Software Design Document (SDD)

Project Title: Task Management Tool

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1. Introduction

1.1 Purpose

The purpose of this project is to create a tool that helps users manage tasks by organizing them with due dates, categories, priorities, and dependencies.

1.2 Scope

This project is designed to run in the terminal and is suitable for beginners. It allows users to add, view, and organize tasks with different attributes like deadlines, importance levels, and which tasks must be completed before others.

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2. System Overview

The system keeps a list of tasks, each with properties such as title, due date, category, priority, and optional dependencies. Users can add new tasks, mark them as complete, and see what's coming up next.

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3. System Features

3.1 Task Attributes

- **Title**: Name of the task.

- **Due Date**: When the task should be finished.

- **Category**: User-defined label (e.g., "School", "Home").

- **Priority**: A simple ranking (e.g., High, Medium, Low).

- **Dependencies**: Tasks that must be finished before this one.

3.2 Task Operations

- **Add Task**: Input all required details.

- **View Tasks**: List tasks by due date, priority, or category.

- **Mark Complete**: Update task status.

- **Filter/Sort**: View tasks based on filters (e.g., incomplete only).

3.3 Dependency Handling

- Blocks tasks from being marked as complete if their dependencies aren't done.

- Displays warnings or messages about incomplete dependencies.

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4. Optional Ideas

- Save and load tasks from a file.

- Add notifications for upcoming or overdue tasks.

- Color-code tasks by priority or status (text-based).

- Add recurring tasks or reminders.

- Allow editing or deleting existing tasks.