**Exercise 1: Logging Error Messages and Warning Levels Task: Write a Java application that demonstrates logging error messages and warning levels using SLF4J.**

**Step 1: Create a Maven Project in Eclipse**

1. Open Eclipse IDE.
2. Go to File → New → Project.
3. Select Maven → Maven Project → Click Next.
4. Check Create a simple project (skip archetype selection) → Click Next.
5. Fill in the following:
   * Group Id: com.example
   * Artifact Id: LoggingExample
   * Click Finish.

Eclipse will generate a Maven project with src/main/java and a pom.xml.

**Step 2: Add Dependencies to pom.xml**

Open pom.xml and paste this inside <dependencies>:

<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>

Save the pom.xml and Eclipse will automatically download the dependencies.

**Step 3: Create Logging Class**

Right-click src/main/java - LoggingExample.java:

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");

}

}

**Step4 : Add logback.xml**

Create a file under src/main/resources named logback.xml:

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

<configuration>

<appender name="CONSOLE" class="ch.qos.logback.core.ConsoleAppender">

<encoder>

<pattern>%d{HH:mm:ss.SSS} %-5level %logger{36} - %msg%n</pattern>

</encoder>

</appender>

<root level="debug">

<appender-ref ref="CONSOLE" />

</root>

</configuration>

**Step 5: Run the Program**

1. Right-click LoggingExample.java.
2. Choose Run As → Java Application.

**Output:**

