

PROGRAM-7

WAP to implement Polyalphabetic cipher with key in C++.

```
#include<stdio.h>
#include<string.h>

char pt[40]={'\0'},key[40]={'\0'},ct[40]={'\0'},pta[40]={'\0'},k[40]={'\0'};
int i,j;    // global values

int main()
{
    printf("\nEnter the Plain text:\n");
    gets(pt);

    printf("\nEnter the key:\n");
    gets(k);

    printf("The convergen matrix\n");
    printf("\n  ");
    for(j=97;j<=122;j++)
    {
        printf(" %c",j);
    }

    printf("\n-----\n");
    for(i=97;i<=122;i++)
```

```

{
    printf("%c |",i);
    for(j=97;j<=122;j++)
    {

        if(((i+j))>219)
        {

            printf(" %c",((i+j)-155));
        }
        else
        {
            printf(" %c",((i+j)-129));
        }
    }
    printf("\n");
}

// for keyword
j=0;
for(i=0;i<strlen(pt);i++)
{
    key[i]=k[j];
    if(j==(strlen(k)-1))
    {
        j=0;
    }
    else
    {
        j++;
    }
}

```

```

    }
}
for(i=0;i<(strlen(pt)-1);i++);
k[i]='\0';
printf("\nThe encrypted text is:\n");
// encryption
for(i=0;i<strlen(pt);i++)
{
    if(97<=(int)pt[i] && (int)pt[i]<=122)
    {

        if(((int)pt[i]+(int)key[i])>219)
        {
            ct[i]=(int)pt[i]+(int)key[i]-123;
        }
        else
        {
            ct[i]=(int)pt[i]+(int)key[i]-97;
        }
        printf("%c",(ct[i]-32));
    }
    else
    {
        ct[i]=pt[i];
        printf("%c",pt[i]);
    }
}
// decryption
printf("\n\nDecrypted text is:\n");

```

```

for(i=0;i<strlen(ct);i++)
{
    if(97<=(int)ct[i] && (int)ct[i]<=122)
    {

        if(((int)ct[i]-(int)key[i])<0)
        {
            pta[i]=((int)ct[i]-(int)key[i])+123;
        }
        else
        {
            pta[i]=(int)ct[i]-(int)key[i]+97;
        }
        printf("%c",pta[i]);
    }
    else
    {
        pta[i]=ct[i];
        printf("%c",pta[i]);
    }
}
return 0;
}

```

OUTPUT

Enter the Plain text:

delhi

Enter the key:

k

The convergen matrix

abcdefghijklmnopqrstuvwxyz

a		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
b		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A
c		C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
d		D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
e		E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
f		F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
g		G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
h		H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
i		I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
j		J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
k		K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
l		L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
m		M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
n		N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
o		O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
p		P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
q		Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
r		R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
s		S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
t		T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
u		U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
v		V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
w		W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V

x | XYZABCDEFGHIJKLMNOPQRSTUVWXYZ
y | YZABCDEFGHIJKLMNOPQRSTUVWXYZ
z | ZABCDEFGHIJKLMNOPQRSTUVWXYZ

The encrypted text is:

NOVRS

Decrypted text is:

delhi

Process returned 0 (0x0) execution time : 9.344 s

Press any key to continue.