**WEEK – 1 Assignments**

**Design principles & Patterns**

**Mandatory hands-on :-**

**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.

**Codes :-**

**File names :**

**Program.cs :**

| using System;  class Program {  static void Main()  {  DocumentFactory wordFactory = new WordDocumentFactory();   Console.WriteLine("Creating Word Document:");  wordFactory.ProcessDocument();   Console.ReadLine();  } } |
| --- |

**IDocument.cs :**

| public interface IDocument {  void Open();  void Save();  void Close(); } |
| --- |

**DocumentFactory.cs :**

| public abstract class DocumentFactory {  public abstract IDocument CreateDocument();   // Optional: Template method for processing  public void ProcessDocument()  {  IDocument doc = CreateDocument();  doc.Open();  doc.Save();  doc.Close();  } } |
| --- |

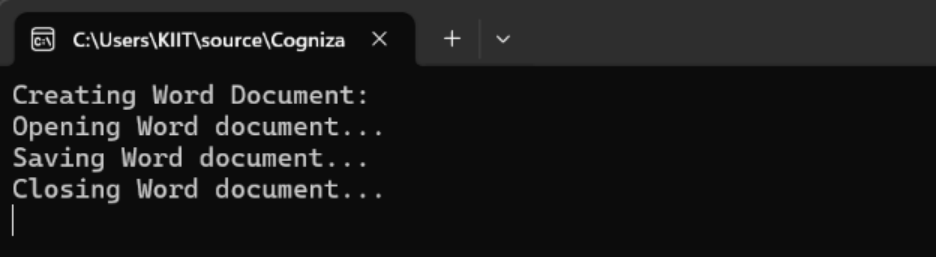
**WordDocument.cs :**

| public class WordDocument : IDocument {  public void Open() => Console.WriteLine("Opening Word document...");  public void Save() => Console.WriteLine("Saving Word document...");  public void Close() => Console.WriteLine("Closing Word document..."); } |
| --- |

**WordDocumentFactory.cs :**

| public class WordDocumentFactory : DocumentFactory {  public override IDocument CreateDocument() => new WordDocument(); } |
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**Output :-**

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