

Name :-Aditi Vinaykumar Patil.

Batch : T4

PROGRAM :

```
import javax.swing.*;

import java.security.SecureRandom;

import javax.crypto.Cipher;

import javax.crypto.KeyGenerator;

import javax.crypto.SecretKey;

import javax.crypto.spec.SecretKeySpec;

import java.util.Random ;

class DES {

byte[] skey = new byte[1000];

String skeyString;

static byte[] raw;

String inputMessage,encryptedData,decryptedMessage;

public DES() {

try {

generateSymmetricKey();

inputMessage=JOptionPane.showInputDialog(null,"Enter message to encrypt");

byte[] ibyte = inputMessage.getBytes();

byte[] ebyte=encrypt(raw, ibyte);

String encryptedData = new String(ebyte);

System.out.println("Encrypted message "+encryptedData);

JOptionPane.showMessageDialog(null,"Encrypted Data "+"\\n"+encryptedData);
```

```

byte[] dbyte= decrypt(raw,ebyte);

String decryptedMessage = new String(dbyte);

System.out.println("Decrypted message "+decryptedMessage);


JOptionPane.showMessageDialog(null,"Decrypted Data "+"\\n"+decryptedMessage);

}

catch(Exception e) {

System.out.println(e);

}


}

void generateSymmetricKey() {

try {

Random r = new Random();

int num = r.nextInt(10000);

String knum = String.valueOf(num);

byte[] knumb = knum.getBytes();

skey=getRawKey(knumb);

skeyString = new String(skey);

System.out.println("DES Symmetric key = "+skeyString);

}

catch(Exception e) {

System.out.println(e);

}

}

private static byte[] getRawKey(byte[] seed) throws Exception {

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

```

```

SecureRandom sr = SecureRandom.getInstance("SHA1PRNG");

sr.setSeed(seed);

kgen.init(56, sr);

SecretKey skey = kgen.generateKey();

raw = skey.getEncoded();

return raw;

}

private static byte[] encrypt(byte[] raw, byte[] clear) throws Exception {

SecretKeySpec skeySpec = new SecretKeySpec(raw, "DES");

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

cipher.init(Cipher.ENCRYPT_MODE, skeySpec);

byte[] encrypted = cipher.doFinal(clear);

return encrypted;

}

private static byte[] decrypt(byte[] raw, byte[] encrypted) throws Exception {

SecretKeySpec skeySpec = new SecretKeySpec(raw, "DES");

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

cipher.init(Cipher.DECRYPT_MODE, skeySpec);

byte[] decrypted = cipher.doFinal(encrypted);

return decrypted;

}

public static void main(String args[]) {

DES des = new DES();

}

}

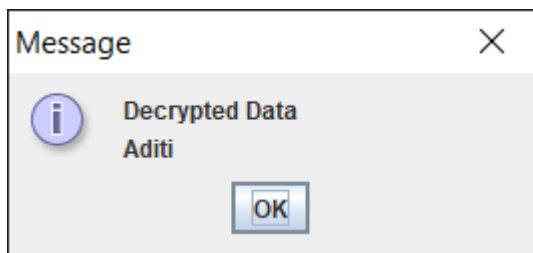
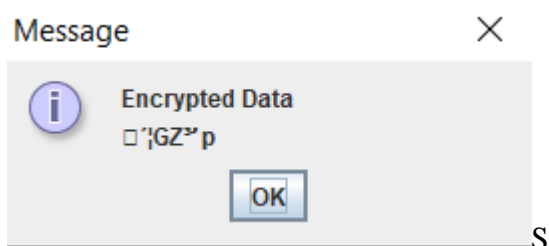
```

OUTPUT :

```
C:\Windows\System32\cmd.exe - java DES

D:\java programs>javac DES.java

D:\java programs>java DES
DES Symmetric key = 7h
```



```
C:\Windows\System32\cmd.exe - java DES

Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

D:\java programs>javac DES.java

D:\java programs>java DES
DES Symmetric key = 7hÇñÄß
Encrypted message 7hÇñÄß
Decrypted message Aditi
```