



Sri Lanka Institute of Information Technology

**DISTRIBUTED HEALTH CARE FRAMEWORK FOR
PATIENT HEALTH RECORD MANAGEMENT AND
PHARMACEUTICAL DIAGNOSIS**

Project ID: 2022-110

STATUS DOCUMENT

Chathuranga S.J - IT19043388

Group Details

Supervisor: **Mr. Jeewaka Perera**

Co-Supervisor: **Ms. Laneesha Ruggahakotuwa**

Student Name	Student Number
Wickramarathna W.G.M.S.	IT19004778
De Silva K.H.K.L	IT19006994
Lekamalage U.L.V.M.	IT19111766
Chathuranga S.J	IT19043388

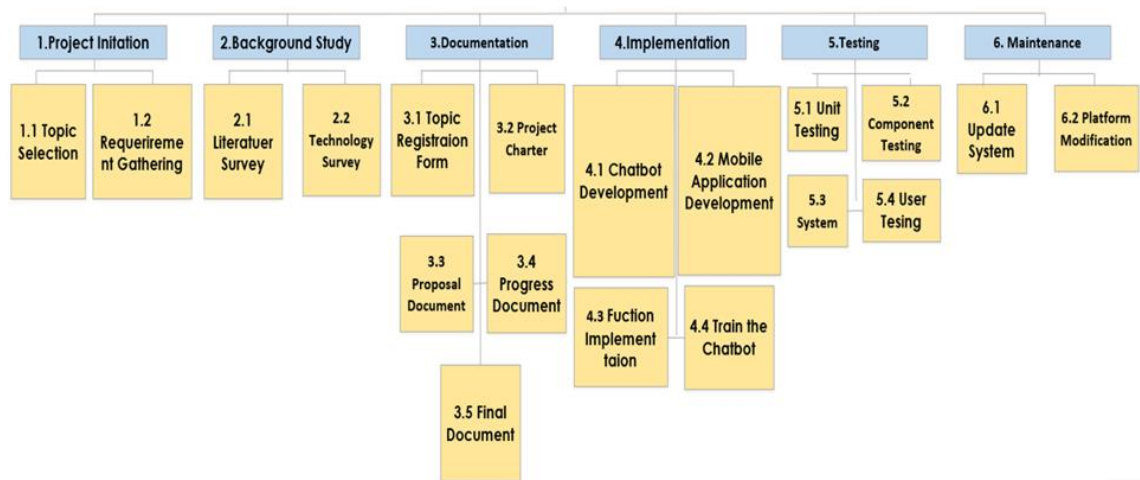
Contents

Group Details	i
1. Gantt Chart	1
2. Work Breakdown Structure	2
3. Screenshots of MS Teams	3
3.1 SCRUM Meetings	3
3.2 Teams Shared Folder	9
3.3 Team Members	10
4. Screenshots of Teams Planner	11
4.1 Teams Board	11
4.2 Teams Chart Overview	11
5. Screenshots of GitLab	13
5.1 Project Overview	13
5.2 Members	13
5.3 README file with Project Details	14
5.4 Git Commits	15
5.5 Git Charts	16
5.6 Folder Structure	18
6. Task Output / Progress – 50%	19

1. Gantt Chart

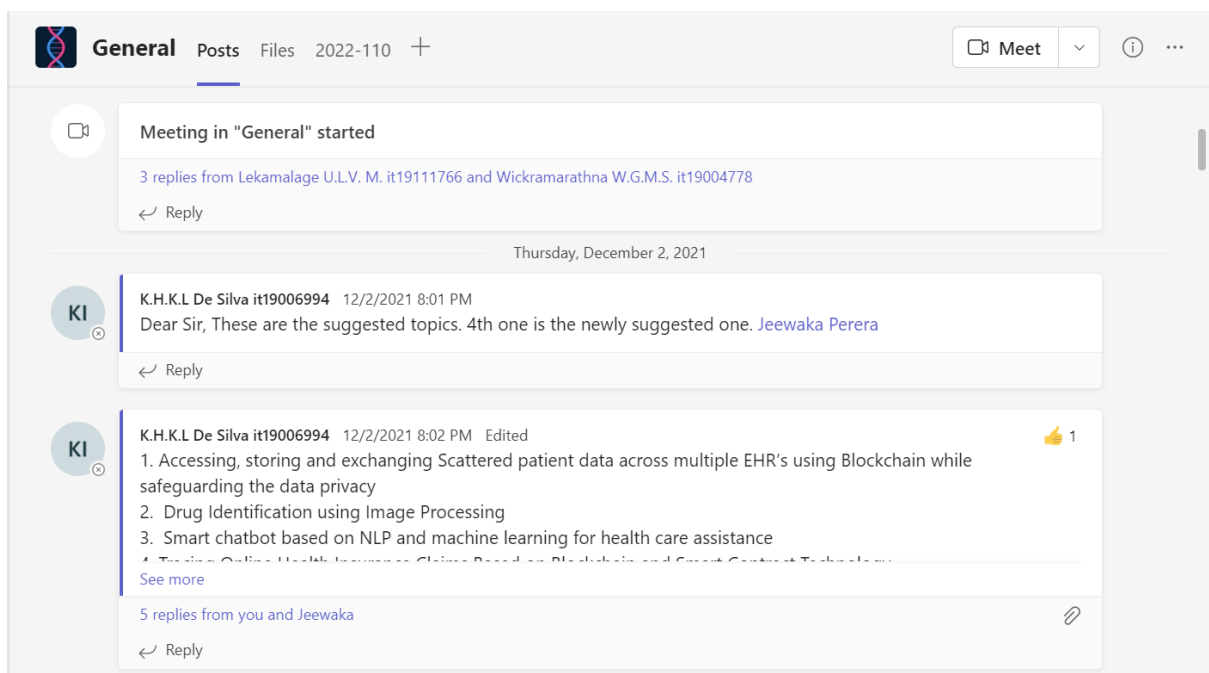
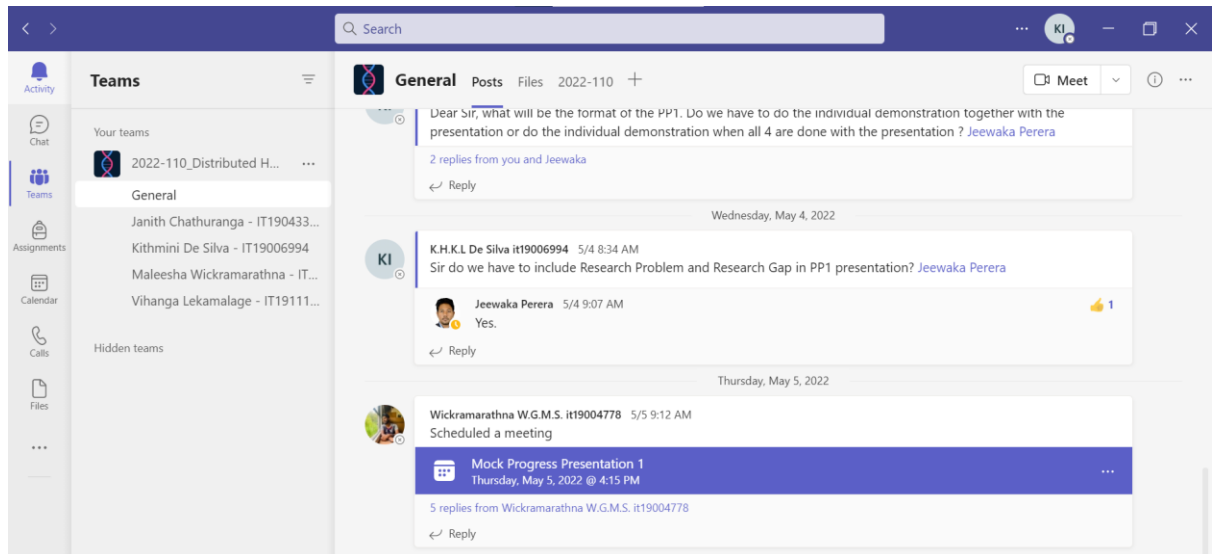
Task Name	Timeline													
Description	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Project Initiation														
Evaluation														
Topic Assessment form														
Charter														
Proposal Draft														
Proposal Presentation														
Project Phase														
System Planning														
Collecting Required Data														
Selecting Algorithm technologies														
Implementation Phase														
Implement mobile application														
chatbot implementation														
Function Implementation														
Train the chatbot														
Testing Phase and Evaluation														
Testing														
Final Report and Research paper														
Final Evaluation														

2. Work Breakdown Structure



3. Screenshots of MS Teams

3.1 SCRUM Meetings



General Posts Files 2022-110 + Meet ...

← Reply

Saturday, December 4, 2021

KI K.H.K.L De Silva it19006994 12/4/2021 12:22 PM Edited 📌

Please upload your Research finding and Documents under the Files Tab given in the Teams Group!

[./teams.microsoft.com/#/school/files/General?threadId=19%3A3C2m9SEFFpuYC_y4OdDjpXEgzwYUua2CXMtoswtzAgU1%40thread.tacv2&ctx=channel&context=Individual%2520Documents%2520and%2520Findings&rootfolder=%252Fsites%252FHealthCareResearchProject%252FShared%2520Documents%252F%20Findings&rootId=19%3A3C2m9SEFFpuYC_y4OdDjpXEgzwYUua2CXMtoswtzAgU1%40thread.tacv2&ctx=channel&context=Individual%2520Documents%2520and%2520Findings](https://teams.microsoft.com/#/school/files/General?threadId=19%3A3C2m9SEFFpuYC_y4OdDjpXEgzwYUua2CXMtoswtzAgU1%40thread.tacv2&ctx=channel&context=Individual%2520Documents%2520and%2520Findings&rootfolder=%252Fsites%252FHealthCareResearchProject%252FShared%2520Documents%252F%20Findings&rootId=19%3A3C2m9SEFFpuYC_y4OdDjpXEgzwYUua2CXMtoswtzAgU1%40thread.tacv2&ctx=channel&context=Individual%2520Documents%2520and%2520Findings)

See more

← Reply

KI K.H.K.L De Silva it19006994 12/4/2021 12:28 PM Edited

Dear Sir and Madam, Here is the suggested Research Topics. Please provide your feedback. Please let us know if there's anything to alter. [Jeewaka Perera Laneesha Ruggahakotuwa](#)

4 replies from you and Jeewaka

← Reply


Thursday, December 9, 2021

General Posts Files 2022-110 + Meet ...

Thursday, December 9, 2021

KI K.H.K.L De Silva it19006994 12/9/2021 9:20 AM

Scheduled a meeting

 Discussion on Research Topic Registration and Finalizing Research Scope
Thursday, December 9, 2021 @ 12:30 PM

9 replies from you


← Reply







General Posts Files 2022-110 + Meet ...


Thursday, December 16, 2021

KI K.H.K.L De Silva it19006994 12/15/2021 9:24 PM

Scheduled a meeting


 Topic Registration Final Discussion
Thursday, December 16, 2021 @ 11:00 AM

 Meeting ended: 26m 1s      +1


 **Attendance report**
Click here to download attendance report

← Reply

Sunday, January 9, 2022

 Wickramarathna W.G.M.S. it19004778 1/9 7:39 PM

[Jeewaka Perera](#) , [Laneesha Ruggahakotuwa](#) , We have been sent the document with feedback.

 TAF_TMP-22-010.docx ...

7 replies from Lekamalage U.L.V. M. it19111766 and Jeewaka

General
Posts
Files
2022-110
+

Meet

Monday, January 10, 2022

KI

K.H.K.L De Silva it19006994 1/10 2:17 PM Edited
Dear sir, In topic assessment the panel has requested to fix the grammar of the title "automatic patient record" (make more meaningful). Hence we changed the topic as: **Distributed Health Care Framework for Automatic Patient Health Record Management and Pharmaceutical Diagnosis** [Jeewaka Perera](#)

5 replies from you and Jeewaka

← Reply

Tuesday, January 11, 2022

Wickramarathna W.G.M.S. it19004778 1/10 7:56 PM
Sir, we are about to finish our charter document and coversheet, so can we arrange a meeting? [Jeewaka Perera](#) [Laneesha Ruggahakotuwa](#)

7 replies from Jeewaka and Wickramarathna W.G.M.S. it19004778

← Reply

General
Posts
Files
2022-110
+

Meet

Saturday, January 29, 2022

Jeewaka Perera 1/28 12:12 PM
Sorry I cannot start at 9 am. Hope this is okay with you all. Please Let me know if this does not work

Mock Proposal Presentation - Health Care
Saturday, January 29, 2022 @ 9:30 AM

▼ Collapse all

- Meeting started
- Recording has started
- Recording has stopped. Saving recording...

Meeting
Recorded by: K.H.K.L De Silva it...

Meeting ended: 1h 37m

← Reply

Search

General Posts Files 2022-110 +

Meet

Thursday, February 3, 2022

Jeewaka Perera 2/3 8:40 AM
Scheduled a meeting

Meeting To Discuss Panel Comments
Thursday, February 3, 2022 @ 8:45 AM

Collapse all

- Meeting started
- Recording has started
- Recording has stopped. Saving recording...
- Meeting ended: 57m

Meeting
Recorded by: Chathuranga S. J. i...
54m 8s

Reply

Search

General Posts Files 2022-110 +

Meet

Tuesday, February 8, 2022

Wickramarathna W.G.M.S. it19004778 2/7 5:11 PM
Scheduled a meeting

Discussion about Blockchain
Tuesday, February 8, 2022 @ 2:00 PM

Collapse all

- Discussion about Blockchain started
- Recording has started
- Recording has stopped. Saving recording...
- Meeting ended: 40m 18s

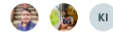
Meeting
Recorded by: Wickramarathna ...
26m 22s

Reply

Wednesday, April 6, 2022



Meeting in "General" ended:



Attendance report

Click here to download attendance report

← Reply



Wickramarathna W.G.M.S. it19004778 4/6 8:43 PM

https://teams.microsoft.com/l/meetup-join/19:meeting_NTQyMGYxNDAtOTZkYi00MTNLTg4ODgtNThkMDY5MTA1MWMx@thread.v2/0?context=%7B%22Tid%22:%2244e3cf94-19c9-4e32-96c3-14f5bf01391a%22,%22Oid%22:%2216564c04-dfe6-4871-af4d-c77102a0eea4%22%7D

← Reply

Monday, April 18, 2022



Wickramarathna W.G.M.S. it19004778 4/18 9:11 AM

Scheduled a meeting



Progress Review

Monday, April 18, 2022 @ 11:00 AM



▼ Collapse all



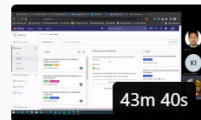
Progress Review started



Recording has started



Recording has stopped. Saving recording...



Meeting

Recorded by: Wickramarathna ...

43m 40s

This recording is set to expire. View or change the expiration date [here](#). [Learn more](#)



Meeting ended: 1h 11m

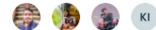


← Reply

Saturday, April 23, 2022



Meeting in "General" ended: 1h 19m

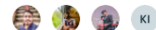


← Reply

Wednesday, April 27, 2022



Meeting in "General" ended: 1h 6m



← Reply

Tuesday, May 3, 2022

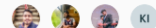


Meeting in "General" started

6 replies from Chathuranga S. J. it19043388, Wickramarathna W.G.M.S. it19004778, and Lekamalage U.L.V. M. it19111766



Meeting ended: 3h 22m



← Reply

Thursday, May 5, 2022



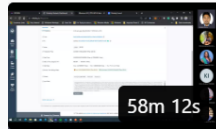
Wickramarathna W.G.M.S. it19004778 Thursday 9:12 AM
Scheduled a meeting



Mock Progress Presentation 1
Thursday, May 5, 2022 @ 4:15 PM

...

4 replies from Wickramarathna W.G.M.S. it19004778



Meeting

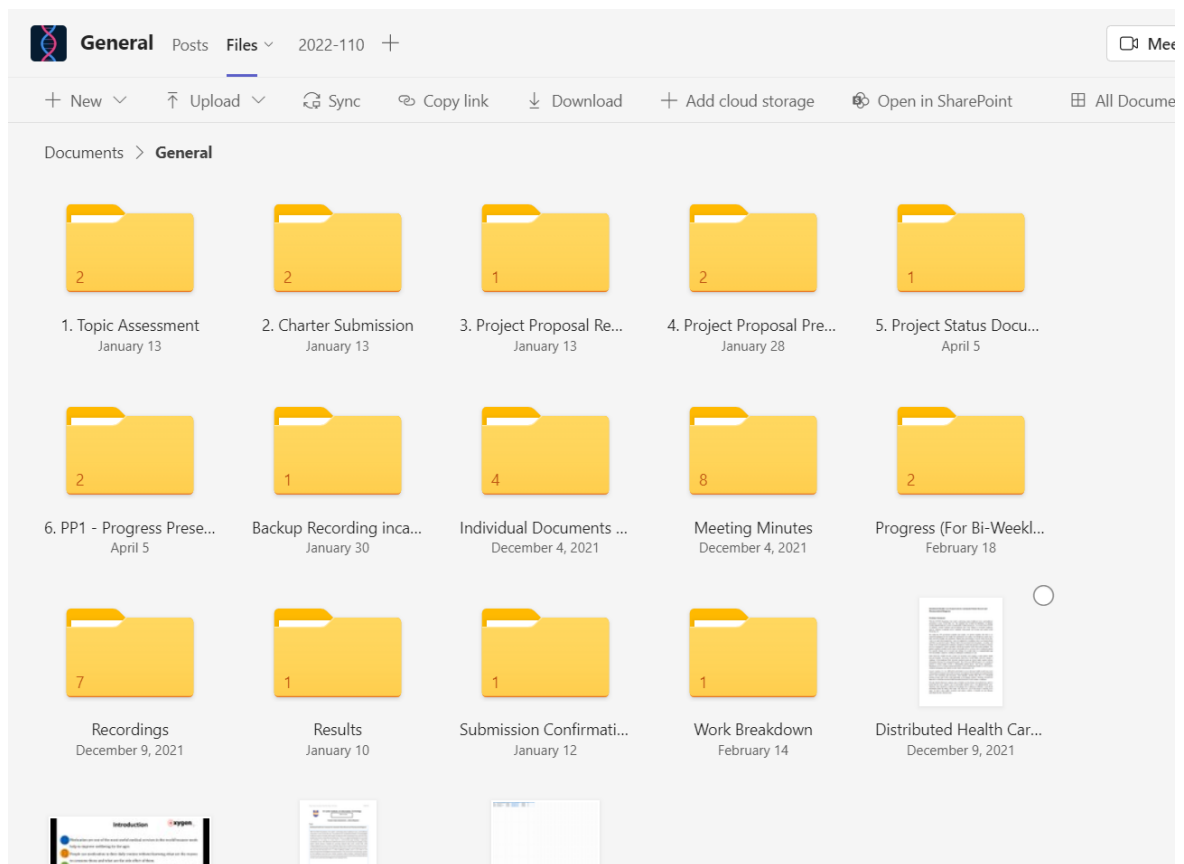
Recorded by: K.H.K.L De Silva it...

...


This recording is set to expire. View or change the expiration date [here](#). [Learn more](#)

← Reply

3.2 Teams Shared Folder




3.3 Team Members




2022-110_Distributed Health Care Framework for Patient Health Record Managem...









Health Care Research Project

[Members](#) [Pending Requests](#) [Channels](#) [Settings](#) [Analytics](#) [Apps](#) [Tags](#)



 [Add member](#)

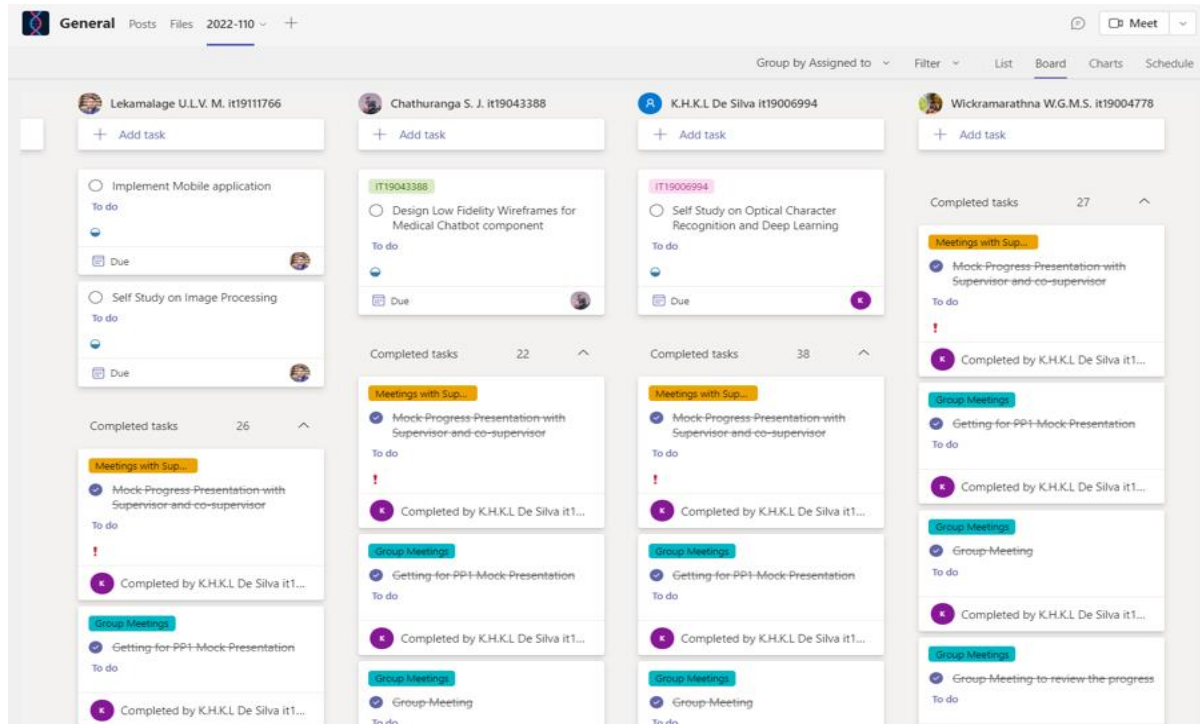
▼ **Owners (6)**

Name	Title	Location	Tags 	Role
 Wickramarathna W.G.M.S. it19...				Owner ▼
 Chathuranga S. J. it19043388				Owner ▼
 Laneesha Ruggahakotuwa	Assistant Lecturer	Malabe		Owner ▼
 Jeewaka Perera	Lecturer (Tenure Track)	Malabe		Owner ▼
 K.H.K.L De Silva it19006994				Owner ▼
 Lekamalage U.L.V. M. it19111...				Owner ▼

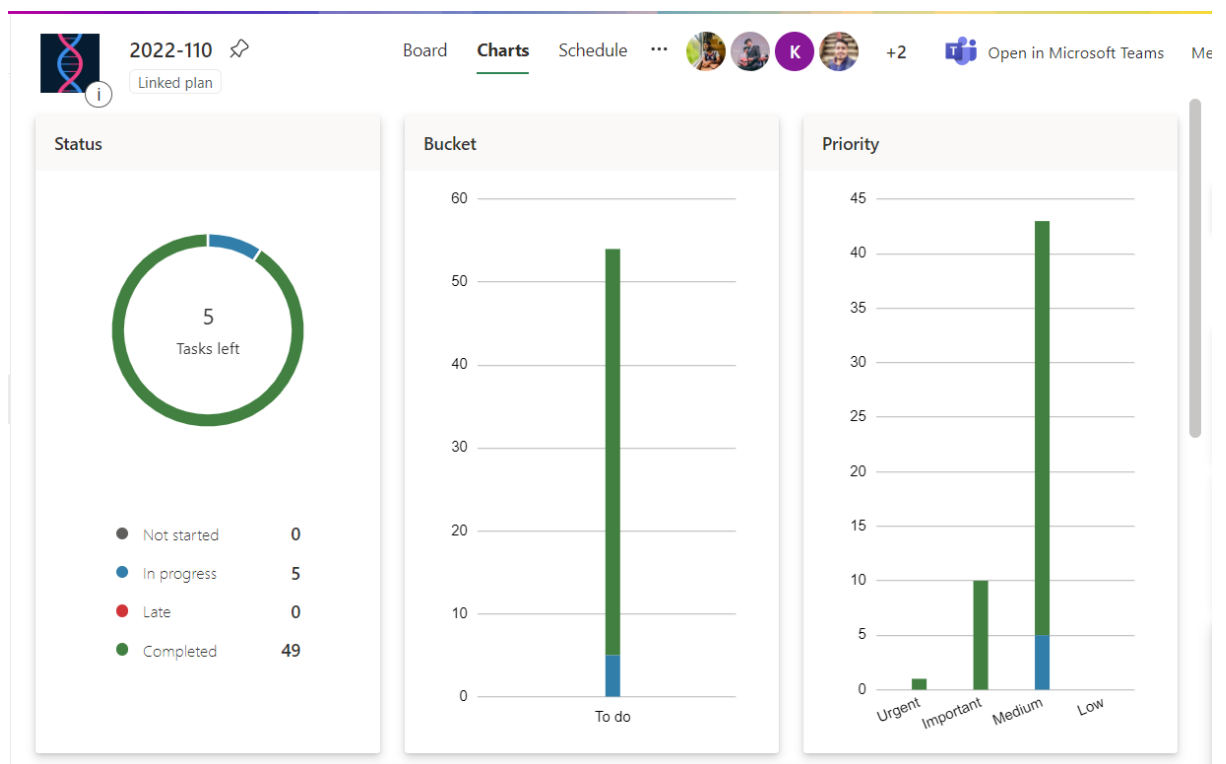
► **Members and guests (0)**

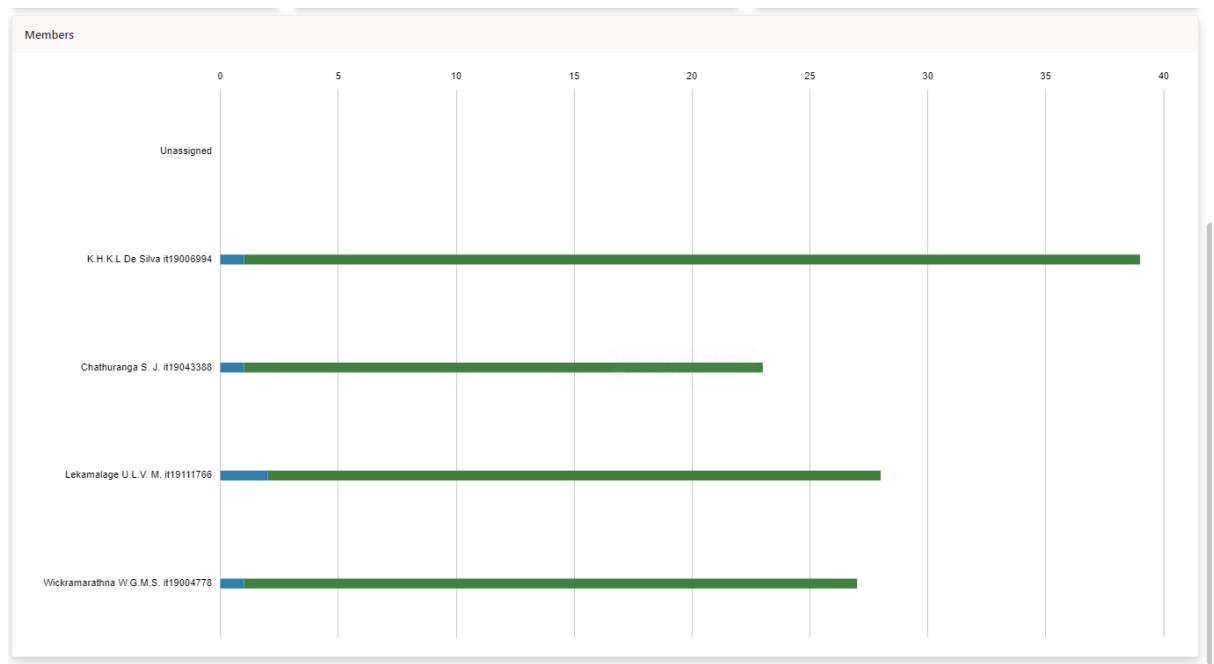
4. Screenshots of Teams Planner

4.1 Teams Board



4.2 Teams Chart Overview





5. Screenshots of GitLab

5.1 Project Overview

The screenshot shows the GitLab Project Overview page for project 2022-110 (Project ID: 1085). The left sidebar contains navigation links: Project overview, Details, Activity, Releases, Cycle Analytics, Repository, Issues (3), Merge Requests (0), CI / CD, Operations, Wiki, and Collapse sidebar. The main content area displays project statistics: 70 Commits, 7 Branches, 0 Tags, and 5.2 MB Files. A commit history table is shown with columns for Name, Last commit, and Last update.

Name	Last commit	Last update
Backend	blockchain component added	1 week ago
healthCare_Assistant	add chad bot application	1 hour ago
mobile-app	add chad bot application	1 hour ago

5.2 Members

The screenshot shows the GitLab Members page for project 2022-110. The left sidebar contains navigation links: Project overview, Repository, Issues (3), Merge Requests (0), CI / CD, Operations, Wiki, Snippets, Settings, and Collapse sidebar. The main content area displays a list of existing members and groups for the project, sorted by Name, ascending.

Member	Access	Role
Chathuranga.SJ @IT19043388_Chathuranga_S_J	Given access 2 months ago	Owner
De Silva K.H.K.L._IT19006994 @DesilvaK.H.K.L._IT19006994	Given access 2 months ago	Owner
Jeewaka Perera @jeewaka.p	Given access 2 months ago	Owner
Lanisha Ruggahakotuwa @Lanisha94	Given access 2 months ago	Developer
Lekamalage U.L.V.M. @IT19111766_Lekamalage_U_L_V_M	Given access 2 months ago	Owner
RP Team @RPTeam	Given access 1 month ago	Reporter
Wickramarathna W.G.M.S._IT19004778 @WickramarathnaW.G.M.S._IT19004778	Given access 2 months ago	Owner

5.3 README file with Project Details

Backend	blockchain component added	4 days ago
mobile-app	initialize mobile app project	1 week ago
webapp	blockchain component added	4 days ago
README.md	Update README.md	1 week ago

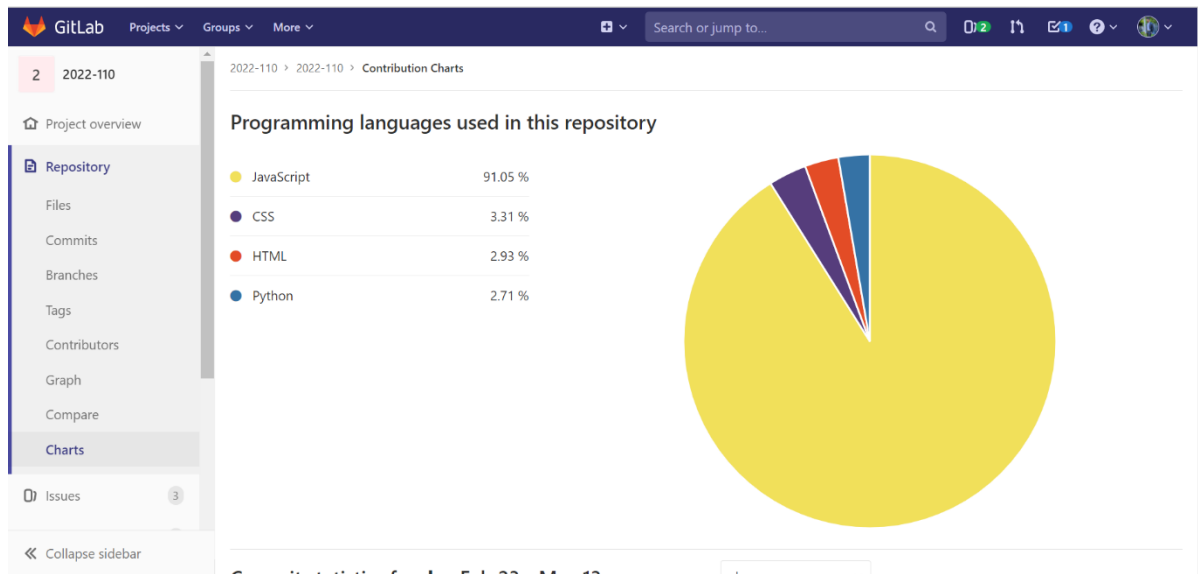
README.md
<h3>2022-110</h3> <hr/> <h2>Distributed Health Care Framework for Patient Health Record Management and Pharmaceutical Diagnosis.</h2> <hr/> <h3>Main Objective</h3> <hr/> <p>Solving healthcare issues during COVID-19 by providing a healthcare framework for automatically storing patients' records protecting users' privacy while providing healthcare services like a virtual assistant for pharmaceutical diagnosis for people staying at home conducting social distancing.</p> <h3>Main Research Questions</h3> <hr/> <p>No Healthcare institution in Sri Lanka has a registered population, and the patient's medical records are kept by the health service or doctor who is treating the patient for a specific disease, as it is in most care settings. As a result, many caregivers are unable to communicate effectively, resulting in poor care coordination. Many research institutes are working on finding solutions for healthcare issues that occur during a pandemic and EHR (Electronic Health Record) systems are becoming more popular. Accessing scattered patient data across several EHRs, however, remains a challenge. In most countries, it is very difficult for individuals to access electronic health records since most of the medical documents such as lab test reports, prescriptions from hospitals are in printed format and it's time-consuming and error-prone when manually entering data and converting them to EHR. Therefore, the practical approach to extracting structured data from printed medical records remains a challenge. Not only that the third most common cause of death is not the disease, but medical error therefore, there should be a solution for the patient to get all the information about the tablets, their usage, side effects, etc. while staying at home. The Healthcare domain is in a need of a conversational agent to give reminders to take medication on time. No such distributed health care service providing framework has yet been implemented to provide healthcare solutions during the COVID-19 while securely storing patient data across several EHRs.</p> <h3>Individual Research question</h3> <hr/> <p>IT19004778: EHR (Electronic Health Record) systems are becoming more popular to share patient details between hospitals but accessing scattered data across several EHRs while safeguarding patient privacy remains a challenge</p> <p>IT19006994: Most of these medical records and documents are in printed format and manually entering those into EHR systems is time-consuming and error-prone.</p> <p>IT19111766: Pharmaceutical error is a critical healthcare problem, but it is even riskier to visit doctors for pharmaceutical diagnosis during a pandemic.</p> <p>IT19043388: The Healthcare domain is in a need of a conversational agent to give reminders to take medication on time.</p> <h3>Individual Objectives</h3> <hr/> <p>IT19004778: To protect patients' data privacy while tracking/sharing healthcare records with healthcare professionals.</p> <p>IT19006994: To scan and extract relevant data from Patient Medical Documents using Deep Learning while preventing human errors that cause when manually entering data.</p> <p>IT19111766: To identify Drugs using Image Processing and extracting pharmaceutical data such as its side effects, dosage, etc.</p> <p>IT19043388: The Healthcare domain is in a need of a conversational agent to give reminders to take medication on time and give appropriate responses according to prescription.</p>

5.4 Git Commits

The screenshot displays the GitLab web interface for a project named '2022-110'. The left sidebar shows the 'Commits' section selected under the 'Repository' tab. The main content area lists the commit history, grouped by date. The commits are as follows:

Date	Commit Message	Author	Commit Hash
2 weeks ago	Merge branch 'dev' of https://gitlab.sliit.lk:2022-110/2022-110 into IT19006994	K.H.K.L. De Silva	833cab28
	Added changes	IT19006994 - K.H.K.L. De Silva	a9d580d3
	changes added	Wickramarathna W.G.M.S., IT19004778	28bfff994
	Merge branch 'feature/dev' into 'dev'	Chathuranga.S.J	4812b771
	changes	Chathuranga.S.J	e15fec22
	code refactor	Chathuranga.S.J	2d578af5
	fixes	Chathuranga.S.J	f4967967
	add git ignore	Chathuranga.S.J	dfd9f9f1
	Merge branch 'IT19006994' into 'dev'	Wickramarathna W.G.M.S., IT19004778	73c7b348
13 May, 2022	add training data to chatbot	Chathuranga.S.J	76686ba8
	add chad bot application	Chathuranga.S.J	1bccc9ae
02 May, 2022	Merge branch 'IT19004778' into 'dev'	Wickramarathna W.G.M.S., IT19004778	12aed51f
	blockchain component added	Wickramarathna W.G.M.S., IT19004778	013bfaf6
	Merge branch 'dev' of https://gitlab.sliit.lk:2022-110/2022-110 into IT19004778	Wickramarathna W.G.M.S., IT19004778	96c17204
26 Apr, 2022	smart contact component added	Wickramarathna W.G.M.S., IT19004778	5c652995
	Merge branch 'IT19006994' into 'dev'	Wickramarathna W.G.M.S., IT19004778	55d484ff

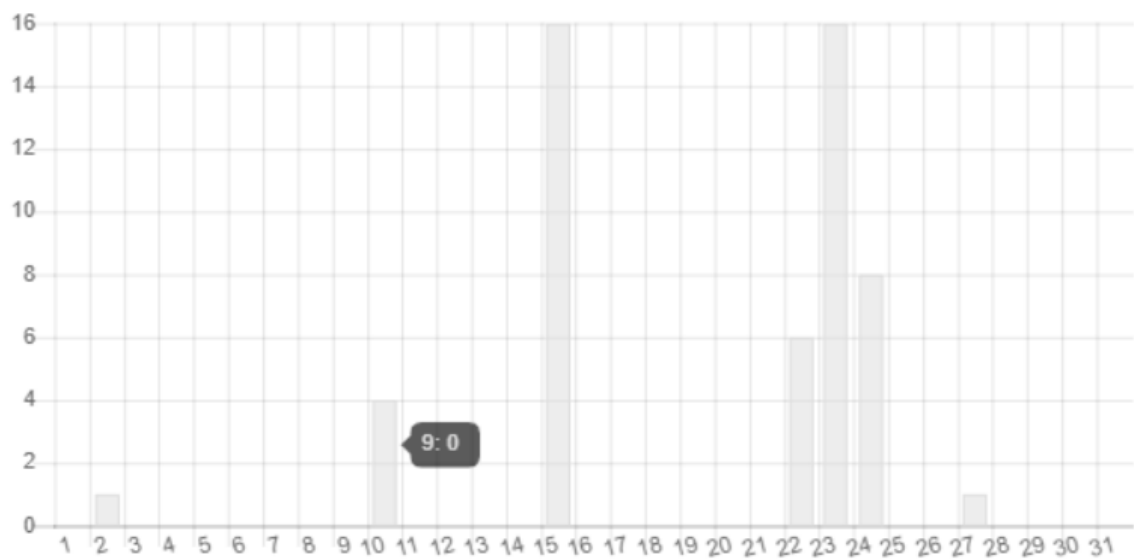
5.5 Git Charts



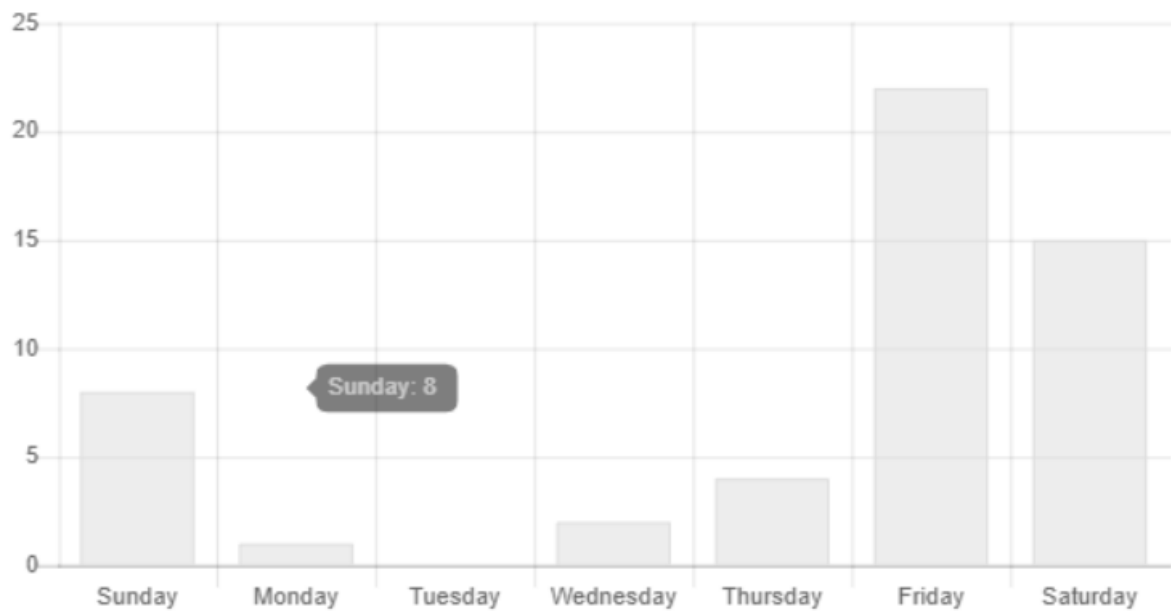
dev

2022-110

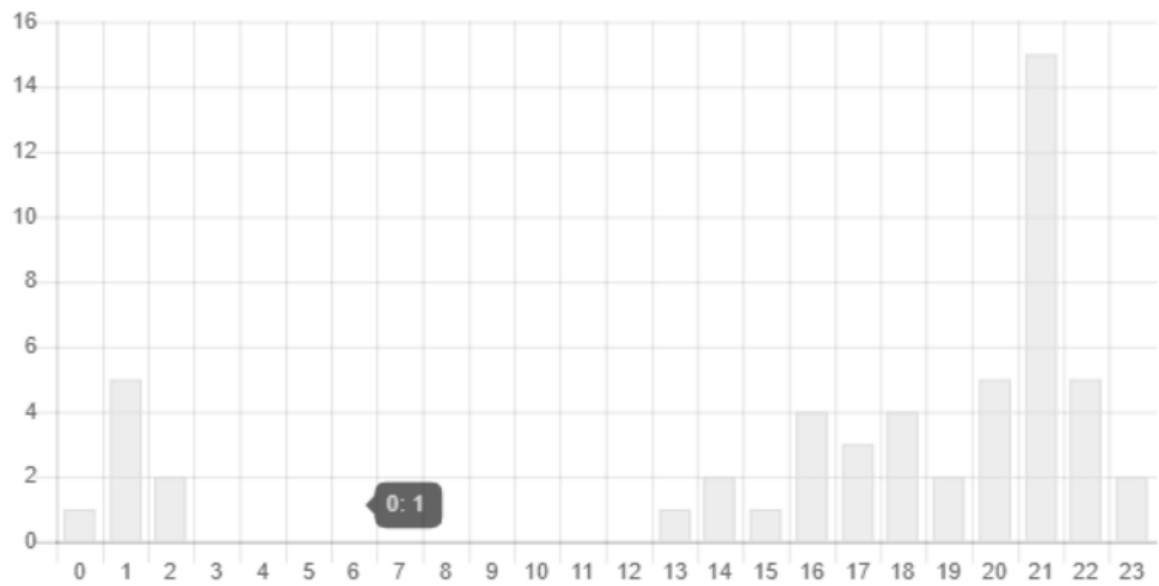
Commits per day of month



Commits per weekday



Commits per day hour (UTC)



5.6 Folder Structure

The screenshot shows the GitLab web interface for a project named "2022-110". The left sidebar contains navigation links: Project overview, Details, Activity, Releases, Cycle Analytics, Repository, Issues (3), Merge Requests (0), CI / CD, and Operations. The main content area displays a commit titled "add training data to chatbot" by Chathuranga.SJ, authored 4 minutes ago. Below the commit message are buttons for adding README, LICENSE, CHANGELOG, CONTRIBUTING, enabling Auto DevOps, and adding a Kubernetes cluster. A table below lists the files in the commit:

Name	Last commit	Last update
Backend	blockchain component added	1 week ago
healthCare_Assistant	add training data to chatbot	4 minutes ago
mobile-app	add chad bot application	1 hour ago
webapp	add chad bot application	1 hour ago
README.md	Update README.md	2 weeks ago

6. Task Output / Progress – 50%

- Research about the two chat bot frameworks (rasa and wit.ai).
 - Install required software's according to the frameworks.
 - Create sample chat bot applications and check how they works.
 - Identified the most suitable framework for our system.
 - Create Health care chat bot using rasa framework.
-
- Screen shot for training model.

```
Processed story blocks: 100%|██████████| 5/5 [00:00<00:00, 1798.90it/s, # trackers=1]
Processed story blocks: 100%|██████████| 5/5 [00:00<00:00, 519.73it/s, # trackers=5]
Processed story blocks: 100%|██████████| 5/5 [00:00<00:00, 70.51it/s, # trackers=30]
Processed story blocks: 100%|██████████| 5/5 [00:00<00:00, 32.05it/s, # trackers=50]
Processed rules: 100%|██████████| 2/2 [00:00<00:00, 1998.24it/s, # trackers=1]
2022-05-04 20:20:07 INFO rasa.engine.training.hooks - Starting to train component 'MemoizationPolicy'.
Processed trackers: 100%|██████████| 5/5 [00:00<00:00, 1245.34it/s, # action=16]
Processed actions: 16it [00:00, 5355.43it/s, # examples=16]
2022-05-04 20:20:08 INFO rasa.engine.training.hooks - Finished training component 'MemoizationPolicy'.
2022-05-04 20:20:08 INFO rasa.engine.training.hooks - Starting to train component 'RulePolicy'.
Processed trackers: 100%|██████████| 2/2 [00:00<00:00, 1563.58it/s, # action=5]
Processed actions: 5it [00:00, ?it/s, # examples=4]
Processed trackers: 100%|██████████| 5/5 [00:00<00:00, 1671.44it/s, # action=16]
Processed trackers: 100%|██████████| 2/2 [00:00<00:00, 2005.40it/s]
Processed trackers: 100%|██████████| 7/7 [00:00<00:00, 2719.03it/s]
2022-05-04 20:20:08 INFO rasa.engine.training.hooks - Finished training component 'RulePolicy'.
2022-05-04 20:20:08 INFO rasa.engine.training.hooks - Starting to train component 'TEDPolicy'.
Processed trackers: 100%|██████████| 350/350 [00:00<00:00, 2985.93it/s, # action=126]
Epochs: 100%|██████████| 100/100 [00:15<00:00, 6.54it/s, t_loss=1.46, loss=1.29, acc=1]
2022-05-04 20:20:25 INFO rasa.engine.training.hooks - Finished training component 'TEDPolicy'.
Processed trackers: 100%|██████████| 350/350 [00:00<00:00, 4410.35it/s, # intent=42]
Epochs: 100%|██████████| 100/100 [00:10<00:00, 9.65it/s, t_loss=0.149, loss=0.0308, acc=0.994]
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Finished training component 'UnexpectTEDIntentPolicy'.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'CountVectorsFeaturizer' from cache.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'CountVectorsFeaturizer' from cache.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'DIETClassifier' from cache.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'EntitySynonymMapper' from cache.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'LexicalSyntacticFeaturizer' from cache.
2022-05-04 20:20:38 INFO rasa.engine.training.hooks - Restored component 'RegexFeaturizer' from cache.
```

- Sample output of chat

```
Your input -> hi
Hey! How are you?
Your input -> im good
Great, carry on!
Your input -> can you help me?
yes tell me i can help you.
Your input -> can you help me to find my prescription details?
Please Wait Im find your history.....
Your input -> 
```

