# 1. Define Document Classes

Create an interface IDocument that represents the base functionality for all document types.  
Each document class (Word, PDF, Excel) will implement this interface.

# 2. Create Concrete Document Classes

Implement WordDocument, PdfDocument, and ExcelDocument classes that inherit from IDocument and implement their own version of DisplayInfo().

# 3. Implement the Factory Method

Create an abstract class DocumentFactory with a method CreateDocument().  
Then, create concrete factory classes like WordFactory, PdfFactory, and ExcelFactory that inherit from DocumentFactory and override CreateDocument().

# 4. Test the Factory Method Implementation

In the Main method, use each factory to create its corresponding document type and call the DisplayInfo() method to verify creation.

using System;  
  
  
public interface IDocument  
{  
 void DisplayInfo();  
}  
  
  
public class WordDocument : IDocument  
{  
 public void DisplayInfo() => Console.WriteLine("This is a Word Document.");  
}  
  
public class PdfDocument : IDocument  
{  
 public void DisplayInfo() => Console.WriteLine("This is a PDF Document.");  
}  
  
public class ExcelDocument : IDocument  
{  
 public void DisplayInfo() => Console.WriteLine("This is an Excel Document.");  
}  
  
  
public abstract class DocumentFactory  
{  
 public abstract IDocument CreateDocument();  
}  
  
  
public class WordFactory : DocumentFactory  
{  
 public override IDocument CreateDocument() => new WordDocument();  
}  
  
public class PdfFactory : DocumentFactory  
{  
 public override IDocument CreateDocument() => new PdfDocument();  
}  
  
public class ExcelFactory : DocumentFactory  
{  
 public override IDocument CreateDocument() => new ExcelDocument();  
}  
  
  
class Program  
{  
 static void Main(string[] args)  
 {  
 DocumentFactory wordFactory = new WordFactory();  
 IDocument wordDoc = wordFactory.CreateDocument();  
 wordDoc.DisplayInfo();  
  
 DocumentFactory pdfFactory = new PdfFactory();  
 IDocument pdfDoc = pdfFactory.CreateDocument();  
 pdfDoc.DisplayInfo();  
  
 DocumentFactory excelFactory = new ExcelFactory();  
 IDocument excelDoc = excelFactory.CreateDocument();  
 excelDoc.DisplayInfo();  
 }

}

Output:

