**Week 1-FactoryPattern Example**

**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().
   * Create concrete factory classes for each document type that extends DocumentFactory and implements the createDocument() method.
5. **Test the Factory Method Implementation:**
   * Create a test class to demonstrate the creation of different document types using the factory method**.**

**Program.cs**

**using System;**

**interface IDocument**

**{**

**void open();**

**}**

**class WordDocument : IDocument**

**{**

**public void open()**

**{**

**Console.WriteLine("Opening Word Document");**

**}**

**}**

**class PdfDocument : IDocument**

**{**

**public void open()**

**{**

**Console.WriteLine("Opening PDF Document ");**

**}**

**}**

**class ExcelDocument : IDocument**

**{**

**public void open()**

**{**

**Console.WriteLine("Opening Excel Document");**

**}**

**}**

**class DocumentFactory**

**{**

**public static IDocument CreateDocument(string type)**

**{**

**if (type == "word")**

**return new WordDocument();**

**else if (type == "pdf")**

**return new PdfDocument();**

**else if (type == "excel")**

**return new ExcelDocument();**

**else**

**return null;**

**}**

**}**

**class Program**

**{**

**static void Main()**

**{**

**Console.Write("Enter Document Type:");**

**string ip = Console.ReadLine();**

**IDocument doc = DocumentFactory.CreateDocument(ip.ToLower());**

**if (doc != null)**

**{**

**doc.open();**

**}**

**else**

**{**

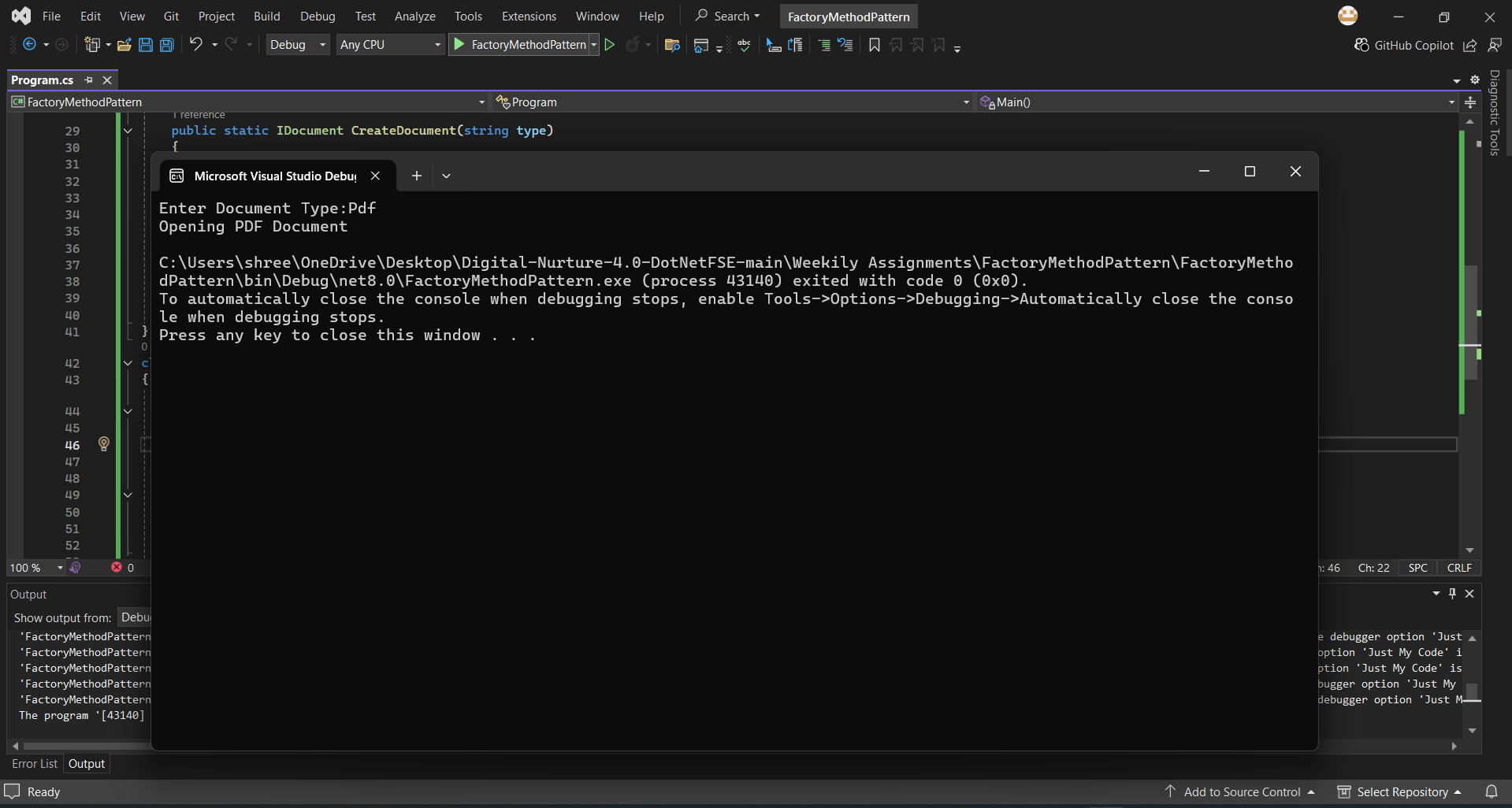
**Console.WriteLine("Invaild Document Type");**

**}**

**}**

**}**

**OUTPUT:**

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