



Sri Lanka Institute of Information Technology

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

Project ID: 2022-110

STATUS DOCUMENT

Wickramarathna W.G.M.S - IT19004778

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

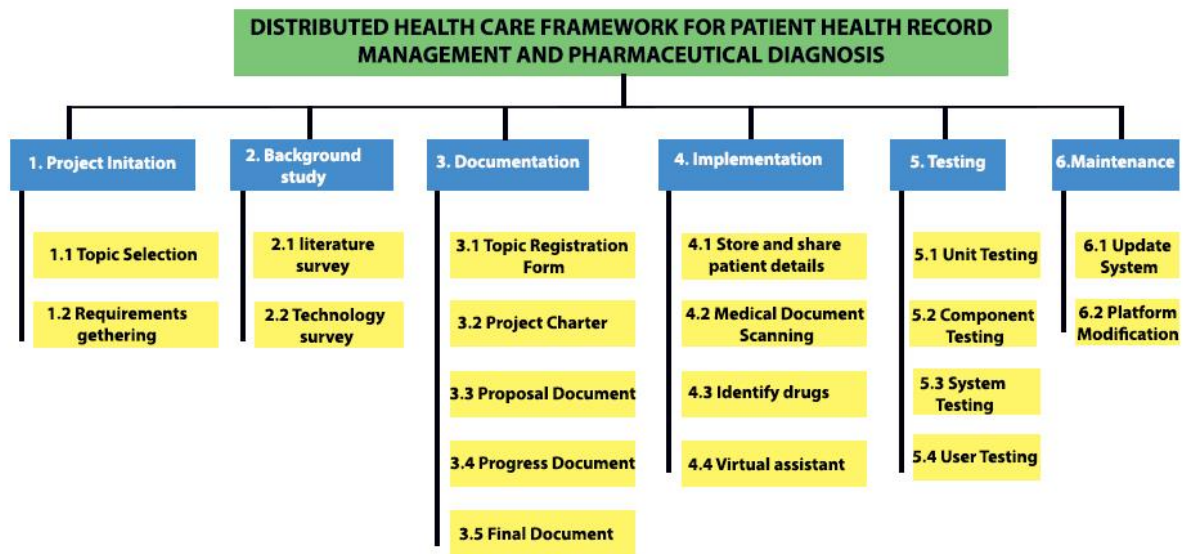
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1. Gantt Chart



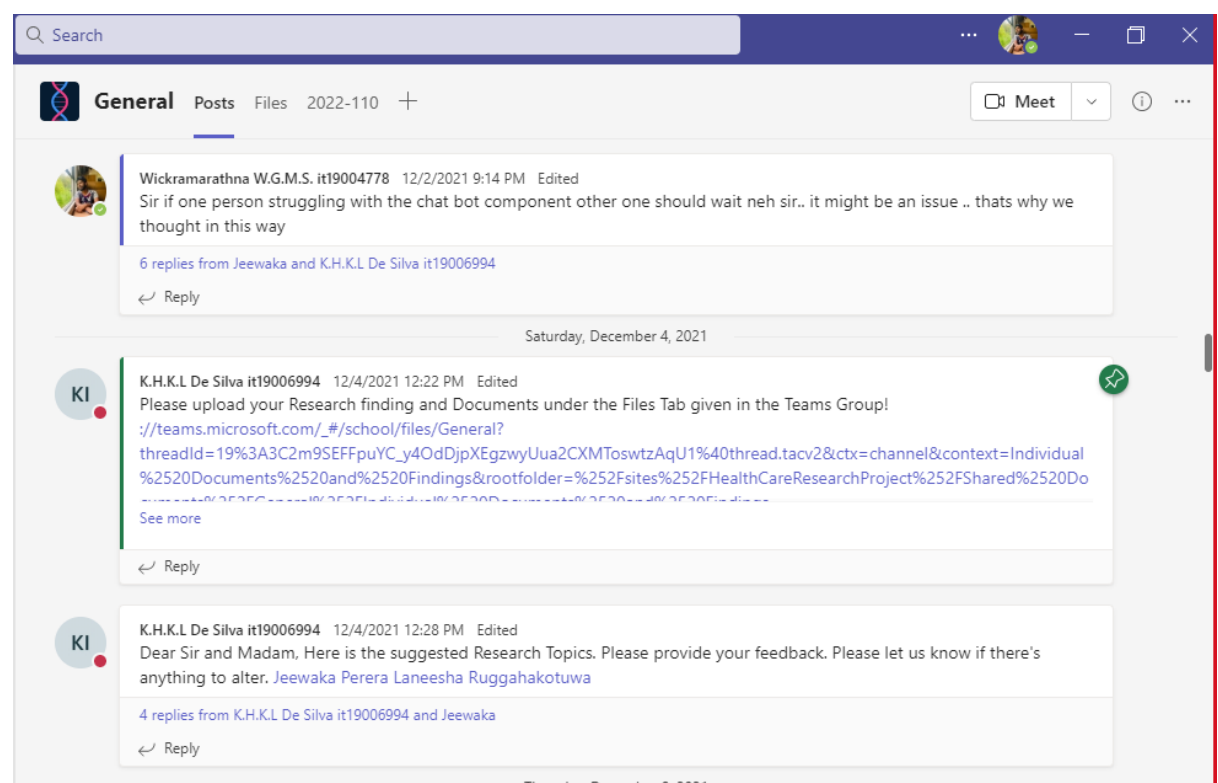
2. Work Breakdown Structure



3.1 SCRUM Meetings

The screenshot shows a Microsoft Teams chat window. On the left is a sidebar with a search bar at the top containing the text "Search". Below it are icons for "All teams" and a DNA helix icon representing a team named "2022-110_Distributed Health...". The main area displays a chat conversation. At the top, there's a header with a "General" tab selected, followed by "Posts", "Files", and "2022-110". A "Meet" button is visible in the top right corner. The chat history starts with a system message: "Meeting in 'General' started" with a timestamp of "Thursday, December 2, 2021". This is followed by two messages from user "K.H.K.L De Silva":

- Message 1:** Sent at 12/2/2021 8:01 PM. Content: "Dear Sir, These are the suggested topics. 4th one is the newly suggested one. Jeeewaka Perera". It has 3 replies.
- Message 2:** Sent at 12/2/2021 8:02 PM. Content: A numbered list of four topics related to EHR and blockchain, followed by a link to a presentation titled "Topic 4 - Topic 4 Online Health Insurance Claims Based on Blockchain and Smart Contract Technology.pptx". It has 5 replies.



Q Search

...

×

General

Posts

Files

2022-110

+

Meet

▼

ⓘ

...

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

↶

Reply

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 K.H.K.L De Silva it19006994 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 you and Jeewaka

@

Q Search

...

×

General

Posts

Files

2022-110

+

Meet

▼

ⓘ

...

Monday, January 24, 2022

Jeewaka Perera

1/24 12:02 PM

Your Proposal Submissions should be individual submissions. Not a Group submission

Wickramarathna W.G.M.S. it19004778

1/24 12:09 PM

okay sir.

↶

Reply

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

...

5 replies from Jeewaka

↶

Reply

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

...

5 replies from Jeewaka

4

Search

General Posts Files 2022-110 +

Meet

KI K.H.K.L De Silva it19006994 4/27 4:26 PM
Dear Sir, what will be the format of the PP1. Do we have to do the individual demonstration together with the presentation or do the individual demonstration when all 4 are done with the presentation? [Jeewaka Perera](#)
2 replies from K.H.K.L De Silva it19006994 and Jeewaka
Reply

Wednesday, May 4, 2022

KI K.H.K.L De Silva it19006994 5/4 8:34 AM
Sir do we have to include Research Problem and Research Gap in PP1 presentation? [Jeewaka Perera](#)
Jeewaka Perera 5/4 9:07 AM
Yes. 1
Reply

Thursday, May 5, 2022

Wickramarathna W.G.M.S. it19004778 5/5 9:12 AM
Scheduled a meeting
Mock Progress Presentation 1
Thursday, May 5, 2022 @ 4:15 PM
5 replies from you
Reply

Search

General Posts Files 2022-110 +

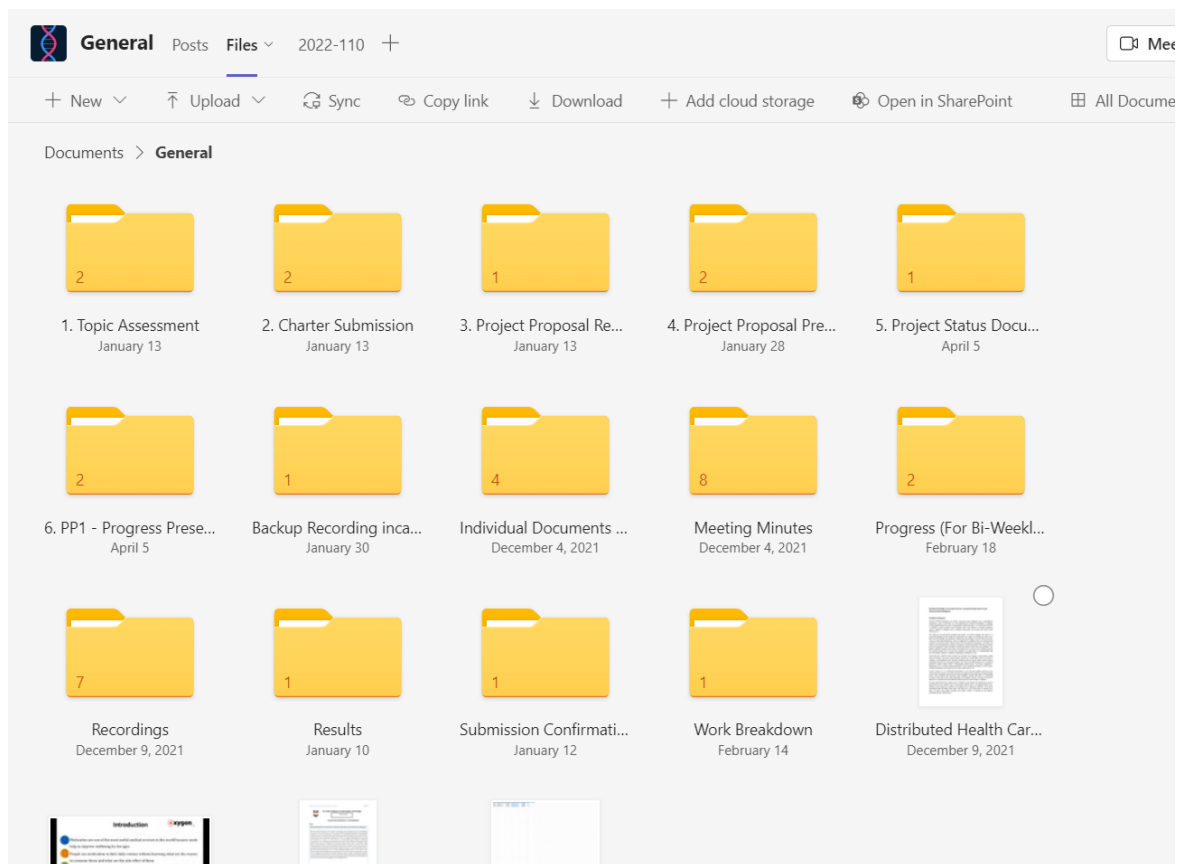
Meet

+ New Upload Copy link Sync Download Add shortcut to OneDrive All Documents


Documents > General > Meeting Minutes

Modified	Name	Modified By
April 7	Attendance Reports	K.H.K.L De Silva it1...
February 28	03rd Feb 2022.docx	K.H.K.L De Silva it1...
February 28	04th of Dec 2021.docx	K.H.K.L De Silva it1...
February 28	07th Feb 2022.docx	K.H.K.L De Silva it1...
February 28	09th of Dec 2021.docx	K.H.K.L De Silva it1...
February 28	11th Jan 2022.docx	K.H.K.L De Silva it1...
April 18	18th April 2022.docx	K.H.K.L De Silva it1...
February 28	29th Jan 2022.docx	K.H.K.L De Silva it1...

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

Search for members

Q

Add member

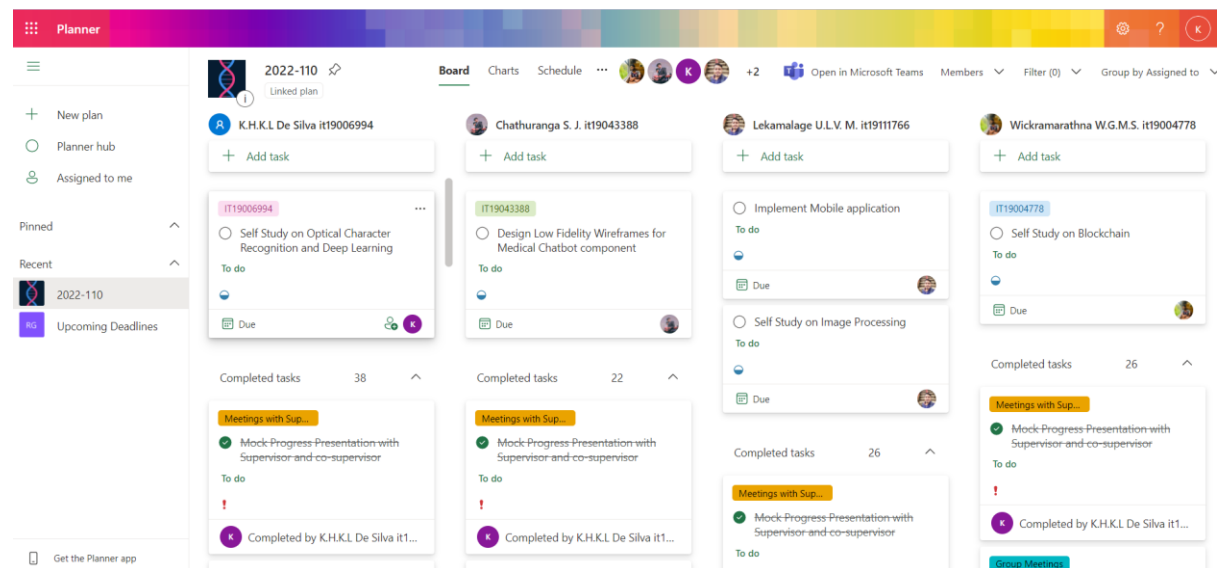
▼ Owners (6)

Name	Title	Location	Tags ①	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 ▼

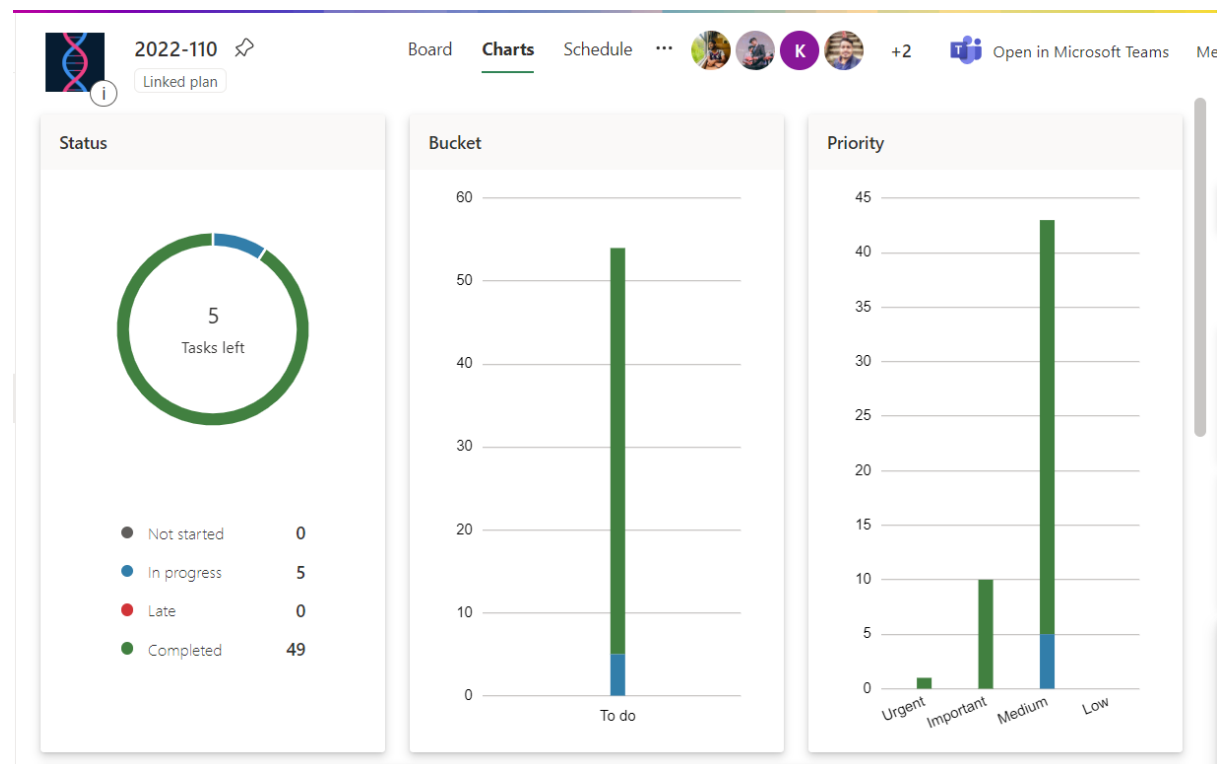
► Members and guests (0)

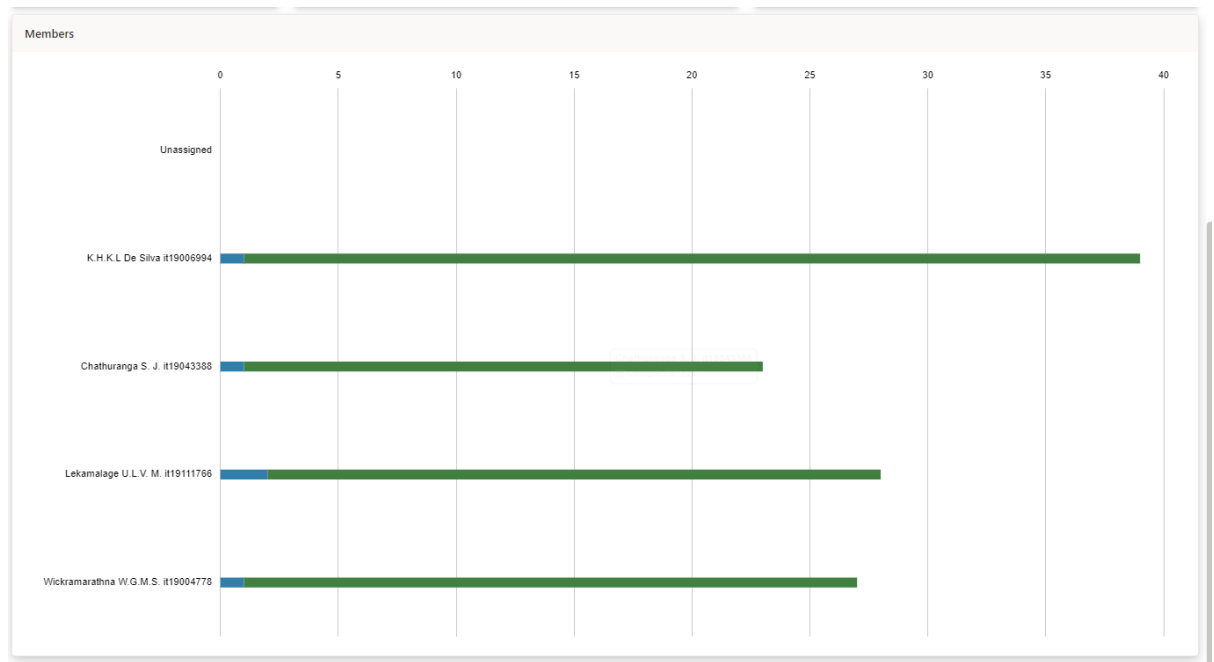
4. Screenshots of Teams Planner

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. The left sidebar contains navigation links: Project overview (selected), Details, Activity, Releases, Cycle Analytics, Repository, Issues (3), Merge Requests (0), CI / CD, and Operations. The main content area displays the 'dev' branch selected for project 2022-110. It shows a merge of branch 'IT19004778' into 'dev' by Wickramarathna W.G.M.S_IT19004778, authored 1 week ago, with commit hash 12aed51f. Below this, there are buttons for README, Add LICENSE, Add CHANGELOG, Add CONTRIBUTING, Enable Auto DevOps, Add Kubernetes cluster, and Set up CI/CD. A table lists the project's components and their last updates:

Name	Last commit	Last update
Backend	blockchain component added	1 week ago
mobile-app	initialize mobile app project	2 weeks ago
webapp	blockchain component added	1 week ago
README.md	Update README.md	2 weeks ago

5.2 Members

The screenshot shows the GitLab Members page for project 2022-110. The left sidebar contains navigation links: Repository, Issues (3), Merge Requests (0), CI / CD, Operations, Wiki, Snippets, Settings (selected), General, Members (selected), Integrations, Repository, CI / CD, and Operations. The main content area displays the 'Existing members and groups' section. It shows a list of members with their names, email addresses, and roles. The list is sorted by Name, ascending. The members are:

- Chathuranga.S.J. (@IT19043388_Chathuranga_S_J - 2022-110) - Owner
- De Silva K.H.K.L. (@DesilvaK.H.K.L._IT19006994 - 2022-110) - Owner
- Jeevaka Perera (@jeevaka.p - 2022-110) - Owner
- Lanisha Ruggahakotuwa (@Lanisha94 - 2022-110) - Developer
- Lekamalage U.L.V.M. (@IT19111766_Lekamalage_U_L_V_M - 2022-110) - Owner
- RP Team (@RPTeam - 2022-110) - Reporter
- Wickramarathna W.G.M.S_IT19004778 (@WickramarathnaW.G.M.S_IT19004778 - 2022-110) - Owner

5.3 READEME

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

GitLab Projects Groups More Search or jump to...

2022-110 > 2022-110 > Commits

IT19004778 2022-110 Create merge request Filter by commit message

04 May, 2022 1 commit

changes added Wickramarathna W.G.M.S_JT19004778 authored 1 week ago 51da4d06

02 May, 2022 3 commits

changes added in viewPatientDetailsUI Wickramarathna W.G.M.S_JT19004778 authored 1 week ago 141688ad

blockchain component added Wickramarathna W.G.M.S_JT19004778 authored 1 week ago 013bfa66

Merge branch 'dev' of http://gitlab.sliit.lk/2022-110/2022-110 into IT19004778 Wickramarathna W.G.M.S_JT19004778 authored 1 week ago 96c17284

26 Apr, 2022 2 commits

smart contact component added Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 5c652995

Merge branch 'IT19006994' into 'dev' Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 55d484ff

GitLab Projects Groups More Search or jump to...

2022-110 > 2022-110 > Commits

IT19006994 - K.H.K.L. De Silva authored 2 weeks ago d36e93c9

23 Apr, 2022 26 commits

Merge branch 'IT19004778' into 'dev' Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago d904d4a4

side nav bar added Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 4cab8ba4

initialize mobile app project Chathuranga.SJ authored 2 weeks ago 476284fb

Merge branch 'IT19004778' into 'dev' Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 0612f81c

new header added Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago e5f24c71

Merge branch 'IT19006994' into 'dev' Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 006917a9

changes added Wickramarathna W.G.M.S_JT19004778 authored 2 weeks ago 6ec67f54

2

2022-110

Project overview

Repository

Files

Commits

Branches

Tags

Contributors

Graph

Compare

Charts

Issues3

navbar component added

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

d6bb0c7f

header component changed

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

977b4c24

header component added

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

6f84a5c4

initial commit

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

f3993852

Added Index.jsx file

IT19006994 - K.H.K.L De Silva authored 2 weeks ago

f7597833

web app folder added

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

034c2d99

web app folder removed

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

4ad5930b

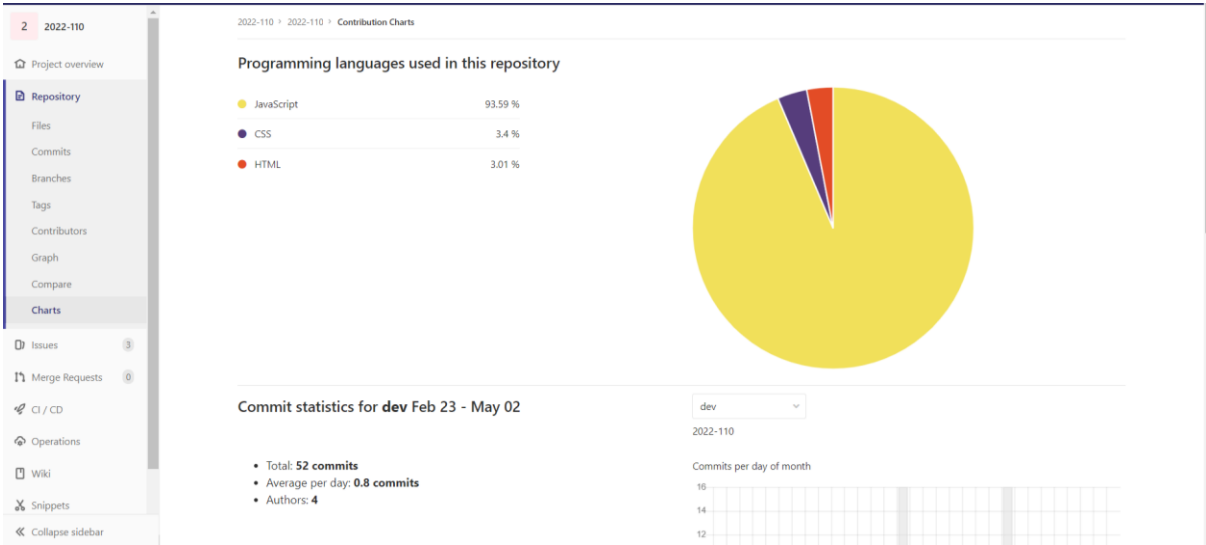
web app initial commit

Wickramarathna W.G.M.S_IT19004778 authored 2 weeks ago

e99f2ae4

13

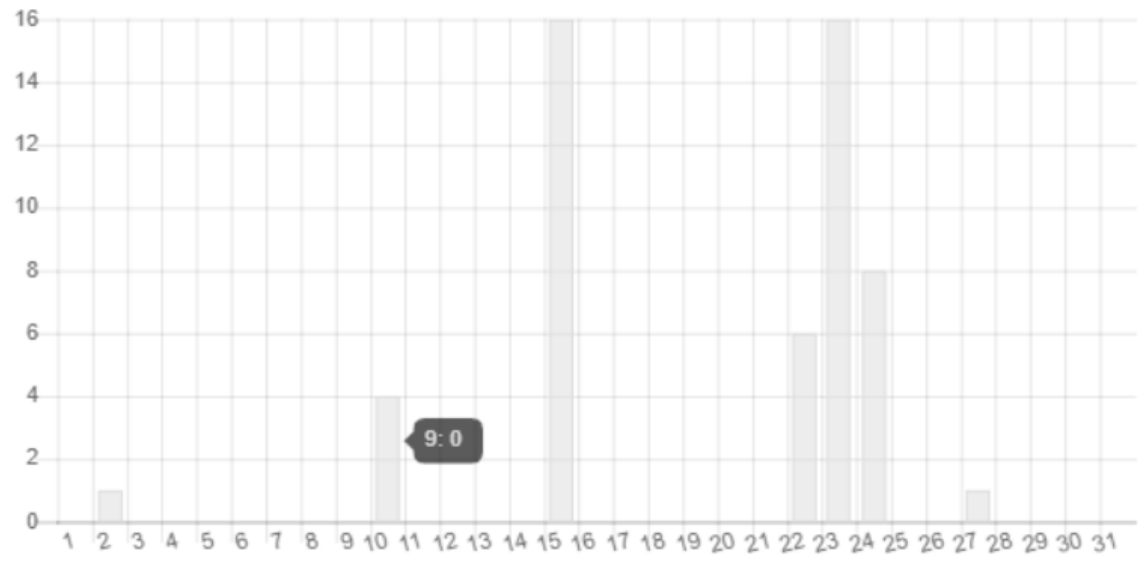
5.5 Git Charts



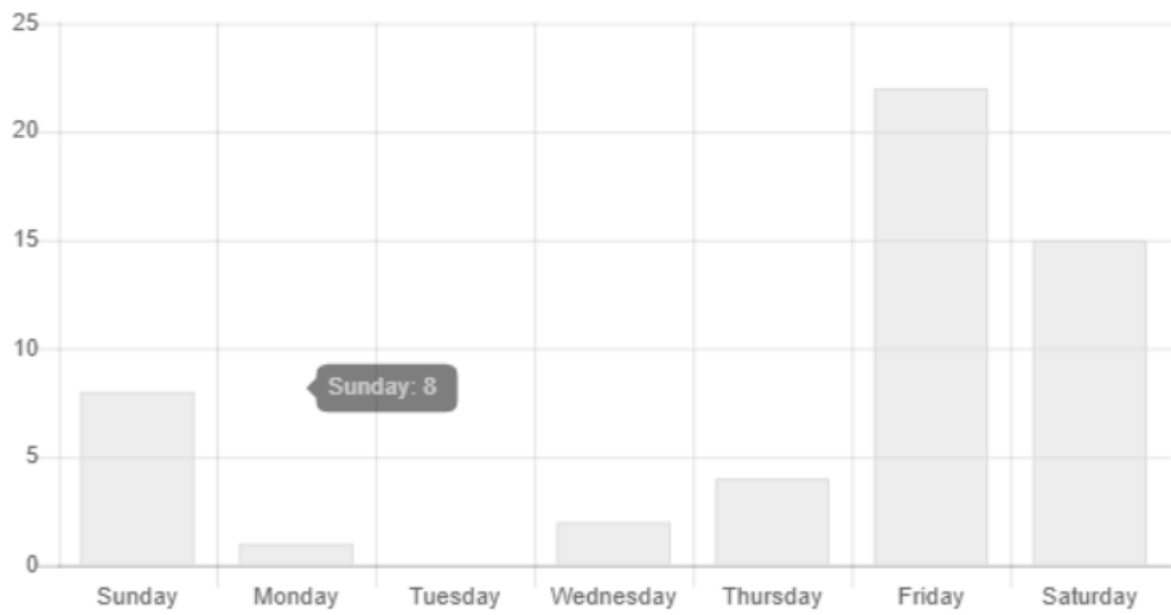
dev

2022-110

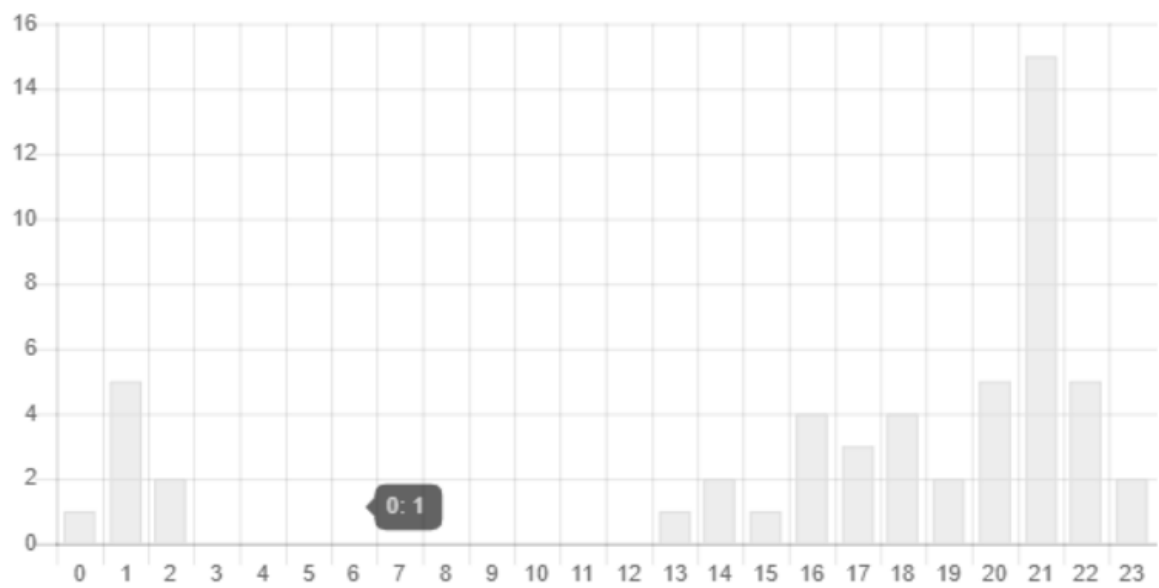
Commits per day of month



Commits per weekday



Commits per day hour (UTC)



GitLab Projects Groups More Search or jump to...

2022-110

Project overview

Repository

- Files
- Commits
- Branches
- Tags
- Contributors
- Graph
- Compare
- Charts

Issues 3

Merge Requests 0

Collapse sidebar

2022-110 > 2022-110 > Graph

IT19004778

You can move around the graph by using the arrow keys.

Git revision ☐ Begin with the selected commit

May 5 IT19004778 changes added

4 IT19111766 made changes

3 changes added in viewPatientDetailsUI

2 Merge branch 'dev' into 'dev'

blockchain component added

Merge branch 'dev' of http://gitlab.sliit.lk/2022-110/2022-110 into IT19004778

added imprint identification code

joined python code vs node js

smart contact component added

Merge branch 'IT19006994' into 'dev'

Changed the Default React Browser Tab Icon

Update routes

Add new file

Apr 27

24 IT19006994

master

5.6 Folder Structure

22022-110

Project overview

Repository

Files

Commits

Branches

Tags

Contributors

Graph

Compare

Charts

Issues3

Merge Requests0

CI / CD

Operations

2022-110 > 2022-110 > Repository

IT190069942022-110+

HistoryFind fileWeb IDE

Changed the Default React Browser Tab Icon

IT19006994 - K.H.K.L. De Silva authored 1 week ago

d36e93c9

Name	Last commit	Last update
Backend	fixes	1 week ago
mobile-app	initialize mobile app project	1 week ago
webapp	Changed the Default React Browser Tab Icon	1 week ago
README.md	Update README.md	1 week ago

README.md

2022-110

Distributed Health Care Framework for Patient Health Record Management and Pharmaceutical Diagnosis.

6. Task Output / Progress

Deploy smart contract on Rinkeby Ethereum Test Network

```
Server is up and running
MongoDB Connection success!
Attempting to deploy from account 0xE84D206CecD4Bd0B493a62BA1DfAb4A2643f9d2D
contract deployed to 0x78B45779734C4c8395d77433Cb904eC7E32cBF56
```

Address 0xE84D206CecD4Bd0B493a62BA1DfAb4A2643f9d2D

Overview

Balance: 0.144189034824043807 Ether

More Info

My Name Tag: Not Available

Transactions

Latest 25 from a total of 87 transactions

Txn Hash	Method	Block	Age	From	To	Value	Txn Fee
0xc530d10cb0481df705...	0x60806040	10618173	2 mins ago	0xe84d206cecd4bd0b49...	Contract Creation	0 Ether	0.012302094798

Get patient details

http://localhost:8070/patient/getPatientDetails/025

GET http://localhost:8070/patient/getPatientDetails/025

Status: 200 OK Time: 810 ms Size: 1.57 KB

Body

```
{
  "basicInformation": {
    "generalInformation": {
      "firstName": "amal",
      "mName": "amal",
      "lastName": "amal",
      "profilePic": "location",
      "dob": "2022-01-01",
      "gender": "male",
      "maritalStatus": "married",
      "contactDetails": {
        "mobileNumber": "07758999995",
        "email": "abc@gmail.com",
        "emergencyContact": {
          "mobileNumber": "07758999995",
          "homeNumber": "07758999995"
        },
        "otherInformation": {
          "height": "123",
          "weight": "25",
          "bloodGroup": "b"
        },
        "prescriptions": [
          {
            "doctorName": "prescription 01",
            "date": "2022/01/01",
            "summary": "medication summary",
            "comment": ""
          },
          {
            "doctorName": "prescription 02",
            "date": "2022/01/01",
            "summary": "medication summary",
            "comment": ""
          }
        ],
        "vaccinationDetails": [
          {
            "vaccineName": "vaccine 01",
            "date": "2022/01/01",
            "placeOfVaccination": "Kandy",
            "batchNumber": "001",
            "dose": "1",
            "time": "9.20 am",
            "comment": "vaccine 01"
          },
          {
            "vaccineName": "vaccine 01",
            "date": "2022/01/01",
            "placeOfVaccination": "Kandy",
            "batchNumber": "001",
            "dose": "1",
            "time": "9.20 am",
            "comment": "vaccine 01"
          }
        ],
        "allergiesDetails": [
          {
            "date": "2022/01/01",
            "comment": "Allergic data",
            "detailsOfMedicalDocuments": [
              {
                "documentName": "name_date",
                "location": "./ac/"
            },
            {
              "identifiedDate": "2022/01/01",
              "Disease": "Disease 01",
              "level": "level"
            }
          ]
        }
      }
    }
  }
}
```

Add patient details

The screenshot shows the REST Client interface with a POST request to `http://localhost:8070/patient/add`. The request body is a JSON object:

```
{
  "nic": "826",
  "data": {
    "basicInformation": {
      "generalInformation": {
        "firstName": "amal",
        "middleName": "amal",
        "lastName": "amal",
        "profilePic": "location",
        "dob": "2022-01-01",
        "gender": "male",
        "maritalStatus": "married"
      },
      "contactDetails": {
        "mobileNumber": "8775099995",
        "email": "abc@gmail.com"
      },
      "emergencyContact": {
        "mobileNumber": "8775099995",
        "homeNumber": "8775099995"
      }
    }
  }
}
```

[illegible][illegible]

rinkeby.io/#explorer

Etherscan
Rinkeby Testnet

Address: 0xE84D206CecD48d08493a628A1DfAb4A2643Bd2D

Overview

Balance: 0.001005088004020110 Ether

More Info

My Name Tag: Not Available

Transactions

17 Latest 25 from a total of 94 transactions

Txn Hash	Method	Block	Age	From	To	Value	Txn Fee
0x7b0d8174878638250f...	0x238ae1c1	10041273	4 days 2 mins ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.007466403111
0x74221cd09e091120a...	0x238ae1c1	10022852	7 days 4 hrs ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.004081419833
0x1cd59243f40c418a0...	0x238ae1c1	10022744	7 days 5 hrs ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.004971292381
0x44c3f5297088a33a01...	Transfer	10022888	7 days 5 hrs ago	0x031e9b031b10b18172...	0xe84d206cecd4bd0b49...	0.5 Ether	0.000566999084
0x79139e1c41ea48524...	0x238ae1c1	10022874	7 days 5 hrs ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.004481457138
0x93d508823d72132b6...	0x238ae1c1	10018209	8 days 32 mins ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.002123373496
0x38a0debf8eac428d95...	Transfer	10018207	8 days 32 mins ago	0x3c352ea32dfb797cod...	0xe84d206cecd4bd0b49...	0.1 Ether	0.004595641081
0xc530a10cb481d0f05...	0x08000040	10018173	8 days 41 mins ago	0xe84d206cecd4bd0b49...	Contract Creation	0 Ether	0.01230204708
0x859a33ac720280401d...	0x238ae1c1	10018182	9 days 1 hr ago	0xe84d206cecd4bd0b49...	0x1e80b2701235c30b...	0 Ether	0.013908718738
0xd723a91219a33a27f...						0 Ether	0.01295692674
0xa7c8cd507b182330...						0 Ether	0.000493617056

localhost:3000/viewPatientDetails

Search

Basic Information

NIC: 922212661V

Name: Alex B.

Age: Alex

More Details >

Last Medication Details

Doctor Name: 922212661V

Date: Alex B.

Note: Alex

More Details >

Vaccination Details

Vaccine 01

+ Add New Vaccine Details

localhost:3000/viewPatientDetails

Search

Basic Information

NIC: 922212661V

Name: Alex B.

Age: Alex

More Details >

Allergies Details

+ Add New Alle

Patient Information

First Name: Alex B.

Middle Name: Alex B.

Last Name: Alex B.

Date Of Birth: Alex B.

Gender: Alex B.

Marital Status: Alex B.

NIC: Alex B.

Address: Alex B.

Address: Alex B.

Address: Alex B.

Address: Alex B.

Address: Alex B.

Address: Alex B.

More Details >

Diseases Condition

Condition 01

Condition 01

More Details >

localhost:3000/viewPatientDetails

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Search

Basic Information

NIC
922212661V

Name
Alex B.

Age
Alex

Allergies Details

Prescription 01

More Details ▶

Prescription 01

More Details ▶

Modal: Last Prescription Information

Address
Alex B.

Address
mm/dd/yyyy

Address

Comment

localhost:3000/viewPatientDetails

Customize Links Free Hotmail Windows MarketPL... New Tab I'm Trying to subscr... Windows Media Windows Imported From IE HP Connected Other bookmark

Search

Basic Information

NIC
922212661V

Name
Alex B.

Age
Alex

Allergies Details

Prescription 01

More Details ▶

Prescription 01

More Details ▶

Modal: Add New Vaccination

Name of the Vaccine
Alex B.

Date
mm/dd/yyyy

Place of vaccination
Alex B.

Batch Number
Alex B.

Dose

Time
--:--:--

Comment

Secondary