Sprint 2 Plan

Product Name: LEMMA
Team Name: LEMMA
Sprint Completion Date: May 5, 2025
Revision Number: 1.0
Revision Date: April 22, 2025

Goal

Implement the 3D knowledge graph visualization functionality using Three.js, establish manual connection capabilities between notes, set up semantic indexing with ChromaDB for local vector database functionality, and build a comprehensive search system across all notes.

Task Listing, Organized by User Story

US2.1 - As a user, I want to visualize connections between my notes in a 3D knowledge graph so that I can see relationships between my ideas.

1. Set up Three.js environment and basic scene configuration (5 hours)
2. Design JSON schema for nodes and connections storage (4 hours)
3. Implement note-to-node conversion pipeline (5 hours)
4. Implement camera controls for 3D navigation (zoom, pan, rotate) (4 hours)
5. Add node selection and focus functionality (3 hours)
6. Test 3D graph with various datasets and connection patterns (3 hours) Total for user story 2.1: 24 hours

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

1. Develop mechanism to link notes (7 hours)
2. Develop mechanism to update JSON node file when connections change (3 hours)
3. Test connection creation and persistence (3 hours) Total for user story 2.2: 13 hours

US2.3 - As a developer, I want to set up ChromaDB so that we can begin semantic indexing of notes.

1. Design and implement system for querying notes via embeddings (6 hours)
2. Build background process for updating embeddings when notes change (4 hours)

3. Develop fallback mechanism for when embeddings can't be generated (3 hours)
4. Test embedding generation and retrieval with various note contents (3 hours) Total for user story 2.3: 16 hours

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

1. Design search UI components (3 hours)
2. Implement basic text-based search functionality (4 hours)
3. Create hybrid search combining tag and text semantic results (5 hours)
4. Create UI for displaying and navigating search results (3 hours)
5. Develop mechanism to highlight matching content in search results (3 hours)
6. Test search functionality with various queries and data volumes (2 hours) Total for user story 2.4: 20 hours

Team Roles

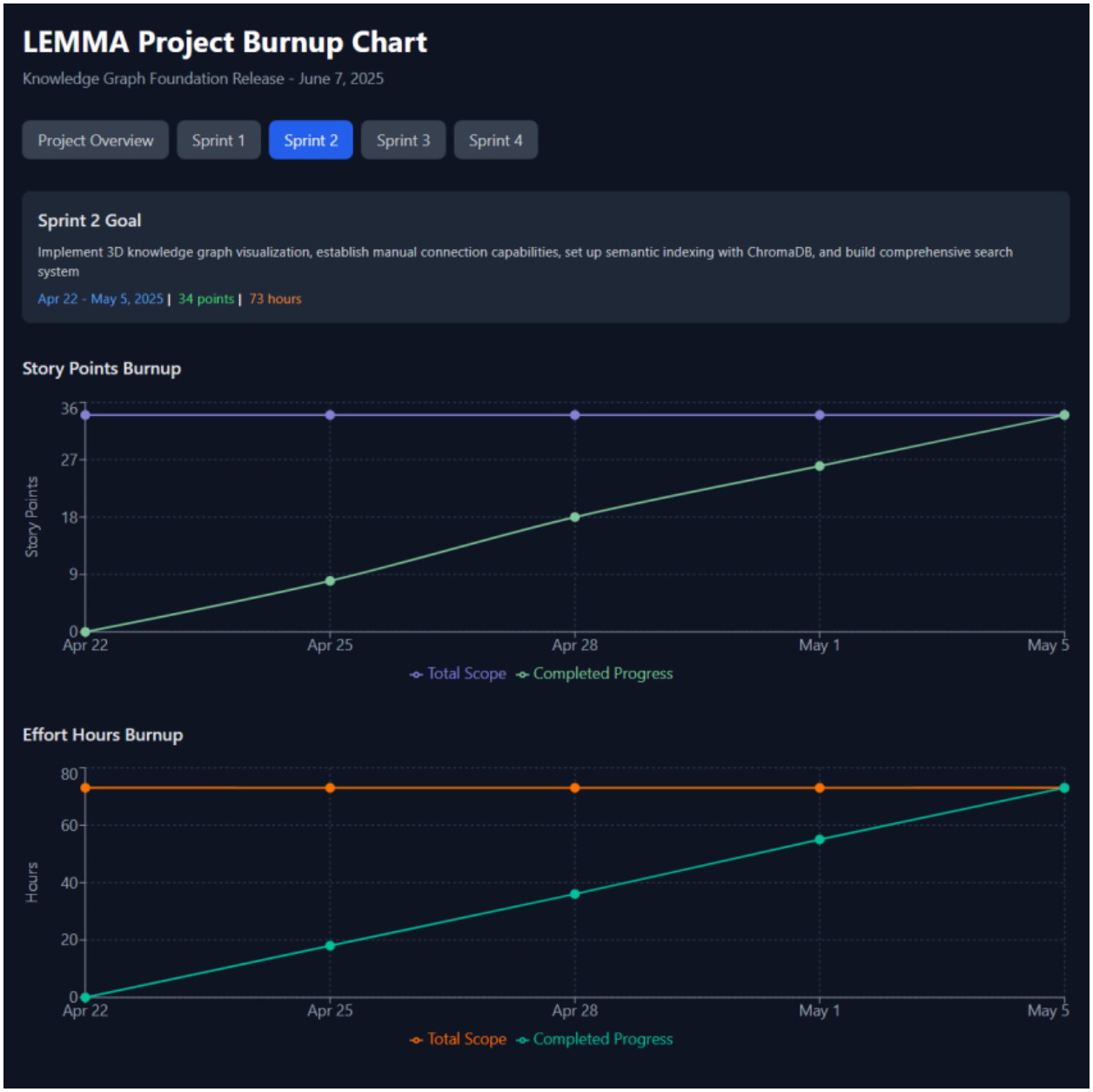
- Project Lead (Cory): Developer (assisting all areas)
- Team Member 1 (Howard): Frontend Developer (UI/UX, note-linking)
- Team Member 2 (Jiancheng): Database/Backend Developer (ChromaDB integration)
- Team Member 3 (Mason): Scrum Master, Chrome Extension Developer (assisting with search functionality and Three.js for Sprint 2)

Initial Task Assignment

- Project Lead: US2.1, Set up Three.js environment and basic scene configuration
- Frontend Developer: US2.2, Design UI for connection creation between nodes
- Database/Backend Developer: US2.3, Set up ChromaDB semantic search
- Chrome Extension Developer: US2.4, Design search UI components

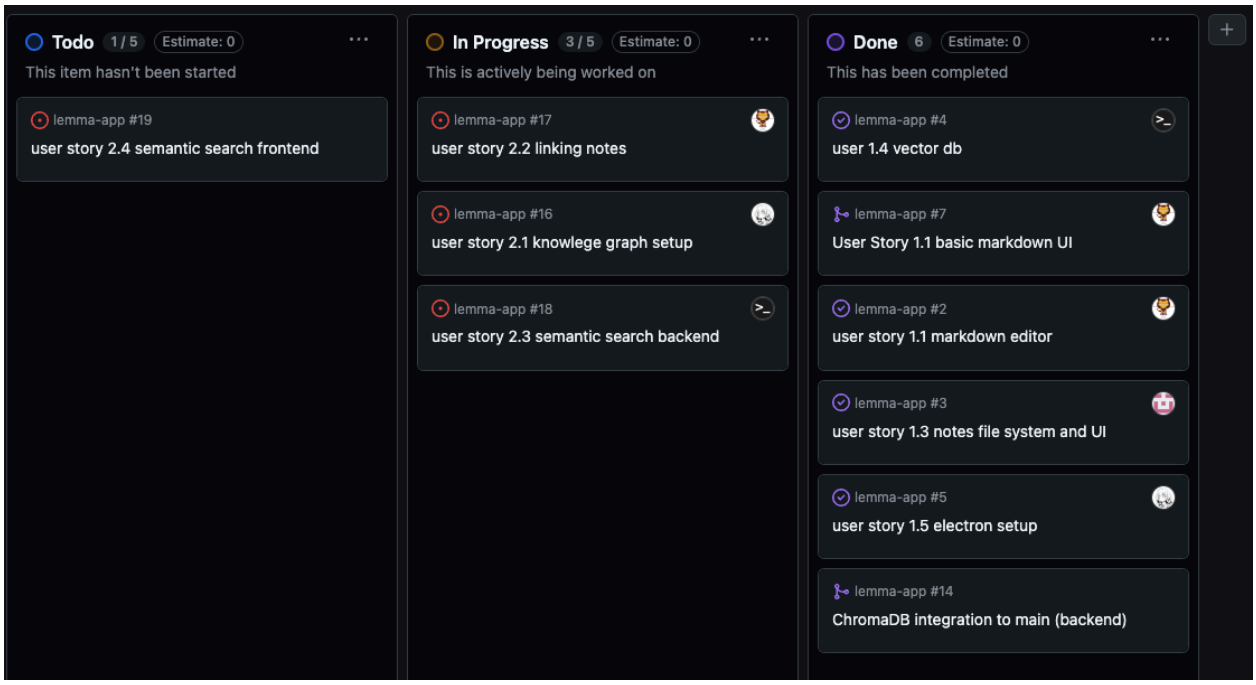
Initial Burnup Chart

[A physical burnup chart is created and located in the lab, labeled "Sprint 2 - LEMMA"]



Initial Scrum Board

[A physical scrum board is set up in the lab with four columns: User Stories, Tasks Not Started, Tasks in Progress, and Tasks Completed. All tasks are currently in the "Tasks Not Started" column, except for the initial assignments which are in "Tasks in Progress"]



Scrum Times

- Monday, Wednesday, Friday at 10:00 AM - Daily standup (TA/tutor will join Friday meeting during lab time)
- Additional ad-hoc scrum meetings will be scheduled as needed