Object Pool Pattern

Mostly, performance is the key issue during the software development and the object creation, which may be a costly step.

Object Pool Pattern says that **" to reuse the object that are expensive to create".**

Basically, an Object pool is a container which contains a specified amount of objects. When an object is taken from the pool, it is not available in the pool until it is put back.**Objects in the pool have a lifecycle: creation, validation and destroy.**

A pool helps to manage available resources in a better way. There are many using examples: especially in application servers there are data source pools, thread pools etc.

Advantage of Object Pool design pattern

* It boosts the performance of the application significantly.
* It is most effective in a situation where the rate of initializing a class instance is high.
* It manages the connections and provides a way to reuse and share them.
* It can also provide the limit for the maximum number of objects that can be created.

Usage:

* When an application requires objects which are expensive to create. Eg: there is a need of opening too many connections for the database then it takes too longer to create a new one and the database server will be overloaded.
* When there are several clients who need the same resource at different times.

**NOTE: Object pool design pattern is essentially used in Web Container of the server for creating thread pools and data source pools to process the requests.**

UML for Object Pool Pattern

