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

**Program:**

Document.java

public interface Document {

    public void open();

    public void read();

    public void close();

}

WordDocument.java

public class WordDocument implements Document{

    public void open(){

        System.out.println("opening word");

    }

    public void read(){

        System.out.println("reading word");

    }

    public void close(){

        System.out.println("closing word");

    }

}

PDFDocument.java

public class PDFDocument implements Document{

   public void open(){

        System.out.println("opening pdf");

    }

    public void read(){

        System.out.println("reading pdf");

    }

    public void close(){

        System.out.println("closing pdf");

    }

}

ExcelDocument.java

public class ExcelDocument implements Document{

public void open(){

System.out.println("opening excel");

}

public void read(){

System.out.println("reading excel");

}

public void close(){

System.out.println("closing excel");

}

}

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();

    }

}

DocumentFactory.java

public abstract class DocumentFactory{

    public abstract Document createDocument();

}

FactoryMethodPatternExample.java

public class FactoryMethodPatternExample {

    public static void main(String[] args) {

        DocumentFactory wordfac = new WordDocumentFactory();

        DocumentFactory pdffac = new PDFDocumentFactory();

        DocumentFactory excelfac = new ExcelDocumentFactory();

        Document word = wordfac.createDocument();

        Document pdf = pdffac.createDocument();

        Document excel = excelfac.createDocument();

        word.open();

        word.read();

        word.close();

        pdf.open();

        pdf.read();

        pdf.close();

        excel.open();

        excel.read();

        excel.close();

    }

}

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