EX.No.8   **SHA1 HASHING ALGORITHM**

CODE:

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

public class SHA1 {
   String message;

   public String hash()  throws NoSuchAlgorithmException
   {
      MessageDigest md = MessageDigest.getInstance("SHA-1");
      byte[] messageDigest = md.digest(message.getBytes());

      System.out.println("\nSHA1 Digest of "+ message + "  (in Base64): "
+Base64.getEncoder().encodeToString(messageDigest));

      BigInteger no = new BigInteger(1, messageDigest);
      String res = no.toString(16);
      while (res.length() < 32) {
         res = "0" + res;
      }
      return res;
   }

   public static void main(String args[]) throws NoSuchAlgorithmException
   {
      Scanner sc = new Scanner(System.in);
      System.out.println("\nSHA1 HASHING ALGORITHM");
      System.out.println("***********************");
      SHA1 sha1 = new SHA1();

      System.out.print("\nEnter the message: ");
      sha1.message=sc.next();

      System.out.println("\nSHA1 Digest of "+ sha1.message + " (in hex): "
+sha1.hash());
   }
}
```

OUTPUT:

```
C:\Users\WELCOME\Desktop\CNS lab\ex8sha>javac SHA1.java

C:\Users\WELCOME\Desktop\CNS lab\ex8sha>java SHA1

SHA1 HASHING ALGORITHM
***********************

Enter the message: Hello World

SHA1 Digest of Hello  (in Base64): 9/+ei3uy4Jtwk1pdeF4MxdnQq/A=

SHA1 Digest of Hello (in hex): f7ff9e8b7bb2e09b70935a5d785e0cc5d9d0abf0

C:\Users\WELCOME\Desktop\CNS lab\ex8sha>java SHA1

SHA1 HASHING ALGORITHM
***********************

Enter the message: Good Morning

SHA1 Digest of Good  (in Base64): Yd7c8FP/M2krqsv3eJxdcZXZrL4=

SHA1 Digest of Good (in hex): 61dedcf053ff33692baacbf7789c5d7195d9acbe

C:\Users\WELCOME\Desktop\CNS lab\ex8sha>java SHA1

SHA1 HASHING ALGORITHM
***********************

Enter the message: Good Evening

SHA1 Digest of Good  (in Base64): Yd7c8FP/M2krqsv3eJxdcZXZrL4=

SHA1 Digest of Good (in hex): 61dedcf053ff33692baacbf7789c5d7195d9acbe

C:\Users\WELCOME\Desktop\CNS lab\ex8sha>_
```