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

**Scenario:**

You are developing a document management system that needs to create different types of documents (e.g., Word, PDF, Excel). Use the Factory Method Pattern to achieve this.

Source Code:

## **Document.java**

public interface Document {

void open();

void save();

void close();

}

## **WordDocument.java**

public class WordDocument implements Document {

public void open() {

System.out.println("Opening Word document");

}

public void save() {

System.out.println("Saving Word document");

}

public void close() {

System.out.println("Closing Word document");

}

}

## **PdfDocument.java**

public class PdfDocument implements Document {

public void open() {

System.out.println("Opening PDF document");

}

public void save() {

System.out.println("Saving PDF document");

}

public void close() {

System.out.println("Closing PDF document");

}

}

## **ExcelDocument.java**

public class ExcelDocument implements Document {

public void open() { System.out.println("Opening Excel document"); }

public void save() { System.out.println("Saving Excel document"); }

public void close() { System.out.println("Closing Excel document"); }

}

## **DocumentFactory.java**

public abstract class DocumentFactory {

public abstract Document createDocument();

public void processDocument() {

Document doc = createDocument();

doc.open();

doc.save();

doc.close();

}

}

## **WordDocumentFactory.java**

public class WordDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new WordDocument();

}

}

## **PdfDocumentFactory.java**

public class PdfDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new PdfDocument();

}

}

## **ExcelDocumentFactory.java**

public class ExcelDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new ExcelDocument();

}

}

## **DocumentFactoryTest.java**

public class DocumentFactoryTest {

public static void main(String[] args) {

DocumentFactory wordFactory = new WordDocumentFactory();

wordFactory.processDocument();

DocumentFactory pdfFactory = new PdfDocumentFactory();

pdfFactory.processDocument();

DocumentFactory excelFactory = new ExcelDocumentFactory();

excelFactory.processDocument();

}

}

