Content for Poster

Definition

The object pool pattern is a creational design pattern that uses a set of initialized objects kept ready to use – a "pool" – rather than allocating and destroying them on demand. A client of the pool will request an object from the pool and perform operations on the returned object. When the client has finished, it returns the object to the pool rather than destroying it; this can be done manually or automatically.

Intent

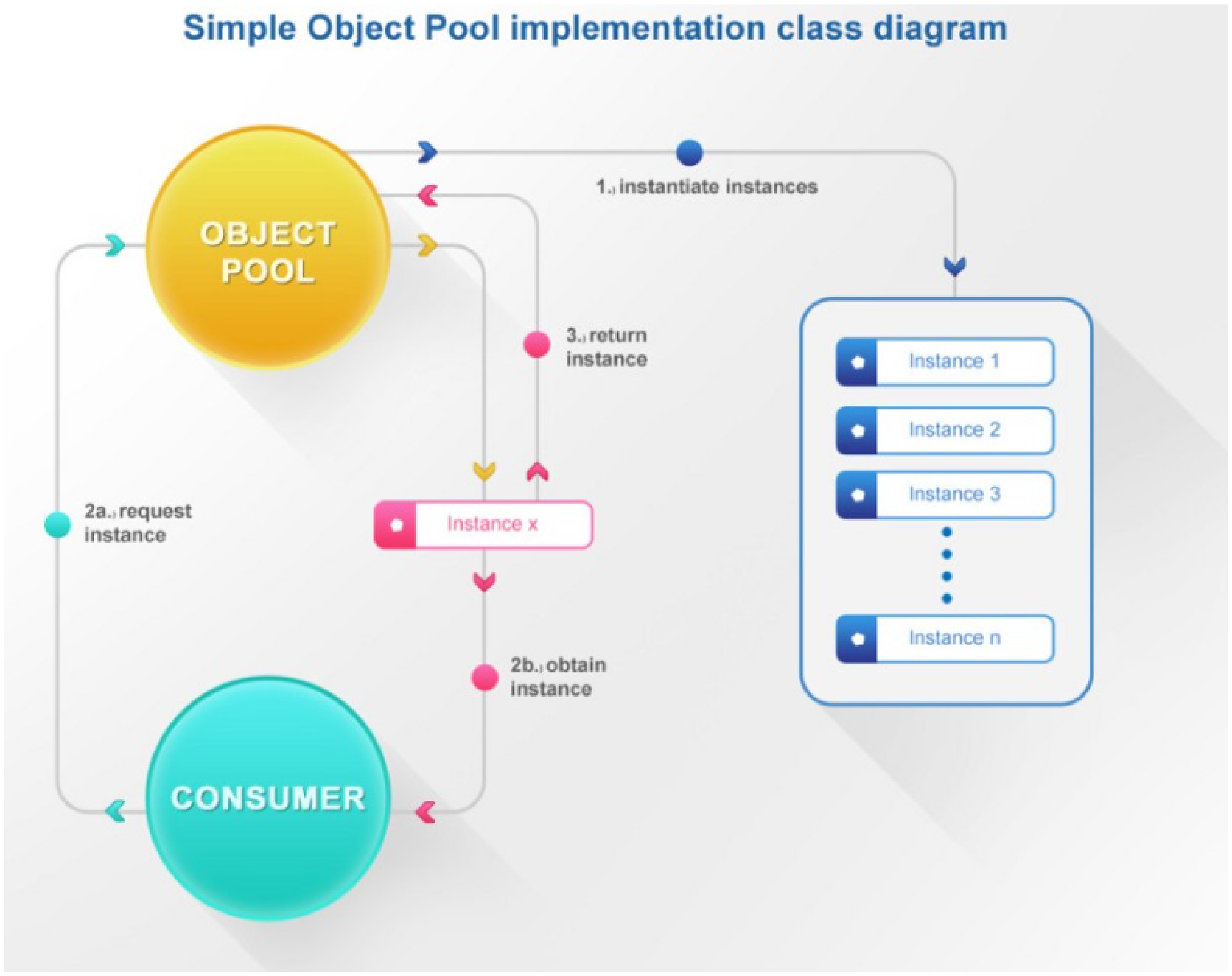
Object pooling can offer a significant performance boost; it is most effective in situations where the cost of initializing a class instance is high, the rate of instantiation of a class is high, and the number of instantiations in use at any one time is low.

Problem

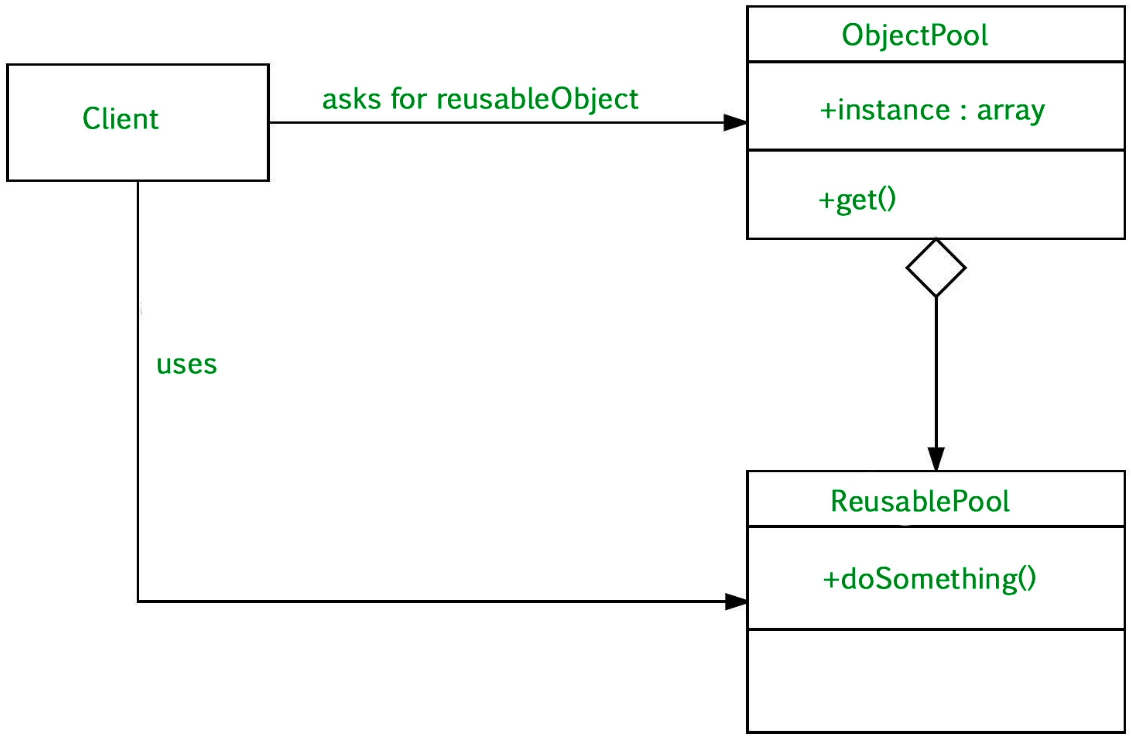
Object pools (otherwise known as resource pools) are used to manage the object caching. A client with access to a Object pool can avoid creating a new Objects by simply asking the pool for one that has already been instantiated instead. Generally the pool will be a growing pool, i.e. the pool itself will create new objects if the pool is empty, or we can have a pool, which restricts the number of objects created.

It is desirable to keep all Reusable objects that are not currently in use in the same object pool so that they can be managed by one coherent policy. To achieve this, the Reusable Pool class is designed to be a singleton class

Structure



Object Pooling UML


Client
asks for reusableObject
ObjectPool
+instance : array
+get()
uses
ReusablePool
+doSomething()