Ex .1 CAESER CIPHER

AIM:

Implement the Caeser Cipher

PROCEDURE:

Step 1:
Design of Caeser Cipher algorithm
Step 2:
Implementation using C or python code
Step 3:

- In Ceaser Cipher each letter in the plaintext is replaced by a letter some fixed number of positions down the alphabet.
- For example, with a left shift of 3, D would be replaced by A, E would become B, and so on.
- The encryption can also be represented using modular arithmetic by first transforming the letters into numbers, according to the scheme, A = 0, B = 1, Z = 25.
- Encryption of a letter x by a shift n can be described mathematically as, En(x) = (x + n) mod26
- Decryption is performed similarly (x)= (x - n) mod26

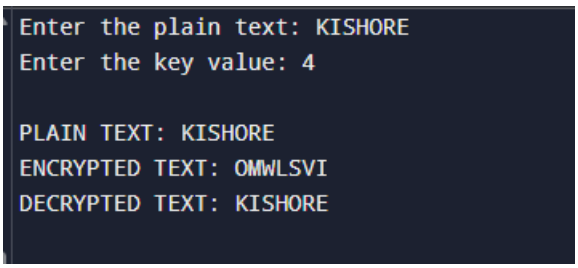
PROGRAM:

```
#include <stdio.h>

#include <string.h>

#include <ctype.h>


int main() {

   char plain[10], cipher[10];

   int key, i, length;
```

```
printf("\n Enter the plain text (max 9 chars): ");
scanf("%9s", plain);

printf("\n Enter the key value: ");
scanf("%d", &key);

length = strlen(plain);

printf("\n\n\t PLAIN TEXT: %s", plain);
printf("\n\n\t ENCRYPTED TEXT: ");

for (i = 0; i < length; i++) {
    cipher[i] = plain[i] + key;


    if (isupper(plain[i]) && (cipher[i] > 'Z'))
        cipher[i] -= 26;
    if (islower(plain[i]) && (cipher[i] > 'z'))
        cipher[i] -= 26;

    printf("%c", cipher[i]);
}

cipher[length] = '\0';
```

```
    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] += 26;
        if (islower(cipher[i]) && (plain[i] < 'a'))
            plain[i] += 26;

        printf("%c", plain[i]);
    }

    printf("\n");

    return 0;
}
```

OUTPUT:



RESULT:

The program is executed successfully