**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.

**Steps:**

1. **Create a New Java Project:**
   * Create a new Java project named **FactoryMethodPatternExample**.
2. **Define Document Classes:**
   * Create interfaces or abstract classes for different document types such as **WordDocument**, **PdfDocument**, and **ExcelDocument**.
3. **Create Concrete Document Classes:**
   * Implement concrete classes for each document type that implements or extends the above interfaces or abstract classes.
4. **Implement the Factory Method:**
   * Create an abstract class **DocumentFactory** with a method **createDocument()**.

**Source Code:**

**Doc.java:**

**public** **interface** Doc

{

**void** open();

}

**WDoc.java:**

**public** **class** WDoc **implements** Doc

{

@Override

**public** **void** open()

{

System.***out***.println("This is word document.");

}

}

**PdfDoc.java:**

**public** **class** PdfDoc **implements** Doc

{

@Override

**public** **void** open()

{

System.***out***.println("This is pdf document.");

}

}

**ExcelDoc.java:**

**public** **class** ExcelDoc **implements** Doc

{

@Override

**public** **void** open()

{

System.***out***.println("This is excel document.");

}

}

**Fact.java:**

**public** **abstract** **class** Fact

{

**public** **abstract** Doc createDocument();

}

**WFact.java:**

**public** **class** WFact **extends** Fact

{

@Override

**public** Doc createDoc()

{

**return** **new** WDoc();

}

}

**PdfFact.java:**

**public** **class** PdfFact **extends** Fact {

@Override

**public** Doc createDoc() {

**return** **new** PdfDoc();

}

}

**ExcelFact.java:**

**public** **class** ExcelFact **extends** Fact {

@Override

**public** Doc createDoc() {

**return** **new** ExcelDoc();

}

}

**Main.java:**

**public** **class** Main

{

**public** **static** **void** main(String[] args)

{

Fact wfact = **new** WFact();

Doc word = wfact.createDoc();

word.open();

Fact pfact = **new** PdfFact();

Doc pdf = pfact.createDoc();

pdf.open();

Fact efact = **new** ExcelFact();

Doc excel = efact.createDoc();

excel.open();

}

}

**Output:**

This is word document.

This is pdf document.

This is Excel Document.