SLF4JLogging Exercises:

Project Structure:

SLF4JLoggingExercises/

│

├── pom.xml

│

├── src/

│ └── main/

│ ├── java/

│ │ └── com/

│ │ └── example/

│ │ └── logging/

│ │ ├── LoggingExample.java

│ │ ├── ParameterizedLoggingExample.java

│ │ └── AppenderExample.java

│ │

│ └── resources/

│ └── logback.xml

│

├── logs/

│ └── app.log ← (Auto-generated after running AppenderExample)

**AppenderExample.java**

package com.example.logging;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class AppenderExample {

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

    public static void main(String[] args) {

        logger.info("This message will be logged to both console and file.");

        logger.debug("Debugging message.");

        logger.error("Simulated error message.");

    }

}

**LoggingExample.java**

package com.example.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");

    }

}

**ParameterizedLoggingExample.java**

package com.example.logging;

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class ParameterizedLoggingExample {

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

    public static void main(String[] args) {

        String user = "Alice";

        int items = 5;

        double total = 123.45;

        logger.info("User {} purchased {} items for a total of ${}", user, items, total);

        logger.debug("Debug info: user={}, items={}, total={}", user, items, total);

    }

}

**Logback.xml**

<configuration>

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

        <encoder>

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

        </encoder>

    </appender>

    <appender name="file" class="ch.qos.logback.core.FileAppender">

        <file>logs/app.log</file>

        <encoder>

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

        </encoder>

    </appender>

    <root level="debug">

        <appender-ref ref="console" />

        <appender-ref ref="file" />

    </root>

</configuration**>**

**Pom.xml**

<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>

    <groupId>com.example</groupId>

    <artifactId>SLF4JLoggingExercises</artifactId>

    <version>1.0-SNAPSHOT</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>

</project>

**Output:**

