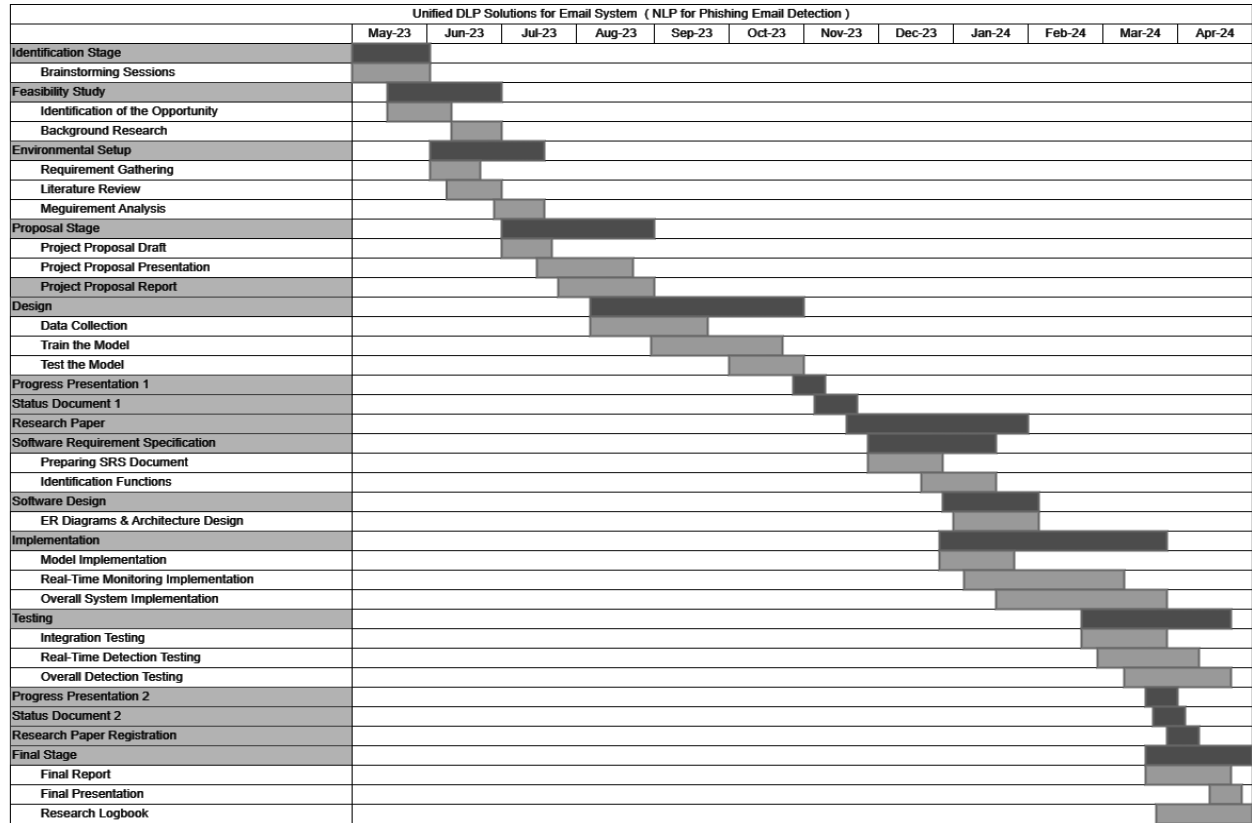


Figure 21: Gantt chart

Work Breakdown Structure (WBS)

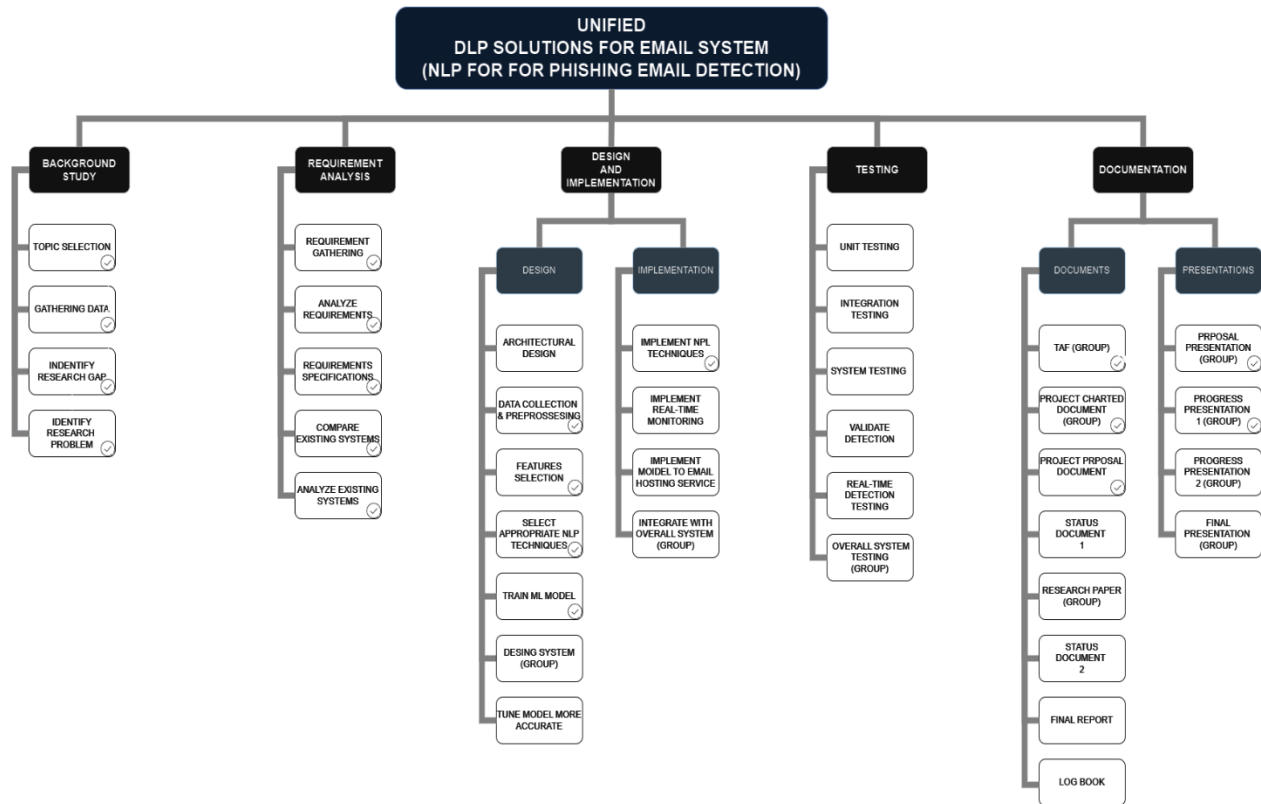


Figure 22: WBS

Git Lab

S.K.KESHANI > TMP-2023-24-082 > Repository

You pushed to IT20650902_Ahamed.R.R in 48 seconds

Create merge request

IT20650902_Aha...

tmp-2023-24-082 /

+ v

History

Find file

Web IDE

Download

Clone



Update README.md

Rallydeen Roshan Ahamed authored in 45 seconds

a59c832b



Name	Last commit	Last update
Detection.py	Phishing Detection code	5 hours ago
Email_content_data.csv	Phishing Email Data set	5 hours ago
README.md	Update README.md	in 45 seconds
create_Phishing_Model.py	Create Phishing Model	5 hours ago
phishing_detection_model.pkl	Phishing Detection Model	5 hours ago
preprocessed_data.csv	Preprocessed Data set	5 hours ago
sample_mails.docx	Sample Data to test Detection	5 hours ago
tfidf_vectorizer.pkl	Vectorizer Model	5 hours ago

Figure 23: Code Repository (gitlab.sliit.lk)

revision ☐ Begin with the selected commit

5 IT20650902_Aham... Update README.md

Update Research Project Related Details to README file

Sample Data to test Detection

Vectorizer Model

Phishing Detection Model

Preprocessed Data set

Phishing Detection code

Create Phishing Model

Phishing Email Data set

Figure 24: Gitlab Commits

TMP-2023-24-082

Main Research Topic : Unified DLP Solutions for Email System

Sub Research component : Natural Language Processing For Phishing Email Detection

1. Main objective - To enhance email security and prevent unauthorized access to sensitive email content, safeguarding against data breaches through the implementation of advanced DLP.

3. Individual research question-

I. Traditional methods like rule-based systems may not be capable of identifying phishing emails accurately

II. Challenge of balancing false positives and false negatives when detecting phishing emails.

False Positives - Legitimate email classify as phishing

False Negative - Phishing email classify as legitimate

4. Individual Objectives - To develop an effective machine learning model for classifying emails as phishing or legitimate, with a focus on using NLP techniques.

5. Other necessary information. - Solution : To solve these problem our approach is compared to previous work because it focuses on the natural language text contained in the Email Content, performing semantic analysis of the text to detect malicious intent.

Figure 25: ReadMe File