Caesar cipher Technique:-

Encrypt the following message using caesar cipher with key 3.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M	N

14	15	16	17	18	19	20	21	22	23	24	25
O	P	Q	R	S	T	U	V	W	X	Y	Z

(1) Hello world

H :- $C = (P + 3) \bmod 26$

$= (7 + 3) \bmod 26$

$= 10 \bmod 26$

$= 10 = K$

e :- $C = (P + 3) \bmod 26$

$= (4 + 3) \bmod 26$

$= 7 \bmod 26$

$= 7 = H$

l :- $C = (P + 3) \bmod 26$

$= (11 + 3) \bmod 26$

$= 14 \bmod 26$

$= 14 = O$

l :- $C = (P + 3) \bmod 26$

$= (11 + 3) \bmod 26$

$= 14 \bmod 26$

$= 14 = O$

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H :- $C = (P+3) \bmod 26$
$= (14+3) \bmod 26$
$= 17 \bmod 26$
$= 17 = r$

W :- $C = (P+3) \bmod 26$
$= (22+3) \bmod 26$
$= 25 \bmod 26$
$= 25 = z$

O :- $C = (P+3) \bmod 26$
$= (14+3) \bmod 26$
$= (17 \bmod 26)$
$= 17 = r$

R :- $C = (P+3) \bmod 26$
$= (17+3) \bmod 26$
$= 20 \bmod 26$
$= 20 = U$

L :- $C = (P+3) \bmod 26$
$= (11+3) \bmod 26$
$= 14 \bmod 26$
$= 14 = O$

D :- $C = (P+3) \bmod 26$
$= (3+3) \bmod 26$
$= 6 \bmod 26$
$= 6 = G$

plain text :- Hello World

cipher text :- khoor zruog

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(2.) Dayshan university

D :- C = (P + 3) mod 26
= (3 + 3) mod 26
= 6 mod 26
= 6 = G

A :- C = (P + 3) mod 26
= (0 + 3) mod 26
= 3 mod 26
= 3 = D

Y :- C = (P + 3) mod 26
= (17 + 3) mod 26
= 20 mod 26
= 20 = U

S :- C = (P + 3) mod 26
= (18 + 3) mod 26
= 21 mod 26
= 21 = V

H :- C = (P + 3) mod 26
= (7 + 3) mod 26
= 10 mod 26
= 10 = K

A :- C = (P + 3) mod 26
= (0 + 3) mod 26
= 3 mod 26
= 3 = D

N :- C = (P + 3) mod 26
= (13 + 3) mod 26
= 16 mod 26
= 16 = Q

V :- C = (P + 3) mod 26
= (20 + 3) mod 26
= 23 mod 26
= 23 = X

n :- C = (P + 3) mod 26
= (13 + 3) mod 26
= 16 mod 26
= 16 = Q

i :- C = (P + 3) mod 26
= (8 + 3) mod 26
= 11 mod 26
= 11 = L

V :- C = (P + 3) mod 26
= (21 + 3) mod 26
= 24 mod 26
= 24 = Y

e :- C = (P + 3) mod 26
= (4 + 3) mod 26
= 7 mod 26
= 7 = H

q :- C = (P + 3) mod 26
= (17 + 3) mod 26

= 20 mod 26
= 20 = U

s :- C = (P + 3) mod 26
= (18 + 3) mod 26
= 21 mod 26
= 21 = V

i :- C = (P + 3) mod 26
= (8 + 3) mod 26
= 11 mod 26
= 11 = L

t :- C = (P + 3) mod 26
= (19 + 3) mod 26
= 21 mod 26
= 21 = V

y :- C = (P + 3) mod 26
= (24 + 3) mod 26
= 27 mod 26
= 1 = b

plaintext :- darshan university
ciphertext :- GDUVKDQXQLYHUVLVb

(3.) GOOD morning :-

G :- C = (P+3) mod 26
= (6+3) mod 26
= 9 mod 26
= 9 = J

O :- C = (P+3) mod 26
= (14+3) mod 26
= (17+3) mod 26
= ~~39~~ mod 26
= ~~20~~ 17 = ~~T~~ R

O :- C = (P+3) mod 26
= (14+3) mod 26
= 17 mod 26
= 17 = R

D :- C = (P+3) mod 26
= (3+3) mod 26
= 6 mod 26
= 6 = G

M :- C = (P+3) mod 26
= (12+3) mod 26
= 15 mod 26
= 15 = P

O :- C = (P+3) mod 26
= (14+3) mod 26
= 17 mod 26
= 17 = R

R :- C = (P+3) mod 26
= (17+3) mod 26
= 20 mod 26
= 20 = U

n :- C = (P+3) mod 26
= (13+3) mod 26
= 16 mod 26
= 16 = Q

i :- C = (P+3) mod 26
= (8+3) mod 26
= 11 mod 26
= 11 = L

n :- C = (P+3) mod 26
= (13+3) mod 26
= 16 mod 26
= 16 = Q

J :- C = (P+3) mod 26.
= (6+3) mod 26
= 9 mod 26
= 9 = J

plaintext :- GOOD morning
ciphertext :- JRRG PRUQLQJ

(4) Surgical Strike

s :- C = (P+3) mod 26
= (18+3) mod 26
= 21 mod 26
= 21 = V

a :- C = (P+3) mod 26
= (20+3) mod 26
= 23 mod 26
= 23 = X

r : C = (P+3) mod 26
= (17+3) mod 26
= 20 mod 26
= 20 = U

g : C = (P+3) mod 26
= (6+3) mod 26
= 9 mod 26
= 9 = J

i :- C = (P+3) mod 26
= (8+3) mod 26
= 11 mod 26
= 11 = L

c :- C = (P+3) mod 26
= (2+3) mod 26
= 5 mod 26
= 5 = F

a:- C = (P + 3) mod 26
= (0 + 3) mod 26
= 3 mod 26
= 3 = D

d:- C = (P + 3) mod 26
= (11 + 3) mod 26
= 14 mod 26
= 14 = O

5:- C = (P + 3) mod 26
= (18 + 3) mod 26
= 21 mod 26
= 21 = V

t:- C = (P + 3) mod 26
= (19 + 3) mod 26
= 22 mod 26
= 22 = W

y:- C = (P + 3) mod 26
= (17 + 3) mod 26
= 20 mod 26
= 20 = U

i:- C = (P + 3) mod 26
= (8 + 3) mod 26
= 11 mod 26
= 11 = L

K :- C = (P+3) mod 26
= (10+3) mod 26
= 13 mod 26
= 13 = N

E :- C = (P+3) mod 26
= (4+3) mod 26
= 7 mod 26
= 7 = H

plaintext :- surgical strike
ciphertext :- VXUJLFDO VWULNH

(5) Test this process

Encryption :-

T :- C = (P+3) mod 26
= (19+3) mod 26
= 22 mod 26
= 22 = W

E :- C = (P+3) mod 26
= (4+3) mod 26
= 7 mod 26
= 7 = H

S :- C = (P+3) mod 26
= (18+3) mod 26
= 21 mod 26
= 21 = V

t :- C = (p+3) mod 26
= (19+3) mod 26
= 22 mod 26
= 22 = W

t :- C = (t+3) mod 26
= (19+3) mod 26
= 22 mod 26
= 22 = W

h :- C = (p+3) mod 26
= (7+3) mod 26
= 10 mod 26
= 10 = K

i :- C = (p+3) mod 26
= (8+3) mod 26
= 11 mod 26
= 11 = L

s :- C = (p+3) mod 26
= (18+3) mod 26
= 21 mod 26
= 21 = V

p :- C = (p+3) mod 26
= (15+3) mod 26
= 18 mod 26
= 18 = S

q :- C = (p+3) mod 26

= (17 + 3) mod 26
= 20 mod 26
= 20 = U

O :- C = (P + 3) mod 26
= (14 + 3) mod 26
= 17 mod 26
= 17 = R

C :- C = (P + 3) mod 26
= (2 + 3) mod 26
= 5 mod 26
= 5 = F

E :- C = (P + 3) mod 26
= (4 + 3) mod 26
= 7 mod 26
= 7 = H

S :- C = (P + 3) mod 26
= (18 + 3) mod 26
= 21 mod 26
= 21 = V

S :- C = (P + 3) mod 26
= (18 + 3) mod 26
= 21 mod 26
= 21 = V

Plain text :- Test this process
cipher text :- WHVW WKLV SURFHVV

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decryption :-

cipher text :- WHVW WKLV SURFHVV

W :- $p = (c-3) \bmod 26$
$= (22-3) \bmod 26$
$= 19 \bmod 26$
$= 19 = T$

H :- $p = (c-3) \bmod 26$
$= (7-3) \bmod 26$
$= 4 \bmod 26$
$= 4 = e$

V :- $p = (c-3) \bmod 26$
$= (21-3) \bmod 26$
$= 18 \bmod 26$
$= 18 = s$

W :- $p = (c-3) \bmod 26$
$= (22-3) \bmod 26$
$= 19 \bmod 26$
$= 19 = T$

W :- $p = (c-3) \bmod 26$
$= (22-3) \bmod 26$
$= 19 \bmod 26$
$= 19 = T$

K :- $p = (c-3) \bmod 26$
$= (10-3) \bmod 26$

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$= 7 \bmod 26$

$= 7 = h$

L :- $p = (c-3) \bmod 26$

$= (11-3) \bmod 26$

$= 8 \bmod 26$

$= 8 = i$

V :- $p = (c-3) \bmod 26$

$= (21-3) \bmod 26$

$= 18 \bmod 26$

$= 18 = s$

S :- $p = (c-3) \bmod 26$

$= (18-3) \bmod 26$

$= 15 \bmod 26$

$= 15 = p$

U :- $p = (c-3) \bmod 26$

$= (20-3) \bmod 26$

$= 17 \bmod 26$

$= 17 = r$

R :- $p = (c-3) \bmod 26$

$= (17-3) \bmod 26$

$= 14 \bmod 26$

$= 14 = o$

F :- $p = (c-3) \bmod 26$

$= (5-3) \bmod 26$

$= 2 \bmod 26$

$= 2 = c$

H :- $p = (c-3) \bmod 26$
$= (7-3) \bmod 26$
$= 4 \bmod 26$
$= 4 = e$

V :- $p = (c-3) \bmod 26$
$= (21-3) \bmod 26$
$= 18 \bmod 26$
$= 18 = s$

V :- $p = (c-3) \bmod 26$
$= (21-3) \bmod 26$
$= 18 \bmod 26$
$= 18 = s$

ciphey text :- WHVW WKLV SURFHVV
plain text :- Test this Process.