14.08.2020

Ex No: 1.A

IMPLE MENTATION OF CAESAR CIPHER

AIM:

To implement the simple substitution technique named Caesar cipher using C language.

DESCRIPTION:

To encrypt a message with a Caesar cipher, each letter in the message is changed using a simple rule: shift by three. Each letter is replaced by the letter three letters ahead in the alphabet. A becomes D, B becomes E, and so on. For the last letters, we can think of the alphabet as a circle and "wrap around". W becomes Z, X becomes A, Y becomes B, and Z becomes C. To change a message back, each letter is replaced by the one three before it.

ALGORITHM:

STEP-1: Read the plain text from the user.

STEP-2: Read the key value from the user.

STEP-3: If the key is positive then encrypt the text by adding the key with each character in the p lain text.

STEP-4: Else subtract the key from the plain text.

STEP-5: Display the cipher text obtained above.

PROGRAM: (Caesar Cipher)

```
#include <stdio.h>
#include <string.h>
#include <ctype.h>
int main()
```

```
{
char plain[10], cipher[10];
int key,i,length;
int result;

printf("\n Enter the plain text:"); scanf("%s", plain);
printf("\n Enter the key value:");
scanf("%d", &key);
printf("\n \n \t  PLAIN TEXt: %s",plain);
printf("\n \n \t  ENCRYPTED TEXT: ");
for(i = 0, length = strlen(plain); i < length; i++)
{
cipher[i]=plain[i] + key;
if (isupper(plain[i]) && (cipher[i] > 'Z'))
cipher[i] = cipher[i] - 26;

if (islower(plain[i]) && (cipher[i] > 'z')) cipher[i] = cipher[i] - 26;
printf("%c", cipher[i]); }

printf("\n \n \t AFTER DECRYPTION : "); for(i=0;i<length;i++)
{

plain[i]=cipher[i]-key; if(isupper(cipher[i])&&(plain[i]<'A'))
plain[i]=plain[i]+26; if(islower(cipher[i])&&(plain[i]<'a'))
plain[i]=plain[i]+26; printf("%c",plain[i]);
}
}
```

OUTPUT:

```
> clang-7 -pthread -lm -o main main.c
> ./main

 Enter the plain text:Geedha

 Enter the key value:3


        PLAIN TEXt: Geedha

        ENCRYPTED TEXT: Jhhgkd

     AFTER DECRYPTION : Geedha>
```

RESULT:

Thus the implementation of Caesar cipher had been executed successfully.