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Singleton

Singleton is like a single resource which is being shared among multiple users; for example - sharing a single washing machine among all the residents in a hotel or sharing a single appliance like refrigerator among all the family members.

Singleton pattern ensures that single instance of a class is created and shared among all other objects in an application.

Scenario:

Let's think about the customer who has multiple Windows-based (Desktop) applications currently in use for different financial purposes. Now, they want us to provide a solution to add the printing feature in all the applications they have.

One thing which is clearly stated is that they want printing functionality to be added to all their applications, which means, we need to create a printing library or class that can be shared or accessed from multiple applications.

For such kind of implementation where we have to restrict the instantiation of a class to one object meaning a single instance of a class that can be shared or accessed from multiple, Singleton pattern is the best we can follow.

What is Prototype Pattern?

The prototype Design pattern is a creational pattern that deals with creating objects quickly through cloning. This pattern is helpful when an object would take less time to initialize than through constructors. Also, this pattern makes sure your code doesn't depend on the classes of the objects.

Real-World Scenario:

Imagine a factory creates a new phone Phone X. Later they decided to create a new phone called Phone X PRO.

It is a good idea to build everything from scratch or just reiterate the existing design of myphone10 and reuse it? As you see by reuse existing objects we are saving resources and time.

the Prototype Design Pattern is the same approach in software engineering.