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

**package** sd;

**interface** Document {

**void** open();

}

**class** WordDocument **implements** Document {

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

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

}

}

**class** PdfDocument **implements** Document {

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

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

}

}

**class** ExcelDocument **implements** Document {

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

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

}

}

**abstract** **class** DocumentFactory {

**public** **abstract** Document createDocument();

}

**class** WordDocumentFactory **extends** DocumentFactory {

**public** Document createDocument() {

**return** **new** WordDocument();

}

}

**class** PdfDocumentFactory **extends** DocumentFactory {

**public** Document createDocument() {

**return** **new** PdfDocument();

}

}

**class** ExcelDocumentFactory **extends** DocumentFactory {

**public** Document createDocument() {

**return** **new** ExcelDocument();

}

}

**public** **class** FactoryMethodPatternExample {

**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** **:**

