Implementing Singleton Principle

package singletondemo;

public class Singleton {

    private static Singleton instance;

    private Singleton() {

        System.out.println("Singleton instance created.");

    }

    public static synchronized Singleton getInstance() {

        if (instance == null) {

            instance = new Singleton();

        }

        return instance;

    }

    public void showMessage() {

        System.out.println("Hello from Singleton!");

    }

}

package singletondemo;

public class Main {

    public static void main(String[] args) {

        Singleton s1 = Singleton.getInstance();

        Singleton s2 = Singleton.getInstance();

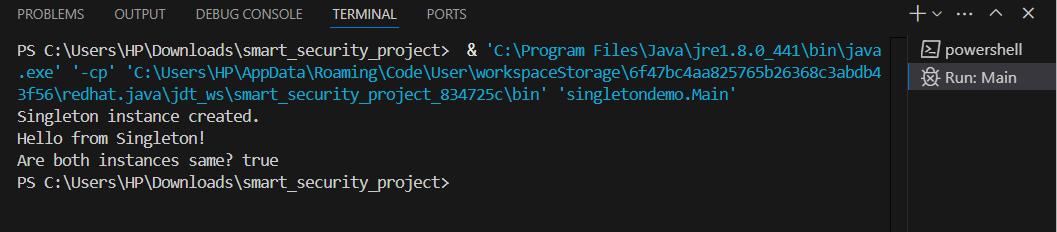
        s1.showMessage();

        System.out.println("Are both instances same? " + (s1 == s2));

    }

}

Output:



Implementing the Factory Method Pattern

Document.java

package FactoryMethodPatternExample;

public interface Document {

    void open();

}

Worddocument.java

package FactoryMethodPatternExample;

public class WordDocument implements Document {

    public void open() {

        System.out.println("Opening Word document...");

    }

}

Pdfdocument.java

package FactoryMethodPatternExample;

public class PdfDocument implements Document {

    public void open() {

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

    }

}

Exceldocument.java

package FactoryMethodPatternExample;

public class ExcelDocument implements Document {

    public void open() {

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

    }

}

Documentfactory.java

package FactoryMethodPatternExample;

public abstract class DocumentFactory {

    public abstract Document createDocument();

}

Worddocumentfactory.java

package FactoryMethodPatternExample;

public class WordDocumentFactory extends DocumentFactory {

    public Document createDocument() {

        return new WordDocument();

    }

}

Pdfdocumentfactory.java

package FactoryMethodPatternExample;

public class PdfDocumentFactory extends DocumentFactory {

    public Document createDocument() {

        return new PdfDocument();

    }

}

Exceldocumentfactory.java

package FactoryMethodPatternExample;

public class ExcelDocumentFactory extends DocumentFactory {

    public Document createDocument() {

        return new ExcelDocument();

    }

}

Main.java

package FactoryMethodPatternExample;

public class Main {

    public static void main(String[] args) {

        DocumentFactory wordFactory = new WordDocumentFactory();

        Document wordDoc = wordFactory.createDocument();

        wordDoc.open();

        DocumentFactory pdfFactory = new PdfDocumentFactory();

        Document pdfDoc = pdfFactory.createDocument();

        pdfDoc.open();

        DocumentFactory excelFactory = new ExcelDocumentFactory();

        Document excelDoc = excelFactory.createDocument();

        excelDoc.open();

    }

}

Output:

