

Participating team members: Rohan Kansal, Ishaan Reddy, Adinay Khatri

## SOLID

The diagram implements **Liskov Substitution Principle** as the specialized task classes `RecurringTask` and `HighPriorityTask` may substitute the `Task` class they inherit within the system without compromising functionality or creating an error. We also implement **Interface Segregation Principle** with the team members, as we use a general `TeamMember` class and then have 2 classes, `BackendDev` and `FrontendDev` that inherit that and then implement a special interface that each have their own specific method relevant to each subclass, the `Backend` interface providing `apis()` functionality to the `BackendDev` and the `divs()` functionality provided to the `FrontendDev` to segregate responsibilities for different people by different interfaces. **Dependency Inversion Principle** is also followed as the task is structured to depend on the generalized `TaskStatus` interface rather than on specific implementations like `CompletedStatus` and `PendingStatus`, thereby enhancing both flexibility and extensibility.

## GRASP

There are multiple instances of **inheritance**, one example including the classes `RecurringTask` and `HighPriorityTask` that extend the `Task` class, thereby facilitating polymorphism. Low Coupling is accomplished as the design maintains loose dependencies between `Task` and `TaskStatus`, ensuring that modifications in status management do not adversely affect the task system. Interfaces for Flexible Status Handling is implemented through the adoption of the `TaskStatus` interface which enables a flexible and extensible approach to task status management, while decoupling the `Task` class from specific implementations.