Design Patterns

Types of Design Patterns

Singelton 01

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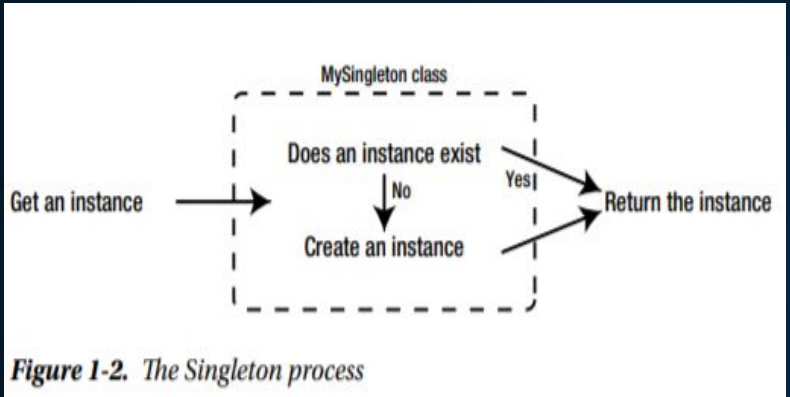


Figure 1-2. The Singleton process

Singleton

- Singleton is a design pattern that ensures a class can have only one instance at a time.
- A traditional Singleton class maintains one instance of itself in an internal static property, and cannot be instantiated (or cloned) in the usual way that a non-Singleton class can.
- Singletons have a special instance accessor method, which returns the internal instance property, or creates a new instance to return and store as you can see in the figure.

Registry

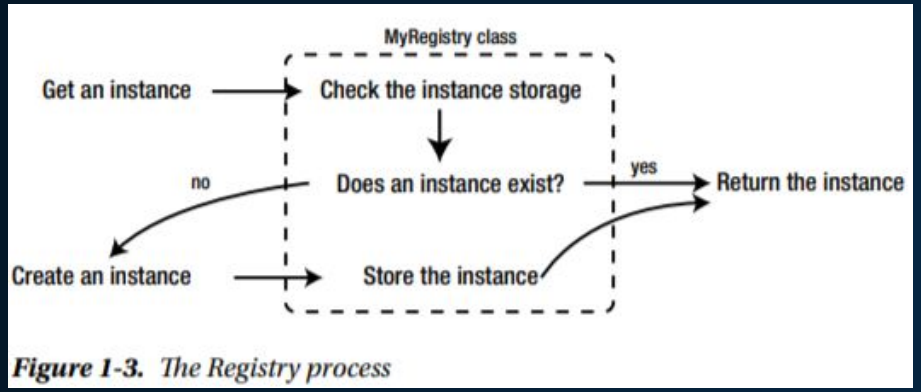


Figure 1-3. The Registry process

- A Registry is a class that can store and return instances of standard classes.
- We use Registry classes to manage a finite amount of class instances, so that we don't need to keep on reinstantiating classes that the Registry already contains instances of.
- Think of it like a team manager that brings players off the playing field and sends new ones in as required.

Factory

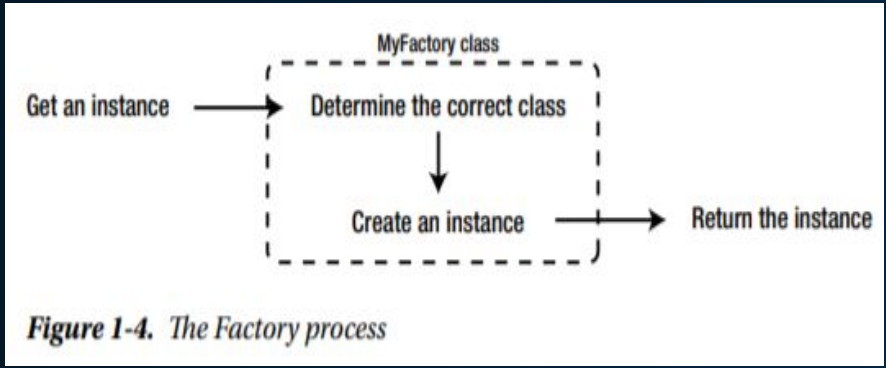


Figure 1-4. *The Factory process*

- A Factory is a class that provides a singular interface for creating any number of instances, without actually needing to specify the type of class the instances should be.
- A Factory will choose which class to instantiate based on input or internal logic.
- Factories are useful when we need to perform database work, but could be dealing with any number of different database drivers. We use a Factory class to give us the correct driver class, ensuring that all of our drivers conform to a standard interface.

Observer

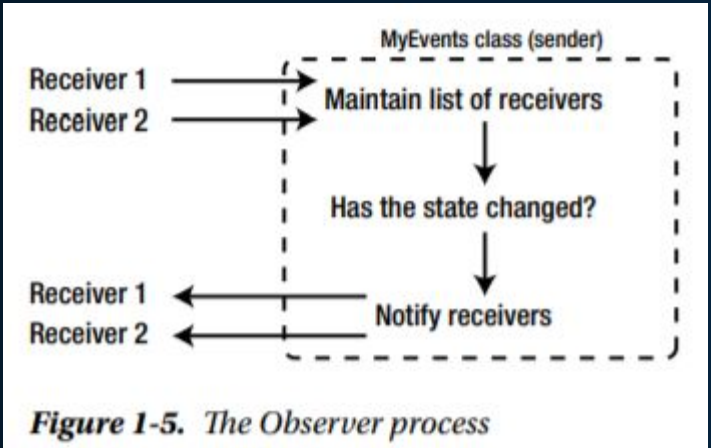
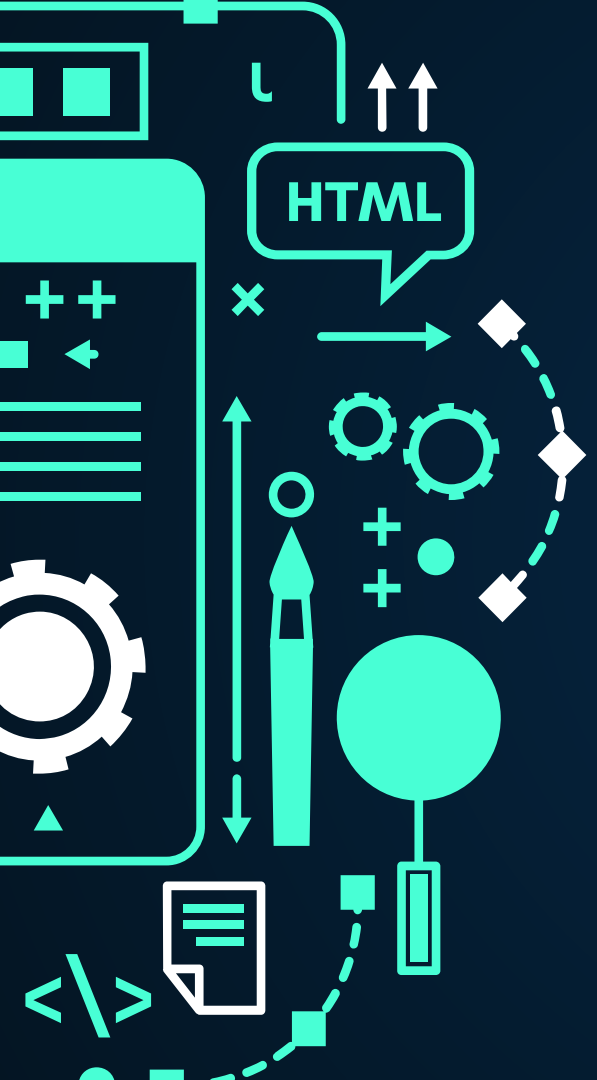


Figure 1-5. The Observer process

- The Observer pattern describes a structure in which there are senders and receivers.
- When something changes in the state of a sender, it sends a message to the receivers associated with it, usually by calling one of their functions.
- The most practical uses of this pattern are to implement event-based software, and to facilitate loose coupling in classes only related by changes in application state.



THANKS!

Shivay Bhandari
URN/CRN - 1905498/1921142
Class - IT B2