**Design Patterns and Principles**

**EXERCISE – 2 : Implementing the Factory Method Pattern**

**SCENARIO :**

You are developing a document management system that needs to create different types of documents (e.g., Word, PDF, Excel). Use the Factory Method Pattern to achieve this.

**SOURCE CODE :**

**WordDocument.java**

package com.factory.document;

public class WordDocument implements Document {

@Override

public void open() {

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

}

}

**PdfDocument.java**

package com.factory.document;

public class PdfDocument implements Document {

@Override

public void open() {

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

}

}

**ExcelDocument.java**

package com.factory.document;

public class ExcelDocument implements Document {

@Override

public void open() {

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

}

}

**DocumentFactory.java**

package com.factory.document;

public abstract class DocumentFactory {

public abstract Document createDocument();

}

**WordDocumentFactory.java**

package com.factory.document;

public class WordDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new WordDocument();

}

}

**PdfDocumentFactory.java**

package com.factory.document;

public class PdfDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new PdfDocument();

}

}

**ExcelDocumentFactory.java**

package com.factory.document;

public class ExcelDocumentFactory extends DocumentFactory {

@Override

public Document createDocument() {

return new ExcelDocument();

}

}

**DocumentFactoryTest.java**

package com.factory.document;

public class DocumentFactoryTest {

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();

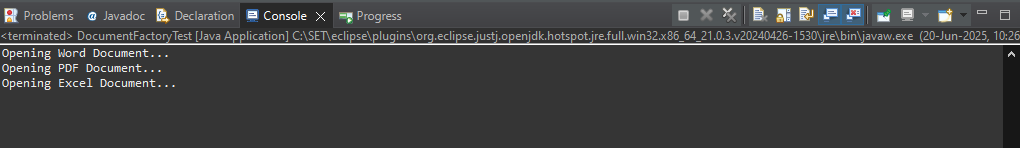
Document excelDoc = excelFactory.createDocument();

excelDoc.open();

}

}

**OUTPUT :**

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