**Exercise 1: Logging Error Messages and Warning Levels**

Task: Write a Java application that demonstrates logging error messages and warning levels

using SLF4J.

Step-by-Step Solution:

1. Add SLF4J and Logback dependencies to your `pom.xml` file:

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-api</artifactId>

<version>1.7.30</version>

</dependency>

<dependency>

<groupId>ch.qos.logback</groupId>

<artifactId>logback-classic</artifactId>

<version>1.2.3</version>

</dependency>

2. Create a Java class that uses SLF4J for logging:

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class LoggingExample {

private static final Logger logger = LoggerFactory.getLogger(LoggingExample.class);

public static void main(String[] args) {

logger.error("This is an error message");

logger.warn("This is a warning message");

}

}

**Source Code:**

**File: LoggingExample.java**

package com.example;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class LoggingExample {

private static final Logger logger = LoggerFactory.getLogger(LoggingExample.class);

public static void main(String[] args) {

logger.error("This is an error message");

logger.warn("This is a warning message");

}

}

**File: pom.xml:**

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 <http://maven.apache.org/xsd/maven-4.0.0.xsd>">

<modelVersion>4.0.0</modelVersion>

<!-- Project coordinates -->

<groupId>com.example</groupId>

<artifactId>demo</artifactId>

<version>1.0-SNAPSHOT</version>

<name>demo</name>

<url>http://www.example.com</url>

<!-- Properties for the build -->

<properties>

<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>

<maven.compiler.release>17</maven.compiler.release>

</properties>

<!-- Dependency Management -->

<dependencyManagement>

<dependencies>

<dependency>

<groupId>org.junit</groupId>

<artifactId>junit-bom</artifactId>

<version>5.11.0</version>

<type>pom</type>

<scope>import</scope>

</dependency>

</dependencies>

</dependencyManagement>

<!-- Dependencies -->

<dependencies>

<!-- JUnit 5 Dependencies -->

<dependency>

<groupId>org.junit.jupiter</groupId>

<artifactId>junit-jupiter-api</artifactId>

<version>5.11.0</version>

<scope>test</scope>

</dependency>

<dependency>

<groupId>org.junit.jupiter</groupId>

<artifactId>junit-jupiter-engine</artifactId>

<version>5.11.0</version>

<scope>test</scope>

</dependency>

<!-- SLF4J API for logging -->

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-api</artifactId>

<version>1.7.30</version>

</dependency>

<!-- Logback Classic for SLF4J logging implementation -->

<dependency>

<groupId>ch.qos.logback</groupId>

<artifactId>logback-classic</artifactId>

<version>1.2.3</version>

</dependency>

</dependencies>

<!-- Build section -->

<build>

<plugins>

<!-- Surefire plugin to run tests -->

<plugin>

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-surefire-plugin</artifactId>

<version>3.0.0-M5</version>

</plugin>

<!-- Exec plugin to run main class -->

<plugin>

<groupId>org.codehaus.mojo</groupId>

<artifactId>exec-maven-plugin</artifactId>

<version>3.1.0</version>

<executions>

<execution>

<goals>

<goal>java</goal>

</goals>

<configuration>

<mainClass>com.example.LoggingExample</mainClass> <!-- Your main class -->

</configuration>

</execution>

</executions>

</plugin>

</plugins>

</build>

</project>

**Output:**

[main] ERROR com.example.LoggingExample - This is an error message

[main] WARN com.example.LoggingExample - This is a warning message