Experiment 4

AES Encryption-

**Code-**

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 = "HelloWorld";

System.out.println();

String originalString = "http://aes.online-domain-tools.com/";

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-

