

21BAI1844
Shlok Kamath

CRYPTOGRAPHY- LAB-12

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1) SHA-512

CODE:

```
2) import java.math.BigInteger;
import java.security.MessageDigest;
import java.security.NoSuchAlgorithmException;

public class Main {

    public static String encryptThisString(String input) {

        try {

            MessageDigest md = MessageDigest.getInstance("SHA-512");
            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);
        }
    }

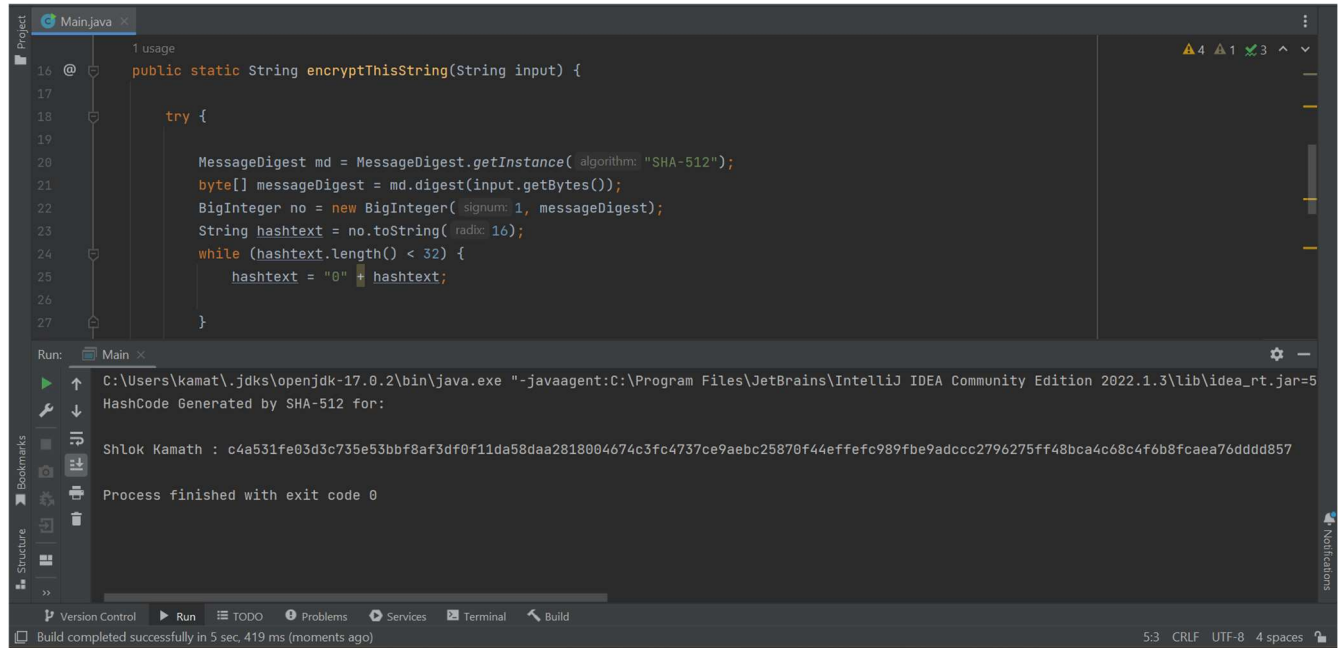
    public static void main(String args[]) throws
    NoSuchAlgorithmException {
        System.out.println("HashCode Generated by SHA-512 for: ");

        String s1 = "Shlok Kamath";

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

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OUTPUT:



The screenshot displays the IntelliJ IDEA IDE interface. The top editor pane shows a Java file named `Main.java` with the following code:

```
16 @ 1 usage
17 public static String encryptThisString(String input) {
18     try {
19         MessageDigest md = MessageDigest.getInstance("SHA-512");
20         byte[] messageDigest = md.digest(input.getBytes());
21         BigInteger no = new BigInteger(1, messageDigest);
22         String hashtext = no.toString(16);
23         while (hashtext.length() < 32) {
24             hashtext = "0" + hashtext;
25         }
26     }
27 }
```

The bottom pane shows the Run configuration and output. The command executed is:

```
C:\Users\kamat\.jdk\openjdk-17.0.2\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.1.3\lib\idea_rt.jar=5
```

The output shows the hash code generated by SHA-512 for the input "Shlok Kamath":

```
HashCode Generated by SHA-512 for:
Shlok Kamath : c4a531fe03d3c735e53bbf8af3df0f11da58daa2818004674c3fc4737ce9aebc25870f44effefc989fbe9adccc2796275ff48bca4c68c4f6b8fcaea76ddddd857
```

The process finished with exit code 0. The status bar at the bottom indicates the build completed successfully in 5 seconds and 419 milliseconds.