Week 4 Interactive Assignment

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CST 310: Software Development

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* **Discuss different design patterns.**

The purpose of design patterns is to provide the developer a shortcut, more or less. You do not reinvent the wheel everytime you design a new car, the same principle applies to software development. I will be referencing *Topics in object-oriented design patterns* for the design patterns below (Mancordis, 1999).

The Adapter pattern, for example, is used to allow a developer to use reusable classes, without changing them, in applications that expect some other interface that is incompatible.

By organizing objects into tree structures to represent partial or whole hierarchies, you would follow the Composite design pattern. The Composite design pattern allows objects and object compositions to be treated in a uniform manner.

When an object changes state, it would be nice if all of the dependants were notified and updated accordingly. That is precisely what the Observer pattern is used for. The Observer pattern allows for maintaining consistency between related objects without tightly coupling the classes together, thus increasing reusability of the individual classes.

There are many other design patterns that may be followed, depending on what the application is intended for, one might select several that appropriately meets the needs.

* **Explain how these patterns can help capture the desired requirements and specifications of the proposed website.**

Design patterns are abstract enough to be used in a meriad of use cases, while still providing a core of best practices that help you create clean, usable code (Connolly & Hoar, 2018). One may use these patterns to learn, from the countless people that came before them, how others tackled similar tasks to the requirements and specifications you one is facing.

**References**

Connolly, R., & Hoar, R. (2018). [Fundamentals of web development (2nd ed.)](https://ashford.instructure.com/courses/84200/modules/items/4256321). Retrieved from <https://www.vitalsource.com>

Mancordis, S. (1999, September 27). [*Topics in object-oriented design patterns*](http://research.cs.queensu.ca/home/ahmed/home/teaching/CISC322/F08/files/Slides_Spiros_Patterns.pdf) [Presentation slides]. Retrieved from http://research.cs.queensu.ca/home/ahmed/home/teaching/CISC322/F08/files/Slides\_Spiros\_Patterns.pdf