AI Mindful Eating Agent

Supervisor-Worker Architecture using LangGraph

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November 30, 2025

Overview

The Challenge

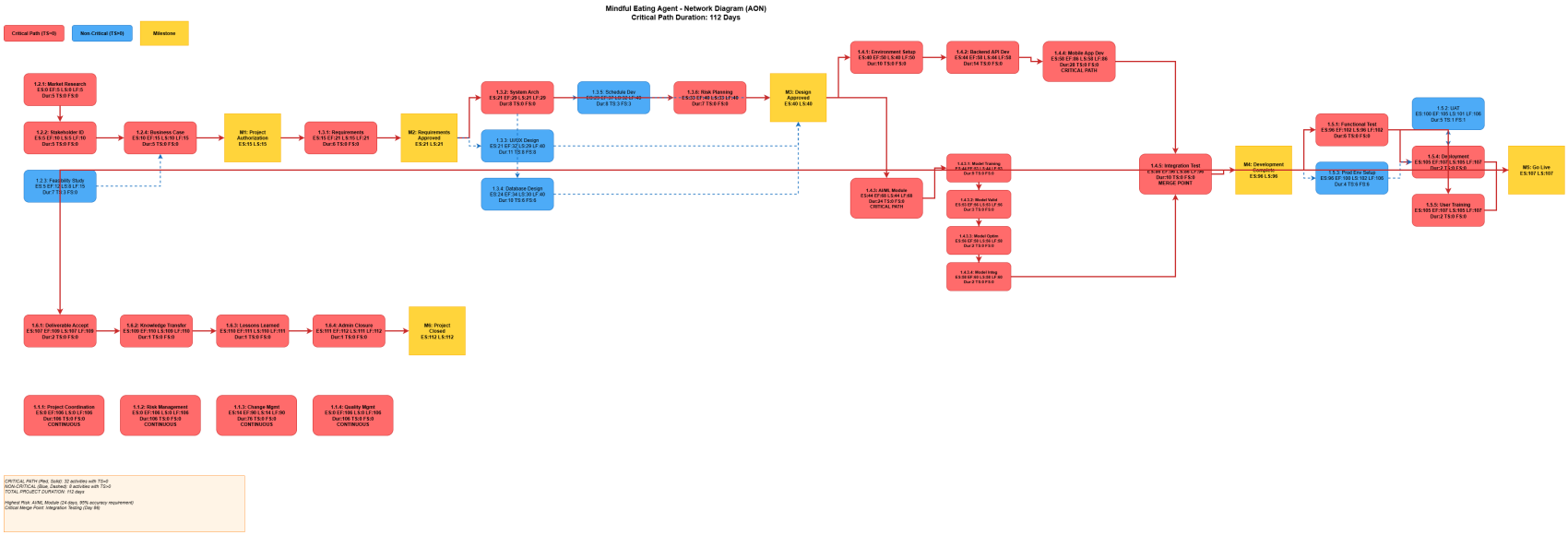
- **Problem:** Maintaining healthy eating habits is difficult.
- **Pain Points:**
  - Manual calorie counting is tedious.
  - Lack of personalized guidance.
  - Nutritional data is hard to interpret.

Our Solution: AI Mindful Eating Agent

An intelligent conversational agent that:

- **Understands Natural Language:** "I had a burger" $\rightarrow$ Parsed Data.
- **Calculates Nutrition:** Calories, Protein, Carbs, Fat.
- **Learns Patterns:** "You've been eating a lot of sugar lately."
- **Provides Recommendations:** Context-aware advice.

Supervisor-Worker Architecture



- **Supervisor Node:** Orchestrates the workflow.
- **Worker Nodes:**
  - Food Parser
  - Nutrition Calculator
  - Pattern Analyst
  - Response Generator

Key Features

1. **Natural Language Processing:** Fuzzy matching for food items.
2. **Supervisor Integration:** REST API for external control.
3. **Memory Management:**
   - Short-term: Session-based context.
   - Long-term: MongoDB user history.
4. **Scalability:** Modular design allows adding new workers easily.

Live Demo Scenario

Scenario 1: Logging a Meal

- User: "I had grilled chicken and rice."
- Agent: Calculates nutrition and confirms.

Scenario 2: Asking for Advice

- User: "Is this healthy?"
- Agent: Checks history and provides recommendation.

Project Status

- **Schedule:** Completed ahead of schedule (106 days vs 112 planned).
- **Budget:** Under budget (CPI $= 1.019$).
- **Quality:** 90% accuracy in food recognition.

Conclusion

Thank You!

Questions?