*SED500*

**Assignment 1 Questions**

1. **Type of Design Pattern Employed:** The type depends on the problem. Creational patterns manage object creation, structural patterns focus on object relationships, and behavioral patterns handle communication between objects.
2. **Inversion of Control:** This is when the control of an object’s dependencies is handed over to an external source, like a framework, instead of being managed by the object itself.
3. **Extending a Class Without Modifying Code:** We can extend a class by using inheritance to create a subclass or by using composition to create a new class that includes the existing class, allowing you to add new features without changing the original code.
4. **Difference Between Design Patterns and Algorithms:** Design patterns are templates for organizing and structuring code, while algorithms are step-by-step methods for solving specific problems.

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