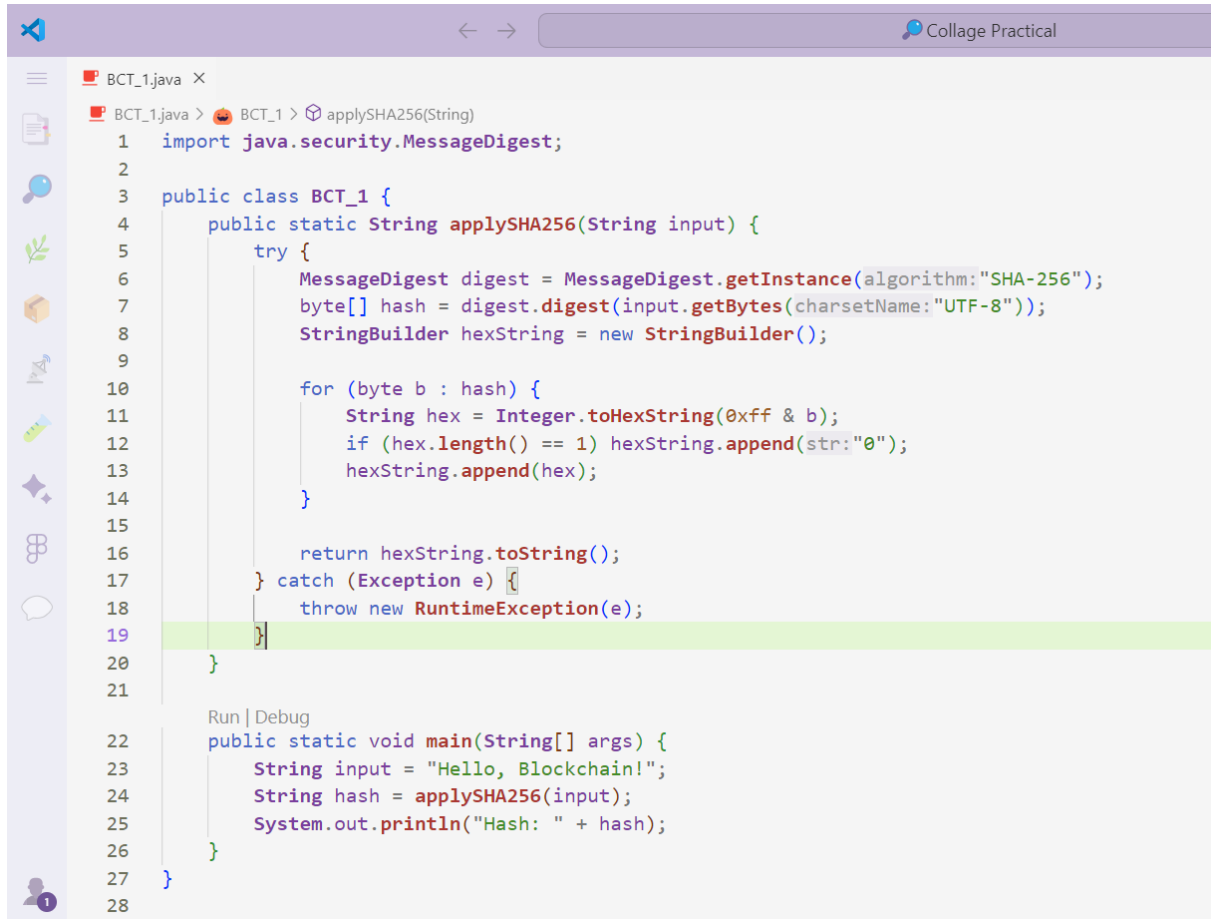


Experiment No. 1

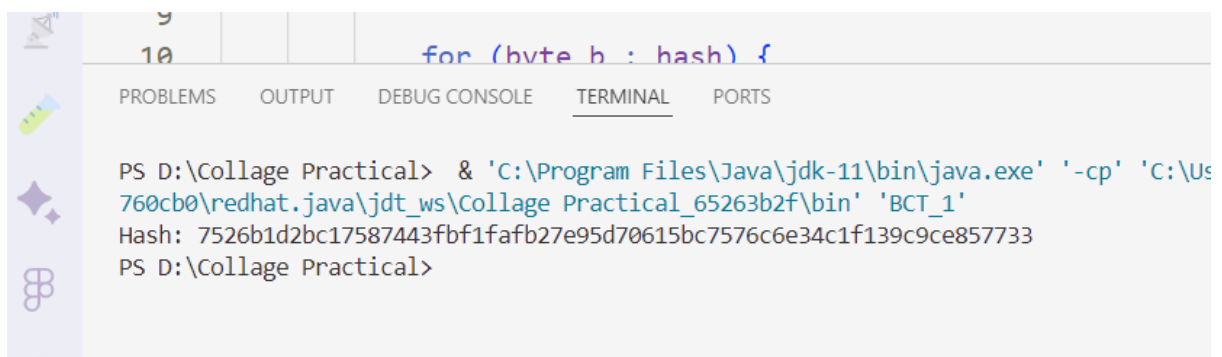
Title: - Cryptographic hash function (SHA-256).

Aim: - Write a program to implement cryptographic hash functions (SHA-256) in Java.

Output: -



```
1 import java.security.MessageDigest;
2
3 public class BCT_1 {
4     public static String applySHA256(String input) {
5         try {
6             MessageDigest digest = MessageDigest.getInstance("SHA-256");
7             byte[] hash = digest.digest(input.getBytes("UTF-8"));
8             StringBuilder hexString = new StringBuilder();
9
10            for (byte b : hash) {
11                String hex = Integer.toHexString(0xff & b);
12                if (hex.length() == 1) hexString.append("0");
13                hexString.append(hex);
14            }
15
16            return hexString.toString();
17        } catch (Exception e) {
18            throw new RuntimeException(e);
19        }
20    }
21
22    public static void main(String[] args) {
23        String input = "Hello, Blockchain!";
24        String hash = applySHA256(input);
25        System.out.println("Hash: " + hash);
26    }
27 }
28
```



```
PS D:\Collage Practical> & 'C:\Program Files\Java\jdk-11\bin\java.exe' '-cp' 'C:\Us
760cb0\redhat.java\jdt_ws\Collage Practical_65263b2f\bin' 'BCT_1'
Hash: 7526b1d2bc17587443fbf1fafb27e95d70615bc7576c6e34c1f139c9ce857733
PS D:\Collage Practical>
```