Name : Harshal Kodgire
Batch : B1
Subject : CNS lab
Topic : Assignment 2

Aim : Given a Cipher text , encrypted caesar using , Using Crypt analysis find the plain text

Theory :
Caesar Cipher It is a substitution cipher, i.e., each letter of a given text is replaced by a letter with a fixed number of positions down the alphabet We will decrypt using all the possible key , and find the most relative plain text

Code :

```
#include<bits/stdc++.h>
using namespace std;

int main()
{
    string input;
    vector<string>
dictionary{"harshal","kodgire","walchand","college","friend"};
    vector<string> vs;
    int key = 0;
    cout<<"\n**** Crypt Analysis ****\n";
    cout<<"\n Enter cipher text : ";
    getline(cin,input);

    string output;

    for(int i=0;i<input.size();i++)
    {
        if(input[i]!=' ')
        output += input[i];

        if(input[i]>=65 && input[i]<=90)
        output[i] += 32;
    }

    // cout<<"\n Enter key to decrypt : ";
```

```
    // cin>>key;

    for(int j=0;j<25;j++)
    {
        key = j;
        for (int i=0;i<output.size();i++)
        {
            int val = output[i] - 'a';
            val = (val - key + 26) % 26;
            char ch = 'a' + val;
            output[i] = ch;
        }
        vs.push_back(output);
    }

    int i = 0;
    int flg = 0;
    for(i=0;i<vs.size();i++)
    {
        for(int j=0;j<dictionary.size();j++)
        {
            if(dictionary[j].compare(vs[i])==0)
            {
                cout<<"\n Word found in dictionary !"<<endl;
                cout<< "\n Plain Text is : "<<dictionary[j]<<endl;
                flg = 1;
                break;
            }
        }

        if(flg)
        break;
    }

    if(!flg)
    {
        cout<<"\n Word not found in dictionary !";
        cout<<"\n All possible plain texts are : "<<endl;
        for(int i=0;i<vs.size();i++)
        cout<<vs[i]<<endl;
    }
    return 0;
}
```

Output :

```
D:\WCE_ENGINEERING\BTECH_SEM1\CNS lab>g++ Assignment_2.cpp

D:\WCE_ENGINEERING\BTECH_SEM1\CNS lab>a.exe

**** Crypt Analysis ****

 Enter cipher text : kduvkdo

 Word found in dictionary !

 Plain Text is : harshal

D:\WCE_ENGINEERING\BTECH_SEM1\CNS lab>
```

```
D:\WCE_ENGINEERING\BTECH_SEM1\CNS lab>a.exe

**** Crypt Analysis ****

 Enter cipher text : Ramesh

 Word not found in dictionary !
 All possible plain texts are :
ramesh
qzldrg
oxjbpe
lugymb
hqcuix
clxpds
wfrjxm
pykcqf
hqcuix
yhtlzo
oxjbpe
dmyqet
ramesh
enzrfu
qzldrg
bkwocr
lugymb
udphvk
clxpds
jsewkz
pykcqf
udphvk
yhtlzo
bkwocr
dmyqet

D:\WCE_ENGINEERING\BTECH_SEM1\CNS lab>
```