Week 1: Taming the Brain (The AI Core)

(September 1st - September 7th)

- 🎯 **Goal:** To validate that the Llama 3 8B model can be reliably prompted to perform the core Socratic tutoring and summarization tasks of Minerva.
- ✅ **Key Tasks (Approx. 4 hours):**
    1. **(1 hour) Environment Setup:** Go to Google Colab, create a new notebook, and enable the T4 GPU hardware accelerator. Install the necessary libraries (`transformers`, `torch`, etc.).
    2. **(2 hours) Prompt Engineering:** This is the most creative and critical task. Experiment with various system prompts to define Minerva's persona. Test its ability to:
        - Guide a user through a problem without giving the answer.
        - Adopt a patient and encouraging tone.
        - Summarise a hypothetical learning session accurately.
    3. **(1 hour) Documentation:** Create a "Master Prompt" document. Record the final, most effective system prompt and save 3-5 examples of successful dialogues in your Inventor's Notebook.
- 🏁 **Milestone: A documented "Master Prompt" that successfully and reliably makes the Llama 3 8B model behave like the Minerva AI persona in Google Colab.**

Week 2: Building the Sanctuary (Cloud Environment & Memory)

(September 8th - September 14th)

- 🎯 **Goal:** To set up our dedicated cloud server and create the foundational "memory" system for the Evolving Learning Map.
- ✅ **Key Tasks (Approx. 4 hours):**
    1. **(1 hour) Cloud Setup:** Activate your Google Cloud Free Trial. Create a new Compute Engine virtual machine with a GPU (e.g., an NVIDIA L4).
    2. **(2 hours) Install the AI Stack:** Install Docker on your new cloud instance. Use Docker to install **Ollama** and pull the `llama3:8b-instruct` model. This creates a clean, repeatable environment for serving our AI.
    3. **(1 hour) Create the Memory Foundation:** Write a simple Python script on the server that can create, write to, and read from a basic JSON file. This file will be the first version of the "Evolving Learning Map."
- 🏁 **Milestone: A running Google Cloud server with the Llama 3 model served via Ollama, and a Python script capable of reading/writing a session summary to a JSON file.**

Week 3: The Mission Control (Parents' Portal Interface)

(September 15th - September 21st)

- 🎯 **Goal:** To build the front-end user interface for the Parents' Portal.
- ✅ **Key Tasks (Approx. 4 hours):**
    1. **(1 hour) Install the Portal Hub:** Install **Home Assistant** on the Google Cloud server using Docker. Configure it and set up a secure admin login.
    2. **(2 hours) Build the Dashboard:** Create a new dashboard in Home Assistant for the portal. Use simple "Markdown" cards to create the visual layout for the "Weekly Highlights" and the "Chat with Minerva" Q&A sections. This will all be static, placeholder text for now.
    3. **(1 hour) Create the Input Form:** In Home Assistant, create an "Input Text" helper and a "Button" helper. This will serve as the simple form where a parent types their question and clicks "Ask."
- 🏁 **Milestone: A functional Home Assistant dashboard, accessible via a web browser with a secure login. The dashboard will contain the user interface for the Parents' Portal, including a text box and a button for asking questions.**

Week 4: Connecting the Pieces & Final Polish

(September 22nd - September 28th)

- 🎯 **Goal:** To create the final integration that allows the Parents' Portal to communicate with the Minerva AI and its memory, creating a fully working loop.
- ✅ **Key Tasks (Approx. 4 hours):**
    1. **(2 hours) The Core Integration:** Write a script (using Home Assistant's "Pyscript" or "Command Line" integrations) that is triggered when the "Ask" button is pressed. This script will:
        - Read the question from the "Input Text" box.
        - Send this question to the local Ollama Llama 3 model.
        - Display the model's response back on the dashboard.
    2. **(1 hour) Integrate the Memory:** Modify the script to first read the contents of the "Learning Map" JSON file and include this information as context in the prompt sent to the LLM.
    3. **(1 hour) End-to-End Testing:** Test the full flow. Log in as a parent, ask a question, and verify that the AI gives a context-aware response. Document any bugs and final thoughts.
- 🏁 **Milestone: A working, end-to-end cloud-based MVP. A parent can log in to the portal, ask a question, and receive a response from the Minerva AI that is informed by the persistent "Learning Map" memory file.**

Log Entry: Project Minerva - Week 1 Summary

- **Date Range:** September 1st - September 7th, 2025
- **Status:** Complete

Objective

The primary goal for Week 1 was to validate the core AI model (Llama 3 8B) and develop a "Master Prompt" capable of embodying the Minerva persona for Socratic tutoring, safety, and conceptual explanation.

Key Accomplishments

1. **Environment Setup:** Successfully configured a free, GPU-enabled AI development environment using Google Colab.
2. **Technical Problem-Solving:** Overcame initial setup hurdles, including Hugging Face access delays and Ollama errors, by implementing a robust and simplified workflow using Ollama directly within the Colab notebook.
3. **Prompt Engineering:** Developed, tested, and documented the **"Master Prompt v1.0,"** defining Minerva's core persona, safety rules, and Socratic teaching methods.
4. **Conducted Three Validation Tests:**
    - **Socratic Test (Grade A):** Confirmed the model can successfully guide a student through a problem without giving the direct answer.
    - **Safety Test (Grade A+):** Confirmed the model can perfectly deflect inappropriate personal questions and redirect the conversation to learning.
    - **Analogy Test (Grade B):** Confirmed the model attempts to use analogies as instructed, but revealed an opportunity for further refinement.

Key Learnings & Decisions

- **Primary Learning:** The Llama 3 8B Instruct model is highly effective and responsive to detailed prompt engineering. The core concept of creating the Minerva persona through a Master Prompt is validated and successful.
- **Decision & Prompt Refinement:** Based on the Analogy Test, we identified that the model tended to give a full explanation at once rather than guiding step-by-step. We made the decision to refine the Master Prompt by adding a more explicit instruction: **"Always explain a concept step-by-step. After revealing one small piece of information, ask a simple question to make sure the student is following along before you continue."**

Milestone Status

- **Week 1 Milestone: COMPLETE.** We have a validated AI core and a working, refined Master Prompt. This provides a strong foundation and the confidence to proceed to the next stage of the MVP development.