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**Roll Number : 20141224**

# **Experiment No: 4**

package Exp;

import java.io.UnsupportedEncodingException;

import java.security.MessageDigest;

import java.security.NoSuchAlgorithmException;

import java.util.Arrays;

import java.util.Base64;

import javax.crypto.Cipher;

import javax.crypto.spec.SecretKeySpec;

public class AES {

 private static SecretKeySpec secretKey;

 private static byte[] key;

 public static void setKey(String myKey) {

 MessageDigest sha = null;

 try {

 key = myKey.getBytes("UTF-8");

 sha = MessageDigest.getInstance("SHA-1");

 key = sha.digest(key);

 key = Arrays.copyOf(key, 16);

 secretKey = new SecretKeySpec(key, "AES");

 } catch (NoSuchAlgorithmException e) {

 e.printStackTrace();

 } catch (UnsupportedEncodingException e) {

 e.printStackTrace();

 }

 }

 public static String encrypt(String strToEncrypt, String secret) {

 try {

 setKey(secret);

 Cipher cipher = Cipher.getInstance("AES/ECB/PKCS5Padding");

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

 return Base64.getEncoder().encodeToString(cipher.doFinal(strToEncrypt.getBytes("UTF-8")));

 } catch (Exception e) {

 return null;

 }

}

 public static String decrypt(String strToDecrypt, String secret) {

 try {

 setKey(secret);

 Cipher cipher = Cipher.getInstance("AES/ECB/PKCS5PADDING");

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

 return new String(cipher.doFinal(Base64.getDecoder().decode(strToDecrypt)));

 } catch (Exception e) {

 System.out.println("Error while decrypting: " + e.toString());

 }

 return null;

 }

 public static void main(String[] args) {

 final String secretKey = "Pradyumna Bhosale";

 System.out.println("Pradyumna Bhosale (20141224)");

 System.out.println();

 String originalString = " https://www.linkedin.com/in/pradyumna-bhosale-a65a14206/";

 String encryptedString = AES.encrypt(originalString, secretKey);

 String decryptedString = AES.decrypt(encryptedString, secretKey);

 System.out.println("URL Encryption Using AES Algorithm\n------------");

 System.out.println("Original URL : " + originalString);

 System.out.println("Encrypted URL : " + encryptedString);

 System.out.println("Decrypted URL : " + decryptedString);

 }

}

**Output:**

