The Fingerprint: Demo Application

The completed activity's functionality will undergo testing through direct interaction with the terminal via command lines. Success in the test requires that all the requisite files are located within the same directory. Before executing any command line, the user must ensure that the terminal is operating within the same directory as the location of the files.

Completed Java programs and data files can be downloaded here. The files must be extracted before the testing process.

Technical specification: JDK (Java) is required for the testing procedure.

Testing procedure

Part I – Fingerprint object testing

Required files:

- Fingerprint object implementation: FingerPrint.java
- Tester: FileProcessor.java
- Original Fingerprint file: Original.txt
- User 1 Fingerprint file: User1.txt

Open a new terminal “Command Prompt”, move to the directory where the files are saved, and execute the following command lines.

1. `C:\Users\User\Desktop\fingerprint>` **`javac FileProcessor.java`**
2. `C:\Users\User\Desktop\fingerprint>` **`java FileProcessor`**

Expected output

Part II – Threat Detection Model No. 1 testing

Required files:

- Fingerprint object implementation: FingerPrint.java
- Threat Detection System implementation: ThreatDetection.java

Open a new terminal "Command Prompt", move to the directory where the files are saved, and execute the following command lines.

1. `C:\Users\User\Desktop\fingerprint>` **`javac ThreatDetection.java`**
2. `C:\Users\User\Desktop\fingerprint>` **`java ThreatDetection`**

Expected output.

Case 1: Access Denied.

```
Define a maximum # of tries: 3
Provide Fingerprint: User1.txt
Provide Fingerprint: User2.txt
Provide Fingerprint: User3.txt
Access Denied.
```

Case 2: Succeed Authentication

```
Define a maximum # of tries: 3
Provide Fingerprint: User1.txt
Provide Fingerprint: User2.txt
Provide Fingerprint: Original.txt
Succeed Authentication
```

Part III – Threat Detection Model No. 2 testing

Required files:

- Fingerprint object implementation: FingerPrint.java
- Second Threat Detection System implementation: ThreatDetection2.java

Open a new terminal "Command Prompt", move to the directory where the files are saved, and execute the following command lines.

1. `C:\Users\User\Desktop\fingerprint>` **`javac ThreatDetection2.java`**
2. `C:\Users\User\Desktop\fingerprint>` **`java ThreatDetection2`**

Expected output.

Case 1: Access Denied.

```
Define a maximum # of tries: 3
Set up error threshold (%): 1
Provide Fingerprint: variation1.txt
Provide Fingerprint: variation2.txt
Provide Fingerprint: variation3.txt
Access Denied.
```

Case 2: Succeed Authentication

```
Define a maximum # of tries: 3
Set up error threshold (%): 10
Provide Fingerprint: variation1.txt
Succeed Authentication.Accuracy: 97.77
```