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Assignment no 05

import java.util.Base64;

import javax.crypto.Cipher;

import javax.crypto.KeyGenerator;

import javax.crypto.SecretKey;

public class DESExample {

    // Method to encrypt a message using DES

    public static String encrypt(String plainText, SecretKey secretKey) throws Exception {

        Cipher cipher = Cipher.getInstance("DES");

        cipher.init(Cipher.ENCRYPT\_MODE, secretKey);

        byte[] encryptedBytes = cipher.doFinal(plainText.getBytes());

        return Base64.getEncoder().encodeToString(encryptedBytes);

    }

    // Method to decrypt a message using DES

    public static String decrypt(String encryptedText, SecretKey secretKey) throws Exception {

        Cipher cipher = Cipher.getInstance("DES");

        cipher.init(Cipher.DECRYPT\_MODE, secretKey);

        byte[] decodedBytes = Base64.getDecoder().decode(encryptedText);

        byte[] decryptedBytes = cipher.doFinal(decodedBytes);

        return new String(decryptedBytes);

    }

    // Generate a DES secret key

    public static SecretKey generateKey() throws Exception {

        KeyGenerator keyGenerator = KeyGenerator.getInstance("DES");

        keyGenerator.init(56); // DES uses a key size of 56 bits

        return keyGenerator.generateKey();

    }

    public static void main(String[] args) {

        try {

            String message = "Hello, World!";

            // Generate a DES key

            SecretKey secretKey = generateKey();

            // Encrypt the message

            String encryptedMessage = encrypt(message, secretKey);

            System.out.println("Encrypted Message: " + encryptedMessage);

            // Decrypt the message

            String decryptedMessage = decrypt(encryptedMessage, secretKey);

            System.out.println("Decrypted Message: " + decryptedMessage);

        } catch (Exception e) {

            e.printStackTrace();

        }

    }

}

