

# Release Summary

**Product Name:** LEMMA

**Team Name:** LEMMA

**Revision Date:** May 24, 2025

## Key user stories and acceptance criteria

### Sprint 1 - Core Foundation (Completed)

**US1.1** - As a user, I want to create and edit markdown notes so that I can capture my thoughts with rich formatting. *Acceptance Criteria:*

- Markdown editor with toolbar
- Preview pane for rendered markdown
- Syntax highlighting for code blocks
- Keyboard shortcuts for common formatting actions

**US1.2** - As a user, I want my notes to be automatically saved so that I don't lose my work. *Acceptance Criteria:*

- Auto-save every few seconds
- Visual save status indicator
- Version history for recovery

**US1.3** - As a user, I want to organize my notes with tags and categories so that I can easily find related content. *Acceptance Criteria:*

- Tag creation and management UI
- Category hierarchy system
- Filtering by tags and categories

**US1.4** - As a user, I want to set up a local database to store my notes so that they remain private and accessible offline. *Acceptance Criteria:*

- Local database setup
- CRUD operations for notes
- Data persistence
- Offline access capability

### Sprint 2 - Knowledge Graph Foundation (Completed)

**US2.1** - As a user, I want to visualize connections between my notes in a knowledge graph so that I can see relationships between my ideas. *Acceptance Criteria:*

- 3D graph visualization using Three.js
- Camera controls (zoom, pan, rotate)
- Node selection and focus functionality

**US2.2** - As a user, I want to manually create connections between notes so that I can build my knowledge graph. *Acceptance Criteria:*

- UI for linking notes together
- Connection persistence in database
- Bidirectional relationships

**US2.3** - As a developer, I want to set up ChromaDB with embedding functionality so that we can begin semantic indexing of notes. *Acceptance Criteria:*

- ChromaDB integration
- Embedding generation for notes
- Semantic query capabilities

**US2.4** - As a user, I want to search across all my notes so that I can quickly find specific information. *Acceptance Criteria:*

- Full text search functionality
- Search result navigation

### **Sprint 3 - AI Integration (Completed)**

**US3.1** - As a user, I want a Chrome extension that can save the current webpage to my notes so that I can capture online content. *Acceptance Criteria:*

- Chrome extension popup interface
- Webpage content capture
- Metadata extraction (title, URL, date)
- Communication with desktop app

**US3.2** - As a user, I want the system to automatically suggest connections between notes based on content similarity so that I discover relationships I might have missed. *Acceptance Criteria:*

- Automated connection analysis
- Similarity scoring algorithm

- Suggestion UI for review

**US3.3** - As a user, I want to ask natural language questions about my notes so that I can retrieve information conversationally. *Acceptance Criteria:*

- Q&A interface
- Local language model integration
- Context retrieval from notes
- Source citations in responses

## **Sprint 4 - Advanced Features (Completed)**

**US4.1** - As a user, I want the system to help me synthesize ideas across my notes so that I can generate new insights. *Acceptance Criteria:*

- Semantic clustering of related concepts
- Synthesis generation functionality
- Source traceability for generated insights

**US4.2** - As a user, I want the Chrome extension to automatically extract key information from webpages so that capturing content requires less manual effort. *Acceptance Criteria:*

- Automatic key information extraction

## **Known Problems**

An exhaustive list of issues and bugs is described below. The majority of these are at a fine granularity, which is beyond the scope of establishing our MVP, and are expected to be addressed in future development.

### **Frontend/UI**

- Resizing the window causes a slight delay in the knowledge graph tab, and the background of the window can be seen as the tab resizes
- Toast notifications prematurely display “AGI synced successfully” while the inference model is chunking notes that the user is currently editing.
- The chat UI cannot pop out as a separate window; it can only drag within the app window
- There is no minimum width or height when resizing the chat window
- When trying to add a link to a note at the bottom of the app, file link suggestions popup is cut off
- When user closes Chrome Extension, the message history is lost

- Cannot drag tab bars in the editor tab.
- Cannot highlight the search result
- Minor bugs in editor
  - When adding a tag in the editor, the position of the editor occasionally moves to the front of the tag, or the display of the editor moves up.
  - Tags in the front of the line occasionally cannot be deleted via the shortcut `Cmd+Backspace` on macOS.
  - When manually adding a tag in the source editor, file link suggestions pop up in the top left corner of the app. Only applicable to notes with existing file links

## Backend/System

- (Limitation) Chrome extension requires the user to have the application open
- (Limitation) Application requires user to install and run Ollama in the background
  - Additionally, user is required to download the inference model from Ollama using the command `ollama pull` before it can be used by the application
- File renaming and duplication are not yet available
- For saving notes/question answering on webpage content, local inference models cannot read long webpages due to limitations on the context size of the inference models. Thus, long webpage content is truncated.
- Application cannot be built and packaged; currently executable in development environment.
  - Packaged application only displays blank screen
- Occasional instabilities/unexpected behavior in the inference service; response generation can sometimes get stuck, but no error is raised

## Product Backlog

### Bug Fixes and System Improvements

- Fix blank screen issue after packaging application
- Highlight search results
- Fix lag when resizing the window
- Allow the system to automatically download the model from Ollama if the selected model hasn't been installed, with a notification indicating the status of the installation
  - (Alternatively) Add an interface in the application to download inference models from Ollama without running `ollama pull`
- Fix minimum window size of the chat UI and allow it to be dragged out of the app

- Address unexpected behavior in the editor when editing a tag or adding a file link at the bottom of the editor
- Implement stronger fault tolerance in the inference service to handle unexpected behavior during call to Ollama or cloud inference server
- Only allow the Chrome Extension to make requests to the local Express server hosted by the app; all other (potentially malicious) requests should be blocked.

## High Priority User Stories

**US3.4** - As a user, I want to import and export my notes in common formats (Markdown, PDF) so that I can backup or migrate my data.

- *Note: Moved to backlog from Sprint 3 scope*

**US4.3** - As a user, I want to customize the appearance of the application so that it matches my preferences.

- *Note: Moved to backlog from Sprint 4*

## User Stories for follow-up project

**US4.5** - As a user, I want to access basic offline functionality so that I can use core features without an internet connection.

**US5.1** - As a user, I want support for multi-modal content (images, audio, video) so that I can create richer knowledge representations.

**US5.2** - As a user, I want collaborative note-taking functionality so that I can share and co-edit notes with others.

**US5.3** - As a user, I want a mobile companion application so that I can access my notes on mobile devices.