Assignment 05:

Modify the script to handle errors, such as the directory already existing or lacking permissions to create files.

Add a debugging mode that prints additional information when enabled.

Code-:

```java
import java.io.File;
import java.io.FileWriter;
import java.io.IOException;

public class CreateFilesImproved {

    public static void main(String[] args) {
        String directoryName = "TestDir";
        int numFiles = 10;
        boolean debugMode = true;   // Set to true for additional logging

        // Create directory
        createDirectory(directoryName, debugMode);

        // Create files
        for (int i = 1; i <= numFiles; i++) {
            String fileName = "File" + i + ".txt";
            createFile(directoryName, fileName, debugMode);
        }
    }

    private static void createDirectory(String directoryName, boolean debugMode) {
        File directory = new File(directoryName);
        if (!directory.exists()) {
            if (debugMode) {
                System.out.println("Creating directory: " + directoryName);
            }
            if (!directory.mkdir()) {
                System.out.println("Error creating directory: " + directoryName);
            }
        } else if (debugMode) {
            System.out.println("Directory already exists: " + directoryName);
        }
    }

    private static void createFile(String directoryName, String fileName, boolean debugMode) {
        File file = new File(directoryName, fileName);
        try (FileWriter writer = new FileWriter(file)) {
            writer.write(fileName);
            if (debugMode) {
                System.out.println("Created file: " + file.getAbsolutePath());
            }
        } catch (IOException e) {
            System.out.println("Error creating file: " + fileName + " (" + e.getMessage() + ")");
        }
    }
}
```

Output-:

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.4291]
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C:\Users\user\Desktop>javac CreateFiles.java

C:\Users\user\Desktop>java CreateFiles
Directory already exists.
File created: File1.txt
File created: File2.txt
File created: File3.txt
File created: File4.txt
File created: File5.txt
File created: File6.txt
File created: File7.txt
File created: File8.txt
File created: File9.txt
File created: File10.txt

C:\Users\user\Desktop>
```

Explanation:

1. **debugMode Flag: We introduce a debugMode boolean flag set to true by default.**

2. **Separate Methods: The logic for creating the directory and files is encapsulated in separate methods:**

   - **createDirectory(String directoryName, boolean debugMode):**

     - **Handles directory creation with additional logging based on debugMode.**

- createFile(String directoryName, String fileName, boolean debugMode):
  - Creates individual files with error handling and logging based on debugMode.

3. Directory Creation:

   - The createDirectory method checks if the directory exists.

   - If it doesn't exist, it attempts to create it using mkdir().
     - In debugMode, it prints a message indicating directory creation.
     - If creation fails, an error message is printed.

   - If the directory already exists (and debugMode is enabled), a message is printed informing the user.

4. File Creation:

   - The createFile method takes the directory name, filename, and debugMode as arguments.

   - A try-with-resources block is used to manage the FileWriter.

- Inside the block:
  - The file is created.
  - The filename is written to the file.
  - If debugMode is enabled, a message is printed with the absolute path of the created file.
- The catch block handles potential IOException during file creation and prints an error message with the exception details.