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

public class Main {

interface Document {

void open();

}

static class WordDocument implements Document {

public void open() {

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

}

}

static class PdfDocument implements Document {

public void open() {

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

}

}

static class ExcelDocument implements Document {

public void open() {

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

}

}

abstract static class DocumentFactory {

public abstract Document createDocument();

}

static class WordDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new WordDocument();

}

}

static class PdfDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new PdfDocument();

}

}

static class ExcelDocumentFactory extends DocumentFactory {

public Document createDocument() {

return new ExcelDocument();

}

}

public static void main(String[] args) {

DocumentFactory wordFactory = new WordDocumentFactory();

Document word = wordFactory.createDocument();

word.open();

DocumentFactory pdfFactory = new PdfDocumentFactory();

Document pdf = pdfFactory.createDocument();

pdf.open();

DocumentFactory excelFactory = new ExcelDocumentFactory();

Document excel = excelFactory.createDocument();

excel.open();

}

}

Output:

