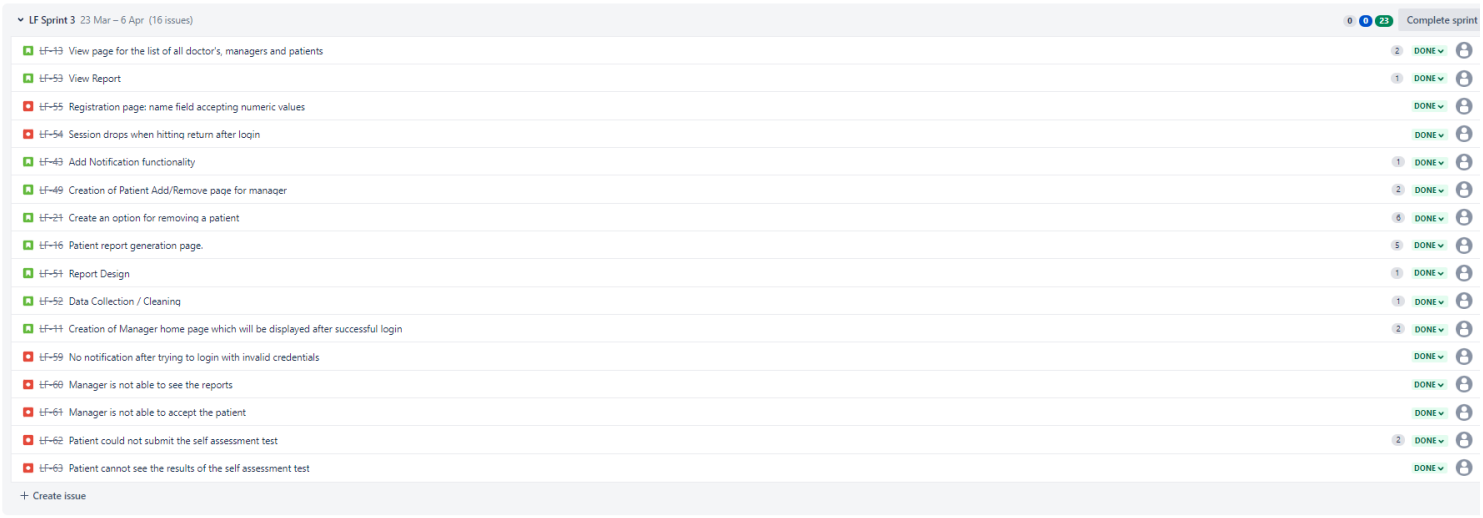
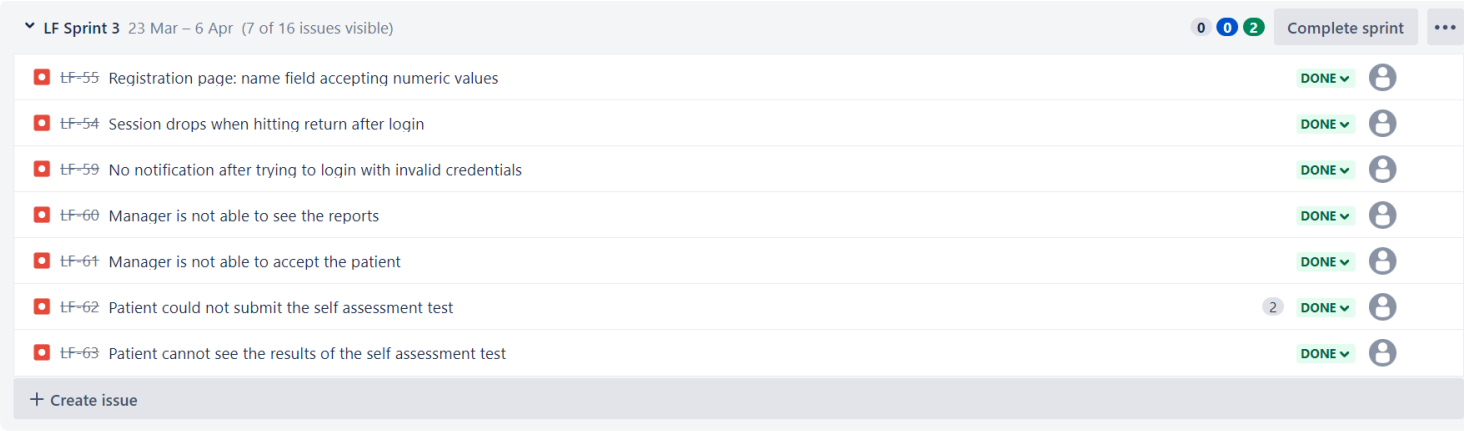
SPRINT 3 REPORT

1. User Stories Backlog

Sprint 3: - 23rdMarch- 6th April (Completed)



Defects Backlog



2. Acceptance Test Cases

Note: - In the excel file attached.

3. Risk management for the functionality developed in the sprint.

Sr. No	Risk Item	Risk Category	Risk Management Technique
1	Story points are higher than finished in sprint 3, Finishing all story points in time	Estimation risk	Mitigation 1. Divided the team into 2 parts and worked in parallel to increase the speed and efficiency. 2. Planned and had regular meetings to help task between teams.
2	Integration of code within team	Integration risk	Mitigation 1. Planned a meeting with people from both sub-team's developer to discuss and merge the code.
3	Integration with external systems	Estimation risk	Mitigation 1.Identify the integration points early in the project. 2. Test the integration points frequently to identify and resolve issues early. 3. Document the integration process and dependencies clearly.

4	Insufficient Testing	Quality Risk	Mitigation 1. Develop comprehensive test cases and plans. 2.Conduct regular testing throughout the sprint. 3.Use automated testing tools where possible.
5	Security Vulnerabilities	Security risk	Mitigation 1. Conduct regular security audits and penetration testing. 2. Follow secure coding practices apply security patches promptly. 3. Train the development team on best security practices.
6	Unexpected changes in project scope or requirements	Scope risk	Mitigation 1. Establish a change management process for all stakeholders. 2. Ensure regular communications and agreements on changes. 3. Reassess project plans and resources to accommodate changes. 4. Prioritize changes based on impact and feasibility.
7	Improper communication with the team members	Communication risk	Avoidance 1. Set a coding standard for the dev team. 2. After scrum meetings, extra session time for peer review of developed codes.
8	Inadequate documentations	Documentation Risk	Avoidance 1.Set documentation standards for the team 2.Review and update documentation regularly 3.Schedule dedicated time for documentation tasks during the sprint.

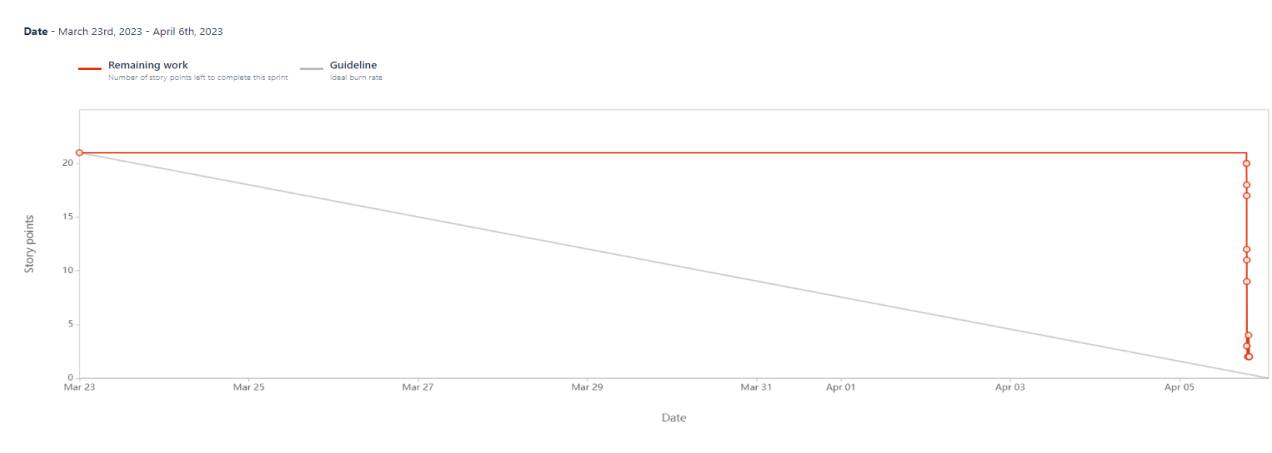
4. Iteration and Release Burndown Charts

Here with the help of the burn down chart, we visually represented the progress made by a team during a sprint in agile project management. It shows the amount of work completed versus the amount of

work remaining in the sprint.

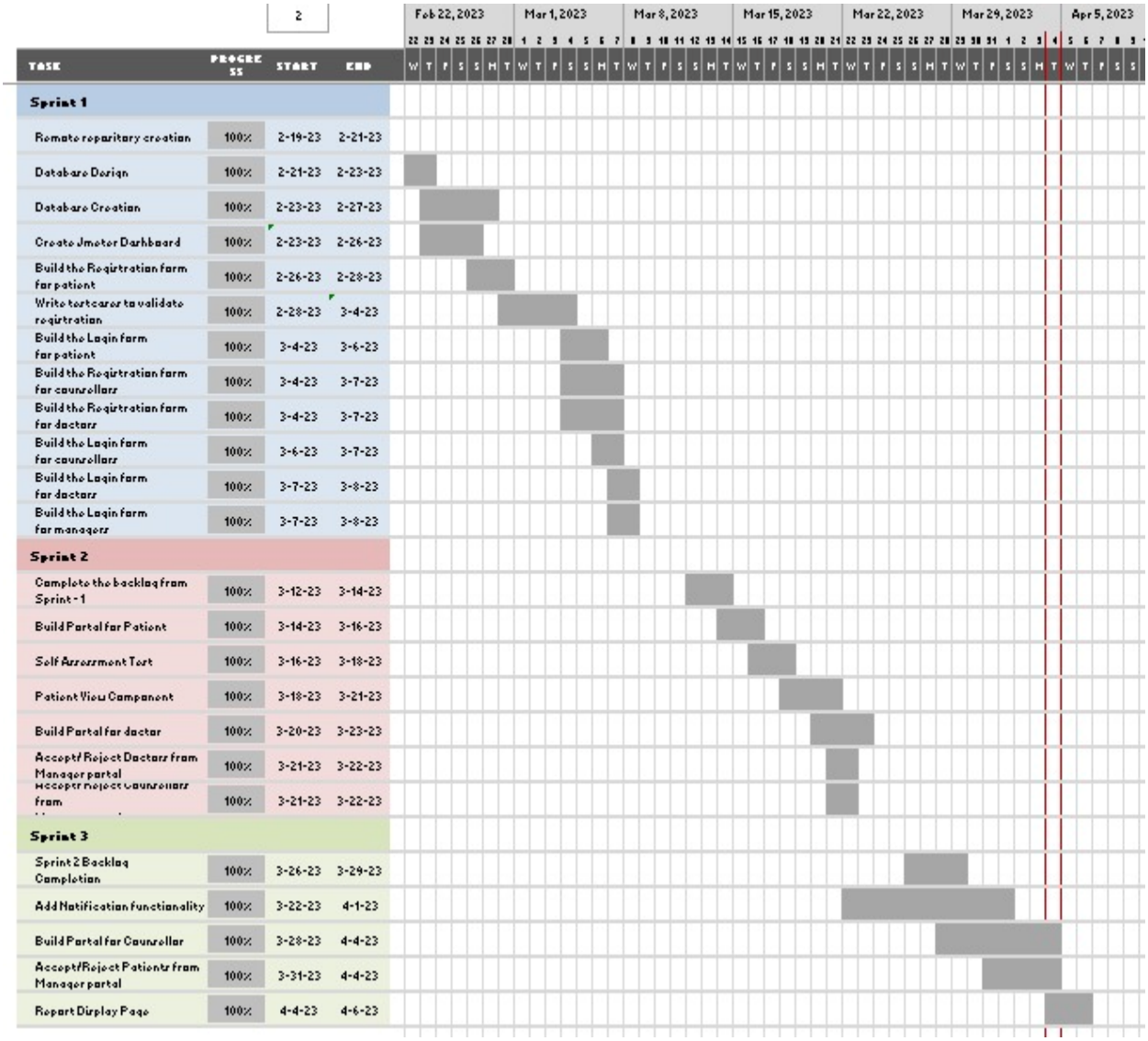
If a sprint has "burn down" it means that it was not completed successfully and may have been terminated before completion due to various reasons such as technical difficulties, resource constraints, or changing project requirements. In such a case, a burnt down chart would show incomplete or partially completed tasks, with the remaining work appearing as a gap or a downward trend on the chart.

During Sprint 2, we were able to complete 49 out of 58 story points, which resulted in a slightly deviated graph from the ideal one that we achieved in the previous sprint. However, the majority of the work was completed within the sprint, resulting in a graph that closely resembles the ideal one. Moving forward to Sprint 3, we were able to complete all of the story points, which enabled us to achieve the ideal burndown chart. For reference, the burndown chart for Sprint 3 has been posted.



5. Gantt Chart: -

The third sprint commenced on March 23rd and concluded on April 6th. This sprint involved a comprehensive set of user stories, including those related to doctor, counsellor, patient, manager, notification, and report modules. As per our initial plan, a total of 21 user stories were successfully completed within the stipulated timeframe.



TASK	PROGRESS	START	END
Sprint 1			
Remote repository creation	100%	2-19-23	2-21-23
Database Design	100%	2-21-23	2-23-23
Database Creation	100%	2-23-23	2-27-23
Create Jmeter Dashboard	100%	2-23-23	2-26-23
Build the Registration form for patient	100%	2-26-23	2-28-23
Write test cases to validate registration	100%	2-28-23	3-4-23
Build the Login form for patient	100%	3-4-23	3-6-23
Build the Registration form for counsellors	100%	3-4-23	3-7-23
Build the Registration form for doctors	100%	3-4-23	3-7-23
Build the Login form for counsellors	100%	3-6-23	3-7-23
Build the Login form for doctors	100%	3-7-23	3-8-23
Build the Login form for managers	100%	3-7-23	3-8-23
Sprint 2			
Complete the backlog from Sprint - 1	100%	3-12-23	3-14-23
Build Portal for Patient	100%	3-14-23	3-16-23
Self Assessment Test	100%	3-16-23	3-18-23
Patient View Component	100%	3-18-23	3-21-23
Build Portal for doctor	100%	3-20-23	3-23-23
Accept/Reject Doctors from Manager portal	100%	3-21-23	3-22-23
Accept/Reject Counsellors from	100%	3-21-23	3-22-23
Sprint 3			
Sprint 2 Backlog Completion	100%	3-26-23	3-29-23
Add Notification functionality	100%	3-22-23	4-1-23
Build Portal for Counsellor	100%	3-28-23	4-4-23
Accept/Reject Patients from Manager portal	100%	3-31-23	4-4-23
Report Display Page	100%	4-4-23	4-6-23

6. Sprint 3 Meeting Events

Sprint 3 Planning

Date/Time – 23rd March 2023, (20:00 -20:30)

Venue – Zoom meeting (online)

Attendees -

Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish(QA and Manager)

Major Points Discussed:

1. Assessment Test was planned to do in this Sprint from the previous Sprint.
2. We updated the estimations of some stories because they are very similar to previous stories so reduced the estimation time.
3. Team Members signed up for stories. We assigned two people to each user story in order to have pair-programming practice.

Standup Meeting

Date/Time – 25th March 2023, (22:00 -22:20)

Venue – Zoom meeting (online)

Attendees -

Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish(QA and Manager)

Major Points Discussed:

1. Team discussed completing the user stories of previous sprint and development team assigned the tasks.
2. The development team discussed the implementation of the major modules like report and notification in the sprint 3.

Standup Meeting

Date/Time - 26th March, 2023, (22:00 -22:20)

Venue – Zoom meeting (online)

Attendees -

Aditi Aditi (Project Manager)	Anagha(Developer)
Aditya, Shivam (UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish (QA and Manager)

Major Points Discussed:

1. The team discussed the progress made in the previous sprint and identified areas for improvement.
2. We identified some issues with database and database team were assigned the task to fix the issue.
3. We discussed the importance of testing and assigned a team member to create a test plan for the sprint.

Standup Meeting

Date/Time – 28th March 2023, (22:00 -22:20)

Attendees -

Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish(QA and Manager)

Major Points Discussed:

1. The development team started working on the notification function for all the doctors, counsellors, patients, notifications, and report modules.
2. The testing team started to write test cases for the modules.
3. Other testing team members confirmed that they have started working on front end testing and found some errors in design of the modules.

Standup Meeting

Date/Time – 1st t April 2023, (22:00 -22:20)

Venue – Zoom meeting (online)

Attendees -

Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish(QA and Manager)

Major Points Discussed:

1. Testing team Confirmed that all implementations done until now could pass the acceptance test criteria.
2. Developers stated that they are still working on the implementation of a few user stories as they have other deadlines as well.

Review Meeting

Date/Time – 3rd April 2023, (22:00 -22:30)

Venue – Zoom meeting (online)

Attendees -

Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya, Soham(QA and Database)	Kenish (QA and Manager)

Major Points Discussed:

1. Team Demonstrated the flow and functionality of the modules.
2. The team completed the Sprint 3 Documentation and demonstrated it in the review meeting. The development team verified that everything is working fine.

Retrospective Meeting

Date/Time – 5th March 2023, (22:30 -23:00)

Venue **–** Zoom meeting (online)

Attendees -

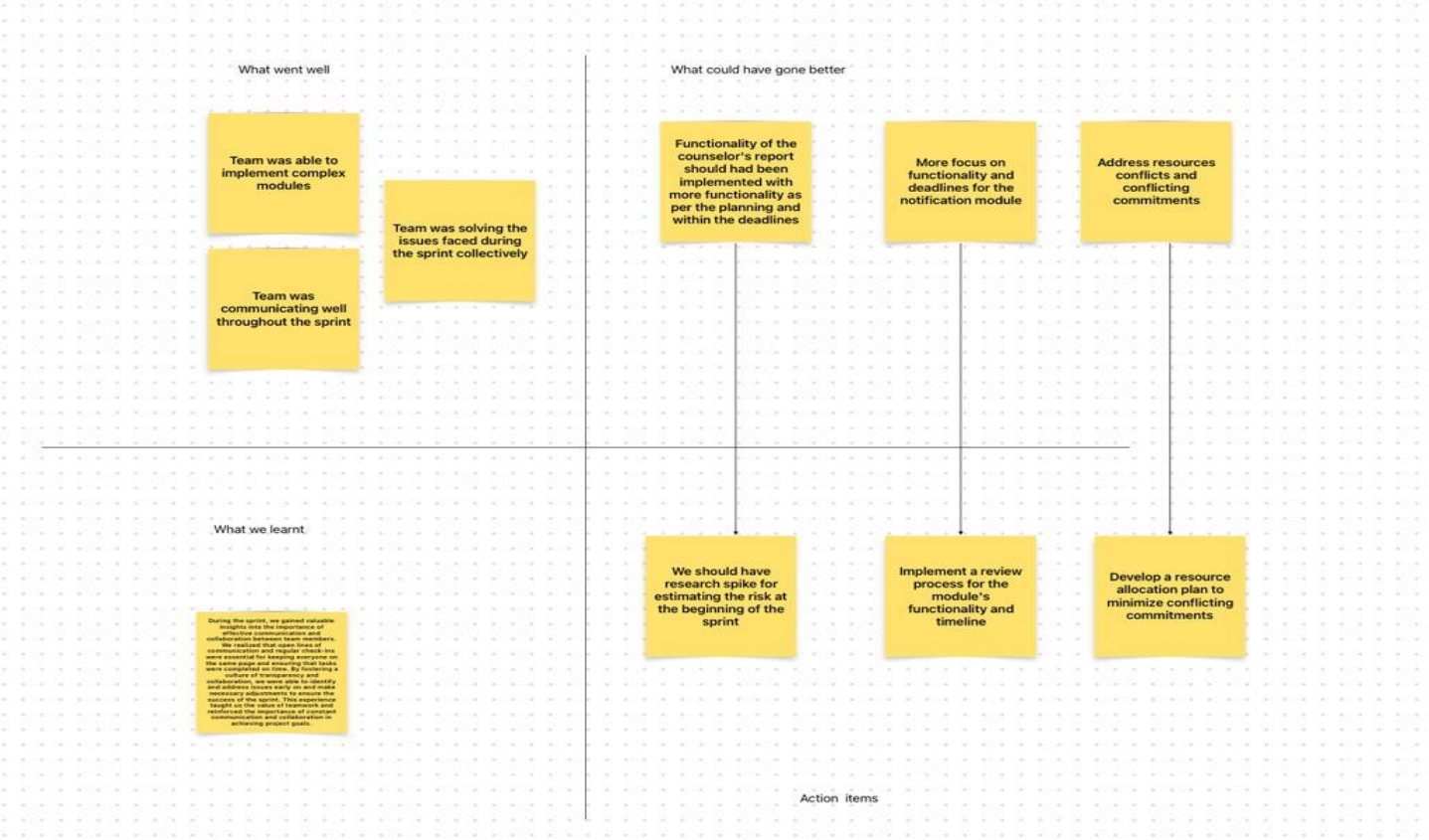
Aditi Aditi (Project Manager)	Angha(Developer)
Aditya, Shivam(UI/UX Designer / Developer)	Bhargav Pragya (Developer)
Simar (QA)	Madhav (QA)
Divya ,Soham(QA and Database)	Kenish(QA and Manager)

Major Points Discussed:

1. The team discussed what went well, what we learnt, what could have gone better, and the action items.
2. We discussed about the problems and the hurdles faced in the sprint and what is the expected result of the sprint:

What went well:
The team communication was great, and the team was able to solve the issues collectively. Team was able to implement the complex modules and developed the product as per the client's requirements.
What we learnt:

During the sprint, we gained valuable insights into the importance of effective communication and collaboration between team members. We realized that open lines of communication and regular check-ins were essential for keeping everyone on the same page and ensuring that tasks were completed on time. By fostering a culture of transparency and collaboration, we were able to identify and address issues early on and make necessary adjustments to ensure the success of the sprint. This experience taught us the value of teamwork and reinforced the importance of constant communication and collaboration in achieving project goals.	
What could have gone better:	Action Item:
Functionality for the counsellor's report should had been implemented with more functionality as per the plan and within the deadline	We should have research spike for estimating the risk at the beginning of the sprint
More focus on functionality and deadlines for the notification module	Implement a review process for the module's functionality and timelines
Address resource conflicts and conflicting commitments	Develop a resource allocation plan to minimize conflicting commitments



4. Measurement data on success indicators.

1) Goal Attainment:

The team was able to deliver story points of the estimated for this Sprint. Functionality pertaining to the following stories were delivered:

1) Patient Portal
2) Counselor Portal
3) Doctor Portal
4) Self-Assessment Test Component
5) Manager Portal
6) Notification Component
7) Reports Component

Goal	To complete the Sprint 3 deliverable on time and within budget and delivered >>
Question	How well did we complete the milestones or deliverable on time and within budget?
Indicator	Burndown Charts.
Metrics	Goal attainment, measured by the **Story Points** completed in the Sprint.

2) Quality:

We found a few defects in the previous sprint and moved them to this sprint and all the three defects have been fixed by the development team. The bugs and defects found in this sprint had been tracked and solved by the team.

Goal	To ensure software quality meets established standards.
Question	How many defects or bugs were found in testing or production?
Indicator	JIRA tickets for bug tracking are in progress.
Metrics	**Defect density**, measured as the number of defects or bugs per unit of software code or functionality.

3) Communication and Collaboration:

The Team worked on introducing new features constantly to enhance the Patient, Doctor, Counselor and Self-Assessment components in the best way possible.

Goal	To improve project team communication and collaboration.
Question	How well are the team members communicating and collaborating with each other.
Indicator	The Team has tried to have standup meeting and review meetings to communicate and collaborate with each other.
Metrics	**Communication and Collaboration percentage**, measured as percentage of effective communication and collaboration practices.

4) Technical debt and Maintainability:

The Development team made sure that there is no technical debt and they followed coding principles. They also made sure that the code is easy to understand and can be easily maintained.

Goal	To minimize technical debt and ensure code maintainability
Question	How much technical debt is there in the project?
Indicator	Team tried to get static code analysis reports like sonarqube.

Metrics	Technical debt ratio measured as the percentage of issues found in code reviews and static code analysis.

5) Customer/Stakeholder Satisfaction.

1. **Meeting Requirements**: Stakeholders would be satisfied if the software meets the requirements that were defined for it. This includes accurate and up-to-date information, easy navigation, uniformity in the format of pages, and controls that are self-explanatory.
2. **Usability Testing Score**: The Usability testing score that was provided by the Testing team is a good indicator of stakeholder satisfaction. If the score is high, then stakeholders can be assured that the application is easy to use and meets their needs.
3. **Aesthetics**: The visual appearance of the application can also contribute to stakeholder satisfaction. If the colors, content, icons, and overall design are aesthetically pleasing, then stakeholders are likely to be satisfied with the software.
4. **Ease of Learning**: Stakeholders would also be satisfied if the application is easy to learn. This includes having clear and concise instructions, intuitive navigation, and an overall user-friendly design.
5. **Accessibility:** Finally, stakeholders would be satisfied if the application is accessible to all users, including those with disabilities. This includes ensuring that the application is compatible with assistive technologies and that it meets accessibility standards.

Goal	To ensure customer satisfaction by meeting their needs and expectations.
Question	How satisfied are the customers and the stakeholders with the delivered functionality?
Indicator	Customer Feedback survey.
Metrics	Customer satisfaction score measured by the ratings and feedback provided by the customers on the delivered functionality

1) Security:

1. **Ensure Security Measures:** The team implemented security measures to protect the data of the patient.
2. **Verification Mail-** After the registration of doctor and counsellor the manager get the email to either accept them or refuse them which adds a security that no unauthorized person is added and has access to the data of the patient.

Goal	To ensure the software is security and protect the user data.
Question	How secure is the application and user data?
Indicator	Security score is **80** as we are only focusing on the major things and not all the modules are covered as time and resources required for security updates is quite less.
Metrics	Security score, measured as a percentage of identified vulnerabilities and their security level.

8) Effort:

The amount of work expended for conflicting commitments (part-time jobs and other subject assignments) reduced the team throughput to 85%. GQIM model is deployed to mitigate the risk and improve effort.

Goal	To restore the team throughput to 100%
Question	Is the team effort increasing?
Indicator	The Sprint was shorter as compared to the previous one, but the Team still managed to have a Team velocity/throughput of 85%.
Metrics	**Team Velocity** at the end of the sprint.

9) Cost Effectiveness:

Cost: -The cost expenditure of all the features implemented in this Sprint are at par with the budget estimated for Sprint.

Expenditures on resources for 90% commitments were visualized and the rest of the amount was spent on miscellaneous expenses and the Final spends for the sprint was –$4,440.

Goal	To ensure the project or feature is cost-effective and spend $4440 on Sprint 2.
Question	What is the cost of the Project/Sprint or feature compared to the expected return on investment?
Indicator	The Team is currently at par with the budget for this Sprint.
Metrics	**Cost effectiveness**, measured as the cost of the project or feature as compared to the expected return on investment.

Comparison between Measurement Data on Success Indicators b/w Sprint1, 2 & 3

Success Indicator	Sprint 1	Sprint 2	Sprint 3
Progress / Goal Attainment	The Team was able to deliver **41 Story Points** out of 41 estimated Story points.	The Team was able to deliver **49 Story Points** out of 58 estimated story points, moving the remaining 9 Story points to the next Sprint.	The Team was able to deliver **21 Story Points out of 21** estimated and there was no backlog that is needed to move to the next sprint
Defects Density	The Team found **5 defects** during the Sprint and **resolved 3** of them whereas the other 2 were moved to next Sprint and being tracked on the JIRA board.	The Team found **5 defects** during the Sprint and **resolved 2** of them whereas the other 3 were moved to next Sprint and being tracked on the JIRA board.	The Team found **5 defects** during the sprint and **resolved all the defects** (defects from the previous sprint as well) and were tracked on JIRA
Efforts	The Team's **throughput** was affected due to conflicting commitments (Midterms) and resulted in a value of **75%.**	The duration of the Sprint 2 was shorter as compared to Sprint 1 but the Team still managed to produce a **throughput of 85%** even though it had other commitments (Part-time jobs and other assignments)	The duration of the Sprint 3 was same as compared to Sprint 2, but the Team still managed to produce a **throughput of % 90** even though it had other commitments (Part-time jobs and other assignments)
Cost Effectiveness	The Team **spent $4,420** out of the $4,830 estimated budget for the Sprint including the 75% expenditures on the resources and other miscellaneous costs.	The Team **spent $4,480** out of the $4,890 estimated budget for the Sprint including the 85% expenditures on the resources and additional $800 on API outage and Database resources.	The team spent **$4,293** out of the **$4,770** estimated budget for the sprint including the 80% expenditures on the resources. And the rest were spent on miscellaneous expenses.

Analysis of the result -

Based on the above comparison data, we can see that the **team's progress** or goal attainment has **increased from Sprint 1 to Sprint 2**. In Sprint 1, the team was able to deliver 41 Story Points out of 41 estimated Story points, indicating that they were able to complete all the work that

they had planned for that sprint. In Sprint 2, the team was able to deliver **49 Story Points out of 58 estimated story points**. Although they were not able to complete all the work that they had planned for this sprint, they were able to deliver more than what they delivered in Sprint 1. Additionally, they have carried over the remaining 9 story points to the next sprint, which can be considered as progress towards achieving their overall goal. In sprint 3 the team was able to complete all the **21 Story Points out of 21 estimated story points** as compared to sprint 2 where the team was not able to complete all of the stories. The team

In terms of **Defect Density**, we can see that the values do **not show a significant change or rather declined a little** between Sprint 1 and Sprint 2. In Sprint 1, the team found 5 defects and resolved 3 of them, meaning that the team was left with 2 unresolved defects at the end, which were moved to the next sprint for further resolution. In Sprint 2, the team found the same number of defects (5) during the sprint, but resolved only 2 of them, leaving 3 unresolved defects to be carried over to the next sprint however, the analysis of Defect Density **highlights a significant difference between Sprint 2 and Sprint 3**. In Sprint 2, the team detected five defects, out of which they could only resolve two, leaving three unresolved defects. These were carried forward to the subsequent sprint for further resolution. However, in Sprint 3, the team **identified five defects**, and were able **to resolve all of them successfully.** The team learned from the previous sprint's analysis, and realized the importance of monitoring the number of defects and the rate at which they are resolved to prevent any escalation in defect density. As a result of the team's efforts, they were able to decrease the defect density as compared to sprint 2.

In terms of **Efforts**, we can see that there has been an **increase in Efforts or throughput from Sprint 1 to Sprint 2 and to Sprint 3**, even though the team had other commitments in both sprints. In Sprint 1 the team's throughput was **75%.** In Sprint 2, the team's throughput was affected due to conflicting commitments (Midterms), resulting in a value of **85%.**

In Sprint 3, even though the duration of the sprint was like Sprint 2, the team managed to produce a throughput of **90%**. It's worth noting that the team **learnt** that may need to **monitor their capacity and availability** in the upcoming sprints to ensure that they are **not overburdened with commitment**s, which can affect their throughput.

The analysis of Cost Effectiveness shows that **there was no significant difference between Sprint 1, Sprint 2 and Sprint 3, with a negligible variance in the expenses incurred**. In Sprint 1, the team spent **$4,420** out of the estimated budget of **$4,830** which indicates that the team was able to complete the sprint within the budget, In Sprint 2, the team was able to complete the tasks within the estimated budget of **$4,89**0, spending only **$4,480**, indicating a successful outcome. However, in Sprint 3, although the team remained within the budget, they spent **$4,293,** which is **90%** of the allocated funds, leaving only a small amount for miscellaneous expenses. **This resulted in a higher percentage of expenditure being used on resources.** The team learned from the previous sprint's analysis and recognized the need to monitor expenses and the percentage of expenditure on resources to ensure cost-effectiveness in the upcoming sprint. As a result, they focused on utilizing most of the expenditure on resources and to maintain cost-effectiveness.

6. **Agile Project Management, Agility Analysis**
   All the team members participated in the survey and the average has been taken for all the team members and the final outcome is attached to the excel sheet.