🏃 Sprint Documentation

Sprint #1 - Sign In and Home Page

Sprint #1 Goal

The team decided to tackle the first objective in the user stories that is to implement the sign in page. This decision is undertaken as implementing the sign page is critical in providing an early visualization of the system's integration.

Expected outcomes:

- Completion of User Stories 1A and 1B - High Priority
- Security Consideration as one of the Non-functional Considerations - High Priority
- The additional functional features according to User Stories 1C and 1D - Medium Priority

Sprint #1 Plan Meeting - 22 August 2024

Attendees	Allocated Tasks	Sprint Duration	Progress
Erich Wiguna	- Integrate the existing code with the created frontend design - Help the frontend team in creating the frontend design (Login In Page)	26 Aug - 8 Sep 2024	DONE
Jessica Aurelia Wijaya	Create the code base for the frontend (Home Page)	26 Aug - 8 Sep 2024	DONE
Nelson Nugroho	- Integrate the existing code with the created frontend design - Help the frontend team in creating the frontend design (Sign Up and Register Page)	26 Aug - 8 Sep 2024	DONE
Reagen Purnama	Create the code base for the frontend (Profile Page)	26 Aug - 8 Sep 2024	DONE
Revelino Edrensya Aldrin	Create the code base for the frontend (Leaderboard Page	26 Aug - 8 Sep 2024	DONE

Meeting Summary

In this first Sprint Plan Meeting, as said above the team decided to implement the sign in page where the frontend team will create the initial frontend code base with the backend team helping them. After the establishment of the frontend design, the backend team will work on integrating the given code base from the client with the created frontend design.

Sprint #1 Retrospective

Achieved Goals

- Clear and effective team communication
- Balanced workload distribution through role assignment
- Team cohesion
- Effective client communication
- Effective meeting and meeting documentation

Unachieved Goals

- Well-organized Confluence Documentation
  - WHY: This is because the Scrum Master is unfamiliar with the format of the documentation.
  - NEED: Regular discussions with the Tutor to discuss about the format of every type of documentations
- Clear task explanation to avoid confusion
  - WHY: It is because there are some team members that is shy to ask or clarify

Sprint #1 Review Meeting - 15 September 2024

Attendees	Demos	Meeting Summary
Erich Wiguna Jessica Aurelia Wijaya Nelson Nugroho Reagen Purnama	- Home Page View - Sign In Page View - Register (Sign Up) Page View - Profile Options - Leaderboard Page View	**Achieved Goals** - In Sprint #1, the team focused on the highest-priority task outlined in the plan: creating a **sign-in page** to handle user authentication and registration. This task was successfully completed, as demonstrated in the meeting through views of the **Home Page**, **Sign In Page**, **Register (Sign Up) Page**, and **Profile Options**. - The team also addressed one of the key **Non-functional Requirements** by implementing a **strong password** policy for enhanced security, aligning with the security considerations laid out during the planning phase. **Unachieved Goals** - However, the team did not achieve the goal of implementing a **password reset feature**, as they were unable to establish a method to send users **password reset emails**. This remains a task to be tackled in upcoming sprints. **Additional Feedback from the Client** - During the review, the client, **Manny Rayner**, provided additional feedback, requesting a new feature: the ability for users to submit their **LLM API Key** in the Profile Options.

Revelino Edrensya Aldrin			• To address this feedback efficiently:
Manny Rayner (as client)			○ The team will break down the task into actionable user stories and review potential security implications of storing and using API keys, ensuring that the feature adheres to best practices in data security. ○ The backend team will work on creating the necessary database fields to store API keys securely. ○ The frontend team will design the user interface for the **Profile Options**, adding a dedicated section for submitting and managing API keys. **Overall**, the team completed most of the goals set out in the Sprint #1 Plan, with only the password reset feature remaining unachieved, while client feedback has added a new task to the backlog.

Sprint #2 - LLM Code Integration to the Web Application

Sprint #2 Goal

The team decided to tackle the next primary objective in the user stories that is to create a game of tic-tac-toe and to integrate the LLMs in the game.

Expected outcomes:

- Completion of User Stories 2A and 2B - High Priority
- Response Time Consideration - Medium Priority
- Polished Login and Game Interface - Low Priority

Sprint #2 Plan Meeting - 11 September 2024

Attendees	Allocated Tasks	Sprint Duration	Progress
Erich Wiguna	• Initializes the code to integrate the LLMs ○ Making the HTML view • Documents the Sprint	11 Sep - 29 Sep 2024	DONE
Jessica Aurelia Wijaya	• Polishes the Login View • Creates the code to implement the user vs user as in User Stories 2A	11 Sep - 29 Sep 2024	DONE
Nelson Nugroho	• Develop the code to fully integrate the LLMs ○ Continuing Jessica's work User Stories 2B	11 Sep - 29 Sep 2024	DONE
Reagen Purnama	• Create the prompt option for the user to select the	11 Sep - 29 Sep 2024	DONE

	player		
Revelino Edrensya Aldrin	• Initializes the Match Summary Page ○ Making the HTML view	11 Sep - 29 Sep 2024	DONE

Meeting Summary

In Sprint #2, the team focused on integrating a tic-tac-toe game with LLM options (Gemini, LLAMA, and Claude) into the web application. Key tasks included developing user vs. user gameplay (User Story 2A), integrating LLM-based player options (User Story 2B), optimizing response times, and refining the login and game interfaces. Frontend responsibilities covered creating views for the game, match summary, and player selection, while backend tasks focused on full LLM integration.

Sprint #2 Retrospective

Achieved Goals

- Clear and effective team communication
- Balanced workload distribution through role assignment
- Team cohesion
- Effective client communication
- Well-organized Confluence Documentation
- Clear task explanation to avoid confusion

Unachieved Goals

- Effective meeting and meeting documentation
  - WHY: This is because there has been a significant difference in each member's schedule causing not every member can come to the meeting
  - NEED: A discussion needs to be conducted one week before the expected meeting time about each member's availability

Sprint #2 Review Meeting - 3 October 2024

Attendees	Demos	Meeting Summary

Erich Wiguna
 	
Jessica Aurelia Wijaya
	• LLM Player Options
	  ○ LLAMA
	  ○ Claude
	  ○ Gemini
	• Match Summary Page Initialization
		Achieved Goals
		
		In Sprint #2, the team focused on the primary goal of integrating LLM functionality into a tic-tac-toe game. The following objectives were successfully completed:
		
		• **LLM Integration**: Gemini, LLAMA, and Claude were integrated as AI players for the tic-tac-toe game, giving users multiple options for gameplay.
		• **User vs. User Gameplay**: Implemented user vs. user mode as outlined in User Story 2A, allowing players to engage in a head-to-head match.
		• **UI Enhancements**: The login interface was polished, improving user experience and alignment with project requirements. Additionally, the Match Summary Page and Player Selection Page were

Nelson Nugroho	
Reagen Purnama	
Revelino Edrensya Aldrin	
Manny Rayner (as client)	

initialized and designed to enhance gameplay flow and accessibility.

Unachieved Goals

The team did not complete the following goals due to prioritization and technical constraints:

- **AI vs. AI Gameplay (User Story 2B)**: Integration of AI vs. AI mode was not achieved this sprint, as efforts were focused on user vs. user functionality and multi-LLM compatibility. This feature will be addressed in future sprints.
- **Password Reset Feature**: Implementing a password reset option was delayed due to challenges with email delivery systems. This remains in the backlog for upcoming sprints.
- **Modification of LLM-Based Player (User Story 2A part C)**: The goal to modify the LLM-based player based on the underlying LLM (GPT-4, Llama, Gemini, etc.), prompt structure (simple prompt, chain of thought prompt, etc.), and the inclusion of few-shot examples was not completed. This will also be revisited in future sprints.

Additional Feedback from the Client

During the Sprint Review, client Manny Rayner requested an enhancement to the LLM gameplay by incorporating chain-of-thought reasoning and explicit prompting to improve AI decision-making transparency and depth in the game.

To address this feedback, the team will:

1. Develop structured prompts for each LLM to enable step-by-step reasoning.
2. Implement backend logic for integrating chain-of-thought responses, making gameplay moves more explainable.
3. Update the interface to reflect explicit prompt feedback in-game, enhancing user understanding of each AI's moves.

This feedback has been added to the backlog and will guide the team's approach to further enriching the LLM-based gameplay experience in upcoming sprints.

Overall, Sprint #2 successfully delivered the foundational LLM integration and gameplay improvements, while feedback and pending tasks, such as AI vs. AI mode and enhanced LLM reasoning, set a clear path for refinement in the upcoming sprints.

Sprint #3 - Match Summary and Leaderboard Database Implementation

Sprint #3 Goal

The team decided to tackle the final primary objective in the user stories: to implement databases for storing match data and to present statistical views in the web application. Additionally, the team will address the unachieved goals from Sprint #2, focusing on the following:

Expected outcomes:

- Completion of User Stories 3A - High Priority
- Implementation of AI vs. AI gameplay (User Story 2B) - High Priority
- Implementation of different prompt structure (User Story 2A part c) - High Priority
- Reliability in the form of Data Backup - High Priority
- Feature Testing to ensure Reliability - High Priority

Sprint #3 Plan Meeting - 2 October 2024

Attendees	Allocated Tasks	Sprint Duration	Progress
Erich Wiguna	- Documents the Sprint - Implement the different Prompt Structure for LLM - Helps to implement the AI vs AI feature	2 Oct Sep - 26 Oct 2024	DONE
Jessica Aurelia Wijaya	- Implement the AI vs AI feature - Helps implement the different Prompt Structure for LLM	2 Oct Sep - 26 Oct 2024	DONE

Nelson Nugroho	- Implements the Match Summary view
	  - Graph
	  - Move Accuracy
	- Creates a new database or integrates to the existing database to store data about the matches
		2 Oct Sep - 26 Oct 2024	IN PROGRESS

Reagen Purnama	- Tests the implemented features so far and documents the testing in Confluence	2 Oct Sep - 26 Oct 2024	DONE
Revelino Edrensya Aldrin	- Helps to implement the AI vs AI feature - Helps implement the different Prompt Structure for LLM	2 Oct Sep - 26 Oct 2024	DONE
Meeting Summary			

In this Sprint Plan Meeting, the team focused on the goals outlined for Sprint #3, including implementing databases to store match data and presenting statistical views in the web application. The team also addressed the unachieved goals from Sprint #2, particularly the implementation of AI vs. AI gameplay.

To achieve these objectives, the team decided to integrate the tic-tac-toe code from the client's code, utilizing Gemini as the first LLM due to its availability as a free option. The frontend team is responsible for implementing the tic-tac-toe web view and the match summary view, while the backend team will focus on developing the database for match data and enabling the AI vs. AI functionality. Overall, the meeting established a clear path forward for completing the tasks in this sprint.

Sprint #3 Retrospective

Achieved Goals

- Clear and effective team communication
- Balanced workload distribution through role assignment
- Team cohesion
- Effective client communication
- Well-organized Confluence Documentation
- Clear task explanation to avoid confusion
- Effective meeting and meeting documentation

Unachieved Goals

- Solid team culture
- Team participation in discussion

Sprint #3 Review Meeting - 26 October 2024

Attendees	Demos	Meeting Summary
Erich Wiguna Jessica Aurelia Wijaya	- AI vs AI game - Added GPT-4 to one of the option for LLM - Explicit prompt	In this Sprint Review Meeting, the team evaluated the progress made during Sprint #3, which focused on implementing databases for storing match data and presenting statistical views in the web application. The team also aimed to address the unachieved goals from Sprint #2, particularly the implementation of AI vs. AI gameplay and modifications to the LLM-based player. **Achieved Goals** The team successfully completed the following objectives during Sprint #3: **AI vs. AI Gameplay**: The integration of AI vs. AI mode was achieved, allowing for automated gameplay between different LLM options. **LLM Integration**: GPT-4 was added as an additional option for LLM gameplay, alongside Gemini and LLAMA. **Prompt Structure Enhancements**: Implemented structured prompting, including Chain-of-Thought reasoning and explicit prompts, to improve AI

Nelson Nugroho		decision-making transparency and depth in the game.
		Unachieved Goals
		Despite progress, the team encountered issues with the following objectives:
Reagen Purnama		- **Chain-of-Thought (CoT) Prompt**: The planned implementation of Chain-of-Thought prompting was not achieved due to technical challenges. Further refinement and testing will be required in future sprints to incorporate CoT for improved AI reasoning.
		- **Match Summary Implementation**: The match summary view is still in progress and has not yet been completed. Technical challenges related to data integration and visualization have delayed its finalization.
Revelino Edrensya Aldrin		- **Data Backup Reliability**: The implementation of a data backup solution was not fully realized during this sprint.
		- **Password Reset Feature**: The development of the password reset option was again delayed due to ongoing challenges with email delivery systems, remaining in the backlog for future sprints.
		Additional Feedback from the Client
		During the Sprint Review, client Manny Rayner emphasized the importance of enhancing the LLM gameplay experience through clear AI decision-making processes. He appreciated the implementation of Chain-of-Thought reasoning but requested further refinements to ensure user understanding of AI choices during gameplay.
Manny Rayner (as client)		To address this feedback, the team will:
		- **Include Instructions**: Develop and provide clear instructions on how to install the program locally for users.
		- **Enhance Feature Development**: Further develop existing features, ensuring they are fully functional and user-friendly, with a focus on improving overall gameplay experience.
		Overall, while Sprint #3 made significant strides in achieving its objectives, ongoing challenges with the match summary implementation and other pending features set the stage for continued focus in upcoming sprints.