import java.math.BigInteger;

import java.security.MessageDigest;

import java.security.NoSuchAlgorithmException;

import java.util.Scanner;

public class MD5Hash {

    public static String getMd5(String input) {

        try {

            // Create an MD5 MessageDigest instance

            MessageDigest md = MessageDigest.getInstance("MD5");

            // Compute the MD5 digest (returns a byte array)

            byte[] messageDigest = md.digest(input.getBytes());

            // Convert byte array into a hex representation

            StringBuilder hexString = new StringBuilder(new BigInteger(1, messageDigest).toString(16));

            // Ensure the hash is always 32 characters long by padding with leading zeros

            while (hexString.length() < 32) {

                hexString.insert(0, "0");

            }

            return hexString.toString();

        } catch (NoSuchAlgorithmException e) {

            throw new RuntimeException("MD5 algorithm not found", e);

        }

    }

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Taking user input for hashing

        System.out.print("Enter the text to hash using MD5: ");

        String input = scanner.nextLine();

        // Generating MD5 hash

        String md5Hash = getMd5(input);

        // Displaying the hash

        System.out.println("MD5 Hash: " + md5Hash);

        scanner.close();

    }

}