Assignment No-10

Title:

Implement Factory design pattern for the given context. Consider Car building process, which requires many steps from allocating accessories to final makeup. These steps should be written methods and should be called while creating an instance of a specific car type. Hatchbacks, Sedan, SUV could be the subclass of Car class. Car class and its subclasses, CarFactory and Test Factory patter should be implemented.

Theory

A factory pattern or Factory method Pattern says that just define an interface or abstract class for creating an object but let the subclasses decide which class to instantiate.

The Factory method Pattern is also known as virtual Constructor.

Factory method Pattern allows the subclasses to choose the type of objects to create.

Implementation.

1. Define a Factory method inside an interface

2. let the subclass implements the above factory method and decides which object

to create.

3. In Java, constructors are not polymorphic, but by allowing subclass to create an object, we are adding polymorphic behavior to the instantiation.

Usage of Factory Design Pattern :

- When a class doesn't know what sub-classe will be required to create.
- When a class wants that its subclasses specify the objects to be created.
- When the parent classes choose the creation of objects to its sub-classes.

Conclusion.

Hence, we have successfully implemented Factory design pattern for the given context.