# Exercise 2: Implementing the Factory Method Pattern

Document.java:

package com.example;

public interface Document {

void open();

void save();

void close();

}

ExcelDocument.java:

package com.example;

public class ExcelDocument implements Document {

*@Override*

public void open() {

System.***out***.println("Opening Excel document");

}

*@Override*

public void save() {

System.***out***.println("Saving Excel document");

}

*@Override*

public void close() {

System.***out***.println("Closing Excel document");

}

}

PdfDocument.java:

package com.example;

public class PdfDocument implements Document {

*@Override*

public void open() {

System.***out***.println("Opening PDF document");

}

*@Override*

public void save() {

System.***out***.println("Saving PDF document");

}

*@Override*

public void close() {

System.***out***.println("Closing PDF document");

}

}

WordDocument.java:

package com.example;

public class WordDocument implements Document{

*@Override*

public void open() {

System.***out***.println("Opening word document");

}

*@Override*

public void save() {

System.***out***.println("Saving Word document");

}

*@Override*

public void close() {

System.***out***.println("Closing Word document");

}

}

DocumentFactory.java

package com.example;

public abstract class DocumentFactory {

public abstract Document createDocument();

}

ExcelDocumentFactory.java:

package com.example;

public class ExcelDocumentFactory extends DocumentFactory {

*@Override*

public Document createDocument() {

return new ExcelDocument();

}

}

PdfDocumentFactory.java:

package com.example;

public class PdfDocumentFactory extends DocumentFactory {

*@Override*

public Document createDocument() {

return new PdfDocument();

}

}

WordDocumentFactory.java:

package com.example;

public class WordDocumentFactory extends DocumentFactory{

*@Override*

public Document createDocument() {

return new WordDocument();

}

}

DocumentManagementTest.java:

package com.example;

public class DocumentManagementTest {

public static void main(String[] args) {

// Create different document types using their factories

DocumentFactory wordFactory = new WordDocumentFactory();

Document wordDoc = wordFactory.createDocument();

DocumentFactory pdfFactory = new PdfDocumentFactory();

Document pdfDoc = pdfFactory.createDocument();

DocumentFactory excelFactory = new ExcelDocumentFactory();

Document excelDoc = excelFactory.createDocument();

wordDoc.open();

wordDoc.save();

wordDoc.close();

pdfDoc.open();

pdfDoc.save();

pdfDoc.close();

excelDoc.open();

excelDoc.save();

excelDoc.close();

}

}

Output:

