**Factory Method Pattern**

1. Document Interface (Document.java)

public interface Document {

void open();

void save();

void close();

}

2. Concrete Document Classes

// WordDocument.java

public class WordDocument implements Document {

@Override

public void open() {

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

}

@Override

public void save() {

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

}

@Override

public void close() {

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

}

}

// PdfDocument.java

public class PdfDocument implements Document {

@Override

public void open() {

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

}

@Override

public void save() {

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

}

@Override

public void close() {

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

}

}

// ExcelDocument.java

public class ExcelDocument implements Document {

@Override

public void open() {

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

}

@Override

public void save() {

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

}

@Override

public void close() {

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

}

}

3. Document Factory Classes

// DocumentFactory.java (Abstract Creator)

public abstract class DocumentFactory {

public abstract Document createDocument();

public void newDocument() {

Document doc = createDocument();

doc.open();

doc.save();

doc.close();

}

}

// WordDocumentFactory.java (Concrete Creator)

public class WordDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new WordDocument();

}

}

// PdfDocumentFactory.java (Concrete Creator)

public class PdfDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new PdfDocument();

}

}

// ExcelDocumentFactory.java (Concrete Creator)

public class ExcelDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new ExcelDocument();

}

}

4. Test Class (DocumentManagementTest.java)

public class DocumentManagementTest {

public static void main(String[] args) {

System.out.println("Creating Word Document:");

DocumentFactory wordFactory = new WordDocumentFactory();

wordFactory.newDocument();

System.out.println("\nCreating PDF Document:");

DocumentFactory pdfFactory = new PdfDocumentFactory();

pdfFactory.newDocument();

System.out.println("\nCreating Excel Document:");

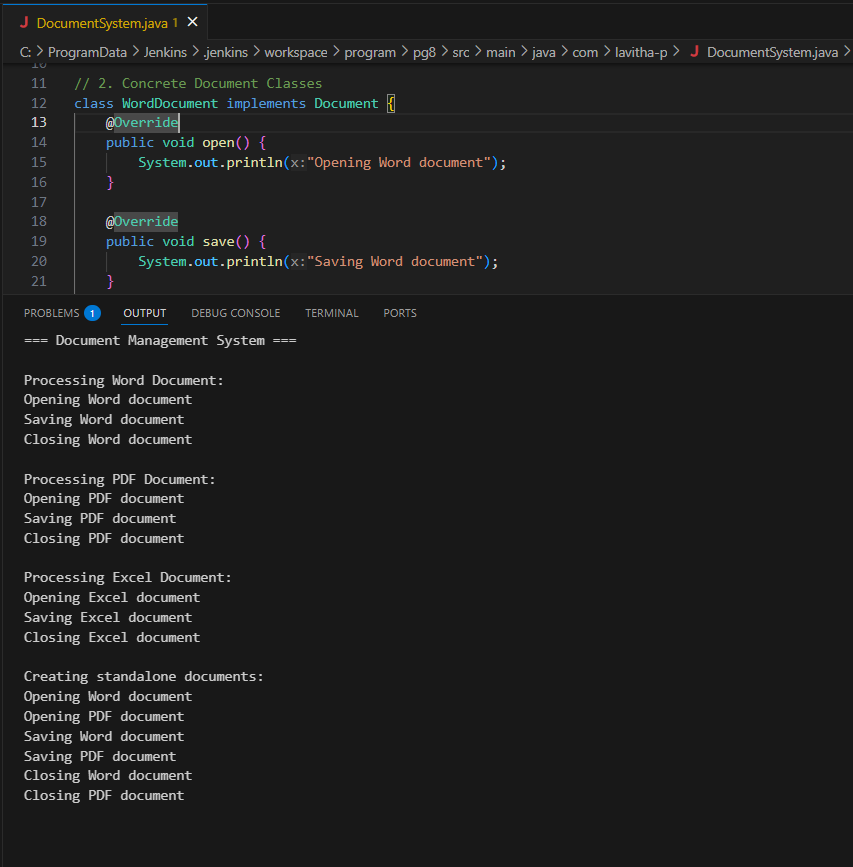
DocumentFactory excelFactory = new ExcelDocumentFactory();

excelFactory.newDocument();

}

}

**Output:**

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