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

**Document.java**

package FactoryMethodPattern;

public interface Document {

    void open();

    void close();

}

**ExcelDocument.java**

package FactoryMethodPattern;

public class ExcelDocument implements Document {

    @Override

    public void open() {

        System.out.println("Opening Excel Document");

    }

    @Override

    public void close() {

        System.out.println("Closing Excel Document");

    }

}

**PdfDocument.java**

package FactoryMethodPattern;

public class PdfDocument implements Document {

    @Override

    public void open() {

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

    }

    @Override

    public void close() {

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

    }

}

**WordDocument.java**

package FactoryMethodPattern;

public class WordDocument implements Document {

    @Override

    public void open() {

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

    }

    @Override

    public void close() {

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

    }

}

**DocumentFactory.java**

package FactoryMethodPattern;

public abstract class DocumentFactory {

    public abstract Document createDocument();

}

**ExcelFactory.java**

package FactoryMethodPattern;

public class ExcelFactory extends DocumentFactory {

    @Override

    public Document createDocument() {

        return new ExcelDocument();

    }

}

**PdfFactory.java**

package FactoryMethodPattern;

public class PdfFactory extends DocumentFactory {

    @Override

    public Document createDocument() {

        return new PdfDocument();

    }

}

**WordFactory.java**

package FactoryMethodPattern;

public class WordFactory extends DocumentFactory {

    @Override

    public Document createDocument() {

        return new WordDocument();

    }

}

**Main.java**

import java.util.Scanner;

import FactoryMethod.\*;

public class Main {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the type of document to create (Word/Excel/Pdf): ");

        String docType = sc.nextLine();

        DocumentFactory factory;

        switch (docType.toLowerCase()) {

            case "word":

                factory = new WordFactory();

                break;

            case "excel":

                factory = new ExcelFactory();

                break;

            case "pdf":

                factory = new PdfFactory();

                break;

            default:

                System.out.println("Invalid document type.");

                return;

        }

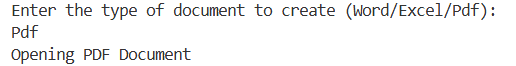
        Document document = factory.createDocument();

        document.open();

    }

}

**Output**

****