1,

public class Frequency

{

punlic static void main(String[]args)

{

String str="text";

char a='t';

char b='e';

char c='x';

int frequency=0;

for(int i=0;i<str.length();i++)

{

if(a==str.charAt(i))

{

++frequency;

}}

System.out.println("frequency of"+a+"="+frequency);

for(int i=0;i<str.length();i++)

{

if(b==str.charAt(i))

{

++frequency;

}}

System.out.println("frequency of"+b+"="+frequency);

for(int i=0;i<str.length();i++)

{

if(c==str.charAt(i))

{

++frequency;

}}

System.out.println("frequency of"+c+"+frequency);

}}

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2,

letters=[chr(i) for i in range(97,123)]

cipher\_text="xultpaajcxitltlxaarpjhtiwtgxktghidhipxciwtvgtpilpitghlxiwiwtxgqadds"

for key in range(0,26):

plain\_text=""

for i in cipher\_text:

plain\_text=plain\_text+letters[abs(letters.index(i)-key)%25]

print("shiftKey={} and plaintext={}".format(key,plain\_text))

3,

Affine.java

package affine;

import java.util.Scanner;

public class Affine {

public static String encryptionDecryption(int Select,String keyAndMsg)

{

String arr[]=keyAndMsg.split(" ");

int a=Integer.parseInt(arr[0]);

int b=Integer.parseInt(arr[1]);

String Msg=arr[2].toUpperCase();

if(Select ==1) {

String CTxt = "";

for (int i = 0; i < Msg.length(); i++)

{

CTxt = CTxt + (char) ((((a \* Msg.charAt(i)) + b) % 26) + 65);

}

return CTxt;

}else {

String CTxt=Msg;

Msg="";

int a\_inv = 0;

int flag = 0;

for (int i = 0; i < 26; i++)

{

flag = (a \* i) % 26;

if (flag == 1)

{

a\_inv = i;

System.out.println("Inverse of "+a+" is :"+i);

} }

for (int i = 0; i < CTxt.length(); i++)

{

Msg = Msg + (char) (((a\_inv \* ((CTxt.charAt(i) - b)) % 26)) + 65);

}

return Msg;

}}

void ShiftKey(String msg){

}

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter the message: ");

String message = sc.next();

int a=3;

int b=6;

String cipher;

cipher=a+" "+b+" "+message;

cipher= encryptionDecryption (1,cipher);

System.out.println("Message is :" + message);

System.out.println("Encryptation Message is : "+ cipher);

cipher=a+" "+b+" "+cipher;

cipher= encryptionDecryption (2,cipher);

System.out.println("Decryption Message is: "+ cipher);

sc.close();

}}

-----------------------------------------------------------------------------------------------------

4,

public class VigenereCipher

{

public static String encrypt(String text, final String key)

{

String res = "";

text = text.toUpperCase();

for (int i = 0, j = 0; i < text.length(); i++)

{

char c = text.charAt(i);

if (c < 'A' || c > 'Z')

continue;

res += (char) ((c + key.charAt(j) - 2 \* 'A') % 26 + 'A');

j = ++j % key.length();

}

return res;

}

public static String decrypt(String text, final String key)

{

String res = "";

text = text.toUpperCase();

for (int i = 0, j = 0; i < text.length(); i++)

{

char c = text.charAt(i);

if (c < 'A' || c > 'Z')

continue;

res += (char) ((c - key.charAt(j) + 26) % 26 + 'A');

j = ++j % key.length();

}

return res;

}

public static void main(String[] args)

{

String key = "VIGENERECIPHER";

String message = "Hellenism was combination of Greek persian and Egyptian cultures.During this remarkable time period,people were encouraged to pursue a formal education and produce many kinds of art.New forms of math,science,and design made a great impact on society";

String encryptedMsg = encrypt(message, key);

System.out.println("String: " + message);

System.out.println("Encrypted message: " + encryptedMsg);

System.out.println("Decrypted message: " + decrypt(encryptedMsg, key));

}}