



Task Management System

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Introduction

This task management system will help individuals and teams organize, track, and manage tasks efficiently. We will use Java as the primary programming language and various design patterns to improve structure, flexibility, and maintainability.

Core Features

- 1 Task Creation and Management: Users can create tasks with attributes like name, description, deadline, responsible users, and priority.
- 2 Task List View: Provides a clear overview of all tasks, allowing for filtering, sorting, and searching.
- 3 Task Details: Allows users to view detailed information about a specific task, including its status, comments, and history.
- 4 Task Status Updates: Users can update the status of a task (e.g., Pending, In Progress, Completed).
- 5 Notifications: The system will send notifications to relevant users about task updates and deadlines.

Design Patterns

- **Singleton
Pattern**

- **Decorator
Pattern**

- **Command
Pattern**

- **Factory
Pattern**

- **Observer
Pattern**

Singleton Pattern

Ensures that only one instance of TaskManager and NotificationSystem exists in the application, preventing conflicts and promoting centralized management.

Factory Pattern

Creates different types of tasks (e.g., Feature Task, Bug Task) based on their specific requirements. This simplifies task creation and promotes code reusability.

Command Pattern

Encapsulates task execution (adding, deleting, updating) as objects. This promotes loose coupling and allows for easy modification and extension.

Observer Pattern

Enables observing task changes and reacting accordingly. It is used for notifications and task status updates.

Decorator Pattern

Adds additional functionality to existing tasks (e.g., setting priority). This provides flexibility in customizing task behavior.

GUI

Task Manager UI

HELLO
MANAGER

Network Task

12/23/202412/31/2024

employee5Develo...Pending

ADD

Search Tasks

PendingIn-ProgressComplete

Software Task
make GUI code that....
03:20:16

UPDATEDELETE

Login

Username:employee5

Password:.....

Login

Task Manager

HELLO, There

New Tasks

Doing Tasks

Finished Tasks

go
hello hello
Deadline: 2024-12-23
00:20:14

Accept

ksljdhf;
dj<SGDH<X
Deadline: 2024-12-24
01:20:14
kdjfh
sa.dkjcg
Deadline: 2024-12-23
00:20:14
dsjkh
sdmcvnb
Deadline: 2024-12-24
01:20:14
hello
do flutter task
Deadline: 2024-12-25
02:20:14
nbv
bvgfgh
Deadline: 2024-12-24
01:20:14

Done
Done
Done
Done
Done
Done



Thank You