

Information Security

Practical 8: Implement SHA 1 Algorithm

CODE:

```
import java.math.BigInteger;
import java.security.MessageDigest;
import java.security.NoSuchAlgorithmException;
import java.util.Scanner;

public class SHA {
    public static String encryptThisString(String input)
    {
        try {
            MessageDigest md = MessageDigest.getInstance("SHA-
1");

            byte[] messageDigest = md.digest(input.getBytes());

            BigInteger no = new BigInteger(1, messageDigest);

            String hashtext = no.toString(16);
```

```
        while (hashtext.length() < 32) {  
            hashtext = "0" + hashtext;  
        }  
  
        return hashtext;  
    }  
  
    catch (NoSuchAlgorithmException e) {  
        throw new RuntimeException(e);  
    }  
}  
  
public static void main(String args[]) throws  
  
    NoSuchAlgorithmException  
{  
  
    System.out.println("HashCode Generated by SHA-1 for: ");  
  
    String s2 = "Hello World";  
  
    System.out.println("Sample : \n" + s2 + " : " +  
encryptThisString(s2));
```

```
Scanner inp = new Scanner(System.in); // Create a Scanner
object

System.out.print("\nEnter String : \t");

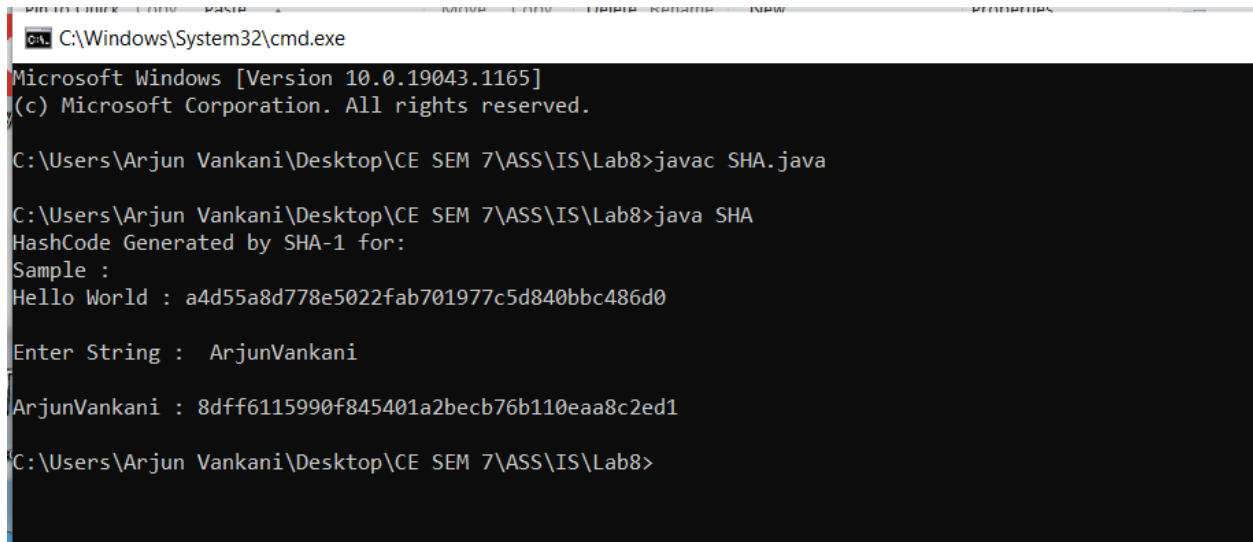
String s1 = inp.nextLine();

System.out.println("\n" + s1 + " : " + encryptThisString(s1));

}

}
```

Output:



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Arjun Vankani\Desktop\CE SEM 7\ASS\IS\Lab8>javac SHA.java

C:\Users\Arjun Vankani\Desktop\CE SEM 7\ASS\IS\Lab8>java SHA
HashCode Generated by SHA-1 for:
Sample :
Hello World : a4d55a8d778e5022fab701977c5d840bbc486d0

Enter String : ArjunVankani
ArjunVankani : 8dff6115990f845401a2becb76b110eaa8c2ed1

C:\Users\Arjun Vankani\Desktop\CE SEM 7\ASS\IS\Lab8>
```