

DM Project Report

Title: Caesar Cipher

Encryption and

Decryption

➤ GROUP MEMBERS:

- MUHAMMAD KASHIF 11762
- FAHAD IMRAN 13018
- WAHEED MANZOR AFRIDI 11723

➤ Class ID

- 108940

➤ DISCRIPTION:

Encryption

Encryption is the process by which a readable message is converted to an unreadable form to prevent unauthorized parties from reading it.. The original message is called the plaintext message.

We are using Caesar Cipher Method to encrypt the messages. In this Method a code number is given through which the letters are changed for example a given number is 4 and the plain text is “Maths” than using Caesar Cipher Method, Every character will be changed with the next 4th character.

Equation

$$En(x) = (x + n) \bmod 26$$

Where X is Serial number of character.

And n is Code number (number of jump)

Serial Number	Character	Serial Number	Character
0	A	13	N
1	B	14	O
2	C	15	P
3	D	16	Q
4	E	17	R
5	F	18	S
6	G	19	T
7	H	20	U
8	I	21	V
9	J	22	W
10	K	23	X
11	L	24	Y
12	M	25	Z

Code

```
private string Encryption(string txt,int key)
```

```

{
    string plainCapital = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
    string plainSmall = "abcdefghijklmnopqrstuvwxyz ";
    this.shift = key;
    string cipher = "";
    char space = ' ';
    for (int i = 0; i < txt.Length; i++)
    {
        if(char.IsUpper(txt[i]))
        {
            for (int j = 0; j < plainCapital.Length; j++)
            {
                if (txt[i] == plainCapital[j])
                {
                    cipher = cipher + plainCapital[(j + shift) % 26];
                }
            }
        }
        else if (txt[i] == space)
        {
            cipher = cipher + " ";
        }
        else
        {
            for (int j = 0; j < plainSmall.Length; j++)
            {
                if (txt[i] == plainSmall[j])
                {
                    cipher = cipher + plainSmall[(j + shift) % 26];
                }
            }
        }
    }
    return cipher;
}

```

Decryption

Decryption is the process of converting an encrypted message back to its original (readable) format. The original message is called the plaintext message.

In Decryption we are also using Caesar Cipher Method to decrypt the messages. In this Method a code number is given through which the letters are changed for example a given number is 4 and the plain text is “Maths” than

using Caesar Cipher Method, Every character will be changed with the previous 4th character.

Equation

$$En(x) = (x - n) \bmod 26$$

Where X is Serial number of character.

And n is Code number (number of jump)

Serial Number	Character	Serial Number	Character
0	A	13	N
1	B	14	O
2	C	15	P
3	D	16	Q
4	E	17	R
5	F	18	S
6	G	19	T
7	H	20	U
8	I	21	V
9	J	22	W
10	K	23	X
11	L	24	Y
12	M	25	Z

Code

```
private string Decryption(string txt)
{
    string plainCapital = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
    string plainSmall = "abcdefghijklmnopqrstuvwxyz";
    string CipherDec = "";
    char space = ' ';
    for (int i = 0; i < txt.Length; i++)
    {
        if (char.IsUpper(txt[i]))
        {
            for (int j = 0; j < plainCapital.Length; j++)
            {
                if (txt[i] == plainCapital[j])
                {
                    if (j >= shift)
                    {
                        CipherDec = CipherDec + plainCapital[(j - shift) % 26];
                    }
                    else
                    {

```

```

        int NonNegativeIndex = ((shift-j) % 26);
        CipherDec = CipherDec + plainCapital[26-
NonNegativeIndex];
    }
}
}
else if (txt[i] == space)
{
    CipherDec = CipherDec + " ";
}
else
{
    for (int j = 0; j < plainSmall.Length; j++)
    {
        if (txt[i] == plainSmall[j])
        {
            if (j >= shift)
            {
                CipherDec = CipherDec + plainSmall[(j - shift) % 26];
            }
            else
            {
                int NonNegativeIndex = ((shift - j) % 26);
                CipherDec = CipherDec + plainSmall[26 -
NonNegativeIndex];
            }
        }
    }
}
return CipherDec;
}

```

ScreenShots

Simple

The screenshot shows a Windows application window titled "Form1". The window has a standard Windows title bar with minimize, maximize, and close buttons. The main content area has a dark blue header bar with the text "CIPHER ENCRYPTION/DECRYPTION" in yellow. Below the header, the text "Technique Caesar Cipher" is displayed in yellow. The interface is divided into three main sections: "Message (PLAIN TEXT)", "Encrypted", and "Decrypted", each with a large white text area. Below the "Message (PLAIN TEXT)" section, there is a label "CODE :" followed by a small white input field. To the right of the input field, there are four buttons arranged in a 2x2 grid: "Encrypt" and "Decrypt" in the top row, and "CLEAR" and "EXIT" in the bottom row. All buttons are blue with yellow text.

Message (PLAIN TEXT)	Encrypted	Decrypted

CODE :

Encrypt Decrypt

CLEAR EXIT

Encryption

Form1

CIPHER ENCRYPTION/DECRYPTION

Technique Caesar Cipher

Message (PLAIN TEXT)	Encrypted	Decrypted
encryption	irgvctxmsr	

CODE : 4

Encrypt Decrypt

CLEAR EXIT

Decryption

Form1

CIPHER ENCRYPTION/DECRYPTION

Technique Caesar Cipher

Message (PLAIN TEXT)	Encrypted	Decrypted
encryption	irgvctxmsr	encryption

CODE : 4

Encrypt Decrypt

CLEAR EXIT