



Development Diary

This diary will contain every major meeting, sprint or advancement related to the project Sync or Bite.

03/04/2025

Today we received the wording for the project, we have set up a meeting for next Friday, which objective will be to plan everything. We've already identified some structures and concurrency methods worth using, we will discuss it next week.

11/04/2025

As said, today we organized the whole project, took some decisions in regard to the design and work load distribution. Moving on, tunnel class has been implemented, ensuring that all requirements are followed in a thread safe manner.

12/04/2025

Today we have focused ourselves in the *Server.backend*, we implemented various classes, such as Logger, Human, Food, etc. Also, a simple Main class was created in *Server.frontend* in order to test basic functionality.

13/04/2025

Work continued on both backend and frontend elements. Backend updates included refining the *FoodGenerator*, improving modularity across various methods, and implementing zombie attack logic. The frontend received new resources such as icons, and a *GuiManager* draft was started. Additionally, the *App* class was created to serve as the launcher.

14/04/2025

Significant progress was made integrating client-server communication. Support for pausing functionality was added via a dedicated *PauseManager* and supporting threads. On the frontend, development of the *MapPage* began from scratch and reached a final draft by the end of the day.

15/04/2025

The GUI was extensively enhanced. Fonts were configured through a new *FontManager*, and the structure of *MapPage* was reworked to support visual elements like counters and crossing indicators. Functionality was added for showing entity lists across areas such as tunnels and unsafe zones. Furthermore, the "Top 3 Killers" feature was successfully implemented, and general bug fixes applied across multiple components.

16/04/2025

Client-server pause synchronization was finalized. *PauseManager* logic was refined and properly integrated with both *MapPage* and *LogPage*. Various frontend bugs were resolved, including display and counting issues in unsafe areas and tunnels. GUI was polished and *App* was renamed to *ServerApp* for clarity. Log visualization was completed and formatting improved.

17/04/2025

Work focused on refining the "*Top 3 Killers*" feature to ensure accurate and real-time updates on the client side. The data transmission process was restructured to provide a cleaner and more reliable flow between server and frontend display components. Additional adjustments were made to improve the synchronization and responsiveness of the GUI elements involved. Minor polishing included standardizing colour naming across the interface for consistency and readability.

18/04/2025

Major improvements were made to the podium visualization system. A progress bar implementation was added to enhance the clarity of player rankings, alongside dynamic counters to reflect real-time changes. The internal logic of the podium component was streamlined for efficiency, reducing redundancy and simplifying updates. Icon synchronization between pause and resume states was also optimized, ensuring visual consistency across all relevant interface sections.

21/04/2025

Fixed *ScrollPane* and resizing issues on *MapPage*, enhancing overall layout stability. Visual inconsistencies like zombie label colours were corrected. Minor refactors included removing unused imports and attributes, as well as renaming variables for better clarity.

22/04/2025

Refinements to unsafe area logic were made to address stuck entity behaviour. Several method names were updated for clarity, and checks in *PauseManager* and related components were optimized. Connection loss handling was introduced alongside improvements in the client backend.

23/04/2025

A major architectural refactor was completed to enforce strict separation between frontend and backend components. Previously, several backend classes were directly invoking

frontend methods, leading to circular dependencies and a brittle structure. This tight coupling was removed entirely by transitioning to a listener-based communication model.

The backend now exposes events through observer interfaces, which the frontend subscribes to. This decoupling ensures that the backend operates independently of any UI logic, improving modularity and testability across the entire codebase. As part of this restructuring, existing direct method calls were replaced with event dispatches, and several components were adjusted to support asynchronous updates via listeners.

This refactors also aligns the system with clean architecture principles and simplifies future maintenance, especially when scaling or modifying frontend behaviour. Combined with the earlier GUI update optimizations and logger enhancements, this marks a significant step toward a more robust and scalable foundation

24/04/2025

Efforts focused on refining backend and frontend synchronization, addressing potential concurrency issues. Several redundant or unused components were cleaned up, and log behaviour was corrected in refuge zones. Preliminary updates were made to UI event listeners and visual layouts, particularly in *MapPage* and *ServerApp* components.

25/04/2025

The interface was polished with structured GUI changes, improving consistency and layout behaviour. Resizing logic in scrollable panes was revised for smoother user experience. Various backend safety improvements were introduced to prevent unexpected behaviour, and shared variable protection was enhanced across sensitive zones such as tunnels and refuge areas.

26/04/2025

Stability updates were prioritized. Exception handling in the frontend was adjusted, redundant checks removed, and several concurrent access points were reviewed and optimized. GUI updates continued with improved resizing behaviour, and additional documentation was added across classes to improve maintainability.

27/04/2025

Interface structure received notable clean-up and documentation. Colours and layout management were unified, and frontend component organization was improved to align with previous architectural refinements. Minor roaming behaviour adjustments were applied in the zombie movement logic to ensure realistic navigation patterns.

28/04/2025

Layout adjustments were made to the *MainClientPage* to better accommodate dynamic components. Overall GUI formatting was revisited to improve spacing and alignment. Streams were properly closed, and unused output flows were removed to reinforce memory safety and resource handling.

29/04/2025

Explanations and inline comments were revised for clarity across the codebase. Minor UI component behaviour was polished to ensure expected performance under variable conditions. Logging and user interface feedback were also subtly enhanced.

30/04/2025

Client-side GUI received further refinements, with updates to colour structures and zombie roaming logic. The MapPage component was enhanced to display newly introduced color-based indicators. Additionally, performance tuning included query refresh rate improvements and replacement of thread-lock mechanisms for better responsiveness.

01/05/2025

Various client settings were adjusted, including switching to unused network ports and improving code commentary for clarity. Dispatcher-related documentation was expanded, improving developer understanding of internal communication between frontend elements.

02/05/2025

Comments across multiple files were updated for improved accuracy and context. Minor visual and logic corrections were also made, maintaining coherence between documentation and application behaviour.

03/05/2025

Icon assets were reviewed and some were removed to avoid redundancy. A colour usage explanation was introduced to assist the user. General polishing concluded a series of GUI refinements, marking a more stable and visually coherent state.

04/05/2025

Today we finished the documentation, and made some tiny tweaks to the code, such as changing some buttons.