**Practice-5.1**

Code:

import java.nio.file.FileSystems;

import java.nio.file.Path;

import java.io.File;

import java.io.FileReader;

import java.io.BufferedReader;

import java.io.IOException;

public class CombinedTest {

// Method to test Path and FileSystem

public static void testPath() {

// Create an instance of FileSystem

java.nio.file.FileSystem fs = FileSystems.getDefault();

// Create a Path instance

Path path = fs.getPath("C:/JavaProgramming/employees.txt");

// Print the constructed Path

System.out.println("Constructed Path: " + path);

}

// Method to test file reading using pre-Java 7 I/O classes

public static void testFileReading() {

// Define the file path

String filePath = "C:/JavaProgramming/employees.txt";

// Create a File object

File file = new File(filePath);

// Declare BufferedReader and FileReader

BufferedReader bufferedReader = null;

FileReader fileReader = null;

try {

// Instantiate FileReader and BufferedReader

fileReader = new FileReader(file);

bufferedReader = new BufferedReader(fileReader);

String line;

// Read lines from the file

while ((line = bufferedReader.readLine()) != null) {

System.out.println(line);

}

} catch (IOException e) {

// Handle file not found or IO exceptions

System.err.println("An error occurred while reading the file: " + e.getMessage());

} finally {

// Close resources in the finally block to ensure they are closed even if an exception occurs

try {

if (bufferedReader != null) {

bufferedReader.close();

}

if (fileReader != null) {

fileReader.close();

}

} catch (IOException ex) {

System.err.println("An error occurred while closing the resources: " + ex.getMessage());

}

}

}

public static void main(String[] args) {

// Test Path and FileSystem

System.out.println("Testing Path and FileSystem:");

testPath();

// Test file reading

System.out.println("\nTesting File Reading:");

testFileReading();

// Main limitations of the java.io package (commented for reference)

System.out.println("\nLimitations of java.io package:");

System.out.println("1. Performance issues compared to java.nio.file.");

System.out.println("2. Limited file operations (no support for file attributes, symbolic links).");

System.out.println("3. Error handling with checked exceptions (IOException).");

System.out.println("4. Lack of direct support for advanced I/O operations like non-blocking I/O.");

System.out.println("5. No direct support for advanced file system features.");

}

}

Output:

