

Practical – 1

AIM : Write a program to implement Caesar cipher Encryption-Decryption.

PROGRAM :

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

int main()
{
    char message[100],ch;
    int i,key;

    printf("Enter a message to encrypt ==>");

    gets(message);

    printf("Enter key ==> ");

    scanf("%d",&key);

    for(i=0; message[i]!='\0';++i)
    {
        ch=message[i];

        if(ch>='a' && ch<='z')
        {
            ch=ch+key;

            if(ch>'z')
            {
                ch=ch-'z'+'a'-1;
            }

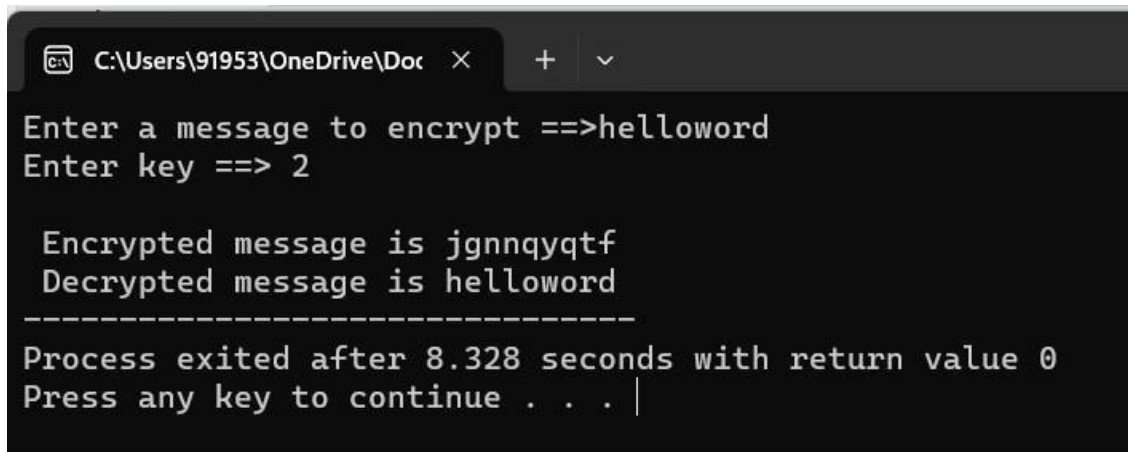
            message[i]=ch;
        }

        else if(ch>='A' && ch<='Z')
```

```
        {
            ch=ch+key;
            if(ch>'Z')
            {
                ch=ch-'Z'+'A'-1;
            }
            message[i]=ch;
        }
    }
    printf("\n Encrypted message is %s",message);
    for(i=0; message[i]!='\0'; i++)
    {
        ch=message[i];
        if(ch>='a' && ch<='z')
        {
            ch=ch-key;
            if(ch<'a')
            {
                ch=ch+'z'-'a'+1;
            }
            message[i]=ch;
        }
        else if(ch>='A' && ch<='Z')
```

```
        {  
            ch=ch-key;  
            if(ch<'A')  
            {  
                ch=ch+'Z'-'A'+1;  
            }  
            message[i]=ch;  
        }  
    }  
    printf("\n Decrypted message is %s",message);  
    return 0;  
}
```

OUTPUT :



```
C:\Users\91953\OneDrive\Doc > Enter a message to encrypt ==>helloworld  
Enter key ==> 2  
  
Encrypted message is jgnnqyqtf  
Decrypted message is helloworld  
-----  
Process exited after 8.328 seconds with return value 0  
Press any key to continue . . . |
```

Practical – 2

AIM : Write a program to implement Mono-alphabetic cipher Encryption.

PROGRAM :

```
#include<stdio.h>

#include<conio.h>

#include<string.h> int

main()

{

    char p[30],k[30],c[30];

    int i,index,len;

    printf("Enter plain Text ==>");

    gets(p);

    len=strlen(p); printf("\n

Enter Key ==>");

    for(i=0;i<26;i++)

    {

        printf("\t");

        printf("%c->",i+97);

        k[i]=getch();

        printf("%c",k[i]);

    }

    for(i=0;i<len;i++)

    {
```

```
        index=p[i]-97;

        c[i]=k[index];

    }

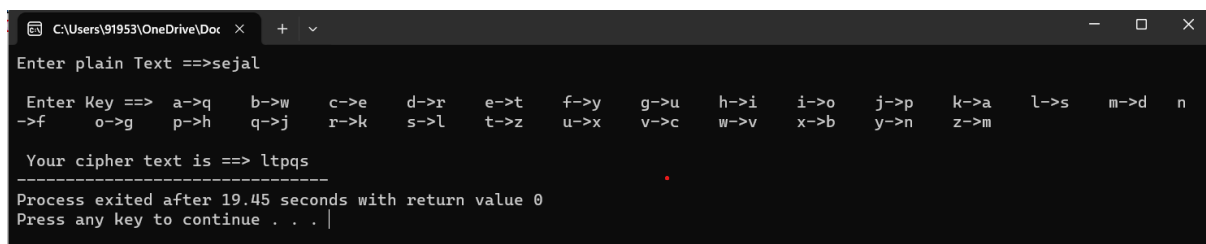
    c[i]=NULL;

    printf("\n\n Your cipher text is ==> %s",c);

    return 0;

}
```

OUTPUT :



```
C:\Users\91953\OneDrive\Doc x + v
Enter plain Text ==>sejal

Enter Key ==> a->q b->w c->e d->r e->t f->y g->u h->i i->o j->p k->a l->s m->d n
->f o->g p->h q->j r->k s->l t->z u->x v->c w->v x->b y->n z->m

Your cipher text is ==> ltpqs
-----
Process exited after 19.45 seconds with return value 0
Press any key to continue . . . |
```

Practical -3

AIM : Write a program to implement Poly-alphabetic cipher Encryption.

PROGRAM :

```
#include<stdio.h>

#include<conio.h>

#include<string.h> int
main()
{
    char p[30],c[30],k[30];

    int i,j=0,len;   printf("Enter
Plain Text==>");

    gets(p);

    printf("Enter Key==>");

    gets(k);

    len=strlen(k);

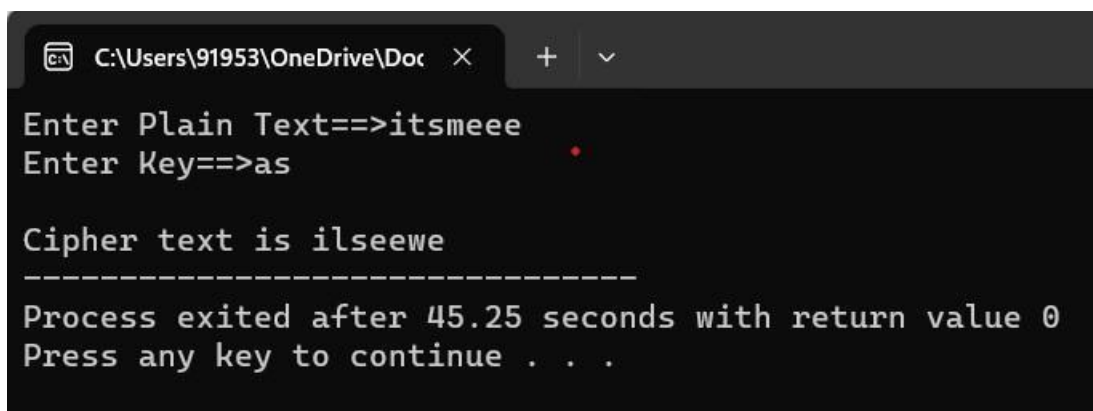
    for(i=0;p[i]!=NULL;i++)
    {
        c[i]=(((p[i]-97)+(k[j])-97)%26)+'a';

        j++;

        if(j==len)
        {
            j=0;
        }
    }
}
```

```
    }  
  
    c[i]=NULL;  
  
    printf("\nCipher text is %s",c);  
  
    return 0;  
  
}
```

OUTPUT :



```
C:\Users\91953\OneDrive\Doc >  
Enter Plain Text==>itsmeee  
Enter Key==>as  
  
Cipher text is ilseewe  
-----  
Process exited after 45.25 seconds with return value 0  
Press any key to continue . . .
```

Practical : 4

AIM : Write a program to implement Hill cipher Encryption.

PROGRAM :

```
#include<conio.h>

#include<stdio.h>

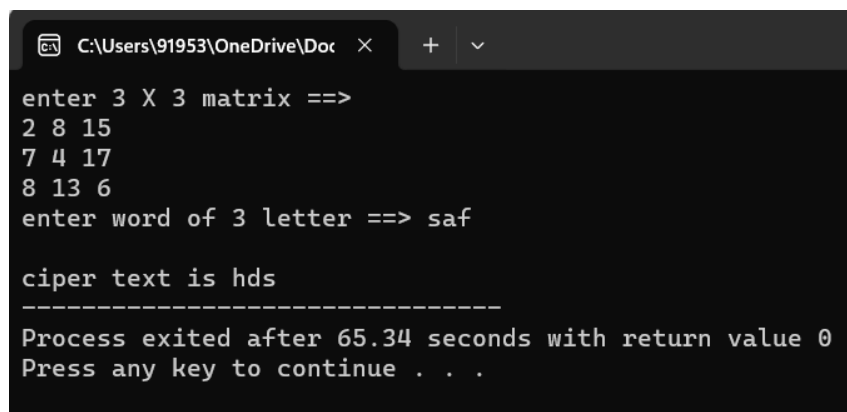
main()
{
    int k[3][3],p1[3][1],c1[3][1],i,j,l;
    char p[5];

    printf("enter 3 X 3 matrix ==> \n");
    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            scanf("%d",&k[i][j]);
        }
    }
    printf("enter word of 3 letter ==> ");
    scanf("%s",p);
    for(i=0;i<3;i++)
    {
        p1[i][0]=p[i]-97;
    }
    for(i=0;i<3;i++)
    {
        for(j=0;j<1;j++)
        {
```



```
        c1[i][j]=0;
    for(l=0;l<3;l++)
    {
        c1[i][j]=c1[i][j]+k[i][l]*p1[l][j];
    }
}
printf("\nciper text is ");
for(i=0;i<3;i++)
{
    for(j=0;j<1;j++)
    {
        printf("%c",(c1[i][j]%26)+97);
    }
}
return 0;
}
```

OUTPUT :



```
C:\Users\91953\OneDrive\Doc  X + v
enter 3 X 3 matrix ==>
2 8 15
7 4 17
8 13 6
enter word of 3 letter ==> saf

ciper text is hds
-----
Process exited after 65.34 seconds with return value 0
Press any key to continue . . .
```

Practical : 5

AIM : Write a program to implement RSA Encryption-Decryption algorithm.

PROGRAM :

```
#include<stdio.h>

#include<conio.h> #include<math.h>

int gcd(int a,int b)
{
    int i,c;
    for(i=1;i<=a&& i<=b;i++)
    {
        if(a%i==0 && b%i==0)
        {
            c = i;
        }
    }
    return c;
}

int main()
{
    int p,q,n,f,e,d,s,msg;
    long enc,dec;

    printf("Enter 1st prime number ==> ");
    scanf("%d",&p);      printf("Enter
```

```
2nd prime number ==>");

scanf("%d",&q);

n = p * q;      f = (p-1)*(q-1);

printf("\nn ==> %d",n); printf("\nf
==> %d",f);      printf("\n\nEnter public key
e ==>");      scanf("%d",&e);

while(e<f)
{
    if(gcd(e,f)==1)
    {
        break;
    }
    else
    {
        e++;
    }
}

do
{
    s=(d*e)%f;
    d++;
}

while(s!=1);

d=d-1;

printf("\npublic key is {%d,%d}",e,n);

printf("\nprivate key is {%d,%d}",d,n);
```

```
printf("\n\nenter your messege ==>");

scanf("%d",&msg);    enc=pow(msg,e);

enc=fmod(enc,n);    dec=pow(enc,d);

dec=fmod(dec,n);

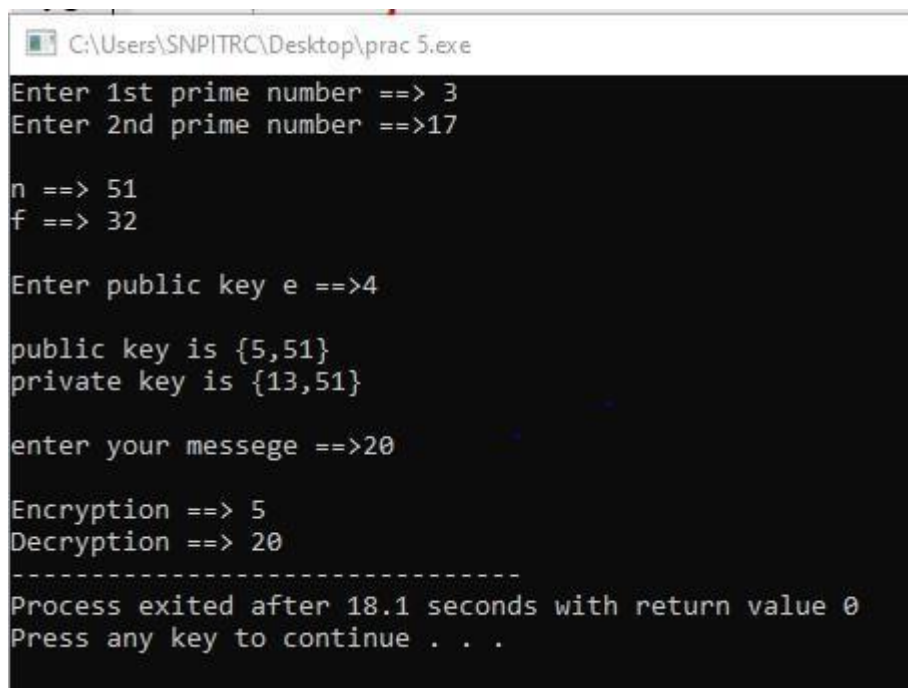
printf("\nEncryption ==> %ld",enc);

printf("\nDecryption ==> %ld",dec);

return 0;

}
```

OUTPUT :



```
C:\Users\SNPITRC\Desktop\prac 5.exe
Enter 1st prime number ==> 3
Enter 2nd prime number ==>17

n ==> 51
f ==> 32

Enter public key e ==>4

public key is {5,51}
private key is {13,51}

enter your messege ==>20

Encryption ==> 5
Decryption ==> 20
-----
Process exited after 18.1 seconds with return value 0
Press any key to continue . . .
```

