**Exercise 2: Implementing the Factory Method Pattern**

The **Factory Method Pattern** is a creational design pattern that allows you to define an interface for creating objects but allows subclasses to alter the type of objects that will be created. In this exercise, we will implement a document management system using the Factory Method Pattern, where we can create different types of documents like Word, PDF, and Excel.

**Steps:**

1. **Define the Document Interface**: The Document interface declares methods like open() and close().
2. **Create Concrete Document Classes**: WordDocument, PdfDocument, and ExcelDocument implement the Document interface.
3. **Define the Factory Class**: The DocumentFactory class declares the factory method createDocument().
4. **Create Concrete Factory Classes**: WordDocumentFactory, PdfDocumentFactory, and ExcelDocumentFactory implement the createDocument() method to instantiate specific document types.
5. **Test the Factory**: In the test class, we create instances of different document types using the respective factories and invoke their methods.

**Benefits of the Factory Method Pattern:**

* **Encapsulation of Object Creation**: The client code does not need to know how the objects are created or instantiated.
* **Extensibility**: If you want to add new document types in the future (e.g., TextDocument), you just need to create a new concrete factory and product class without modifying the existing code.

**Output:**

Opening Word Document

Closing Word Document

Opening PDF Document

Closing PDF Document

Opening Excel Document

Closing Excel Document