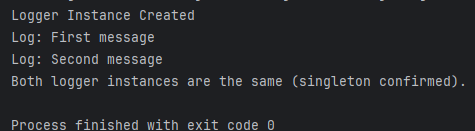
**Exercise 1: Implementing the Singleton Pattern**

**Code**

public class Logger {  
 private static Logger *instance*;  
 private Logger()  
 {  
 System.*out*.println("Logger Instance Created");  
 }  
 public static Logger getInstance()  
 {  
 if (*instance*==null)  
 *instance*=new Logger();  
 return *instance*;  
 }  
 public void log(String message)  
 {  
 System.*out*.println("Log: " + message);  
 }  
}

public class Main {  
 public static void main(String[] args)  
 {  
 Logger logger1 = Logger.*getInstance*();  
 logger1.log("First message");  
 Logger logger2 = Logger.*getInstance*();  
 logger2.log("Second message");  
 if (logger1 == logger2) {  
 System.*out*.println("Both logger instances are the same (singleton confirmed).");  
 } else {  
 System.*out*.println("Different instances (singleton broken).");  
 }  
 }  
}

**Output**



**Exercise 2: Implementing the Factory Method Pattern**

**Code**

public interface Document  
{  
 void open();  
}

public class WordDocument implements Document{  
 @Override  
 public void open() {  
 System.*out*.println("Opening Word Document");  
 }  
}

public class PdfDocument implements Document{  
 @Override  
 public void open()  
 {  
 System.*out*.println("Opening Pdf Document");  
 }  
}

public class ExcelDocument implements Document{  
 @Override  
 public void open()  
 {  
 System.*out*.println("Opening ExcelDocument");  
 }  
}

public abstract class DocumentFactory {  
 public abstract Document createDocument();  
}

public class WordDocumentFactory extends DocumentFactory{  
 @Override  
 public Document createDocument() {  
 return new WordDocument();  
 }  
}

public class PdfDocumentFactory extends DocumentFactory{  
 @Override  
 public Document createDocument() {  
 return new PdfDocument();  
 }  
}

public class ExcelDocumentFactory extends DocumentFactory{  
 @Override  
 public Document createDocument() {  
 return new ExcelDocument();  
 }  
}

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**

