**ASSIGNMENT**

1. **Definition:-**

* Write a program to create different types of document like WORD, PDF, TXT etc…using factory method pattern.

**2) Classes:-**

* Worddoc
* Pdfdoc
* Txtdoc

**3) Class Diagram:-**

Txtdoc

-Create ()

-Save ()

Pdfdoc

-Create ()

-Save ()

Worddoc

-Create ()

-Save ()

**4) Methods:-**

* Create ()
* Save ()

**5) Data Members:-**

* Int ch;

1. **Structure:-**

Client is only aware of The interface

MyFiles(interface))

-Create()

MyFilesClient

FileFactory

-getFile(name)

Factory is aware of concrete class

Txtdoc

Pdfdoc

Worddoc

-Create()

-Create()

-Create()

**7) Name of Participants:-**

* Product:-Defines the interface of objects the factory method creates(MyFiles)
* Concrete Product:-Implements the Product interface(Worddoc , Pdfdoc , Txtdoc)
* Concrete Creator:- Returns instance of Concrete Product (FileFactory)
* Creator:-may call factory methods to create a Product object(MyFilesClient)

**8) Known As:-**

* Virtual Constructor

1. **Consequences:-**

* Can work with any user-defined concrete product classes.
* A class wants its subclasses to specify the object.
* A family of objects needs to be separated by using shared interface.
* The code needs to deal with interface , not implemented classes.
* Hide concrete classes from the client.
* The returned object should be concrete object.
* It introduces weak coupling instead of tight coupling by hiding concrete classes from the application.
* It provides a simple way of extending the family of products with minor changes in application code.

1. **Sample Code:-**

* **MyFiles.java**

**public interface MyFiles**

**{**

**public void create();**

**public void save();**

**}**

* **FileFactory.java**

**public class FileFactory**

**{**

**public static MyFiles getMyFiles(int no)**

**{**

**if(no==1)**

**{**

**System.out.println("Word file is ready....");**

**return new Worddoc();**

**}**

**else if(no==2)**

**{**

**System.out.println("Pdf file is ready....");**

**return new Pdfdoc();**

**}**

**else if(no==3)**

**{**

**System.out.println("Text file is ready....");**

**return new Txtdoc();**

**}**

**else**

**{**

**return null;**

**}**

**}**

**}**

* **Worddoc.java**

**import java.io.\*;**

**public class Worddoc implements MyFiles**

**{**

**public void create()**

**{**

**File f = new File("A:\\Worddoc.doc");**

**try**

**{**

**FileWriter fw = new FileWriter ("A:\\Worddoc.doc");**

**PrintWriter pw = new PrintWriter(fw);**

**pw.println("This is Word file");**

**pw.close();**

**}**

**catch(Exception e)**

**{**

**System.out.println(e.getMessage());**

**}**

**}**

**public void save()**

**{**

**System.out.println("File is save");**

**}**

**}**

* **Pdfdoc.java**

**import java.io.\*;**

**public class Pdfdoc implements MyFiles**

**{**

**public void create()**

**{**

**File f = new File("C:\\Pdfdoc.pdf");**

**try**

**{**

**FileWriter fw = new FileWriter ("C:\\Pdfdoc.pdf");**

**PrintWriter pw = new PrintWriter(fw);**

**pw.println("This is pdf file");**

**pw.close();**

**}**

**catch(Exception e)**

**{**

**System.out.println(e.getMessage());**

**}**

**}**

**public void save()**

**{**

**System.out.println("File is save");**

**}**

**}**

* **Txtdoc**

**import java.io.\*;**

**public class Txtdoc implements MyFiles**

**{**

**public void create()**

**{**

**File f = new File("A:\\Txtdoc.txt");**

**try**

**{**

**FileWriter fw = new FileWriter ("A:\\Txtdoc.txt");**

**PrintWriter pw = new PrintWriter(fw);**

**pw.println("This is txt file ");**

**pw.close();**

**}**

**catch(Exception e)**

**{**

**System.out.println(e.getMessage());**

**}**

**}**

**public void save()**

**{**

**System.out.println("File is save");**

**}**

**}**

* **MyFilesClient.java**

**import java.util.Scanner;**

**import java.io.\*;**

**public class MyFilesClient**

**{**

**public static void main(String [] args)**

**{**

**MyFiles mf;**

**int ch;**

**Scanner sc = new Scanner(System.in);**

**System.out.println("1.Word File");**

**System.out.println("2.Pdf File");**

**System.out.println("3.Text File");**

**System.out.println("Enter your choice");**

**ch=sc.nextInt();**

**mf=FileFactory.getMyFiles(ch);**

**mf.create();**

**mf.save();**

**}**

**}**