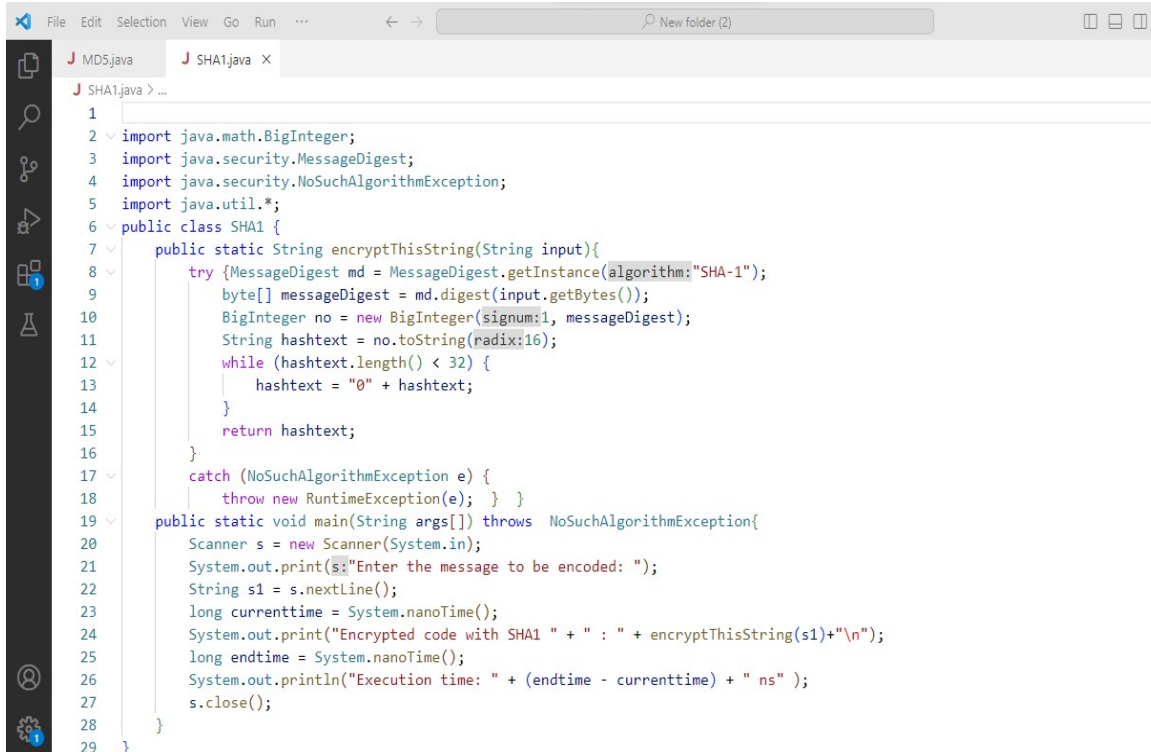


CODE MD5:

```
1 import java.math.BigInteger;
2 import java.security.MessageDigest;
3 import java.security.NoSuchAlgorithmException;
4 import java.util.*;
5 public class MD5 {
6     public static String getMd5(String input){
7         try {MessageDigest md = MessageDigest.getInstance("MD5");
8             byte[] messageDigest = md.digest(input.getBytes());
9             BigInteger no = new BigInteger(signum:1, messageDigest);
10            String hashtext = no.toString(radix:16);
11            while (hashtext.length() < 32) {
12                hashtext = "0" + hashtext;
13            }
14            return hashtext;
15        }
16        catch (NoSuchAlgorithmException e) {
17            throw new RuntimeException(e); } }
18    public static void main(String args[]) throws NoSuchAlgorithmException{
19        Scanner s = new Scanner(System.in);
20        System.out.print(s:"Enter the message to be encoded: ");
21        String input = s.nextLine();
22        long currenttime = System.nanoTime();
23        System.out.print("Your HashCode Generated by MD5 is: " + getMd5(input) + "\n");
24        long endtime = System.nanoTime();
25        System.out.println("Execution time: " + (endtime - currenttime) + " ns" );
26        s.close();
27    }
28 }
```

A screenshot of an IDE window showing a Java file named SHA1.java. The code implements a SHA-1 encryption function. It imports java.math.BigInteger, java.security.MessageDigest, java.security.NoSuchAlgorithmException, and java.util.*. The class SHA1 has a static method encryptThisString(String input) that uses MessageDigest.getInstance("SHA-1") to create a digest, then converts it to a BigInteger and finally to a hexadecimal string. A main method is also present, which prompts the user for a message, calls the encryptThisString method, and prints the result along with the execution time.

```
1
2 import java.math.BigInteger;
3 import java.security.MessageDigest;
4 import java.security.NoSuchAlgorithmException;
5 import java.util.*;
6 public class SHA1 {
7     public static String encryptThisString(String input){
8         try {MessageDigest md = MessageDigest.getInstance("SHA-1");
9             byte[] messageDigest = md.digest(input.getBytes());
10            BigInteger no = new BigInteger(signum:1, messageDigest);
11            String hashtext = no.toString(radix:16);
12            while (hashtext.length() < 32) {
13                hashtext = "0" + hashtext;
14            }
15            return hashtext;
16        }
17        catch (NoSuchAlgorithmException e) {
18            throw new RuntimeException(e); } }
19    public static void main(String args[]) throws NoSuchAlgorithmException{
20        Scanner s = new Scanner(System.in);
21        System.out.print(s:"Enter the message to be encoded: ");
22        String s1 = s.nextLine();
23        long currenttime = System.nanoTime();
24        System.out.print("Encrypted code with SHA1 " + " : " + encryptThisString(s1)+"\n");
25        long endtime = System.nanoTime();
26        System.out.println("Execution time: " + (endtime - currenttime) + " ns" );
27        s.close();
28    }
29 }
```

OUTPUT:

```
PS C:\Users\Student\Desktop\New folder (2)> javac MD5.java
PS C:\Users\Student\Desktop\New folder (2)> java MD5
Enter the message to be encoded: It is a good day
Your HashCode Generated by MD5 is: f67fad1db459f64234e7d02583d628bd
Execution time: 6943700 ns

PS C:\Users\Student\Desktop\New folder (2)> javac SHA1.java
PS C:\Users\Student\Desktop\New folder (2)> java SHA1
Enter the message to be encoded: It is a good day
Encrypted code with SHA1 : e66cc57d64a53f45b25dca1d8514b0fd5a80812d
Execution time: 7796900 ns
PS C:\Users\Student\Desktop\New folder (2)> □
```

