UNIVERSITI UTARA MALAYSIA

SECOND SEMESTER SESSION A242

STIWK 3014 REAL TIME PROGRAMMING

(GROUP A)

Assignment 1

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Github Link:

https://github.com/Chong0508/RealTime_Assignment1.git

Source Code

```java
package org.example;

import java.io.*;
import java.util.Scanner;
import java.util.concurrent.atomic.AtomicInteger;

public class Assignment1 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);

        // Testing path:
src/main/Exercise4/src/main/java/org/example
        System.out.print("Enter the directory path to check for Java files: ");

        String path = scan.nextLine();
        scan.close();

        File folder = new File(path);
        File[] listOfFiles = folder.listFiles((dir, name) -> name.endsWith(".java"));

        if (listOfFiles == null) {
            System.out.println("Invalid directory path or no Java files found!");

            return;
        }
```

```java
        int javaFileCount = listOfFiles.length;

        AtomicInteger issuesCount = new AtomicInteger(0);

        Thread[] threads = new Thread[javaFileCount];


        for (int i = 0; i < javaFileCount; i++) {

            final File file = listOfFiles[i];


            threads[i] = new Thread(() -> {

                try (Scanner scanner = new Scanner(file)) {

                    while (scanner.hasNextLine()) {

                        String line =
scanner.nextLine().toUpperCase();

                        if (line.contains("// SOLVED")) {

                            issuesCount.incrementAndGet();

                        }

                    }

                } catch (FileNotFoundException e) {

                    System.out.println("File not found: " +
file.getName());

                }

            });

            threads[i].start();

        }


        // Wait for all threads to finish

        for (Thread thread : threads) {

            try {

                thread.join();
```

```java
            } catch (InterruptedException e) {

                System.out.println("Thread interrupted.");

            }

        }


        System.out.println("Number of Java Files = " +
javaFileCount);

        System.out.println("Number of Issues = " +
issuesCount.get());

    }

}
```

Output

a. Invalid directory path/no Java files found

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.
Enter the directory path to check for Java files: src/main/Exercise4/src/main/java/org/example/444
Invalid directory path or no Java files found!

Process finished with exit code 0
```

b. Correct testing path

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 20
Enter the directory path to check for Java files: src/main/Exercise4/src/main/java/org/example
Number of Java Files = 10
Number of Issues = 12

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.3.4.1\lib\idea_rt.jar=57938"
Enter the directory path to check for Java files: C:/Users/User/Desktop/Real-Time Programming/Exercise4/src/main/java/org/example
Number of Java Files = 10
Number of Issues = 0

Process finished with exit code 0
```