**Exercise 2: Parameterized Logging**

**Task: Write a Java application that demonstrates parameterized logging using SLF4J.**

**Code:**

**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>

<groupId>com.example</groupId>

  <artifactId>logging-demo</artifactId>

  <version>1.0-SNAPSHOT</version>

<name>logging-demo</name>

  <url>http://www.example.com</url>

<properties>

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

    <maven.compiler.source>1.8</maven.compiler.source>

    <maven.compiler.target>1.8</maven.compiler.target>

  </properties>

<dependencies>

**<!-- SLF4J API -->**

    <dependency>

      <groupId>org.slf4j</groupId>

      <artifactId>slf4j-api</artifactId>

      <version>1.7.30</version>

    </dependency>

**<!-- Logback Classic (Logging implementation) -->**

    <dependency>

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

      <artifactId>logback-classic</artifactId>

      <version>1.2.3</version>

    </dependency>

  </dependencies>

<build>

    <plugins>

**<!-- Plugin to run main class -->**

      <plugin>

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

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

        <version>3.1.0</version>

        <configuration>

          <mainClass>com.example.ParameterizedLoggingExample</mainClass>

        </configuration>

      </plugin>

    </plugins>

  </build>

</project>

**ParameterizedLoggingExample.java**

package com.example;

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 userName = "Dharshini";

        int itemsProcessed = 15;

        double totalCost = 349.99;

logger.info("User '{}' has processed {} items.", userName, itemsProcessed);

        logger.debug("Total cost for {} is ₹{}", itemsProcessed, totalCost);

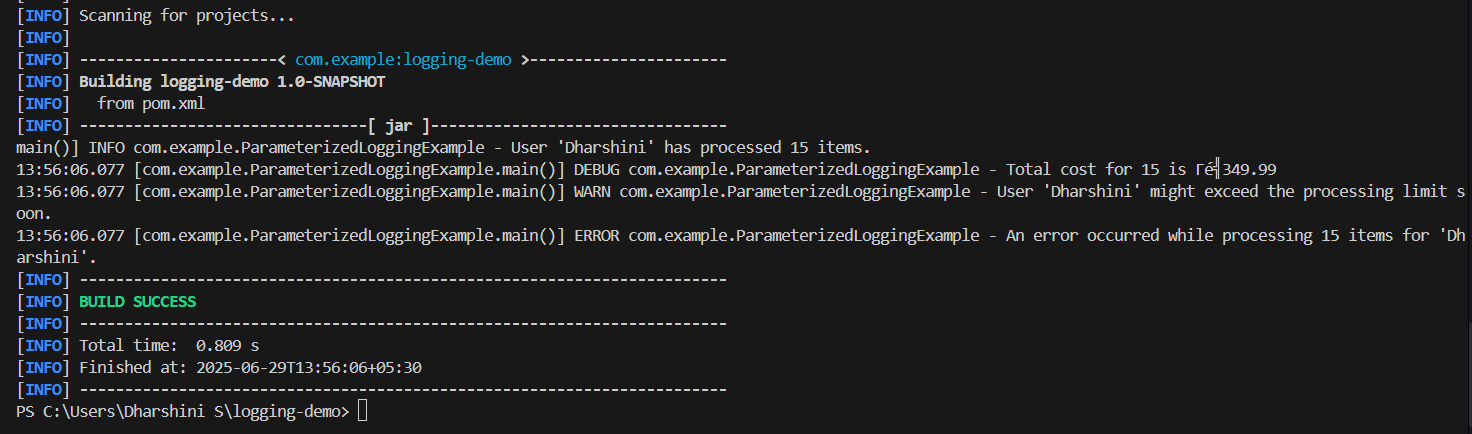
        logger.warn("User '{}' might exceed the processing limit soon.", userName);

        logger.error("An error occurred while processing {} items for '{}'.", itemsProcessed, userName);

    }

}

**Output:**

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