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

**Add SLF4J and Logback (recommended backend)**

<dependencies>

<!-- SLF4J API -->

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-api</artifactId>

<version>2.0.9</version>

</dependency>

<!-- Logback classic backend -->

<dependency>

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

<artifactId>logback-classic</artifactId>

<version>1.4.14</version>

</dependency>

</dependencies>

**Basic Usage in Java Class**

import org.slf4j.Logger;

import org.slf4j.LoggerFactory;

public class App {

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

public static void main(String[] args) {

logger.info("Starting application...");

int x = 10, y = 0;

try {

int result = x / y;

} catch (ArithmeticException e) {

logger.error("Division by zero error: {}", e.getMessage());

}

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

logger.debug("Debug info here");

}

}

**Logging Levels**

**ERROR**

|  |
| --- |
| logger.error() |

|  |  |
| --- | --- |
| Serious failures (e.g. exceptions) | |
|  | |
| |  | | --- | | **WARN** |  |  | | --- | | logger.warn() |  |  | | --- | | Potential issues (e.g. config mismatch) | | |
| **INFO** |

|  |
| --- |
| logger.info() |

|  |
| --- |
| General events (e.g. start-up, shutdown) |
| |  | | --- | | **DEBUG** |  |  | | --- | | logger.debug() |  |  | | --- | | Detailed internal information | | |  | | --- | | **TRACE** |  |  | | --- | | logger.trace() |  |  | | --- | | Very fine-grained logging | | |