**To implement our own cipher:**

import java.util.\*;

public class Own{

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Enter string:");

String pt=sc.next();

int n=pt.length();

String ct1="";

char a[]=pt.toCharArray();

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

{

a[i]=(char)(((3\*(a[i]-97)+2)%26)+97);

ct1+=a[i];

}

System.out.println("\nAfter Custom Subsitution Cipher:\n"+ct1);

String ct2="";

int row;

System.out.println("\nEnter number of columns:");

int col=sc.nextInt();

if(n%col!=0)

{

row=(int)(n/col);

row++;

}

else

row=n/col;

char x[][]=new char [row][col];

for(int i=0,k=0;i<row;i++)

for(int j=0;j<col;j++)

if(k<n)

{

x[i][j]=ct1.charAt(k);

k++;

}

else

break;

for(int i=1;i<col;i+=2)

for(int j=0;j<row;j++)

if(x[j][i]!='\u0000')

ct2+=x[j][i];

for(int i=0;i<col;i+=2)

for(int j=0;j<row;j++)

if(x[j][i]!='\u0000')

ct2+=x[j][i];

System.out.println("\nAfter Custom Columnar Transposition:\n"+ct2);

String dt1="";

char c2[][]=new char [row][col];

int end=row\*col-n;

for(int j=col-1;j>=0;j--)

if(end!=0)

{

c2[row-1][j]='1';

end--;

}

else

break;

int n2=0,r=0,c=1;

while(n2<n)

{

if(c<col)

{

if(r<row)

{

if(c2[r][c]!='1')

c2[r][c]=ct2.charAt(n2);

else

n2--;

r++;

n2++;

}

else

{

r=0;

c+=2;

}

}

else

{

c=0;

}

}

for(int i=0,k=0;i<row;i++)

for(int j=0;j<col;j++)

if(k<n)

{

dt1+=c2[i][j];

k++;

}

else

break;

System.out.println("\nDecrypting Custom Columnar Transposition:\n"+dt1);

String dt2="";

char a2[]=dt1.toCharArray();

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

{

a2[i]=(char)(((((a2[i]-97)-2)/3)%26)+97);

dt2+=a2[i];

}

System.out.println("\nDecrypting Custom Subsitution Cipher:\n"+dt2);

}

}

**OUTPUT:**

