

Dharmsinh Desai University, Nadiad
Department of Information Technology
DAIE, IT704
B.Tech. IT, Sem: VII

Submitted By

Roll No: IT076

Name: Dishant Modh

**Experiment 1: Write a C/C++/Java program to implement
Ceaser and mono alphabetic cipher.**

Ceaser cipher

1. Code

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

void decrypt(int key, char* decryption, char* message) {
    int len = strlen(message);
    char tmp, i;
    for (i = 0; i < len; i++) {
        if (message[i] >= 'A' && message[i] <= 'Z') {
            tmp = message[i] - key;
            if (tmp < 'A')
                decryption[i] = tmp + 26;
            else
                decryption[i] = tmp;
        }
        else
            decryption[i] = message[i];
    }
    decryption[i] = 0;
}
```

```

        decryption[i] = message[i];
    }
    decryption[i] = 0;
}

int main() {
    int key, choice;
    char message[256], encryption[256], decryption[256], ch;
    printf("Enter key for Ceaser Cipher (1-25): ");
    scanf("%d", &key);
    if (key < 1 || key > 25) {
        printf("Enter key between 1 to 25.\n");
        return 1;
    }
    while (1) {
        printf("\n1) Encryption\n2) Decryption\n3) Exit\nEnter
Following Choice: ");
        scanf("%d", &choice);
        getchar();
        if (choice == 3)
            break;
        else if (choice == 1) {
            printf("Enter message for encryption: ");
            scanf("%[^\n]s", message);
            encrypt(key, encryption, message);
            printf("Plain Text: %s\nCipher Text: %s\n", message,
encryption);
        }
        else if (choice == 2) {
            printf("Enter message for deryption: ");
            scanf("%[^\n]s", message);
            decrypt(key, decryption, message);
            printf("Cipher Text: %s\nPlain Text: %s\n", message,
decryption);
        }
        else
            printf("Enter valid choice.\n");
    }
    return 0;
}

```

2. Output

```
dmx@dmx ~/Sem 7 new/Sem-7/ECES/Experiment 1 <master*>
└─> gcc ceaser.c
dmx@dmx ~/Sem 7 new/Sem-7/ECES/Experiment 1 <master*>
└─> ./a.out
Enter key for Ceaser Cipher (1-25): 6

1) Encryption
2) Decryption
3) Exit
Enter Following Choice: 1
Enter message for encryption: DISHANT
Plain Text: DISHANT
Cipher Text: JOYNGTZ

1) Encryption
2) Decryption
3) Exit
Enter Following Choice: 2
Enter message for deryption: JOYNGTZ
Cipher Text: JOYNGTZ
Plain Text: DISHANT
```

mono alphabetic cipher.

1. Code

```
#include<iostream>
#include<string.h>
#include<stdlib.h>
using namespace std;
string encryptionMessage(string Msg)
{
    string CTxt = "";
    int a = 3;
    int b = 6;
    for (int i = 0; i < Msg.length(); i++)
    {
        CTxt = CTxt + (char) (((a * Msg[i]) + b) % 26) + 65);
    }
}
```

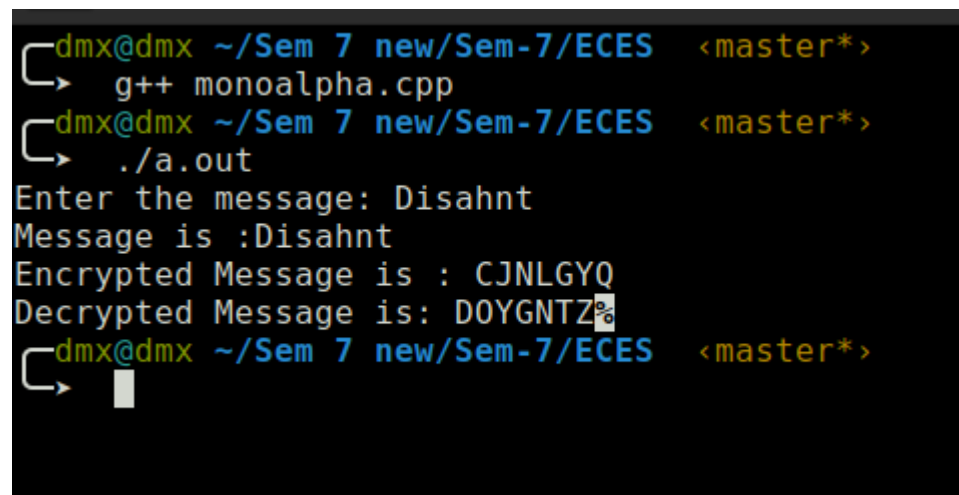
```
    return CTxt;
}
```

```
string decryptionMessage(string CTxt)
{
    string Msg = "";
    int a = 3;
    int b = 6;
    int a_inv = 0;
    int flag = 0;
    for (int i = 0; i < 26; i++)
    {
        flag = (a * i) % 26;
        if (flag == 1)
        {
            a_inv = i;
        }
    }
    for (int i = 0; i < CTxt.length(); i++)
    {
        Msg = Msg + (char) (((a_inv * ((CTxt[i] - b)) % 26)) + 65);
    }
    return Msg;
}
```

```
int main(int argc, char **argv)
{
    cout << "Enter the message: ";
    string message;
    cin >> message;
    cout << "Message is : " << message;
    cout << "\nEncrypted Message is : " << encryptionMessage(message);
}
```

```
    cout << "\nDecrypted Message is: " <<  
    decryptionMessage(encryptionMessage(message));  
}
```

2. Output



```
dmx@dmx ~/Sem 7 new/Sem-7/ECES <master*>  
➤ g++ monoalpha.cpp  
dmx@dmx ~/Sem 7 new/Sem-7/ECES <master*>  
➤ ./a.out  
Enter the message: Disahnt  
Message is :Disahnt  
Encrypted Message is : CJNLGYQ  
Decrypted Message is: DOYGNTZ%  
dmx@dmx ~/Sem 7 new/Sem-7/ECES <master*>  
➤
```