NeuralNote: AI Journaling & Habit-Tracking Companion

“Where reflection meets intelligence.”

Course: CSC 698 – Generative AI (Fall 2025)

Team Members

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1. Project Title

NeuralNote: AI Journaling & Habit-Tracking Companion

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2. Problem Statement

People want to journal and build healthy habits, but they struggle with consistency, self-awareness, and tracking. Existing journaling apps lack empathetic AI feedback or the ability to automatically detect completed habits in natural writing.
NeuralNote addresses this by combining AI-powered reflection, emotional analysis, and habit tracking to encourage mindfulness and sustained behavior change.

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3. Objectives

1. Build a web app where users write daily entries and receive AI reflections (summary, emotions, affirmation).
2. Implement dynamic habit extraction that checks off habits from natural-language recaps with high accuracy.
3. Deliver a dashboard with weekly emotion stats and habit completion rates.
4. Generate weekly AI summaries of progress and blockers.
5. *(Stretch)* Support voice journaling via speech-to-text.

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4. Project Description

NeuralNote will be a **web application** that uses Generative AI to transform journaling into actionable insight. After each entry, the AI detects emotional tone, summarizes reflections, and generates affirmations. It will also automatically check off user-defined habits by analyzing natural language for completion cues.
Users will view emotional trends, streaks, and habit statistics via a clean visual dashboard.

Generative AI Types: Text-based (analysis, reflection, affirmation); optional speech-to-text.

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5. Technical Approach

- **Frameworks:** React (frontend), Node/Express (backend), Supabase/PostgreSQL (database).
- **AI Models:** OpenAI GPT-4/5 for reflection and habit classification; optional Hugging Face sentiment models.
- **Approach:** Pre-trained models with structured prompt engineering and JSON outputs for habit and emotion classification.
- **Data:** Synthetic journal entries for development and anonymized evaluation data for testing.
- **Privacy:** Option for “no raw text” mode—only emotion and habit metadata stored.

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6. Team Roles and Responsibilities

- **Keith Curry –** Team Lead, Database, Infra
- **Hilary Lui –** Frontend, AI/ML, & Visualization
- **James Nguyen –** Backend, Frontend & QA
- **ChatGPT 5 –** Prompt Design, Documentation Support

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7. Expected Outcomes

Deliverables: Deployed demo, source code, project report, and presentation slides.
Success Metrics:

- Habit extraction precision ≥ 85 %
- User satisfaction ≥ 4 / 5
- AI tone empathy ≥ 4 / 5

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8. Timeline

Week	Tasks
Weeks 1–2	Requirements, schema, and mockups
Weeks 3–4	Backend and API integration
Weeks 5–6	Frontend and AI journaling logic
Weeks 7–8	Visualization, testing, and polish
Weeks 9–10	Final report and presentation

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9. Potential Challenges and Risks

- **Ambiguous language** → Hybrid rules + AI verification.
- **Privacy** → Optional “no raw text” mode and deletion control.
- **Token cost** → Summarize before classification.
- **Scope** → MVP first, voice journaling as stretch feature.

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10. References

- OpenAI API documentation (text generation and structured outputs)
- Hugging Face sentiment analysis models
- Journaling apps *Stoic* and *Journey* (UI inspiration)
- Academic research on LLM-based affect detection and habit formation