

**Name:** Taki Tajwaruzzaman Khan

**ID:** 210042146

I implemented the following design patterns in the TaskManager project:

- 1. Command Pattern** - Used for encapsulating operations as objects, enabling undo/redo functionality and command history tracking.
- 2. Observer Pattern** - Implemented for notification services and statistics collection to react to command executions.
- 3. Singleton Pattern** - Applied to repositories and managers to ensure single instances throughout the application.
- 4. Repository Pattern** - Used for centralizing data access logic and abstracting storage implementation.
- 5. Memento Pattern** - Implicitly used within the command pattern to capture and restore object states for undo operations.

**Branch Link:** <https://github.com/Zenhance/SWE-4502/tree/Taki-46>

**THANK YOU**