TaskTrail – SDLC Task Tracking System

Software Engineer Assignment

Utpatti – The Finishing School (Mitt Arv)

February 2026

Submitted by:
Mekala Karthik

Project Overview

TaskTrail is a full-stack task tracking application developed to demonstrate the Software Development Life Cycle (SDLC). The system allows users to manage tasks across different development phases and visualize how tasks progress throughout the lifecycle.

The application focuses on clarity, traceability, and structured workflow management, making it suitable for understanding real-world software development practices.

Problem Statement

In software development projects, tracking tasks across various SDLC phases is critical for maintaining transparency and efficiency. Many systems lack proper visualization of task transitions and do not maintain complete task history.

The objective of this project is to build a system that clearly represents SDLC phases and tracks how tasks move from one phase to another while preserving complete lifecycle history.

Solution Overview

TaskTrail provides a structured solution for managing tasks throughout the SDLC. Users can create tasks, assign them to specific phases, and monitor their progress in real time.

Each task maintains a detailed history of transitions, enabling users to view previous states and understand how tasks evolve during the development process.

System Architecture

Frontend (React + Vite)

↓

Backend (Vercel Serverless APIs)

↓

MongoDB Atlas

The frontend communicates with backend serverless APIs, which handle data processing and storage using MongoDB Atlas.

Technology Stack

Frontend

- React (Vite)
- HTML
- CSS
- JavaScript

Backend

- Node.js
- Vercel Serverless API Routes
- Mongoose

Database

- MongoDB Atlas

Deployment

- Vercel

Key Features

- User creation and management
- Task creation and assignment
- SDLC phase tracking (Agile / Kanban style)
- Task lifecycle and history tracking
- Persistent storage using MongoDB
- One-go full-stack deployment on Vercel

Deployment Strategy

The application is deployed using a one-go full-stack deployment approach on Vercel. The frontend is built using Vite, while the backend is implemented using Vercel Serverless API Routes.

MongoDB Atlas is used as the cloud database and is securely connected using environment variables.

Conclusion

TaskTrail successfully demonstrates the practical implementation of SDLC concepts through a real-world application. The project showcases full-stack development skills, structured task management, and modern deployment practices.

This project fulfills the requirements of the Software Engineer assignment and provides a strong foundation for further enhancements.

Project Links

GitHub Repository:
https://github.com/mekalakarthik05/tasktrail-sdlc-tracker

Live Application:
https://tasktrail-sdlc-tracker.vercel.app