PRACTICAL- 4

Program 1: Write a C program to implement Ceaser Cipher which includes Encryption and Decryption.

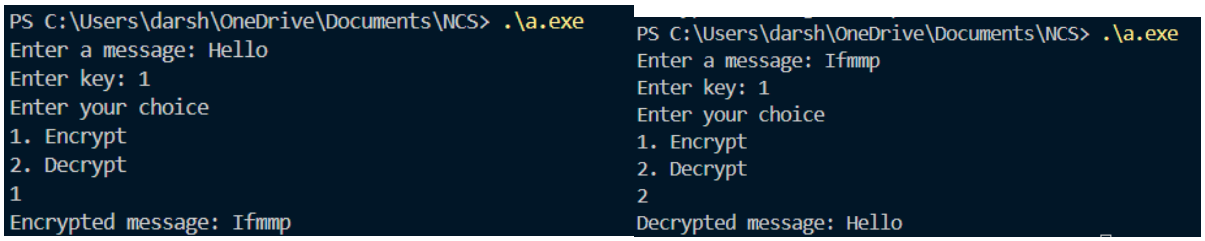
Code:

```
#include <stdio.h>
#include <string.h>
void encrypt(char *message, int key) {
   char ch;
   for(int i = 0; message[i] != '\0'; ++i) {
      ch = message[i];
      if(ch >= 'A' && ch <= 'Z') {
         ch = ch + key;
         if(ch > 'Z')
            ch = ch - 26;
         message[i] = ch;
      }
      else if(ch >= 'a' && ch <= 'z') {
         ch = ch + key;
         if(ch > 'z')
            ch = ch - 26;
         message[i] = ch;
      }   }   }

void decrypt(char *message, int key) {
   char ch;
   for(int i = 0; message[i] != '\0'; ++i) {
      ch = message[i];
      if(ch >= 'A' && ch <= 'Z') {
         ch = ch - key;
         if(ch < 'A')
            ch = ch + 26;
         message[i] = ch;
      }
      else if(ch >= 'a' && ch <= 'z') {
         ch = ch - key;
         if(ch < 'a')
            ch = ch + 26;
         message[i] = ch;
      }   }   }
void main() {
   char message[100];
   int key, choice;
```

```
printf("Enter a message: ");
gets(message);
printf("Enter key: ");
scanf("%d", &key);
printf("Enter your choice\n1. Encrypt\n2. Decrypt\n");
scanf("%d", &choice);
switch(choice) {
   case 1:
      encrypt(message, key);
      printf("Encrypted message: %s\n", message);
      break;
   case 2:
      decrypt(message, key);
      printf("Decrypted message: %s\n", message);
      break;
   default:
      printf("Invalid choice\n");
} }
```

Output:



PRACTICAL- 4

Program 2: Write a C program to implement Brute Force Attack in Ceaser Cipher.

Code:

```
#include <stdio.h>
#include <string.h>
void main() {
   char message[100];
   char decrypted[100];
   int key;
   printf("Enter a message to decrypt: ");
   gets(message);
   printf("Brute force decryption:\n");
   for (key = 1; key <= 26; ++key) {
      strcpy(decrypted, message);
      for (int i = 0; decrypted[i] != '\0'; ++i) {
         char ch = decrypted[i];
         if (ch >= 'A' && ch <= 'Z') {
            ch = ch - key;
            if (ch < 'A')
               ch = ch + 26;
            decrypted[i] = ch;          }
         else if (ch >= 'a' && ch <= 'z') {
            ch = ch - key;
            if (ch < 'a')
               ch = ch + 26;
            decrypted[i] = ch;          }      }
      printf("Key %d: %s\n", key,
   decrypted);    } }
```

Output:

```
PS C:\Users\darsh\OneDrive\Documents\NCS> .\a.exe
Enter a message to decrypt: Hello
Brute force decryption:
Key 1: Gdkkn
Key 2: Fcjjm
Key 3: Ebiil
Key 4: Dahhk
Key 5: Czggj
Key 6: Byffi
Key 7: Axeeh
Key 8: Zwddg
Key 9: Yvccf
Key 10: Xubbe
Key 11: Wtaad
Key 12: Vszzc
Key 13: Uryyb
Key 14: Tqxxa
Key 15: Spwwz
Key 16: Rovvy
Key 17: Qnuux
Key 18: Pmttw
Key 19: Olssv
Key 20: Nkrru
Key 21: Mjqqt
Key 22: Lipps
Key 23: Khoor
Key 24: Jgnnq
Key 25: Ifmmp
Key 26: Hello
```