

## 9. Calculate the message digest of a text using the SHA-1 algorithm in JAVA.

Code:

```
J A9.java X
Codes > J A9.java > A9 > main(String[])
1 // Calculate the message digest of a text using the SHA-1 algorithm in JAVA.
2
3 import java.security.MessageDigest;
4 import java.security.NoSuchAlgorithmException;
5 import java.util.Scanner;
6
7 public class A9 {
8     public static void main(String[] args) {
9         Scanner scanner = new Scanner(System.in);
10
11         System.out.print("Enter a text to calculate its SHA-1 hash: ");
12         String inputText = scanner.nextLine();
13
14         try {
15             MessageDigest sha1 = MessageDigest.getInstance("SHA-1");
16             byte[] inputBytes = inputText.getBytes();
17             byte[] hash = sha1.digest(inputBytes);
18
19             // Convert the byte array to a hexadecimal string
20             StringBuilder hexString = new StringBuilder();
21             for (byte b : hash) {
22                 String hex = Integer.toHexString(0xff & b);
23                 if (hex.length() == 1) {
24                     hexString.append('0');
25                 }
26                 hexString.append(hex);
27             }
28
29             String sha1Hash = hexString.toString();
30             System.out.println("SHA-1 Hash: " + sha1Hash);
31         } catch (NoSuchAlgorithmException e) {
32             System.err.println("SHA-1 algorithm not found.");
33         }
34
35         scanner.close();
36     }
37 }
38
```

Output:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH TERMINAL OUTPUT
Debug: A9 + - [ ] ... ^ x

PowerShell 7.2.15
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PS E:\B.Tech\SEM-V\LABS\CISL> & 'C:\Program Files\Java\jdk-19\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:5077
6' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ADITYA\AppData\Roaming\Code\User\workspaceStorage\982b28e0759a44918fca0f4744cb3a40\redhat.jav
a\jdt_ws\CISL_340623aa\bin' 'A9'
Enter a text to calculate its SHA-1 hash: GOOD AFTERNOON
SHA-1 Hash: f523675b424edc3abdc2f15db4714c448a44ffe
PS E:\B.Tech\SEM-V\LABS\CISL> [ ]

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