Program 1: Plain text to Cypher Text

```
#include<stdio.h>
#include<string.h>
#include<ctype.h>
void 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(slower(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(slower(cipher([i])&&(plain[i]<'A'))
plain[i]=plain[i] -26;
if(slower(cipher([i])&&(plain[i]<'a'))
plain[i]=plain[i] -26;
printf("%c",plain[i]);
}
}
```

Program 2:Plain text to Cypher Text

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

void main() {
    char plain[10], cipher[10];
    int key, i, length;

    printf("\nEnter the plain text: ");
    scanf("%s", plain);

    printf("\nEnter the key value: ");
    scanf("%d", &key);
```

```
    printf("\n\n\tPLAIN TEXT: %s", plain);
    printf("\n\n\tENCRYPTED TEXT: ");

    length = strlen(plain);

    // Encryption process
    for (i = 0; i < length; i++) {
        if (isalpha(plain[i])) {
            cipher[i] = plain[i] + key;

            // Handle uppercase letters
            if (isupper(plain[i]) && cipher[i] > 'Z') {
                cipher[i] = cipher[i] - 26;
            }
            // Handle lowercase letters
            if (islower(plain[i]) && cipher[i] > 'z') {
                cipher[i] = cipher[i] - 26;
            }
        } else {
            cipher[i] = plain[i]; // Non-alphabetic characters remain unchanged
        }

        printf("%c", cipher[i]);
    }
    cipher[length] = '\0'; // Null-terminate the cipher text

    printf("\n\n\tAFTER DECRYPTION: ");

    // Decryption process
    for (i = 0; i < length; i++) {
        if (isalpha(cipher[i])) {
            plain[i] = cipher[i] - key;

            // Handle uppercase letters
            if (isupper(cipher[i]) && plain[i] < 'A') {
                plain[i] = plain[i] + 26;
            }
            // Handle lowercase letters
            if (islower(cipher[i]) && plain[i] < 'a') {
                plain[i] = plain[i] + 26;
            }
        } else {
            plain[i] = cipher[i]; // Non-alphabetic characters remain unchanged
        }

        printf("%c", plain[i]);
    }
    plain[length] = '\0'; // Null-terminate the plain text
}
```

exp1.c *expp1.c

```c
#include <stdio.h>
#include <string.h>
#include <ctype.h>
void main() {
    char plain[10], cipher[10];
    int key, i, length;
    printf("\nEnter the plain text: ");
    scanf("%s", plain);
    printf("\nEnter the key value: ");
    scanf("%d", &key);
    printf("\n\n\tPLAIN TEXT: %s", plain);
    printf("\n\n\tENCRYPTED TEXT: ");
    length = strlen(plain);
    // Encryption process
    for (i = 0; i < length; i++) {
        if (isalpha(plain[i])) {
            cipher[i] = plain[i] + key;
            // Handle uppercase letters
            if (isupper(plain[i]) && cipher[i] > 'Z') {
                cipher[i] = cipher[i] - 26;
            }
            // Handle lowercase letters
            if (islower(plain[i]) && cipher[i] > 'z') {
                cipher[i] = cipher[i] - 26;
            }
        } else {
            cipher[i] = plain[i]; // Non-alphabetic characters remain unchanged
        }
```

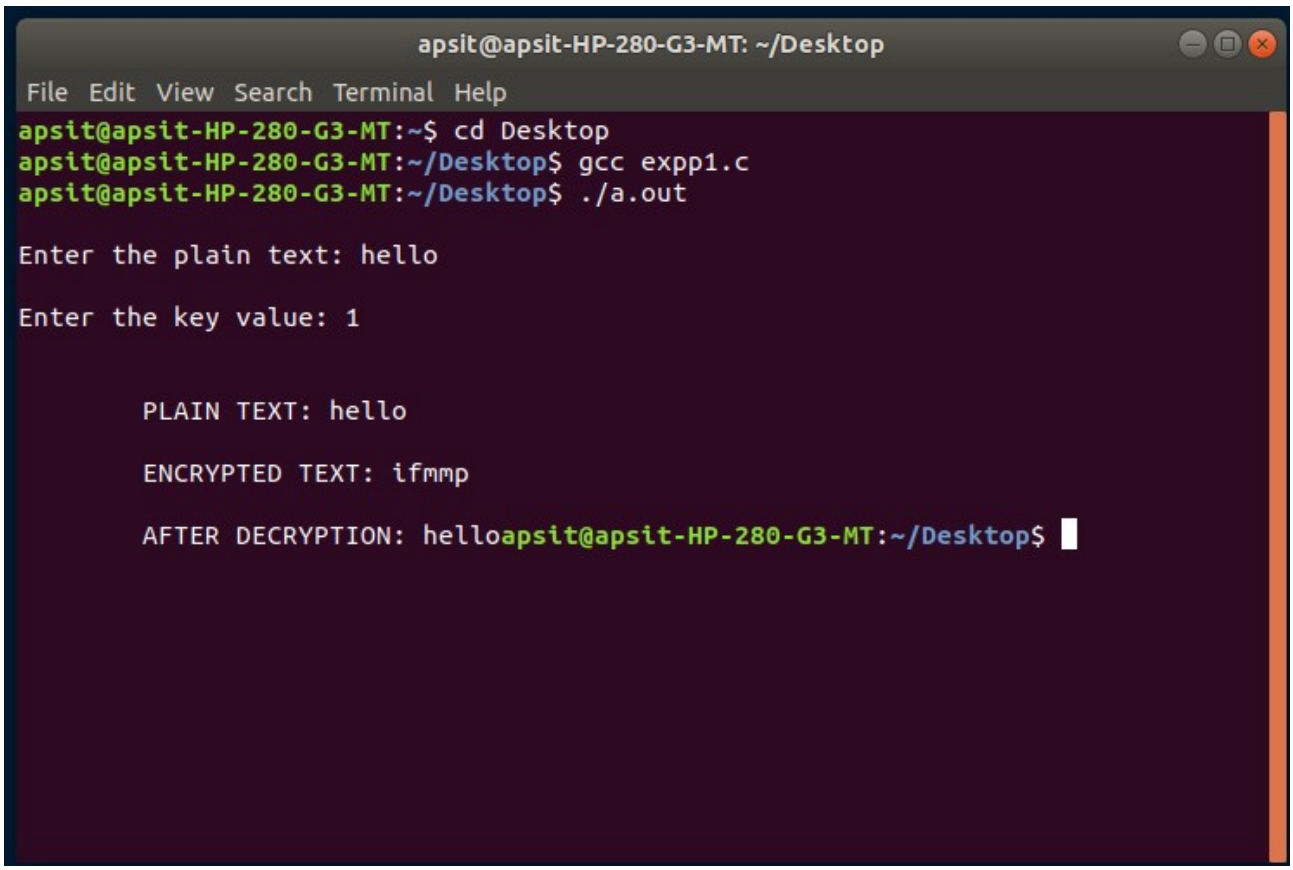
exp1.c *expp1.c

```c
        } else {
            cipher[i] = plain[i]; // Non-alphabetic characters remain unchanged
        }

        printf("%c", cipher[i]);
    }
    cipher[length] = '\0'; // Null-terminate the cipher text
    printf("\n\n\tAFTER DECRYPTION: ");
    // Decryption process
    for (i = 0; i < length; i++) {
        if (isalpha(cipher[i])) {
            plain[i] = cipher[i] - key;

            // Handle uppercase letters
            if (isupper(cipher[i]) && plain[i] < 'A') {
                plain[i] = plain[i] + 26;
            }
            // Handle lowercase letters
            if (islower(cipher[i]) && plain[i] < 'a') {
                plain[i] = plain[i] + 26;
            }
        } else {
            plain[i] = cipher[i]; // Non-alphabetic characters remain unchanged
        }
        printf("%c", plain[i]);
    }
    plain[length] = '\0'; // Null-terminate the plain text
}
```

Output:


apsit@apsit-HP-280-G3-MT: ~/Desktop
File Edit View Search Terminal Help
apsit@apsit-HP-280-G3-MT:~$ cd Desktop
apsit@apsit-HP-280-G3-MT:~/Desktop$ gcc expp1.c
apsit@apsit-HP-280-G3-MT:~/Desktop$ ./a.out
Enter the plain text: hello
Enter the key value: 1
PLAIN TEXT: hello
ENCRYPTED TEXT: ifmmp
AFTER DECRYPTION: helloapsit@apsit-HP-280-G3-MT:~/Desktop$