**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...");

        }

    }

    static abstract 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 wordDoc = wordFactory.createDocument();

        wordDoc.open();

        DocumentFactory pdfFactory = new PdfDocumentFactory();

        Document pdfDoc = pdfFactory.createDocument();

        pdfDoc.open();

        DocumentFactory excelFactory = new ExcelDocumentFactory();

        Document excelDoc = excelFactory.createDocument();

        excelDoc.open();

    }

}

Output:

