Exercise 1: Logging Error Messages and Warning Levels

# Task:

Create a Java application that logs error and warning messages using SLF4J and Logback in Eclipse.

# Prerequisites:

- Eclipse IDE  
- JDK 8 or later  
- Maven (comes with Eclipse usually)

# Step 1: Create a Maven Project in Eclipse

1. Open Eclipse IDE.  
2. Go to File > New > Project… > Maven > Maven Project > Next.  
3. Check 'Use default Workspace location', then click Next.  
4. Select 'maven-archetype-quickstart' and click Next.  
5. Set Group Id: com.example and Artifact Id: SLF4JLoggingExample  
6. Click Finish.

# Step 2: Add SLF4J and Logback Dependencies to pom.xml

1. Open pom.xml in your project.  
2. Add the following inside the <project> tag (after version):  
  
<dependencies>  
 <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>  
</dependencies>

# Step 3: Create Java Class for Logging

1. Right-click on src/main/java > com.example > New > Class  
2. Name: LoggingExample  
3. Check 'public static void main(String[] args)' > Finish  
4. Paste the code below:  
  
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");  
 }  
}

# Step 4: Run the Application

1. Right-click LoggingExample.java  
2. Click Run As > Java Application  
  
Expected output in console:  
[main] ERROR com.example.LoggingExample - This is an error message  
[main] WARN com.example.LoggingExample - This is a warning message