**Factory Method Pattern**

The goal is to create a document management system that can produce different types of documents — Word, PDF, Excel without changing the client code.

The Factory Method pattern is a creational design pattern that:

* Defines an abstract factory with a method (createDocument()).
* Lets subclasses decide which concrete object to create.

**Steps Implemented**

1. **Document Interface** — Defines a common interface (open()).
2. **Concrete Documents** — WordDocument, PdfDocument, ExcelDocument.
3. **Abstract Factory Class** — DocumentFactory with createDocument().
4. **Concrete Factory Classes** — WordDocumentFactory, PdfDocumentFactory, ExcelDocumentFactory.
5. **Test Application** — MainApp to demonstrate how the factories produce documents.

**Analysis:**

By using the Factory Method pattern, we make the system flexible and scalable.  
 Clients remain simple.  
 Adding new document types is straightforward — just add a new class and a new factory.

OUTPUT:

