

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

```
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.nextLine();

        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 World (in Base64): Ck1VqNd45QIvq3AZd8XYQLvEhtA=
```

```
SHA1 Digest of Hello World (in hex): a4d55a8d778e5022fab701977c5d840bbc486d0
```

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

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

```
Enter the message: Good Morning
```

```
SHA1 Digest of Good Morning (in Base64): BuM2IxRm0LBXOgXLyngTREr7Wyk=
```

```
SHA1 Digest of Good Morning (in hex): 6e336231466d0b0573a05cbca7813444afb5b29
```

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

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

```
Enter the message: Good Evening
```

```
SHA1 Digest of Good Evening (in Base64): z07s31WooJ9jMymgnU52kEvMTSc=
```

```
SHA1 Digest of Good Evening (in hex): cf4eecdff55a8a09f633329a09d4e76904bcc4d27
```

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