LEARNING MANAGEMENT SYSTEM

GROUP 5

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Risk Manager	*User Experience Specialist*	*Minutes Taker*

AGILE PROJECT ITERATION I - TEAM 5

Sprint 1 - Project vision

Our Learning Management System (LMS) offers an easy to use and flexible website that allows access to accounts and allows the management of lessons flexibly to students and teachers who require a straightforward and secure platform to access and manage learning materials. Our product also enables the users to log in and create/edit/ delete lessons directly and in a central location as opposed to scattered file-sharing or outdated systems.

This initial sprint provides the platform on which secure access and lesson management is developed and the users can immediately start interacting with course materials. This forms the main foundation, around which subsequent functionality, including quizzes, progress tracking, and collaboration features, will be developed, which is in line with our vision of offering a modern, streamlined and accessible learning experience.

In Sprint 1, we have already established the basis of this vision by introducing the concept of secure user login and lesson management whereby lessons can be easily created, edited and deleted. All these are built-in building blocks of accessibility and the level of control of the contents so that the system could be practical and user-friendly at the very beginning.

1. Sprint - Process Model

In the case of Sprint 1, our group used Scrum within a 2-week academic sprint to provide the initial increment of our Learning Management System (LMS). The Product Owner (Jijendran) prioritised the backlog and made acceptance criteria clear. The Scrum Master (Esha Veena) led sprint ceremonies and blockers were fixed. The increment was implemented by the development team (Dhakshini,Esha,Jijendran,Yuhan,Hui Yi,Ee Dhing) and the tests were written and reviews were carried out. We divided the roles of developers into Frontend(Dhakshini,Hui Yi) and Backend (Ee Dhing, Yuhan).

In Sprint Planning, PO showed four high-priority stories, including: login, create lesson, edit lesson and delete lesson. Epic are also created includes: Manage login and registration, Manage course, Manage lesson, Manage each user’s accessed pages, Manage classroom, Manage reports. The team estimated each story with Planning Poker, agreed capacity by availability and made promises to the same as the Sprint 1 goal. Then we divided them into activities (UI design, backend integration, validation, and testing) and assigned them owners and hours.

We conducted stand-ups thrice a week where members gave progress, blockers and a follow-up. We also had one sprint planning and Sprint retrospective meeting.The Scrum Master noted impediments and did follow up. During the Sprint Review we presented the working increment (login and CRUD lessons) to PO, who accepted the stories accomplished. Through the Retrospective, the group recounted challenges in the processes (e.g tasks coordination) and decided on Sprint 2 improvements.

Produced in Sprint 1:

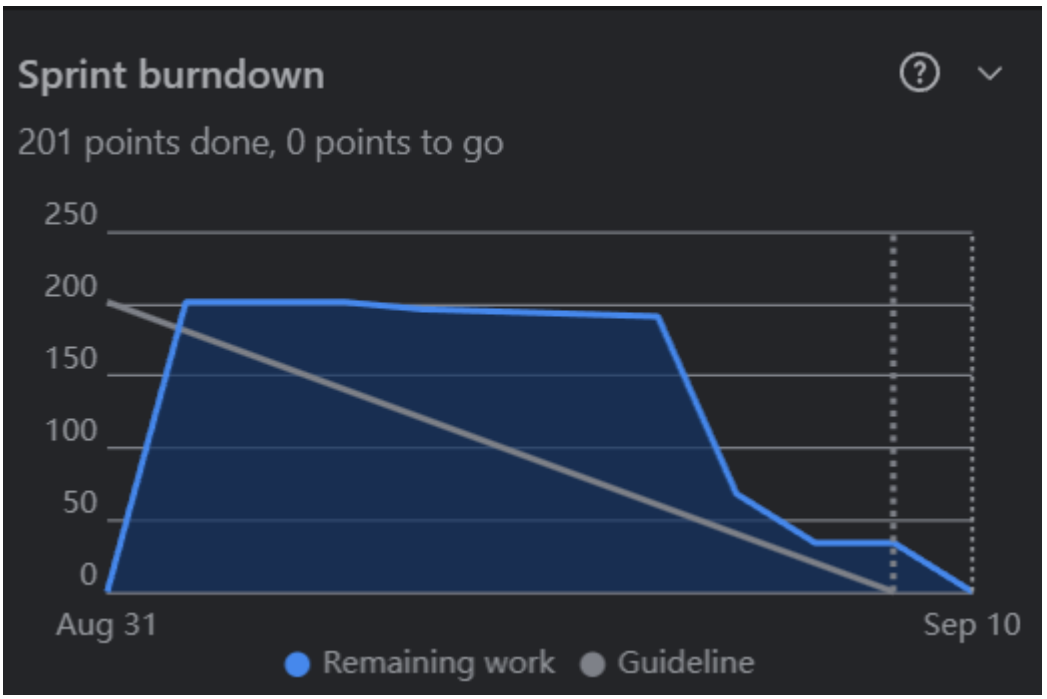
1. **Product Backlog -** refined user stories that have been prioritised by the PO.
2. **Sprint Backlog -** chosen Sprint 1 stories divided into tasks and owned by owners.
3. **Definition of Done (DoD):** Merged to master, Unit-tested, hand-verified against acceptance criteria, peer reviewed.Updated the work log also.
4. **Sprint 1 Objective:** Provide secure log-in and core lesson CRUD to enable teachers to control lessons.

Product/Sprint Backlog (DEEP+ INVEST)

1. Our Product Backlog is based on **DEEP**:
   - **Detailed** properly high-priority items (login + CRUD) were detailed fully with acceptance criteria, whereas lower-priority items are less detailed.
   - **Estimated -** top stories were estimated in story points at Sprint Planning.
   - **Emergent -** backlog changes because new requirements emerge.
   - ordering is **Prioritised** PO has ordering with Sprint 1 stories on top.

Sprint burndown

2. **INVEST** is followed in our Sprint Backlog and stories too:
   - **Independent -** login and CRUD stories may be constructed independently.
   - **Negotiable -** requirements explained with PO at Sprint Planning.
   - **Valuable -** every story provides functionality that the user can see.
   - **Estimable -** all stories measured in points.
   - **Small -** stories could be done in a single sprint.
   - **Testable -** acceptance criteria outlined definite tests to be completed.



This chart visualizes our sprint progress from *August 31,2025* to *September 10,2025* tracking how much work remained versus how much was completed.

Total User Story Points: 201
User Story Points Completed: 201
Story Points Remaining: 0
Sprint Goal Achieved (Yes/No): Yes,all committed work was completed by the end of the sprint.

Burntdown Chart Summary:
- The correspondence between the real progress and the guideline indicates that the sprint was planned and implemented successfully.
- There was no spill over backlog and the team had a sustainable pace.
- INVEST criteria that were used in backlog refinement served to ensure that the stories were small, testable and were attainable within the sprint.

2. Project Management

2.1 Platform Used

Jira: https://fit2101-group5.atlassian.net/jira/software/projects/SCRUM/summary - Ca…

During this sprint, we used Jira to manage our workflow, including the creation of user stories, task assignment, and documentation of both sprint backlog and product backlog. The user stories were documented in the backlog and prioritized according to client's requirements. To monitor progress, the team used Jira boards to visualize the task progress (To Do, In Progress, Done). Jira helped us distribute the workload, maintain transparency within our group, and ensure the timely completion of tasks throughout the sprint.

2.2 Analysis of Alternatives in Project Management Tools

During our Inception 1 meeting, our team members cumulatively decided to stick with jira workspace for our consecutive sprints. We also considered other alternative tools as listed

Project Management Tools	Strengths	Cons	Agile Support	Team Decision
Trello	Very simple kanban boards, low learning curve, Simple UI, Easy to use for beginners	Fewer built-in Agile reports (manual tracking needed)	Use of free resources but limited Agile Structure	Not chosen - Lacks Agile Structures
Jira	Follows Agile Structure as expected by project guideline: Burntdown Charts,sprints breakdown and work allocation	Quite complex for beginners	Strong on Agile support but weaker on ease of onboarding.	Chosen- As it matches our Sprint 1 scope and aligns with the agile structure
Asana	lightweight Kanban boards.	Limited agile structures , no burnt down charts	No to very limited	Not Chosen - Lacks Agile Structures , Too Simple

2.3 Standup Meetings

Meeting Details

- **Sprint week:** 6
- **Team:** Group 5

2.3.1 Scrum standup 1

- **Source:** week6 standup meeting.mp4
- **Focus:** Every team member shared their progress on the sprint 1 tasks, mainly working on the log in and creating lesson pages of learning management system.
- **Highlights:**
    - User stories have been rearranged according to the EPIC created.
    - Most developers have started on the frontend and the backend items.
- **Meeting minutes:** refer to Appendix 1.1

2.3.2 Scrum standup 2

- **Source:** wee6 applied standup.mp4
- **Focus:** Application of sprint tasks and cross-team collaboration
- **Highlights:**
    - Delegated tasks based on frontend, backend and integration developers.
    - Planning to continue working on the log in page and modify the current create lesson page.
- **Meeting minutes:** refer to Appendix 1.2

2.3.3 Scrum standup 3

- **Source:** last sprint standup.mp4
- **Focus:** Sprint wrap-up and retrospective preparation
- **Highlights:**
    - Integration of the backend and frontend.
    - Complete the modification of the create lesson page.
- **Meeting minutes:** refer to Appendix 1.3

2.4 Sprint Planning

2.4.1 Sprint Planning Session

- **Source:** Sprint Planning Final 31:8.mp4
- **Focus:** The team conducted a sprint planning session to finalize backlog items for the upcoming sprint.
- **Highlights:**
    - Reviewed the sprint backlog and prioritized the user stories.

    - Allocated tasks among team members.
- **Meeting minutes:** Refer to Appendix 1.4

2.4.2 Client Interview

- **Source:** week5 client interview.mp4
- **Focus:** Session with the client to clarify and understand the requirements and expectations given for this sprint.
- **Highlights:**
    - The client emphasized the key features needed.
    - Clarified acceptance criteria for certain user stories.

2.5 Sprint Retrospective

The work log can be found in Jira through Clockify by clicking the individual user stories and the tasks under them.

The following google docs is the file with the answers for every team member regarding what went well, what could have been done better, what will we try next and what questions do we have.

- Retrospective_G5

3.0 Risk Register And Management

3.1 Risk Matrix

During this sprint, we used the following risk level matrix to classify and evaluate the risks we identified in our project. The risk matrix considers two factors, the impact and the likelihood of the risk happening. By combining these two dimensions, each risk is assigned to a severity level (Low, Medium, High). And this helps us to identify which risks require more attention and stronger mitigation strategies.

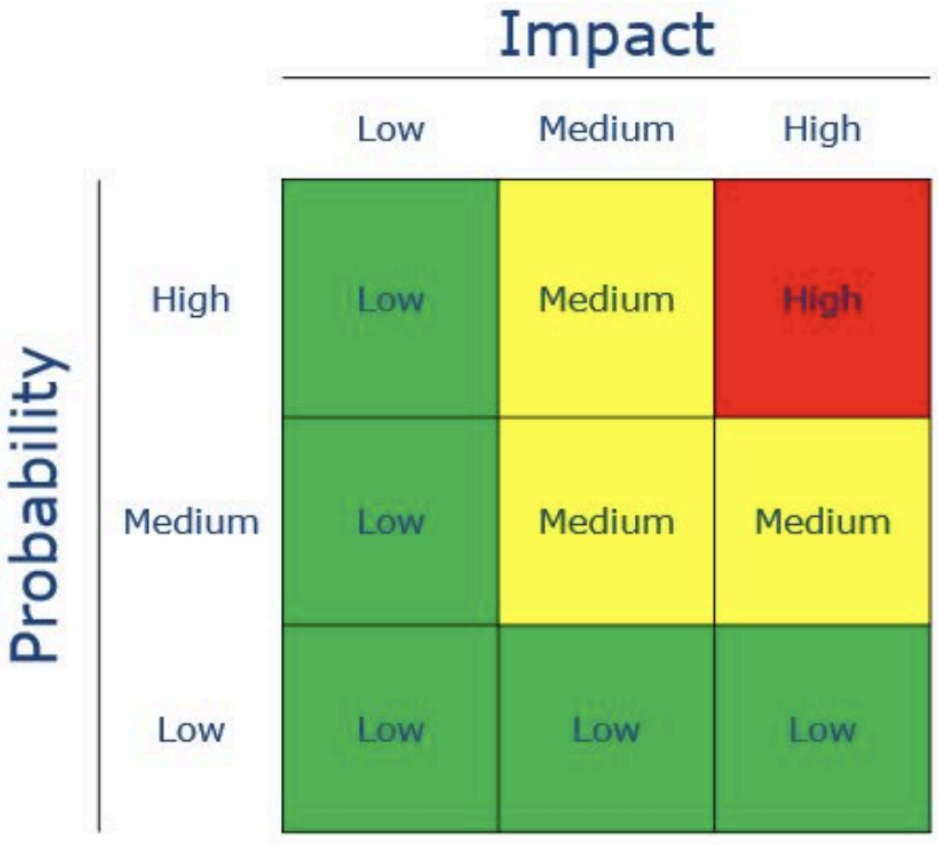


Figure 2.1 Risk Level Matrix

3.2 Live Risk Register

This table lists the risks we faced during the development of the current sprint (based on our Project Inception document).

Risk ID	Date raised	Description	Estimated Impact	Likelihood	Severity	Owner	Status	Monitoring Strategy	Mitigation Plan	Contingency Plan
R1	N/A	Team member unavailable (due to illness or prolonged unresponsive ness)	High	Medium	High	Scrum master (Esha)	Not occurred (monitored)	Check the member's health condition every meeting and also constant check on each other's work progress	Encourage early task starts and cross-train members on each other's tasks	Redistribute unfinished work evenly among members and adjust deadlines of each tasks accordingly
R2	N/A	Delays due to unclear requirements	High	Medium	High	Product Owner (Jijdendran)	Not occurred (monitored)	Communicate regularly with client and review user stories	Double confirm the requirements before Sprint Planning	Re-prioritize the tasks in the next sprint.
R3	9 Sept 2025	A critical bug discovered late in the project	High	Medium	High	Lead Developer (Jijdendran)	Occurred – Solved	Implement a structured testing plan and track and review all logged bugs daily	Follow coding standards, conduct reviews, and adopt continuous testing	Reassign team members from lower-priority tasks to bug resolution
R4	6 Sept 2025	Dependency on another task or team	High	Medium	High	Scrum Master (Esha)	Occurred – Solved	Host regular meetings to checkup on each	Document dependencies clearly and ensure	Reallocate effort to unblock critical dependencies and

Risk ID	Date raised	Description	Estimated Impact	Likelihood	Severity	Owner	Status	Monitoring Strategy	Mitigation Plan	Contingency Plan
		member that has fallen behind schedule						individual's task to make sure they are proceeding according to schedule	communication between members	communicate project impact
R5	N/A	Data loss due to technical failure	High	Low	High	Scrum Master (Esha)	Not occurred (monitored)	Monitor the backup frequently	Regularly back up code and documents to cloud repositories	Recover from latest backup and reassign tasks if rework is needed
R6	N/A	Software crashes during development	High	Low	High	Scrum master (Esha)	Not occurred (monitored)	Monitor development environment stability	Use reliable softwares and test software beforehand	Restore code from backups or switch to alternative tools
R7	8 Sept 2025	Version control conflicts in Git	Medium	High	Medium	Lead Developer (Jijdendran)	Occurred – Solved	Review git commits, pull merge requests and ensure everyone follows the pre-determined git policy	Enforce Git workflow guidelines and frequent commits	Resolve conflicts collaboratively and use code review sessions
R8	N/A	Team member workload conflicts	Medium	High	Medium	Scrum Master (Esha)	Not occurred (monitored)	Track task completion and hold each other accountable through the	Distribute workload evenly using Jira assignments	Reassign tasks as needed and pair inexperienced members with experienced ones

Risk ID	Date raised	Description	Estimated Impact	Likelihood	Severity	Owner	Status	Monitoring Strategy	Mitigation Plan	Contingency Plan
								weekly scrum meetings		
R9	6 Sept 2025	Technical skill gaps within the team	Medium	Medium	Medium	Scrum Master (Esha)	Open	Monitor the progress of the tasks, identify which team member is struggled	Schedule training sessions for team members to learn the new technologies	Reassign critical tasks to experienced members and extend deadlines for beginner members if required
R10	N/A	Drop in team morale causing low productivity	Medium	Medium	Medium	Team Leader (Esha)	Not occurred (monitored)	Hold regular team checkins and anonymous rating system to gauge team spirit	Ensure healthy work-life balance, celebrating small wins and ensuring clear communications	Organize team-building sessions and address issues in an open discussion
R11	N/A	Additional features added last minute	Medium	Medium	Medium	Product Owner (Jijendran)	Not occurred (monitored)	Make sure there is backlog grooming regularly in every weekly meeting	Track if there is any new features request and use Jira to monitor backlogs	Reallocate prioritizations and prioritize the critical features.
R12	N/A	Hosting or server downtime	Medium	Low	Low	Scrum Master (Esha)	Not occurred (monitored)	Need monitor the normal operation time of server	Choose reliable hosting providers and hold the backup servers	Switch to backup server until the service is restored

3.3 Resolution Notes (Sprint 1)

R3 (Critical bug discovered):
A critical bug was identified on 9 Sept 2025. The lead developer (Jijendran) found this bug during the code testing, the actual bug is when the “return” was entered, the contents in ‘Assignment’ and ‘Reading List’ would automatically disappear. And this bug was solved within one day.

R4 (Dependency delays):
During the current sprint, a dependency issue occurred on September 6, 2025, as the implementation of tasks relied on one another, especially between the frontend and backend code. To resolve this problem, the Scrum Master(Esha) redistributed the workload and, through communication between developers, unblocked the task and prevented further delays.

R7 (Version control conflicts):
A Git conflict occurred on 8 Sept 2025. The team resolved it collaboratively during a code review session within WhatsApp group chat. Workflow guidelines were reinforced by the Lead Developer.

R9 (Technical skill gaps):
This risk remains open. Each developer is scheduling their own training sessions, while beginner members are supported by pairing with more experienced teammates.

4. Contribution/Work Log

Tan Ee Dhing

Date	Sprint	User Story ID	Description	Status	Time
3 Sept 2025	1	-	Sprint Planning meeting minutes	Done	30 minutes
6 Sept 2025	1	-	Scrum Stand-Up 1 meeting minutes	Done	30 minutes
6 Sept 2025	1	Scrum 58	Add interactivity using JS	Done	4 hours
6 Sept 2025	1	-	Scrum Stand-Up 2 meeting minutes	Done	30 minutes
8 Sept 2025	1	-	Scrum Stand-Up 3 meeting minutes	Done	30 minutes
10 Sept 2025	1	-	Sprint Retrospective meeting minutes	Done	40 minutes
10 Sept 2025	1	-		Done	30 minutes

Ooi Hui Yi

Date	Sprint	User Story ID	Description	Status	Time
2 Sept 2025	1	Scrum 57	Instructor login (Scrum 60), Create the front end of the login site (Scrum 67)	Done	10:20am - 10:34am 1:34pm (forgot to clock out)
9 Sept 2025	1	Scrum 58	Define Lesson Data Structure (Scrum 91)	Done	10:41am - 10:57am

Yuhan

Date	Sprint	User Story ID	Description	Status	Time
6 Sept 2025	1	Scrum 124	Find out how to use JS to store current user data for authentication	Done	1 hours
6 Sept 2025	1	Scrum 66	Develop backend JSS for user identification	Done	1 hours and 12 mins
8 Sept 2025	1	Scrum 93	Implement Prerequisite Lessons	Done	50 mins

9 Sept 2025	1	Scrum 93	Modify the function from the frontend code finished	Done	53 mins

Esha Veena Veerayya

Date	Sprint	User Story ID	Description	Status	Time
8 Sept 2025	1	Scrum 91	Define lesson data structure and parameters and also make edits to the login page.	Done	1h 19m
8 Sept 2025	1	Scrum 58	Add autofill logic to the create lesson page and make edits to file paths and organization.	Done	25m
3 Sept 2025	1	Scrum 58	Integrate login and instructor page to show instructor name.	Done	19m
1 Sept 2025	1	Scrum 58	Create the initial	Done	37m

			create lesson page according to the wireframe.		

Jijendran

Date	Sprint	User Story ID	Description	Status	Time
8 Sept 2025	1	Scrum 57	Improved functionality and style of adding reading list and assignment list	Done	54 minutes
9 Sept 2025	1	Scrum-58	Implemented a function that sets cursor at the end of the text box after adding to reading list/assignment list	Done	1 hour 29 minutes
3 Sept 2025	1		Added login details to a csv to handle and implemented the code to take the values from the csv file instead of hardcode	Done	23 minutes

Dhakshini Subramanian

Date	Sprint	User Story ID	Description	Status	Time
2025-09-02	1	Scrum- 57	[Scrum-59]Added the html code structure for student login page	Done	3:45:00
2025-09-06	1	Scrum- 57	[Scrum-61] Created the admin JS code	Done	00:35:00
2025-09-09	1	Scrum-58	[Scrum-92] Updated the prerequisite tab both html and css files	Done	00:59:00

5. Sprint Retrospective Reflection -Sprint 1

Sprint retrospective recording: sprint_retrospective.MOV
Meeting minutes: Sprint Retrospective Meeting Minutes Appendix 1.5

Esha

In this sprint, I did not struggle with the coding aspect of the project. I did, however, struggle in the project management aspect a lot because I did not really know what to prioritize and it felt like there were many parts in different places in terms of what is required to submit for this assignment. Additionally, the confirmation of our product backlog was delayed because we did it in the wrong format in the sense that our user stories were more of acceptance criteria, therefore, we could only get started with the sprint a week and a half before it was due, which is not ideal. For the next sprint, we are planning to start the planning aspect way more earlier and have everything ready to go in time for the sprint. As a scrum master, I believe I have been very consistent with my efforts however in the beginning, I was pretty confused about what was expected of me. But, I have been consistently making sure that progress is on track and I have been implementing the tools in Jira as much as I can. I have conducted sprint standups regularly to update progress and solved any hurdles that the team encountered.

Dhakshini

For this sprint I was unsure on how to work with git. At the start it was a bit messy because not everyone was confident with branching and merging. We had a few conflicts in the beginning, but by following our Git policy and reviewing each other's pull requests, it started to feel smoother. We realised committing regularly and pulling often is important, otherwise conflicts pile up.Furthermore,Jira was quite new for some of us. At first, we just dumped tasks, but during Sprint 1 we started to actually use the backlog properly and move stories across the board. It helped us see progress and also made our stand-ups more structured because we could point to the board instead of just talking vaguely. We also learned that prioritisation in Jira is really important, so the PO needs to keep it updated.At first, our risks were too general (like "data loss or crash"), and after feedback we understood that risks need to be specific with clear owners.Now we plan to maintain the register as a live document and update it after each sprint meeting, so it doesn't become stale.Writing user stories was challenging because we started by describing features, not stories. After feedback, we rewrote them in the user story format (As a [user], I want [function] so that [value]). This made our stories more testable.

Ee Dhing

For this sprint, I am not really familiar with creating branches, pushing and pulling, committing messages, as well as creating merge requests in Git. I am also not really familiar with using JavaScript, CSS, and HTML. I was chosen as the backend developer and I was really struggling at the beginning of the sprint because I didn't know what I was doing. So, at first my teammates advised me to learn JavaScript and how to combine it with CSS and HTML. I realised after I have a bit of knowledge I am able to do the coding for JavaScript easily. My teammates also brief me and show me some examples of how to use Git so I find it very easy to push, pull and commit in VS code.

Jijendran

In this sprint, I did not struggle with the coding aspect of the project as much since I am already familiar with most of the languages we chose. I found myself struggling with my role of product owner as I was not too clear on what I should do within the sprint and with the backlogs. Initially I was not very engaging as a PO but as the sprint went on I started fulfilling my responsibilities by answering team questions and making sure they were clear on the requirements of the product and managing the backlog. On the development side I learnt to code in JS and was assigned to integration of the codes built by the team and also did some debugging.

Yuhan

During this sprint, I struggled with using JavaScript ,HTML and CSS , as well as the usage of Gitlab for group working, such as organizing personal branches and performing pull, push, and merge operations from other members' branches. Since I am a beginner in web development, I need to plan training to improve my coding skills while completing the backend task assigned to me, which made me feel a little bit lost at first . Furthermore, we were introduced to a completely new project management tool, Jira, which required us to put additional effort into learning and adapting. Although these challenges initially slowed my progress, they also provided valuable opportunities to strengthen my coding capabilities, while improving my collaboration skills with group members.

Hui Yi

For this sprint, I just started to be more familiar with the CSS and HTML as well as creating new branches, pushing and pulling from the original branches. Since I was assigned the role of frontend developer, I applied what I was learning while working on the login page and the modification of the create lesson page for the learning management system. Although I am still building my skills, this sprint allowed me to understand how both CSS and HTML work together in frontend development.

6. Final Product Demo

This is the sprint review where our scrum master presents the demo of our learning management system on the login page and creates a lesson page.

Source: sprint1_demo.mp4
Meeting minutes: Refer to Appendix 1.6

Appendix

1.0 Meeting minutes

1.1 Scrum Stand-Up 1 Meeting Minutes

1.2 Scrum Stand-Up 2 Meeting Minutes

1.3 Scrum Stand-Up 3 Meeting Minutes

1.4 Sprint Planning 1 Meeting Minutes

1.5 Sprint Retrospective Meeting Minutes

1.6 Sprint Review Meeting Minutes

2.0 Project Inception

Project Inception

3.0 Notion documents

4.1 Requirements

4.2 Group questions

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