AIM: To implement Caesar Cipher

Theory:

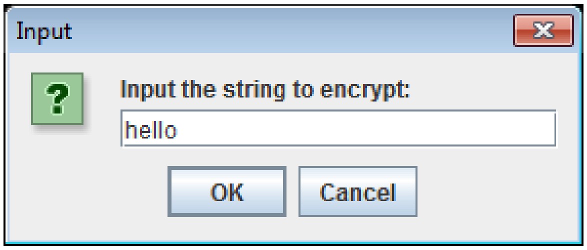
In Cryptography Substitution cipher is a method of encrypting plain text where each alphabetic of plaintext are replaced with another alphabetic resulting into cipher text (unreadable data) using some algorithm.

In the program we are implementing Caesar cipher which is one of the simplest ways of encrypting data. It is a type of substitution cipher. Program consist of two methods encrypt and decrypt. The encrypt method has two parameter one the plain text and second is key. In caesar cipher each alphabet of plain text is replaced by key bits down the order. The decryption method also has two parameters one encrypted message and key. It does opposite process of encryption.

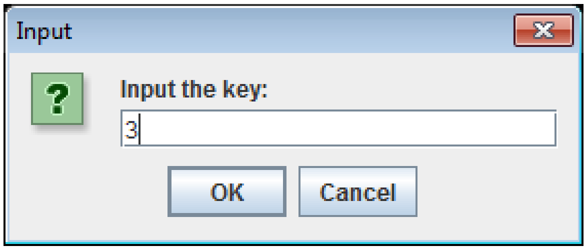
Program

```
packagecaesar_cipher;
importjavax.swing.JOptionPane;
public class Caesar_Cipher
{
    public static void main(String[] args)
    {
        String plain_text;
        String key;
    String cipher1,cipher2;
        plain_text=JOptionPane.showInputDialog("Input the string to encrypt:");
        key=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 str1,String key1)
    {
        intkeylen=Integer.parseInt(key1);
        String encrypted="";
        for(int i=0;i<str1.length();i++)
        {
            int c=str1.charAt(i);

            if(Character.isUpperCase(c))
            {
                c=c+(keylen%26);
                if(c>'Z')
                    c=c-26;
            }
            else if(Character.isLowerCase(c))
            {
                c=c+(keylen%26);

                if(c>'z')
                    c=c-26;
            }
            encrypted+=(char)c;

        }
    return encrypted;
    }
    public static String decrypt(String str1,String key1)
    {
        intkeylen=Integer.parseInt(key1);
        String decrypted="";
        for(int i=0;i<str1.length();i++)
        {
            int c=str1.charAt(i);
            if(Character.isUpperCase(c))
            {
                c=c-(keylen%26);
                if(c<'A')
                    c=c+26;
            }
            else if(Character.isLowerCase(c))
            {
                c=c-(keylen%26);
                if(c<'a')
                    c=c+26;
            }
            decrypted+=(char)c;
        }
        return decrypted;
    }
}
```

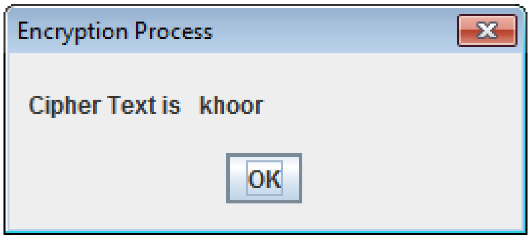
Output:



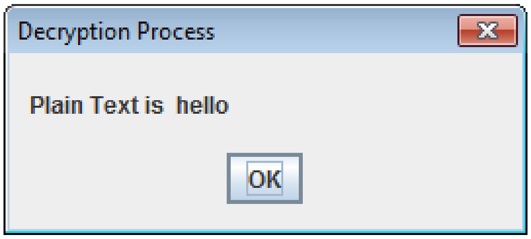
Input the string to encrypt:
hello



Input the key:
3



Cipher Text is khoor



Plain Text is hello