**IT8761 - Security Laboratory**

**Exercise No.8: Calculate the message digest of a text using the SHA-1 algorithm.**

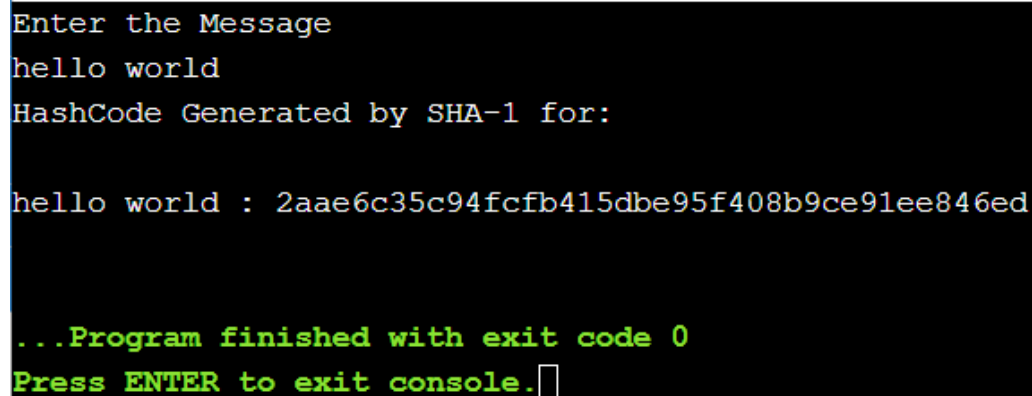**Aim:**
To calculate the message digest of a text using the SHA-1 algorithm.

**Program:**

```java
import java.io.*;

import java.util.*;

import java.math.BigInteger;

import java.security.MessageDigest;

import java.security.NoSuchAlgorithmException;


class Main{

    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() < 40) {

                hashtext = "0" + hashtext;

            }

            return hashtext;

        }

        catch (NoSuchAlgorithmException e) {

            throw new RuntimeException(e);

        }

    }
```

```
public static void main(String args[]) throws

NoSuchAlgorithmException
{

        String s1 = "";
        System.out.println("Enter the Message");
        Scanner s=new Scanner(System.in);
        s1 = s.nextLine();
        System.out.println("HashCode Generated by SHA-1 for: ");
        System.out.println("\n" + s1 + " : " + encryptThisString(s1));
    }
}
```

**Output:**

```
Enter the Message
hello world
HashCode Generated by SHA-1 for:

hello world : 2aae6c35c94fcfb415dbe95f408b9ce91ee846ed


...Program finished with exit code 0
Press ENTER to exit console.
```

**Result:**

Thus, the message digest of a text using the SHA-1 algorithm is completed successfully.