

# **SOEN 6841**

## **Software Project Management**

**Group 8**

**Final Report**

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# Table of Contents

<b>Table of Contents</b>	<b>2</b>
<b>High Level Project Definition</b>	<b>4</b>
<b>Introduction of Team Members and Roles</b>	<b>6</b>
<b>Project Scope</b>	<b>7</b>
Project objective:	7
Out Of Scope	9
<b>Project approach and technologies</b>	<b>11</b>
Methodologies:	11
Agile	11
Scrum	11
Components of the Shelf	11
Custom Coding	12
Launch Strategy of the Project:	12
Technologies	12
Project Management tools	12
Jira	12
Confluence	12
Communication	12
WhatsApp	12
Email	12
Configuration management	13
Backend	13
Frontend	13
Database	13
Cloud	13
<b>Acceptance Test Cases for the functionality developed in all sprints:</b>	<b>14</b>
<b>Success criteria 1:</b>	<b>24</b>
<b>Defect Density (DD) should be less than two defects in each sprint. Defect density for the three sprints is shown in the below graph.</b>	<b>24</b>
Indicator 1:	24
Success criteria 2	25
Indicator 2	25
Indicator 3	25
Indicator 4	26

Indicator 5	26
Indicator 6	27
<b>Iteration Burndown Chart</b>	<b>28</b>
<b>Release Burndown Chart</b>	<b>29</b>
<b>Retrospective analysis</b>	<b>30</b>
<b>Sprint 1 retrospective analysis</b>	<b>30</b>
What went well:	30
What can be improved:	31
<b>Sprint 2 retrospective analysis</b>	<b>31</b>
<b>Sprint 3 retrospective analysis</b>	<b>32</b>
What went well:	32
<b>Timeline</b>	<b>33</b>
<b>Budget and Reports</b>	<b>34</b>
Estimated Workload report (based on story points)	37
Estimated Report on the Assignment of tasks to the assignees	37

# **High Level Project Definition**

**Goal :** The objective of this project is to provide a website/portal to help patients, counselors and doctors to have access faster to the medical system.

**Description:** A software system that helps patients to get a consultation from counselors or doctors based on the severity of their symptoms. The users of this software system are patients, counselors, doctors, and managers. This project is about collecting patients' data by filling out a self-assessment form. After that, the self-assessment results are sent to a counselor, who can either reject the request or assign it to a specific doctor. The counselor can also schedule an appointment with the patient directly to know more about the patient's health issues. And the doctor can also schedule the appointment with the patient or can reject the appointment forwarded by the counselor.

Eventually, the patient will get a notification about the status of their appointment on the portal.

**Approach Used :** Agile Development

# Introduction of Team Members and Roles

1. **Project Manager** - Amarjeet Singh Kapoor
2. **Business Analyst** - Anusha Yeramalla
3. **Scrum Master** - Varshini Vankayalapati
4. **Backend Developer** - Mehtab Singh, Jaswinder Singh, Bhavitha Yarlagadda.
5. **Frontend Developer** - Amarjeet Singh Kapoor, Varshini Vankayalapati, Srikrithi Chamarthi
6. **QA Engineer** - Anusha Reddy Lattupally
7. **Architect** - Mehtab Singh

## Story point planned in Sprints v.s. completed

Sprint Number	Planned	Completed
Sprint 1	16	16
Sprint 2	26	22
Sprint 3	26	30
	Total = 68	Total = 68

# **Project Scope**

## **Project objective:**

The objective of the project is to implement all the capabilities of corresponding users(doctor, patient, Manager, Counsellor ) in three sprints in the form of a website to help patients, counselors and doctors to have faster access to the medical system. The main goal of the project is that the patient must be able to fill the self-assessment form and according to the results the appointment must be fixed and notified to the patient with the appointment details.

## **Resources:**

The team members have been given individual roles as different key stakeholders, the team consists of Project manager, Scrum master, Front-end developers, Backend developers, QA Analyst and Architect for the successful delivery of the product. Here, the budget is fixed by knowing the workload of each individual and assignment of work which was given for the upcoming sprints. As different roles have different pay, the cost has been decided by the hourly and role type they are working on.

## **Assumptions:**

1. The Features to be delivered upon in different sprints have been decided based on the user requirements.
2. The priorities are given to the user stories which are significant and where the other stories are dependent on high priority stories.
3. The size of the story points are being decided with the complexity level and time taken to implement.
4. Every story has a deadline with the sprints and is assumed to complete by a given timeline.
5. The technologies adapted by the project team are assumed to work as expected and as found in the previous experience.

## **Constraints:**

- Time and Budget of the project is fixed with the variable being the scope of the project.
- New resources cannot be hired in case of deficiency of resources.
- Release and timeline of the project is fixed and cannot be modified.
- Tools being used by the team should be free because of no overhead budget of the team.

## **Deliverables:**

### Sprint 1:

- The basic project set up should be done in order to start the implementation.
- The patient must be able to register with the username and password into the website and can login into the website.
- The Manager must be able to register with the username and password into the website and can login into the website.
- The Counsellor must be able to register with the username and password into the website.

### Sprint 2:

- For the patient there must be a home page where one can access different functionalities.
- Patients must be able to fill the self assessment form and be able to see the display results along with the appointment date and time scheduled if it is approved by the counselor and the doctor.
- Counselors must be able to login into the website, able to see the patients self assessments results only after their tests are submitted.
- The Doctor must be able to register with the username and password into the website and can login into the website.
- The Manager must have a home page, admin portal where he can manage the patients, doctors, counselors by adding or deleting them

### Sprint 3:

- Patients can be able to check the details of their own appointment.
- Counselors must have a home page , able to assign a doctor to the patient, able to book an appointment for the patient, able to see the details of the appointment details of the patient, and also can remove the patient.
- Doctors must be able to see the list of patients and their appointment details, and also be able to remove the patients.
- Manager should be able see the complete report of the statistics and be able to approve/reject the registration request of the doctors.

### **Success Metrics:**

- Patients are able to successfully register, login, complete a self assessment test and take appointments.
- Counselors are able to register, login, check patient appointments details, request appointments and assign doctors to a patient.
- Doctors are able to register, login, approve/reject patient appointment requests.
- Manager is able to approve registration requests, add/delete different users and fetch patient reports.
- Patients can now easily self diagnose from the comfort of their homes and request for appointments instead of going physically to the hospital.
- Doctors can approve/reject patients' requests remotely.
- Manager can easily fetch out digital reports and can work efficiently.
- Manager and Counselor can work remotely.
- The software system will make the lives of everyone in the hospital industry easy.

### **Out Of Scope**

Due to constraints on Time and Budget, the team has to compromise with the scope of the project.

Some of the scope has been identified and shifted to out of scope because of the constraints and are written below :-

- Notifying patients about their appointments through email.
- Filter option on the patients list in the counselor's homepage.
- Auto logout after user inactivity where the user must be logged out after the user stops using the page for a few minutes.
- Verification of User(Patient, Counsellor, Doctor, Admin) via email , where the user needs to get a mail with verification link for the security for the information.
- Forget Password to recover the password by the user.
- Human Turing Test(ex. captcha) which is a test done on the user Interface in order to verify that the user is a human.
- Internationalization requires a huge budget Initially and expansion into the international market is tough. It is kept out of scope.
- Multiple languages are not supported.
- UI screen reading to convert to text messages.
- Canceling or rescheduling appointments by the patient is kept out of scope.
- Automatic rejection of appointments for a patient who already has an upcoming appointment.
- Session maintenance for User(Patient, Counsellor, Doctor, Admin).
- Mobile and Desktop applications are kept out of scope because several configurations and extra implementation of several functionalities need to be done which is not possible in a short span.

# **Project approach and technologies**

## **Methodologies:**

### **Agile**

The project has followed agile methodology by delivering a specific set of features in different iterations. The project has been completed in three sprints of two weeks each. Agile has been used as the methodology to deliver the project so that proper feedback from the customer can be taken after each iteration and the same has been incorporated in the project. The agile approach which has been followed in this project is scrum.

### **Scrum**

Scrum Agile approach has been followed in this project. User Backlog stories were written by the project owner and scrum master by collaborating with the needs of the customer and transforming those needs into user stories with the help of business analysts. These stories were then given priority and the same were picked in different sprints based on the priority. Daily meetings took place with the scrum master being the mediator of the meetings.

## **Components of the Shelf**

We have used various off the shelf components to support our project. These components have been chosen carefully to avoid the requirements of customization of these components in the near future. This will avoid conflicts with the components in the future. These include -

1. Jira
2. Confluence
3. Slack
4. GitHub
5. Postgres
6. Heroku

## **Custom Coding**

Although a lot of components are being used, the core business logic of the software project has been custom coded to meet the business requirements of the project stakeholders.

## **Launch Strategy of the Project:**

The project has been developed in iterations and feedback of the project stakeholders has been taken after every iteration. But the launch of the project is not phased. It was released all in one at the end of the last iteration and quality assurance. Phased approach was not followed to release the project because the functionality of the project was interrelated and full usability of the project cannot be extracted out without all the features.

## **Technologies**

### **Project Management tools**

#### **Jira**

The management of the project was done with the help of Jira. This is an off the shelf component which provides various features such as task management, project and issue tracking, backlog prioritization.

#### **Confluence**

Confluence was used to capture project requirements, write project kickoff documentation and documentation of key decisions.

## **Communication**

#### **WhatsApp**

WhatsApp was used for the communication between various stakeholders of the project. WhatsApp helped different individuals connect with each other efficiently with the features of one to one communication, group communication and many others.

## Email

Formal communication in the project was done using emails.

## Configuration management

**GitHub:** Configuration management was an important part of the project. There was a requirement to keep track of various versions of the project software which would be done with the help of GitHub. GitHub provided various features such as change track management, remote collaboration.

## Backend

**Java Spring Boot:** The backend of the project software was implemented in java using the spring framework. This was used as the technology for backend implementation because the team had a proven experience in the same technology and team members had done the same types of project with the same technology. Also, there is a lot of community support for Java Spring Boot which makes it very efficient to be adopted. Java Spring Boot has proven to be the technology which has provided scalable, maintainable and highly available software solutions in the past.

## Frontend

Java Script, HTML, CSS and React were used to build the front-end application. We stuck with these core technologies as it was a small project and these form the basis for any other technologies required for creating UI.

## Database

**Postgres:** Postgres is an open source database software in which the team had an experience in the past. It supports all the features required to develop our project. It has already been in the industry for a lot of time making it a reliable choice for the project. It being open source also helped in the cost reduction of the software.

## Cloud

**Heroku:** We used Heroku free cloud services to deploy our software to help in remote development collaboration of the project.

# Acceptance Test Cases for the functionality developed in all sprints:

For a more detailed view of the Acceptance test cases, please check [detailed acceptance test cases](#).

## Test cases for functionality developed in all the sprints:

### Sprint 1:

User Acceptance Test Cases Sprint 1										
Team Name		Testing Date		Team 8						
Arogya				30 October 2022		Anusha Reddy				
#	Story ID	User Story	Preconditions / Data		Steps To Execute	Expected Results	Tested	Reviewed	Retest Date	Defect/Comments
7	1	As a User, I want to login myself in the system so that I can access my account.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		29 October 2022	Completed, As expected.
8					2 Enter correct Username and password in the fields in order to login into the system.	User must be able to enter the username and password.	PASS		29 October 2022	Completed, As expected.
9					3 Home page screen is seen and can be modify if needed.	If credentials are correct home page must be displayed.	PASS		29 October 2022	Completed, As expected.
10					4 Click or edit account details if needed.	Modified details must be shown in the page.	PASS		29 October 2022	Completed, As expected.
11		Manager Login (Negative scenario)								
12	2	As a User, I want to login myself in the system so that I can access my account.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		29 October 2022	Completed, As expected.
13					2 Enter wrong Username and password in the fields.	An error message must be displayed if wrong credentials are entered.	PASS		29 October 2022	Completed, As expected.
14					3 Click on the login button after entering wrong password.	User must be able to relogin after the wrong credentials are entered.	PASS		29 October 2022	Completed, As expected.
15		Register Counsellor (Positive scenario)								
16	3	As a user, I want to register myself in the system so that I can get patient's self assessment results and assign appointments with me or the doctor.	User must be in the registration page in the system		1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		28 October 2022	Completed, As expected.
17					2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		28 October 2022	Completed, As expected.
18					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		28 October 2022	Completed, As expected.
19					4 Click on the register button and enter registration number in order to register.	Able to enter the registration number.	PASS		28 October 2022	Completed, As expected.
20					5 Redirect to counsellors home page on successful registration.	After registration, user must be able to view the home page	PASS		28 October 2022	Completed, As expected.

Arogya									User Acceptance Test Cases Sprint 1			
1	Team Name								Team 8			
2	Testing Date								30 October 2022			
4	Name of Tester(s):								Anusha Reddy			
5	# ID	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments		
21		Register Counsellor (Negative scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		28 October 2022	Completed, As expected.		
22	4	As a user, I want to register myself in the system so that I can get patient's self assessment results and assign appointments with me or the doctor.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		28 October 2022	Completed, As expected.		
23					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		28 October 2022	Completed, As expected.		
24					4 Re-enter the confirm password	User must be able to re-enter the confirm password if password does not matches with password.	PASS		28 October 2022	Completed, As expected.		
25					5 Click on the register button and enter registration number in order to register.	Able to enter the registration number.	PASS		28 October 2022	Completed, As expected.		
26					6 Redirect to counsellors home page on successful registration.	Able to view the home page after registration.	PASS		28 October 2022	Completed, As expected.		
27												
28												
29		Register Manager (Positive scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		27 October 2022	Completed, As expected.		
30	5	As a User, I want to register myself in the system, to able to see the list of all the patients, doctors, and counselors. I can also add or delete any of them.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		27 October 2022	Completed, As expected.		
31					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		27 October 2022	Completed, As expected.		
32					4 Redirect to managers home page on successful registration.	Able to view the home page after registration.	PASS		27 October 2022	Completed, As expected.		
33												
34												
35		Register Manager (Negative scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		27 October 2022	Completed, As expected.		
36	6	As a User, I want to register myself in the system, to able to see the list of all the patients, doctors, and counselors. I can also add or delete any of them.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		27 October 2022	Completed, As expected.		
37					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		27 October 2022	Completed, As expected.		
38					4 Re-enter the confirm password	User must be able to re-enter the confirm password if password does not matches with password.	PASS		27 October 2022	Completed, As expected.		
39					5 Redirect to managers home page on successful registration.	Able to view the home page after registration.	PASS		27 October 2022	Completed, As expected.		
40												
41												
42		Register Patient (Positive scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		30 October 2022	Completed, As expected.		
43	7	As a user, I want to register myself in the system so that I can get self assessment test and appointment.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		30 October 2022	Completed, As expected.		
44					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		30 October 2022	Completed, As expected.		
45					4 Redirect to patients home page on successful registration.	Able to view the home page after registration.	PASS		30 October 2022	Completed, As expected.		
46												

Arogya									User Acceptance Test Cases Sprint 1			
1	Team Name								Team 8			
2	Testing Date								30 October 2022			
4	Name of Tester(s):								Anusha Reddy			
5	# ID	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments		
31					2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		27 October 2022	Completed, As expected.		
32					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		27 October 2022	Completed, As expected.		
33					4 Redirect to managers home page on successful registration.	Able to view the home page after registration.	PASS		27 October 2022	Completed, As expected.		
34												
35		Register Manager (Negative scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		27 October 2022	Completed, As expected.		
36	6	As a User, I want to register myself in the system, to able to see the list of all the patients, doctors, and counselors. I can also add or delete any of them.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		27 October 2022	Completed, As expected.		
37					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		27 October 2022	Completed, As expected.		
38					4 Re-enter the confirm password	User must be able to re-enter the confirm password if password does not matches with password.	PASS		27 October 2022	Completed, As expected.		
39					5 Redirect to managers home page on successful registration.	Able to view the home page after registration.	PASS		27 October 2022	Completed, As expected.		
40												
41												
42		Register Patient (Positive scenario)			1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		30 October 2022	Completed, As expected.		
43	7	As a user, I want to register myself in the system so that I can get self assessment test and appointment.	User must be in the registration page in the system		2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		30 October 2022	Completed, As expected.		
44					3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		30 October 2022	Completed, As expected.		
45					4 Redirect to patients home page on successful registration.	Able to view the home page after registration.	PASS		30 October 2022	Completed, As expected.		
46												

User Acceptance Test Cases Sprint 1										
Team Name		Testing Date		Team 8 30 October 2022 Anusha Reddy						
#	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments	
47										
48	<b>Register Patient (Negative scenario)</b>									
49	8 As a user, I want to register myself in the system so that I can get self assessment test and appointment.	User must be in the registration page in the system		1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		30 October 2022	Completed, As expected.	
50				2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		30 October 2022	Completed, As expected.	
51				3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS		30 October 2022	Completed, As expected.	
52				4 Re-enter the confirm password	User must be able to re enter the confirm password if password does not matches with password.	PASS		30 October 2022	Completed, As expected.	
53				5 Redirect to patient home page on successful registration.	Able to view the home page after registration.	PASS		30 October 2022	Completed, As expected.	
54										
55	<b>Patient Login (Positive scenario)</b>									
56	9 As a User, I want to login myself in the system so that I can access my account, do self assessment and check my appointment	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		29 October 2022	Completed, As expected.	
57				2 Enter correct Username and password in the fields in order to login into the system.	User must be able to enter the username and password.	PASS		29 October 2022	Completed, As expected.	
58				3 Home page screen is seen and can be modified if needed.	If credentials are correct home page must be displayed.	PASS		29 October 2022	Completed, As expected.	
59				4 Click or edit account details if needed.	Modified details must be shown in the page.	PASS		29 October 2022	Completed, As expected.	
60	<b>Patient Login (Negative scenario)</b>									
61	10 As a User, I want to login myself in the system so that I can access my account, do self assessment and check my appointment.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		29 October 2022	Completed, As expected.	
62				2 Enter wrong Username and password in the fields.	An error message must be displayed if wrong credentials are entered.	PASS		29 October 2022	Completed, As expected.	
63				3 Click on the login button after entering wrong password.	User must be able to relogin after the wrong credentials are entered.	PASS		29 October 2022	Completed, As expected.	
64										

## Sprint 2:

User Acceptance Test Cases Sprint 2										
Team Name		Testing Date		Team 8 13 November 2022 Anusha Reddy						
IAT ID	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments	
68										
69	<b>Arogya</b>									
70	[Patient]:Create patient home page(Positive scenario)									
71	1 As a User, I want an interface so that I can easily access/navigate different functionalities.	User must be registered in the system		1 Enter the Username and Password.	Able to enter the details in the fields.	PASS		12,November,2022	Completed, As Expected	
72				2 User should be in the home page	User must be able to see the home page	PASS		12,November,2022	Completed, As Expected	
73	Name of Tester(s):			3 Functionality for the patients are displayed.	User must be able to see the full functionality.	PASS		12,November,2022	Completed, As Expected	
74				4 Click on the link of the "Self assessment".	User must be able to click the link.	PASS		12,November,2022	Completed, As Expected	
75				6 Click on the link of the "My Appointment".	User must be able to click the link.	PASS		12,November,2022	Completed, As Expected	
76										
77	<b>[Patient]: Self Assessment (Positive scenario)</b>									
78	2 As a User, I want to be able to provide my self assessment test, so that I can schedule an appointment.	User must be logged in to the system.		1 User must be able to click on the "Self Assessment form" link and start quiz.	Self Assessment form be started.	PASS		12,November,2022	Completed, As Expected	
79				2 Select the options in each page.	The options must be selected.	PASS		12,November,2022	Completed, As Expected	
80				3 Click on the restart.	Should be able to go back to the previous page.	PASS		14,November,2022	Completed, As Expected	
81				4 Click on the show button.	The form must be shown.	PASS		12,November,2022	Completed, As Expected	
82										
83	<b>[Patient]: Self Assessment (Negative scenario)</b>									
84	3 As a User, I want to be able to provide my self-assessment test, so that I can schedule an appointment.	User must be logged in to the system.		1 User must be able to click on the "Self Assessment form" link.	Self Assessment form must be displayed.	PASS		12,November,2022	Completed, As Expected	
85				2 Do not select any options.	User must not be able to continue to the next questionnaire.	PASS		12,November,2022	Completed, As Expected	
86				3 Re-select the options from the list.	Able to click the options from the fields.	PASS		12,November,2022	Completed, As Expected	
87				4 Click on the show button.	The form must be shown.	PASS		12,November,2022	Completed, As Expected	
88										
89										
90										
91										
92										

Name or tester(s):								Anusna Keeyo	
5	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments
91				4 Click on the show button.	The form must be shown.	PASS		12,November,2022	Completed, As Expected
92									
93	[Counsellor]:Login Counsellor (Positive scenario)								
94	4 As a User, I want to login myself in the system so that I can access my account , check the self assessment results of patients based on which I can either be able to book an appointment with myself or doctor or even reject a patient.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		11,November,2022	
95				2 Enter correct Username and password in the fields in order to login into the system.	User must be able to enter the username and password.	PASS		11,November,2022	Completed, As Expected
96				3 Able to Navigate to Home screen	User must be able to view the home screen.	PASS		11,November,2022	Completed, As Expected
97									
98	[Counsellor]:Login Counsellor (Negative scenario)								
99	5 As a User, I want to login myself in the system so that I can access my account , check the self assessment results of patients based on which I can either be able to book an appointment with myself or doctor or even reject a patient.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS		11,November,2022	
100				2 Enter wrong Username and password in the fields.	An error message must be displayed if wrong credentials are entered.	PASS		11,November,2022	Completed, As Expected
101				3 Click on the login button after entering wrong password.	User must be able to relogin after the wrong credentials are entered.	PASS		11,November,2022	Completed, As Expected
102				4 Able to Navigate to Home screen	User must be able to view the home screen.	PASS		11,November,2022	Completed, As Expected
103									

Name of tester(s):								Anusha Heddya	
5	User Story	Preconditions / Data		Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments
106	6 As a User, I should be able to see my home page.	User must be logged in to the system.		1 Enter the Username and Password.	Able to enter the details in the fields.	PASS		13,November,2022	Completed, As Expected
107				2 User should be in the home page	User must be able to see the home page	PASS		13,November,2022	Completed, As Expected
108				3 Functionalities for the Counsellor are shown.	User must be able to see the functionalities.	PASS		13,November,2022	Completed, As Expected
109				4 Click on the link of the "List of patients" feature.	User must be able to click the link "List of patients" feature in the home page.	PASS		13,November,2022	Completed, As Expected
110				5 User can click on Appointment and doctors list tab	User must be able to view and click the Appointment and doctors list tab.	PASS		13,November,2022	Completed, As Expected
111									
112									
113									
114	[Counsellor]: List of Patients								
115	7 As a User, I should be able to see the list of patients.	User must be logged in to the system.		1 Click the "List of patients" Link in the home page.	Able to click the "List of patients" link.	PASS		13,November,2022	Completed, As Expected
116				2 Click on the patient details to view	Able to click on the patient details.	PASS		13,November,2022	Completed, As Expected
117				3 Should be able to see the details of the patient	User must be able to view the details of the patient.	PASS		13,November,2022	Completed, As Expected
118									
119	[Doctor]: Register Doctor (Positive Scenario)								
120	8 As a User, I want to register myself in the system so that I can see the list of all the patients appointed to me. I should also be able to see the complete details of the self-assessment results	User must be in the registration page in the system		1 Click the link which directs to website page	Able to click the link which is clickable.	PASS		10,November,2022	
121				2 After clicking the link, the website register or login page is opened which consists of all the fields to fill.	Able to see the register page.	PASS		10,November,2022	Completed, As Expected
122				3 User should enter the name, email, phone number, account type, Registration Number ,password, confirm password.	Able to enter name, email, phone number, account type, Registration Number, password, confirm password.	PASS		10,November,2022	Completed, As Expected
123				4 Redirect to patients home page on successful registration.	Able to view the home page after registration.	PASS		10,November,2022	Completed, As Expected
124									

124										
125	[Doctor]: Register Doctor (Negative Scenario)									
126	9 As a User, I want to register myself in the system so that I can see the list of all the patients appointed to me. I should also be able to see the complete details of the self-assessment results	User must be in the registration page in the system		1 Click the link which directs to website page	Able to click the link which is clickable.	PASS	10,November,2022			
127				2 After clicking the link, the website register or login page is opened which contains the required fields to fill.	Able to see the register page.	PASS	10,November,2022	Completed, As Expected		
128				3 User should enter the name, email, phone number, account type, password, confirm password.	Able to enter name, email, phone number, account type, password, confirm password.	PASS	10,November,2022	Completed, As Expected		
129				4 Re-enter the confirm password	User must be able to re-enter the confirm password if password entered does not matches with password.	PASS	10,November,2022	Completed, As Expected		
130				5 Redirect to patient home page on successful registration.	Able to view the home page after registration.	PASS	10,November,2022	Completed, As Expected		
131										
132	[Doctor]: Login Doctor(Positive Scenario)									
133	10 As a User, I want to log in myself to the system so that I can access my account.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS	10,November,2022	Completed, As Expected		
134				2 Enter correct Username and password in the fields in order to login into the system.	User must be able to enter the username and password.	PASS	10,November,2022	Completed, As Expected		
135				3 Home page screen is seen and can be modify if needed.	If credentials are correct home page must be displayed.	PASS	10,November,2022	Completed, As Expected		
136				4 Click or edit account details if needed.	Modified details must be shown in the page.	PASS	10,November,2022	Completed, As Expected		
137										
138	[Doctor]: Login Doctor(Negative)									
139	11 As a User, I want to log in myself to the system so that I can access my account.	User must be in the login page in the system		1 Click on the login button.	User must be able to click the login button	PASS	10,November,2022	Completed, As Expected		
140				2 Enter wrong Username and password in the fields.	An error message must be displayed if wrong credentials are entered.	PASS	10,November,2022	Completed, As Expected		
141				3 Click on the login button after entering wrong password.	User must be able to relogin after the wrong credentials are entered.	PASS	10,November,2022	Completed, As Expected		
142										
143	[Manager]:Create Home page for manager									
144	12 As a User, I want an interface so that I can easily access/navigate different functionalities.	User must be registered in the system.		1 Enter the Username and Password.	Able to enter the details in the fields.	PASS	13,November,2022	Completed, As Expected		
145				2 User should be in the home page	User must be able to see the home page	PASS	13,November,2022	Completed, As Expected		
146				3 Functionalities for the Manager are shown.	User must be able to see the functionalities.	PASS	13,November,2022	Completed, As Expected		
147				4 click on the features as needed	All the features should be enabled.	PASS	13,November,2022	Completed, As Expected		
148	13 [Patient]:Display self assessment results									
149	As a User, I want to see my self assessment result for my reference. Also display, the status of the appointment (pending, appointed, cancelled).	User has done with their self assessment form.		1 User should be in the home page	User must be able to see the home page	PASS	13,November,2022	Completed, As Expected		
150				2 Click on the self assessment tab	User must be able to click the self assessment tab	PASS	13,November,2022	Completed, As Expected		
151				3 Click on self assessment result form	User must be able to see the result form	PASS	13,November,2022	Completed, As Expected		
152				4 click on any fields to modify.	User must not be able to edit the self assessment fields.	PASS	13,November,2022	Completed, As Expected		
153				4 click on any fields to modify.	User must not be able to edit the self assessment fields.	PASS	13,November,2022	Completed, As Expected		
154	14 [Counsellor]: Display self assessment results									
155	As a User, I want to see the self assessment form which is submitted earlier.	User must be done with self assessment form.		1 User should be in the home page	User must be able to see the home page	PASS	13,November,2022	Completed, As Expected		
156				2 Click on the patients list tab	User must be able to click on the patients list tab	PASS	13,November,2022	Completed, As Expected		
157				3 Click on the patient self assessment form	User must be able to click on the self assessment form.	PASS	13,November,2022	Completed, As Expected		
158				4 User is Navigated to the self assessment form of the patient.	User must be able to see the answers and questions in the questionnaire.	PASS	13,November,2022	Completed, As Expected		
159										
160										
161										
162										

## Sprint 3:

164	<b>Arogya</b>	Sample User Acceptance Test Cases Sprint 3							Group 8
165									27, November, 2022
166	<b>Team Name</b>								Anusha Reddy
167	<b>Testing Date</b>								
168	<b>Name of Tester(s):</b>								
JAT ID	User Story	Preconditions / Data	Steps To Execute	Expected Results	Pass	Fail	Retest Date	Defect/Comments	
169	<b>[Patient]:Patient Appointment Details</b>								
170	1 As a User, I should be able to check details of my appointment.	User must be logged in to the system, and there should a counsellor who has done the appointment.	1 Click on the Appointmnnet details tab 2 User can review the appointment lists 3 Date and time of appointment with doctor or counsellor are visible.	User must be able to be in Appointment details tab. User must be able to check appointment lists. User must be able to see the details of appointment including date and time with doctor or counsellor.	PASS		24, November 2022	Completed, As expected.	
171									
172									
173									
174	<b>[Counsellor]: Appointment with patient.</b>								
175	2 As a User, I should be able to book an appointment with the patient based on the severity.	User must be logged in to the system, and there must be a patient who has done with the self assessment with no upcoming appointments.	1 Click on the Patient list tab 2 Select any Patient from the list of patients. 3 Expand/collapse patient self assessment results. 4 Click on the make an appointment under Schedule appointment field. 5 Select date and time to schedule an appointment. 6 Click on Confirm button to schedule. 7 Notify Patient regarding appointment.	User must be able to click Patient list tab. User must see to the details of the chosen patient. User must be able to see the self assessment results. Able to view the schedule appointment page. Able to select date and date for appointment. Able to confirm an appointment. Patient must be notify regarding the appointment.	PASS		24, November 2022	Completed, As expected.	
176									
177									
178									
179									
180									
181									
182									
183									
184									
185	<b>[Counsellor]: Assigning patient to a doctor</b>								
186	3 As a User, I should be able to assign a patient to the doctor based on the patient's severity.	User must be logged in to the system, and there must be a patient who has done with the self assessment with no upcoming appointments.	1 Click on the Patient list tab 2 Select any Patient from the list of patients. 3 Click on Assign doctor field. 4 Select any doctor to assign from the available list of doctors. 5 Click on confirm button to assign doctor. 6 Doctor has the details of the assigned patient.	User must be able to click Patient list tab. User must see to the details of the chosen patient. Able to redirect to Assign doctor page. Able to select any doctor from the list. Able to confirm to assign a doctor. doctor must see the patient name and email id	PASS		24, November 2022	Completed, As expected.	
187									
188									
189									
190									
191									
192	<b>[Counsellor]: removing a patient</b>								
193	4 As a User, Based on self-assessment results should be able to delete the patient.	User must be logged in to the system, and there must be a patient who has done with the self assessment.	1 Click on the Patient list tab 2 Select any Patient from the list of patients. 3 Click on the delete symbol 4 Click on confirm button to delete patient. 5 User is Able to delete the page after confirming to delete self assessment .	User must be able to click Patient list tab. User must see to the details of the chosen patient. Able to see the delete self assessment page. Able to confirm to delete the page. User should not see the patient in the list which was removed ealier in the patients tab.	PASS		25, November 2022	Completed, As expected.	
194									
195									
196									
197									

198												
199		[Doctor]: List of Patients										
200	5	As a User, should be see the patient details in predefined order.	User must be logged in to the system, patients must submit their self assessment form.		1 Click on the Patient list tab	User must be able to click Patient list tab.	PASS	25, November 2022	Completed, As expected.			
201					2 Patient's list can be viewed in pre defined order.	User must be able to see the pre defined order patient's list.	PASS	25, November 2022	Completed, As expected.			
202					3 Select any Patient from the list of patients.	User must be see to the details of the chosen patient.	PASS	25, November 2022	Completed, As expected.			
203					4 Patient result of self assessment can be reviewed.	User must be able to see the self assessment results of the patient along with name and mail id.	PASS	25, November 2022	Completed, As expected.			
204					5 Assigned patients list can be seen by the user.	User must be able to see the patients assigned to them respectively.	PASS	25, November 2022	Completed, As expected.			
205												
206		[Doctor]: Removing a patient										
207	6	As a User, I should be able to cancel the appointment with the patient based on self-assessment results.	User must be logged in to the system, patients must submit their self assessment form and already has an appointment fixed.		1 Click on the Appointment details tab	User must be able to click Patient list tab.	PASS	25, November 2022	Completed, As expected.			
208					2 Select any Patient from the list of patients.	User must be see to the details of the chosen patient.	PASS	25, November 2022	Completed, As expected.			
209					3 Click on the delete assessment button on the patient page.	User must be able to click on the cancel appointment button.	PASS	25, November 2022	Completed, As expected.			
210					4 Patient is removed from list and appointment list.	User should not be able to see the patient from the list of patients and in the appointment list after cancelling.	PASS	25, November 2022	Completed, As expected.			
211					5 Notify patient regarding rejection.	User must be able to update of rejecting the appointment.	PASS	25, November 2022	Completed, As expected.			
212												

212												
213		[Manager]: User Approval										
214	7	As a User, I should be able to approve/reject registration request of doctors so that I can have the control of doctor admission in the system.	User must be logged into the system, and doctor must be registered into the portal in order to get approval/rejection.		1 Click on Manage Accounts tab.	User must be in Manage accounts tab.	PASS	26, November, 2022	Completed, As expected.			
215					2 Select any user from the list of users.	User must be able to select any user from the list.	PASS	26, November, 2022	Completed, As expected.			
216					3 Check the registration number of selected doctor/counsellor.	User must be able to check the Registration number.	PASS	26, November, 2022	Completed, As expected.			
217					4 Validate the registration number.	User must be able to validate the registration number.	PASS	26, November, 2022	Completed, As expected.			
218					5 Delete the User if the registration number is not valid/correct	User must be able to delete the user if the registration number is not valid.	PASS	26, November, 2022	Completed, As expected.			
219												
220		[Manager]:Create report for manager										
221	8	As a User, I would like to see the statistics.	User must be logged into the system		1 Click on the statistics from the menu	User must be able to be in the statistics page.	PASS	26, November, 2022	Completed, As expected.			
222					2 Number of patients filled the self-assessment Questionnaire are reported.	User must be able to see the Number of patients filled the self-assessment Questionnaire in the form of graph.	PASS	26, November, 2022	Completed, As expected.			
223					3 Number of patients have been assigned a Doctor are shown	User must be able to see the Number of patients have been assigned a Doctor in the form of graph.	PASS	26, November, 2022	Completed, As expected.			
224					4 Number of Doctors, Patients and Counsellors are registered in the APP are shown	User must be able to see Number of Doctors, Patients and Counsellors are registered in the APP in the form of graph.	PASS	26, November, 2022	Completed, As expected.			
225												
226												

27	[Manager]:Create admin portal for manager							
28	9 As a User, I want to be able to delete/add patient, doctors and counsellors so that I can manage the user.	User must be logged into the system. Doctors, counsellors must be registered in prior.		1 Login with the admin credentials	User must be able to be in Admin portal.	PASS	26, November, 2022	Completed, As expected.
29				2 Click on add/delete doctors, counsellors,users.	User must be able to add/delete doctors, counsellors, users.	PASS	26, November, 2022	Completed, As expected.
30				3 Click on user details.	User must be able to see user type, usename, email.	PASS	26, November, 2022	Completed, As expected.
31								
32	[Health Care Worker]: Look/display the appointment details with the patient							
33	10 As a User, I want to look the appointment details of patient with doctor or counsellor.	User must be logged into the system.		1 Click on the appointment tab	User must be able to in the appointment tab page.	PASS	27, November, 2022	Completed, As expected.
34				2 Click on the patient from the list of the patient details	User must be able to click on the patient detail from the list.	PASS	27, November, 2022	Completed, As expected.
35				3 Appointment with the counsellor	User must be able to see the patient details along with counsellor name.	PASS	27, November, 2022	Completed, As expected.
36				4 Appointment with the doctor.	User must be able to see the patient details along with doctor name.	PASS	27, November, 2022	Completed, As expected.
37								
38	[Doctor]: Make Appointment with patient							
39	11 As a User, I want to make appointment with the patient.	User must be logged into the system and patient should submit the assessment form.		1 Click on the patients list tab.	User must be able to be click Appointments tab.	PASS	27, November, 2022	Completed, As expected.
40				2 Select any Patient from the list of patients.	User must be see to the details of the chosen patient.	PASS	27, November, 2022	Completed, As expected.
41				3 Expand/collapse patient self assessment results.	User must be able to see the self assessment results.	PASS	27, November, 2022	Completed, As expected.
42				4 Click on the make an appointment under the Schedule appointment field.	User must be able to see appointment page	PASS	27, November, 2022	Completed, As expected.
43				5 Select appointment Date and time.	User must be able to enter the date and time of the schedule.	PASS	27, November, 2022	Completed, As expected.
44				6 Click on the Confirm button	User must be able to schedule an appointment.	PASS	27, November, 2022	Completed, As expected.
45				7 Patient can see the Assigned doctor	Patient must be notified with assigned doctor under appointments details	PASS	27, November, 2022	Completed, As expected.
46								

## Manual Testing:

Manual testing was done by manually checking the behavior of the system and detailed reports were submitted along with the sprint deliverables.

For details refer to the below given file.

### MANUAL TESTING

### Critical Test cases and Issues faced while testing:

- The functionality of the Registration number for Counselor and the doctor, i.e steps for writing test cases for the validation of registration number during logging into the system was complicated at starting, later on it was resolved that registration number can be checked by the manager and can delete the user(patient/counselor) if the registration number registered is not valid.

- Making an appointment by the counselor test cases seemed to be difficult for writing stepwise test cases, because the functionality seems to work in many ways in the perspective of developers to implement i.e, does the counselor can make an appointment for another counselor along with making scheduling an appointment to himself?, Later on it was clarified that counselor can schedule an appointment to himself and assign any doctor to the patient.
- Doctor/Counselor require approval for their registration feature functionality was not clear, so in team meetings we decided that doctor/counselor registration number must be validated by the manager via the admin portal.
- Some features can be implemented with given functionality in many different ways, figuring out the expected functionality and writing test cases according to the functionalities were hard before the implementation, Although, by validating the functionality iteratively with the test cases made easy to find the actual result vs expected result and modified according to the functionality.
- Fields to validate are tricky, for example
  - When the user registers into the system, what are the appropriate error messages the user can view if any particular field validation is not fulfilled, but we decided to implement an error message if the user enters an wrong format for gmail, and if the password set was not satisfying the length and pattern required.
  - Patient details that are to be displayed.

## **Risk management for the functionality developed**

Sr. No.	Project Risk Item	Risk Category	Risk Management Technique

1	Encountered some minor technical difficulties while developing the project.	Technological Risks	Mitigation: <ul style="list-style-type: none"><li>• Frequent communication (daily meetings) helped us to discuss and resolve the issues faced</li></ul>
2	Dependency on other team members	Dependency Risk	Mitigation: <ul style="list-style-type: none"><li>• Constant communication with the other team members about their task status.</li><li>• To avoid hassle, we have discussed and prioritized the tasks, then tried to close the tasks in the assigned time.</li></ul>
3	Integration between front-end and backend.	Integration Risk	Mitigation: <ul style="list-style-type: none"><li>• Always checked for code consistency (while pulling and pushing the code)</li></ul>
4	Few tasks needed a little more effort than estimated	Estimation Risk	Mitigation: <ul style="list-style-type: none"><li>• Analyzed what went wrong.</li><li>• Tried to complete the tasks with the help of other teammates, so that there is zero to minimum impact on the dependent tasks.</li></ul>

5	Only a few of the team members have experience on the front-end.	Technology Risk	Mitigation: <ul style="list-style-type: none"><li>• To get an idea of how to do, we went through the available online resources.</li><li>• Communication among the team members about the issues faced also helped.</li></ul>
6	Poor Code Quality	Quality Risk	Mitigation: <ul style="list-style-type: none"><li>• Developed the project using a set of pre-defined coding standards.</li><li>• Incorporated frequent peer reviews on any further changes.</li></ul>

## Cautions

- We cannot assure a 100% user satisfaction because of lack of direct user engagement with the project team.

## Disclaimers

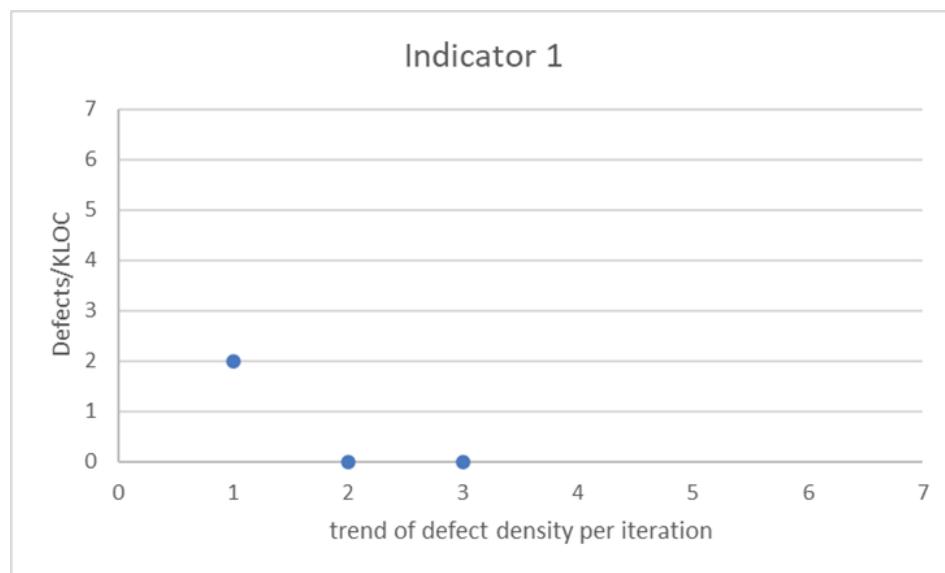
- We cannot guarantee that the operations in Arogya will work continuously without any interruption or completely error free.
- The team of Arogya (stakeholders) are not liable for any of the damage including incidental and consequential loss or profit to the distributors of Arogya, in any given case.
- The team of Arogya is not responsible for any sort of damage to the users (Patients, Counselors, Doctors, Managers).

## Measurement data and analysis on success indicators.

### Success criteria 1:

Defect Density (DD) should be less than two defects in each sprint. Defect density for the three sprints is shown in the below graph.

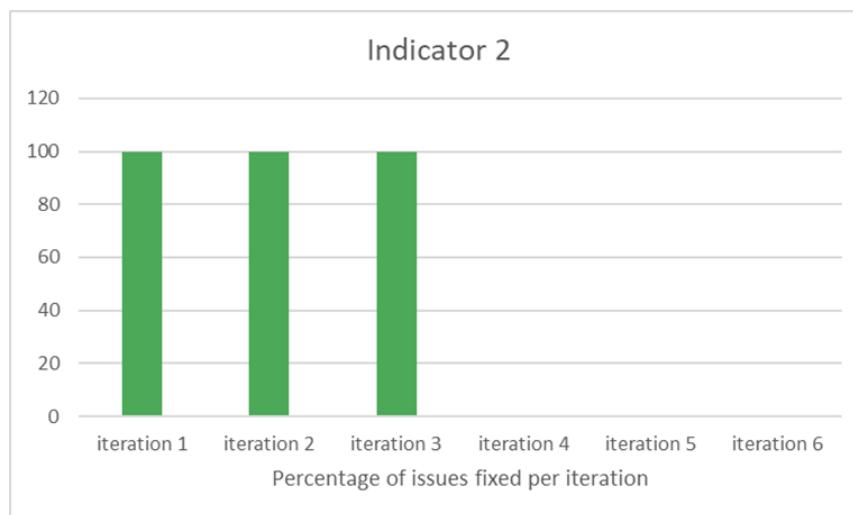
### **Indicator 1:**



### **Success criteria 2**

The percentage of fixed issues per sprint should be more than 95%. For every sprint, the percentage of issues fixed is 100%

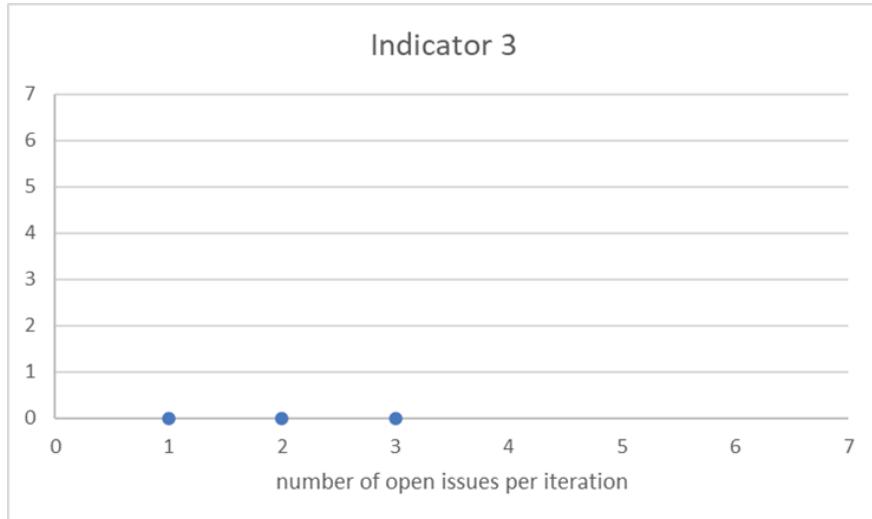
### **Indicator 2**



### **Success criteria 3**

The percentage of open issues for every sprint is zero.

### **Indicator 3**



#### **Success criteria 4**

Functionalities that are planned for each sprint, must be completed on time.

#### **Indicator 4**

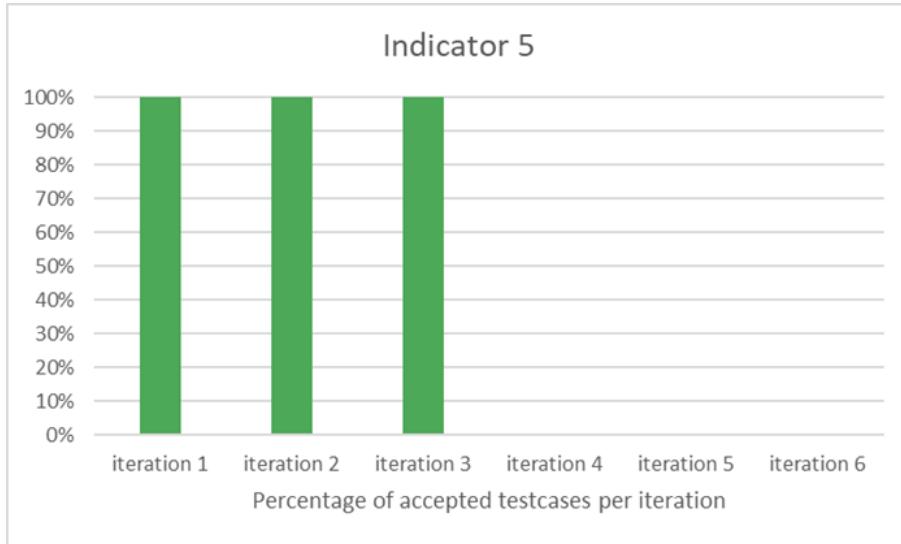
Stories that are planned for every sprint are moved to the DONE stage. The functionalities

are tested, and the test report is documented.

#### **Success criteria 5**

The percentage of acceptance test cases must be at least or more than 95%.

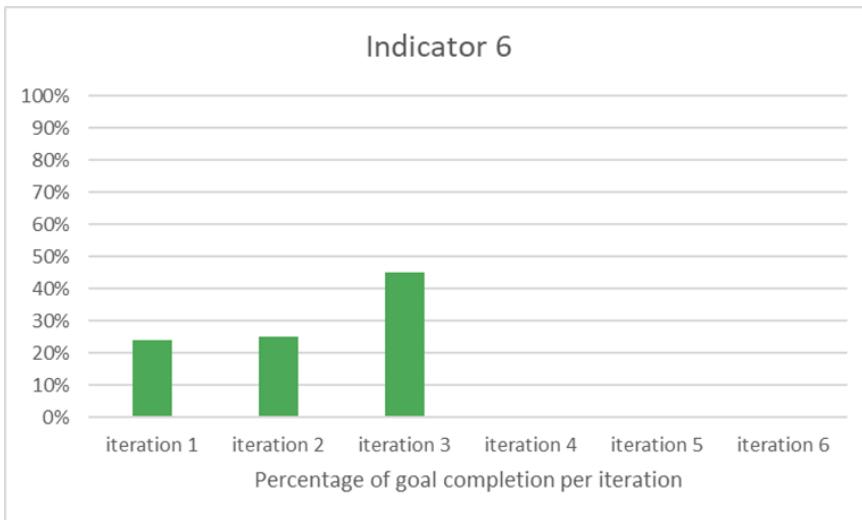
#### **Indicator 5**



### Success criteria 6

The percentage of work planned for every sprint is shown in the below graph.

### Indicator 6



### Analysis of the Results from Sprint 1, Sprint 2 and Sprint 3:

The defect density for sprint 1 is two, however, it is zero for sprints 2 and 3; it is evident that the defect density decreases from sprint 1 to sprint 3. The percentage of defects addressed is consistent across sprints, showing that the work planned for those sprints was done on time. There are no outstanding issues. All scheduled tasks are

properly logged and marked as accomplished. The percentage of acceptance test cases remains constant across all sprints. Finally, sprint 1 finished with 24% of the target, sprint 2 with 25%, and sprint 3 with the rest of the 51% of the complete project plan. There have been no defects reported in any of the sprints other than sprint 1, and all the acceptance test cases have been achieved with a 100% success rate.

## Iteration Burndown Chart

An Iteration Burn down Chart is used to represent the total amount of effort put by the development team in an iteration. This graph is updated everyday to check the progress of the team. Unlike release burn down, Iteration Burn down represents a single iteration or spring . In the graph drawn above, the X-axis represents the days during the sprint.

In all the 3 sprints, there were 11 working days and 4 non-working( weekends) days. And Y-axis represents the total hours of productive effort put in the given sprint (Including sub-tasks).

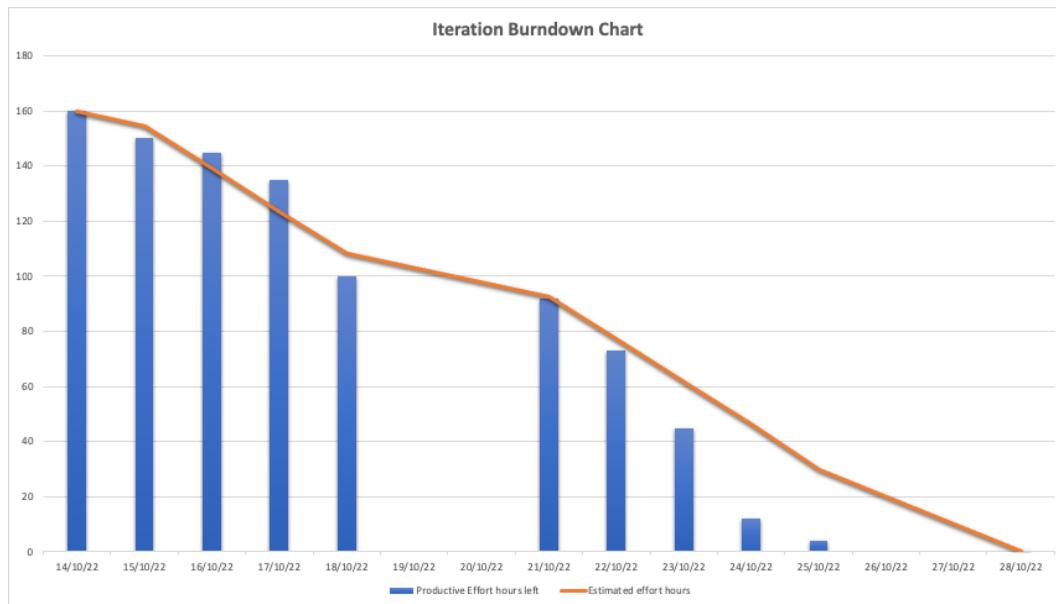
In the below graph, we will be using the total number of productive hours to calculate the total effort put for the sprint . The blue bars represent the actual hour flow of the sprint and orange represents the estimated( planned) workflow.

Before the start of the sprint, we have estimated and allocated a total of 160 productive hours to sprint 1. Out of which all were utilized properly by the development team.The graph uses the blue bars to show the total productive hours left that can be utilized in the sprint till date.

Before the start of the sprint, we have estimated and allocated a total of 160 productive hours to sprint 2. Out of which all were utilized by the development team.In addition, The team was also able to complete an additional 8 story points than initially planned. This was done by utilizing 20 more productive hours than planned. Therefore making the total productive hours to be 180 hours for the sprint 2.

Before the start of the sprint, we have estimated and allocated a total of 160 productive hours to sprint 3. Out of which all were utilized by the development team.In addition, The team was also able to complete an additional 8 story points than initially planned. This was done by utilizing no more

productive hours than planned. Therefore making the total productive hours to be 160 hours for the sprint 3. The graph uses the blue bars to show the total productive hours left that can be utilized in the sprint till date.



## Release Burndown Chart

A Release burndown chart is used to represent the total amount of work done by the development team. It also shows the team's velocity in each sprint. This graph is updated every iteration or spring. In the given graph, the x-axis represents the iterations, where iteration\_0 is the sprint where 0 amount of work is done and sprint 1 and sprint 2 are the sprints completed in the past. Spring 3 is the completed sprint for which we are representing the graph.

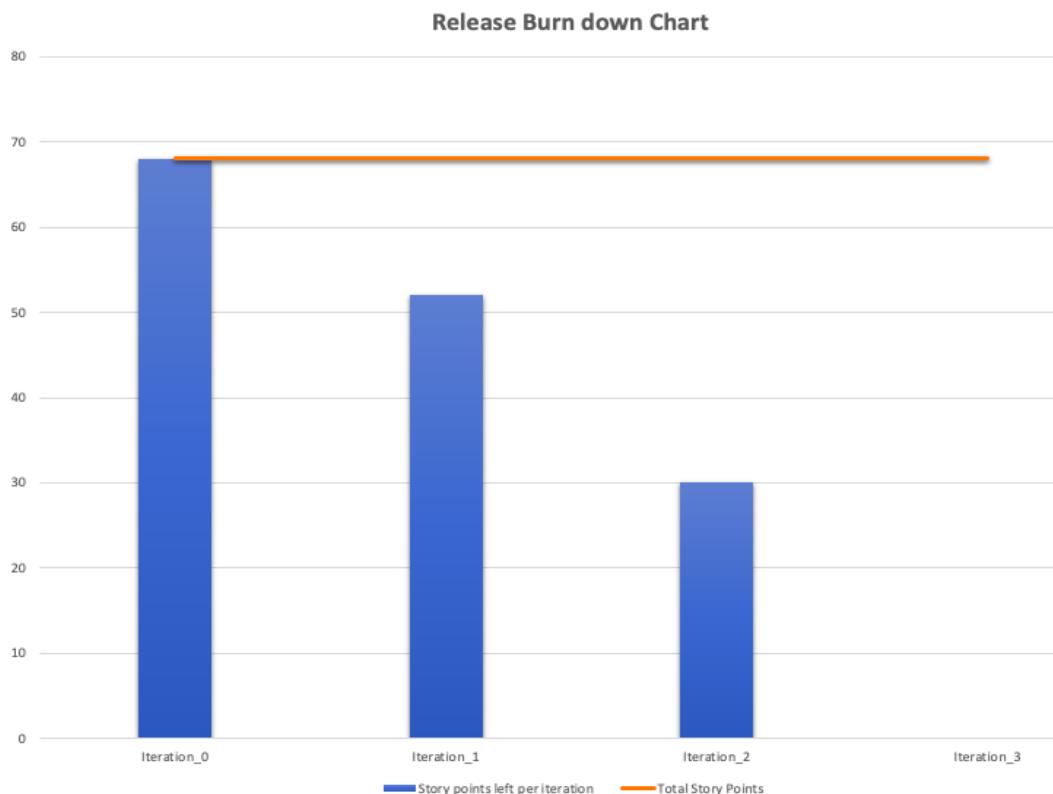
There were a total of 68 story points assigned to our project **Arogya** out of which 22 were to be done in sprint 3. And 22 story points and 8 in addition were completed in sprint 3.

So the velocity for the development team is 30 for sprint 3.

The graph shows the total story points left per iteration in blue bars which are 68, 52, 30 and 0 in iteration\_0, iteration\_1, iteration\_2 and iteration\_3 respectively. Whereas, the straight orange lines

are the total number of story points assigned for the project and are constant throughout. As no story points are added or subtracted extra in the middle of the project.

Bar representation for Iteration\_3 is blank as no more stories are yet to be completed.



## Retrospective analysis

### Sprint 1 retrospective analysis

#### What went well:

1. Division of individual tasks among the team members went well as it was the first time working on a project.
2. Initially basic setup was a bit complicated as it was tough to work with new technologies and frameworks, but we were able to complete it.
3. We were able to resolve integration issues of backend and frontend.
4. Writing Acceptance test cases went well as the functionality of the

implementations were clear which was done in team meetings.

#### **What can be improved:**

1. It was hard to set up the meetings suitable to each and every team member's availability because of varying availability.
2. Pick new libraries which are not over engineered.
3. API calls integration was complicated in order to fetch the data as it was the first time.
4. Proper documentation and communication regarding API interfaces.
5. Setup for testing by QA can be improved

#### **Point to work on:**

1. Documentation of API interface.
2. Use more modes of communication and meetings.
3. Reduced setup for testing by deploying frontend also on cloud.

## **Sprint 2 retrospective analysis**

#### **What went well:**

1. Task estimation was correct and approximately the same time was taken to complete different tasks as estimated.
2. Integration tasks were performed without many complications.
3. Writing Acceptance test cases went well as the functionality of the implementations were clear which was done in team meetings.
4. Quality Assurance testing was done easily as the system was provided on cloud to the tester.

#### **What can be improved:**

1. Team meetings setup can still be improved. It was an issue in the first sprint, but some measures were taken to improve it, and still the team feels that there can be improvements.
2. API contracts were shared by the backend beforehand, but there were still some complications which needed further discussions. So, there is still room for improvement in contract bindings between frontend and backend.

#### **Points worked on based on sprint1:**

1. Reduced setup for testing by deploying frontend also on cloud.
2. Deployed Frontend to cloud.

3. Documentation of API interface.
4. APIs are being documented with examples.

**Point to work on:**

1. Documentation of API interface but with general response structure.
2. API interface needed to be discussed and agreed on.
3. Use more modes of communication and meetings.

## Sprint 3 retrospective analysis

**What went well:**

1. Task estimation was correct and with the effort of team members, it took same productive hours than estimated to not only complete initial story points planned, but also additional ones from backlog.
2. Integration tasks were tricky, but with proper communication and co-operation of the team members, it went well without many complications.
3. Writing Acceptance test cases went well as the functionality of the implementations were clear as discussed in team meetings.
4. Quality Assurance testing was done smoothly as the system was provided on cloud to the tester.
5. Additional story points taken from the backlog also have been completed within the planned productive hours.
6. API contracts were shared by the backend beforehand and complications raised in the last sprint were discussed and resolved.
7. Improvement in contract bindings between frontend and backend which was lacking in some extent in last sprint was taken care off.

**Points worked on based on sprint 2:**

1. Documentation of API interface with general response structure.
2. API interface has been discussed and agreed on.
3. Used more modes of communication between team members.

## Customer satisfaction survey

## **Sprint 1**

### **Things learnt**

- Worked and ensured that there were no delays while calling the API
- Learned that the validation for user inputs should be clearer and more worked on it in the next sprints.

## **Sprint 2**

### **Things learnt**

- Worked on maintaining the consistency and reliability

## **Sprint 3**

### **Things learnt**

- Worked on increasing the performance and efficiency

Undoubtedly, we can say that the customer satisfaction rate from Sprint 1 to Sprint 3 has increased.

# **Agile Project Management**

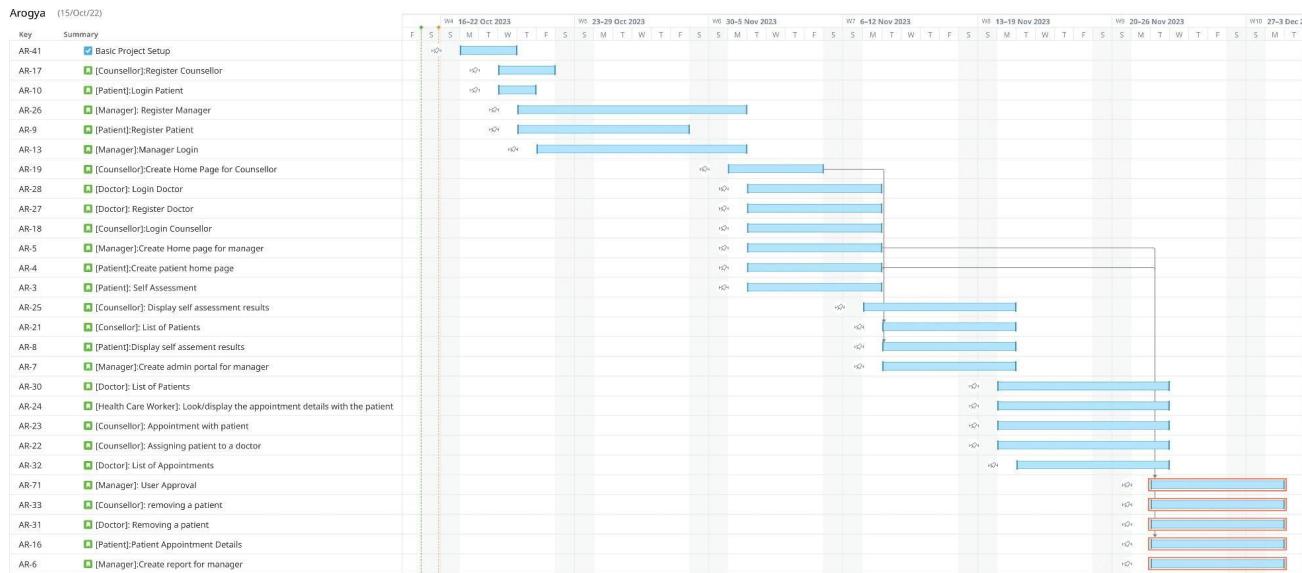
SURVEY: Are you agile enough? NOTE: report the averages of the answers to each question below in your Demo 1 presentations

	0 - Never	1 - Hardly ever (10%)	2 - Rarely (20%)	3 - Sometimes (30%)	4 - Common (40%)	5 - Half & Half (50%)	6 - Usually (60%)	7 - Often (70%)	8 - Regular (80%)	9 - Always (90%)	10 - Fanatic (100%)
This Scale may help:											

What is your team name?		Average of all team members: Answers /10	Explanation
Planning - Does your team engage in stand-up meetings everyday?	9	The team takes 10 minutes each day to review what needs to be done each day and assigns user tasks to team members. * Stand up meetings take place everyday. * Stand up meeting takes less than 15 minutes (for an average of 10 people). * Meetings are short and to the point, focusing only on what has been done and needs to be done that day. * Team members exhibit courage in discussing concerns and successes.	
Planning - What % of the time do you get quick interaction with your customers when needed?	10	The customer is the body for whom the product is being developed and may be either internal or external. Customer access is imperative to developing a product that satisfies the customers' needs as well as clear up requirement ambiguity/inciseness. On-Site Customer is best, but you can use chat, e-mail, telephone, etc., to quickly verify requirements and get feedback. Ideally, the customer is always available. * Customer is involved in release planning. * The developers have direct access (telephone/email/video conference) to the customer. * The developers have same day responses from customer. * The customer is on-site. * Fast and consistent feedback between customer and developer.	
Planning - Do you allow for changes in release plans/requirements after each iteration based on customer feedback and current implementation?	10	The planning game is a highly interactive process between all stakeholders wherein customers and developers trade items in and out of the plan based on current priorities and costs. Adaptation is favored over following a plan. * There is a release plan. * The whole team including coach, customer, developer, etc. is present during release planning. * The customer picks the order of the User Stories in the release plan. * When stories are added to a release, stories of equal value may be re-prioritized. * Developers estimate the time needed to complete the User Stories. * Developers break down User Stories into tasks. Each developer signs up for tasks and estimates the ones he/she owns. * The release plan is used to determine how much can be done by a certain time. * Past User Story experience aids in determining how much can be done by a certain time. * Release points have been identified and communicated to all stakeholders. * At least one User Story is created for automating acceptance tests.	
Testing - How important are customer acceptance tests to the development of your product?	10	Customer acceptance tests exist to ensure both the developers and the customer know what they want. All acceptance tests must be passed before the product can be delivered to the customer. * Acceptance tests are used to verify a system functionality and customer requirements. * Customer provides acceptance criteria. * Customer uses acceptance test to determine what has been accomplished at the end of an iteration. * Acceptance testing is automated. * A User Story is not finished until its acceptance tests pass. * Acceptance tests are run automatically every night. * A test environment that matches our end-user's environment is used to test.	

For more details please refer to the agility [survey](#).

## Timeline



## Budget and Reports

Here in the project, Arogya, we computed the project's overall budget using a top-down methodology. We can compute the labour cost by multiplying the total number of hours invested in the project with the hourly rate paid for each resource. We have an 8-person team working on the project Arogya, and labor and operational costs are estimated for each resource separately and summed together because each developer's working hours vary. Since each sprint lasts two weeks, the timeline is taken over a period of six weeks. After that, additional costs are included in determining the project's overall budget, including taxes, operational costs, integration costs, and contingency costs. Pay varies per resource depending on the role they play in the project. As per the project requirements, the project management team has decided the following rates to be paid per hour.

1. Project Manager - \$80/hr
2. Frontend Developer-\$60/hr
3. Backend Developer-\$70/hr
4. Scrum Master- \$65/hr

5. Business Analyst-\$60/hr
6. QA Engineer-\$60/hr
7. Architect-\$70/hr

S.No	Developer	Total Work Hours estimated	Pay per hour(\$)	Total Pay
1	Amarjeet Singh	72	80	5760
2	Mehtab Singh	65	70	4550
3	Jaswinder Singh	48	70	3360
4	AnushaReddy Lattupally	50.5	60	3030
5	Varshini Vankayalapati	62	65	4030
6	Anusha Yeramalla	60	70	4200
7	Srikrithi Chamarthi	51	60	3060
8	Bhavitha Yarlagadda	70	70	4900

1. Total Labor Cost -\$ 32,890
2. Operational and Management Cost-\$ 7,500
3. Project setup(Software set-up, Licenses) and Taxes \$5,000

**Calculating contingency:**

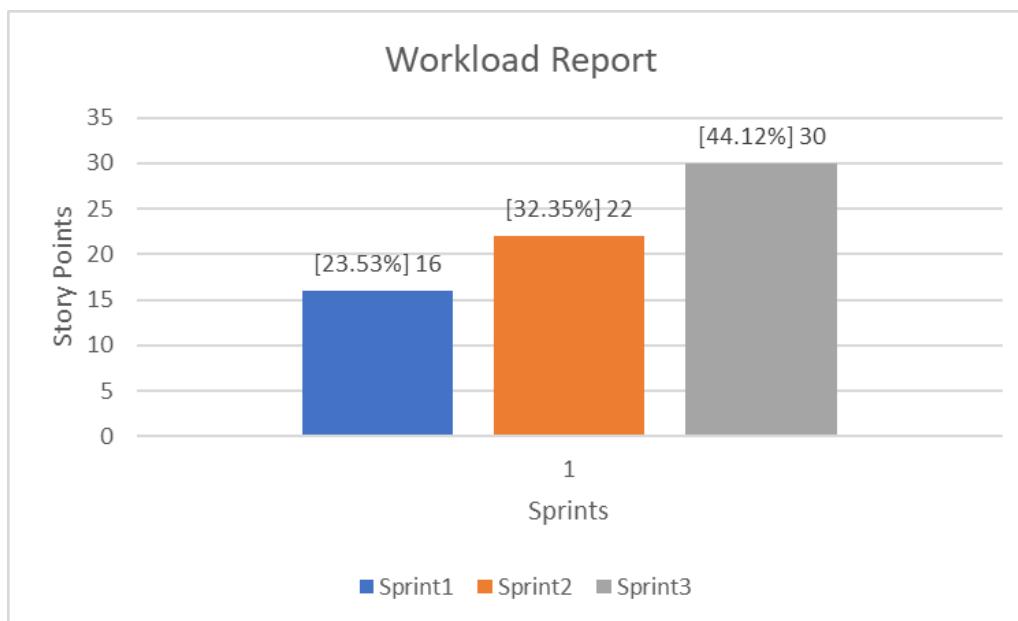
4. Quality factor- \$3,500
5. People Factor- \$1,700

Total contingency(Quality factor): \$5,200

Therefore the total estimated budget for the project **Arogya** is **\$50,000**

## **Estimated Workload report (based on story points)**

Below is a chart representing the workload distributed in each of the given three sprints. Here the amount of work is measured with the number of story points completed per sprint.



## **Estimated Report on the Assignment of tasks to the assignees**

Here is the pie chart representation and data table showing the number of issues each developer worked on in the project for all the three sprints combined.

## Task Assignment Report

