

AIM: To implement Rail fence Technique

Program

```
import javax.swing.JOptionPane;
public class RailFence
{
    public static void main(String[] args)
    {
        // TODO code application logic here
        String plain_text;
        int key;
        String cipher1,cipher2;
        plain_text=JOptionPane.showInputDialog("Input the string to encrypt:");
        key = Integer.parseInt(JOptionPane.showInputDialog("Input the key:"));
        cipher1=encrypt(plain_text,key);
        JOptionPane.showMessageDialog (null, "Cipher Text is " + cipher1, "Encryption
Process", JOptionPane.PLAIN_MESSAGE);
        cipher2=decrypt(cipher1,key);
        JOptionPane.showMessageDialog (null, "Plain Text is " + cipher2, "Decryption Process",
JOptionPane.PLAIN_MESSAGE);
    }
    public static String encrypt(String plainText,int depth)
    {
        int r=depth,len=plainText.length();
        int c=len/depth;
        char mat[][]=new char[r][c];
        int k=0;
        String cipherText="";
        for(int i=0;i<c;i++)
        {
            for(int j=0;j<r;j++)
            {
                if(k!=len)
                    mat[j][i]=plainText.charAt(k++);
                else
                    mat[j][i]='X';
            }
        }
        for(int i=0;i<r;i++)
        {
            for(int j=0;j<c;j++)
            {
                cipherText+=mat[i][j];
            }
        }
        return cipherText;
    }

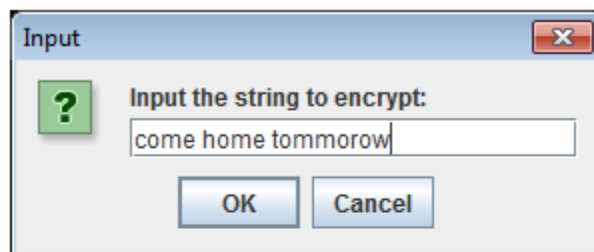
    public static String decrypt(String cipherText,int depth)
    {
        int r=depth,len=cipherText.length();
        int c=len/depth;
        char mat[][]=new char[r][c];
        int k=0;
        String plainText="";
        for(int i=0;i<r;i++)
```

```

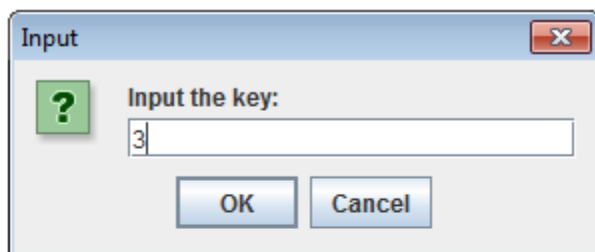
    {
        for(int j=0;j<c;j++)
        {
            mat[i][j]=cipherText.charAt(k++);
        }
    }
    for(int i=0;i<c;i++)
    {
        for(int j=0;j<r;j++)
        {
            plainText+=mat[j][i];
        }
    }
    return plainText;
}
}

```

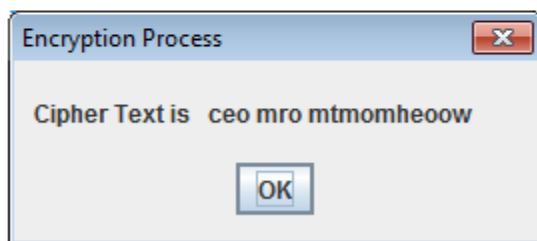
Output:



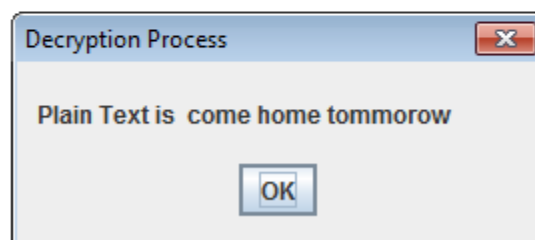
Input dialog box titled "Input" with a green question mark icon. The text "Input the string to encrypt:" is followed by a text input field containing "come home tommorow". Below the input field are "OK" and "Cancel" buttons.



Input dialog box titled "Input" with a green question mark icon. The text "Input the key:" is followed by a text input field containing "3". Below the input field are "OK" and "Cancel" buttons.



Encryption Process dialog box with a title bar and a close button. The text "Cipher Text is" is followed by "ceo mro mtmomheooow". Below the text is an "OK" button.



Decryption Process dialog box with a title bar and a close button. The text "Plain Text is" is followed by "come home tommorow". Below the text is an "OK" button.