Milestone 1 – Project Proposal + System Decomposition

Professor V. Coote

COP 3060

Team Role: Project Owner Cameron Brown

Team Role: Developer BranDon Brown

Project Overview

Problem:

Students struggle with attending events, remembering deadlines, and turning in assignments on time, and most planning tools are expensive, complex, or not school specific. Students need a simple, centralized place to track tasks and receive reminders.

Target Users:

College Student and anyone needing a simple task/reminder manager.

Value Proposition:

A clean, minimal task organizer that lets students quickly add tasks, tag them by class, and get reminders. No clutter, no complex dashboards.

MVP Core Features:

- User accounts (login/register)
- Create/read/update/delete tasks
- Task categories
- Due-date reminders
- Simple dashboard showing upcoming tasks

External API:

WorldTimeAPI

Ethical AI & Data Statement:

- User data will be stored securely and never sharded with external services.
- Only minimal personal information will be collected.

- External API is used solely to fetch current timestamps and does not transmit or store user data.
- AI tools will be used to debug, brainstorming, and documentation.

System Decomposition

Major Modules:

1. Auth Module
2. Dashboard UI
3. Reminder Module
4. Task Module

Data-Flow Diagram:

Frontend – React

→ sends login / task requests →

Backend API – Node/Express

→ reads/writes →

Database – MongoDB/PostgreSQL

→ backend returns JSON →

Frontend displays updated tasks

For reminders:
Backend → calls WorldTimeAPI → compares timestamps → sends email

DTOs/Entities

UserDTO

UserID – Email – Password

TaskDTO

TaskID – UserID – Title – Description

CategoryDTO

CategoryID – UserID – Name

Relationship:

User has many Tasks

User has many Categories

Category has many Tasks

Architecture Diagram:

Frontend --> REST API Layer (Controllers) --> Service Layer --> Database ORM

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External API: WorldTimeAPI