**Topic:** Factory Design Pattern

**Topic Introduction:**

The Factory Design Pattern is a creational design pattern that provides an interface for creating objects in a superclass, but allows subclasses to alter the type of objects that will be created. This pattern is useful when there is a need to create different objects based on a specific set of criteria. The Factory pattern separates the object creation logic from the client code, making the code more modular and easier to maintain.

**Assignment Goals:**

By completing this assignment, students should be able to:

* Understand the concept of the Factory Design Pattern and its purpose.
* Identify situations where the Factory Design Pattern can be used.
* Implement the Factory Design Pattern in Java.
* Understand the advantages and disadvantages of using the Factory Design Pattern.

**Assignment Description:**

In this assignment, you will implement the Factory Design Pattern in Java. You will be provided with an interface and some concrete implementations. Your task is to create a factory that will create different types of zombies based on a specific set of criteria. The types of zombies are taken from the game “The Last of Us” from the Naughty Dog developers. The types are Clicker, Runner and Bloater but you can add or remove any zombie type if you want. You will also create a client class that will use the factory to create objects.

Specifically, your tasks are:

* Create the Zombie interface and its concrete implementations of each zombie type.
* Implement the SimpleZombieFactory class that creates different types of zombies based on the type passed to it.
* Create a client class, ZombieStore, that uses the factory to create zombies.
* Test your implementation by creating different types of zombies using the ZombieStore class.

After completing this assignment, you should be able to understand the Factory Design Pattern and how it can be used to create objects based on specific criteria. You should also be able to implement the Factory Design Pattern in Java and recognize its advantages and disadvantages.

**Key:**  
The key for this assignment is provided in Key Code folder.