**Module 1 - Design Patterns and Principles**

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

**Aim:**

To Develop a document management system that needs to create different types of documents (e.g., Word, PDF, Excel).

**Implementation:** Using the Factory Method Pattern

**Code:**

interface Document{

    void open();

}

class WordDocument implements Document{

    public void open(){

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

    }

}

class PdfDocument implements Document{

    public void open(){

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

    }

}

class ExcelDocument implements Document{

    public void open(){

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

    }

}

abstract class DocumentFactory{

    public abstract Document createDocument();

}

class WordFactory extends DocumentFactory{

     public Document createDocument(){

     return new WordDocument();

}}

class PdfFactory extends DocumentFactory{

     public Document createDocument(){

     return new PdfDocument();

}}

class ExcelFactory extends DocumentFactory{

     public Document createDocument(){

     return new ExcelDocument();

}}

public class FactoryMethodPatternExample{

    public static void main(String[] args) {

        DocumentFactory wordfactory = new WordFactory();

        Document word = wordfactory.createDocument();

        word.open();

        DocumentFactory pdffactory = new PdfFactory();

        Document pdf = pdffactory.createDocument();

        pdf.open();

        DocumentFactory excelfactory = new ExcelFactory();

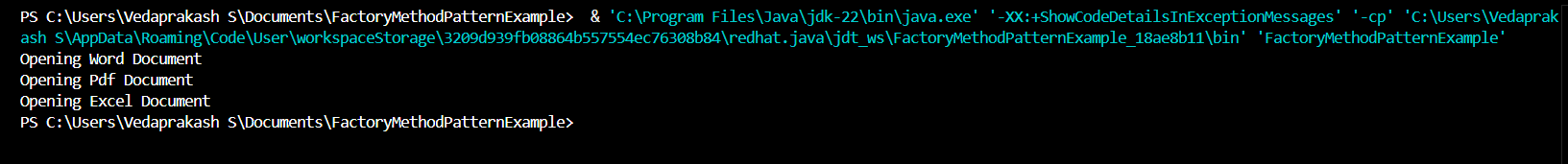
        Document excel= excelfactory.createDocument();

        excel.open();

    }

}

**Output:**

****