Peer to Peer Messaging App Documentation

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Table of Contents

[Journal 3](#_Toc165879025)

[Week 1 3](#_Toc165879026)

[Key Decisions 3](#_Toc165879027)

[Challenges 3](#_Toc165879028)

[Week 2 3](#_Toc165879029)

[Key Decisions 3](#_Toc165879030)

[Challenges 3](#_Toc165879031)

[Week 3 3](#_Toc165879032)

[Key Decisions 3](#_Toc165879033)

[Challenges 4](#_Toc165879034)

[Week 4 4](#_Toc165879035)

[Key Decisions 4](#_Toc165879036)

[Challenges 4](#_Toc165879037)

# Journal

This section documents the decisions and challenges faced along the analysis, design and development stages of the project.

# Week 1

15 April 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Create Gannt Chart | 1. Find need or opportunity |

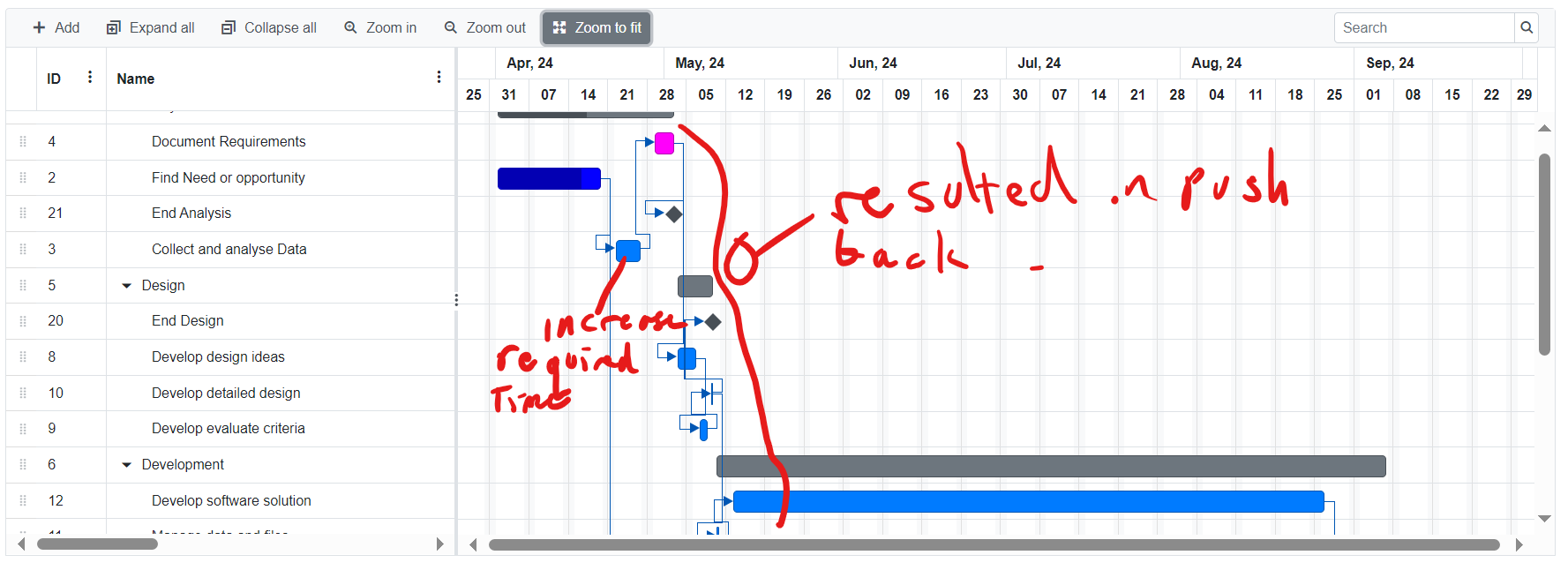
## Key Decisions

1. Decided that students needed a way to contact teachers via messages
2. Decided on project to create a peer to peer messaging app

## Challenges

1. Deciding between projects to consider

## Gant



# Week 2

22 April 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Choose Development model | 1. Create Gannt Chart |

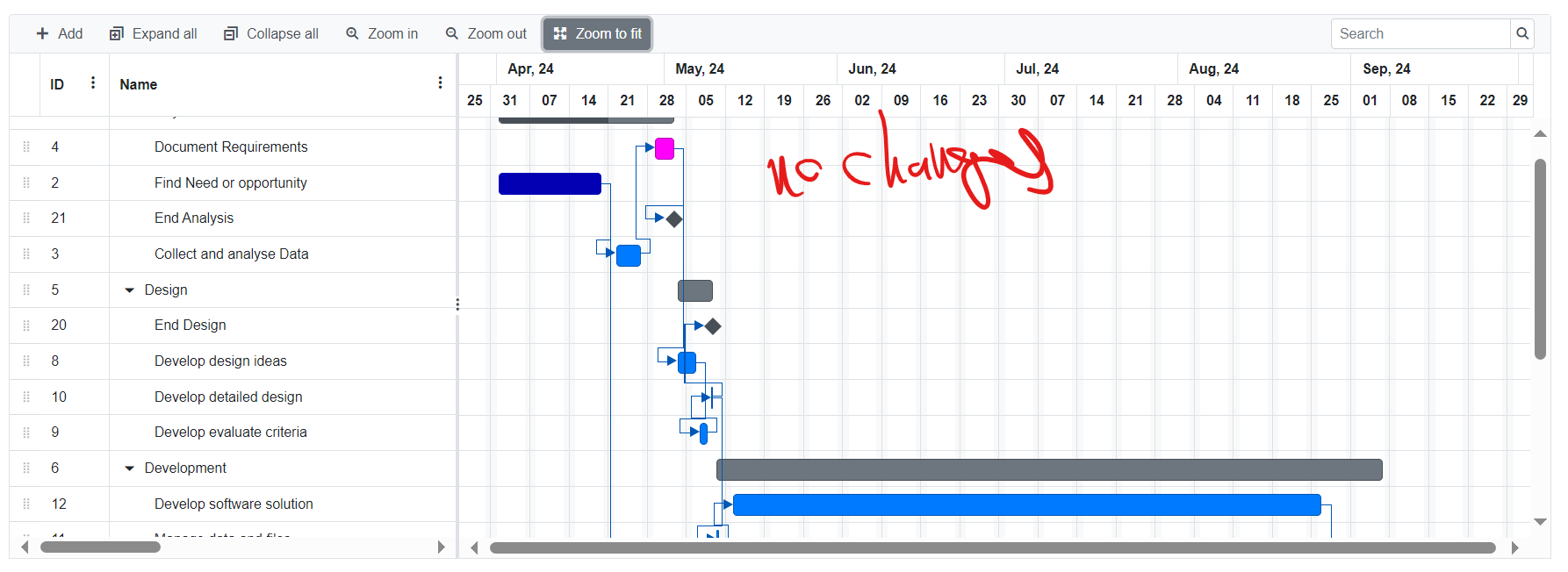
## Key Decisions

1. Timeline for the project

## Challenges

1. Gannt chart software being bad. (online gannt, ????)

## Gant



# Week 3

29 April 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Draft Use case diagram 2. Distribute survey | 1. Choose Development model |

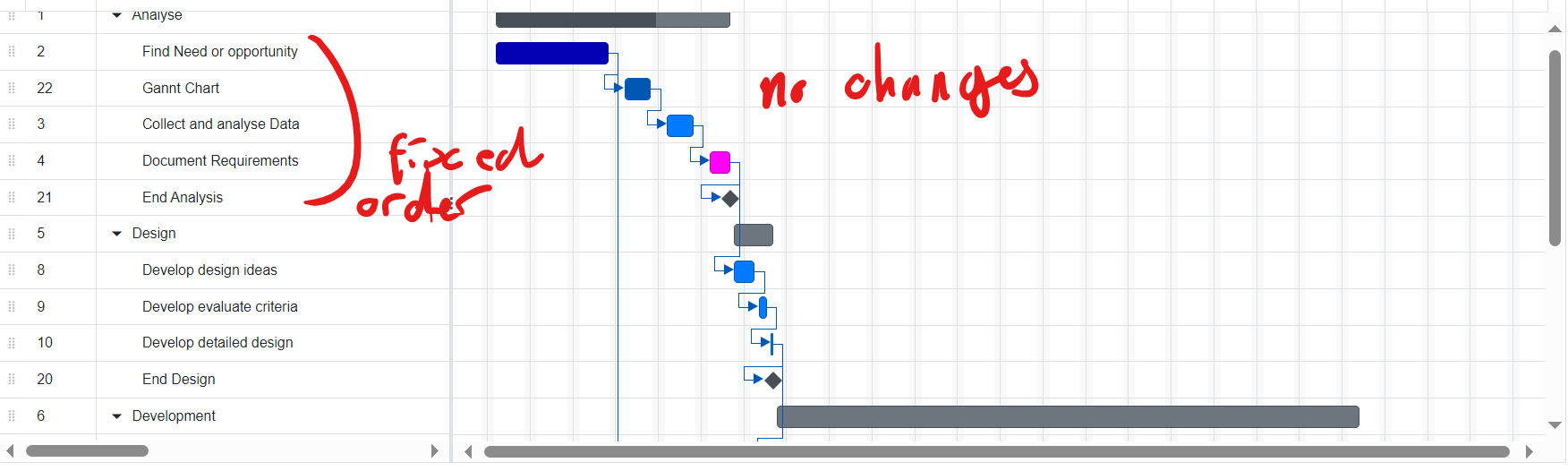
## Key Decisions

1. Decided on a development model for the project – waterfall
2. Wrote a document outlining the reason for the decision.

## Challenges

1. None

## Gant



# Week 4

6-May 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Survey Analysis | 1. Draft Use case diagram 2. Distribute survey 3. Collect survey responses 4. Complete observation 5. Complete interview 6. Complete Report |

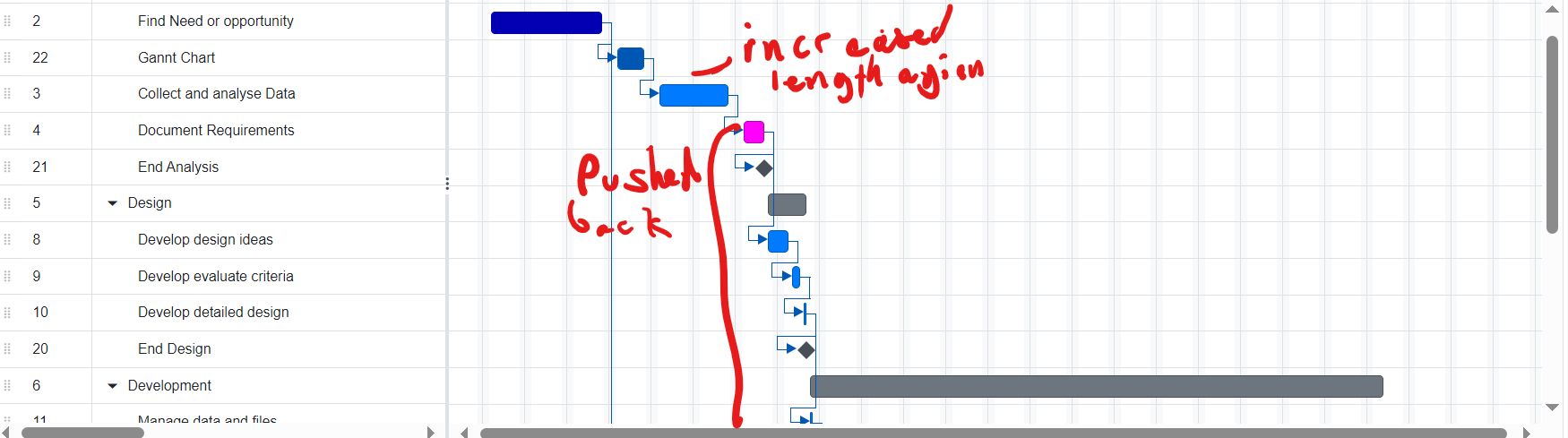
## Key Decisions

1. Report target
2. Interview group
3. Observation target
4. Survey distribution methods

## Challenges

1. Distributing survey to a large audience
2. Validating the authenticity of survey responses

## Gant



# Week 5

13-May 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Survey Analysis 2. Interview Analysis 3. Observation Analysis |

## Key Decisions

1. Users major requirements

## Challenges

1. None

## Gant



# Week 6

20-May 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Survey Analysis 2. Software requirements documents |

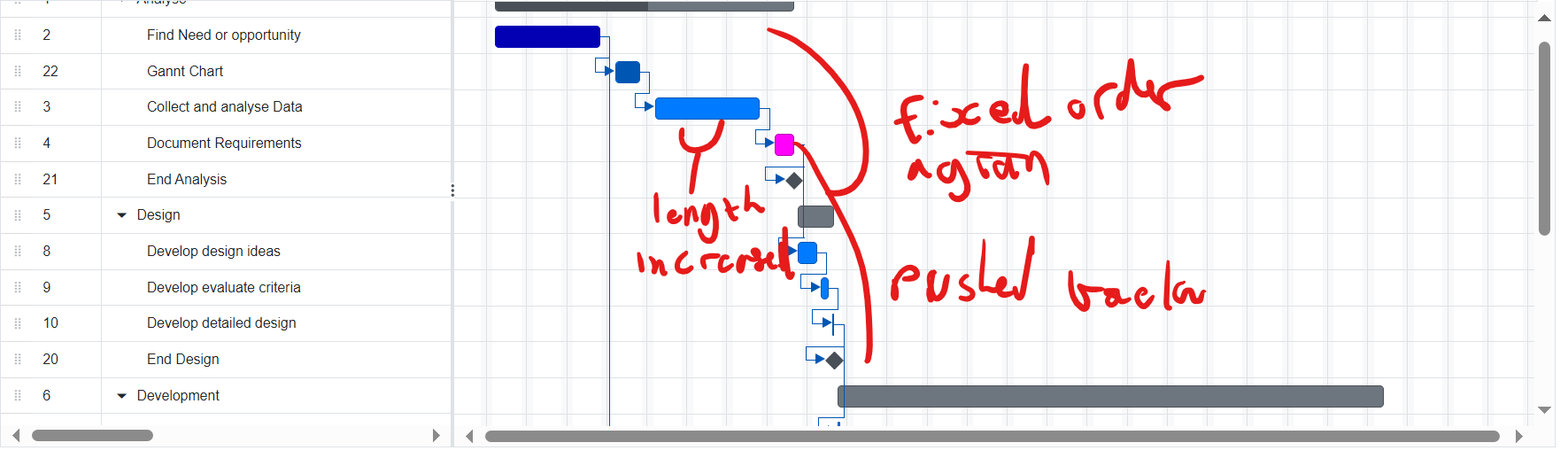
## Key Decisions

## 1. Technical requirements

## Challenges

1. OneDrive deleting work

## Gant



# Week 7

27-May 2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Mockup 1 | 1. Finish software requirements |

## Key Decisions

1. Use cases

## Challenges

1. None

## Gant



# Week 8

3-June-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Finish evaluation criteria 2. Finish user interface mockup | 1. Mockup 1 2. Start of evaluation criteria 3. Data flow diagram |

## Key Decisions

1. Mockup 1 design

2. Defining how data would flow within the network

## Challenges

1. None

## Gant



# Week 9

10-June-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Initialise coding environments | 1. Finish evaluation criteria 2. Finish user interface mockup |

## Key Decisions

1. User interface Mockup design 2
2. User interface Mockup design 3
3. Mockup evaluation
4. Evaluation criteria

## Challenge

1. Failing to install git properly

## Gant



# Week 10

17-June-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Outline of GUI classes | 1. Initialise coding environments |

## Key Decisions

1. Version of python – 3.11.4
2. GUI application – toga
3. Compiler – Beeware

## Challenges

1. Git failing to install to path

## Gant



# Week 11

24-June-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Outline of GUI classes |

## Key Decisions

1. Format for GUI code
2. Design of GUI

## Challenges

1. Stuck on \_\_var not being inherited from super for way to long

## Gant



# Week 12

1-July-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. RSA encryption 2. User Class |

## Key Decisions

1. Encryption type – choose RSA

## Challenges

1. Optimising prime number generation – incomplete

## Gant



# Week 13

8-July-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Message data structure |

## Key Decisions

1. How to store message in memory
2. Long term storage of messages

## Challenges

1. Mock being weird – having to reference message.RSA.decrypt\_padded instead of RSA\_cryptosystem.decrypt\_padded

## Gant



# Week 14

15-July-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Unit tests for encryption | 1. Run code when app exits 2. Save user data on close app |

## Key Decisions

1. When to save user data

## Challenges

1. Can’t relog with saved data (found out was due to encryption errors)

## Gant



# Week 15

22-July-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Unit tests for user data read in and storage | 1. Unit tests for encryption |

## Key Decisions

1. How to test encryption

## Challenges

1. Encryption not working only when saving data to file.

## Gantt



# Week 16

29-July-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Fix encryption algorithm | 1. Unit tests for user data read in and storage |

## Key Decisions

1. How to test successfully storage and read in of data

## Challenges

1. Encryption not working only for saving data to file.

## Gant



# Week 17

5-August-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Temporarily fix encryption algorithm |

## Key Decisions

1. How to fix Encryption algorithm

## Challenges

1. Encryption algorithm not working
2. Data saving not working

## Gant



# Week 18

12-August-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Fix Encryption | 1. Fix Encryption Crashes 2. Fix Encryption errors |

## Key Decisions

1. None was just fixing errors in the code

## Challenges

1. Finding the cause of the errors.
2. Error was a result of mixing private keys order.

## Gant



# Week 19

19-August-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Add the ability to host chat server | 1. Create Example network 2. Add checking for existing chat server to network manager 3. Add the ability to establish a server |

## Key Decisions

1. The basic format for network message
2. The network structure

## Challenges

1. Learning how to use multi-threading
2. Learning how to do networking

## Gant



# Week 20

26-August-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| Sending messages | 1. Fix crash when displaying messages having duplicate ids 2. Add ability to host server 3. Add dynamic ip |

## Key Decisions

1. Major format for network message

## Challenges

1. Determining the format for network messages
2. Identifying cause of the crash

## Gant



# Week 21

2-September-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| Sending messages from queue | 1. Add the ability to send messages to other clients 2. Connected the network to the rest of the code 3. Add saving address book 4. Add updating address book from chat server |

## Key Decisions

1. When to boot the network manager
2. Format for client to client messages

## Challenges

1. Communicating updated address book from chat server

## Gant



# Week 22

9-September-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| 1. Closing and restating the network | 1. Sending message from queue 2. Add the ability to set the ip for name server 3. Test message receive time. 4. Unit tests for message encryption |

## Key Decisions

1. Where to set ip
2. How to test message encryption

## Challenges

1. Making adding messages to the queue not be asynchronous so it can be called from outside the network manager

## Gant



# Week 23

16-September-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
| Restarting network | 1. Closing the network 2. Detecting downed chat servers 3. Reporting downed chat servers |

## Key Decisions

1. How to report downed servers

## Challenges

1. Detecting downed chat servers

## Gant



# Week 24

23-September-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Test screen load times 2. Analyse project for security flaws 3. Test high network traffic resilience |

## Key Decisions

1. None

## Challenges

1. None

## Gant



# Week 25 – Final Week

30-September-2024

|  |  |
| --- | --- |
| To Do List | Completed Tasks |
|  | 1. Write evaluation |

## Key Decisions

None

## Challenges

None

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# References

online gannt. (????, ?? ??). *gantt*. Retrieved from onlinegantt: https://www.onlinegantt.com/#/gantt