
CRYPTOGRAPHY & NETWORK SECURITY

SYMMETRIC ENCRYPTION

Transposition Techniques -
Route cipher

ROUTE CIPHER

- Plaintext is written as a grid of a particular size.
- Then read off using a predetermined pattern called “route”.
- This pattern is the key used in Route cipher.
- The size of grid is also passed with the key.

- eg:- Let P = GIVETHEMONEY
then write it in a form of grid.

G	I	V	E
T	H	E	M
O	N	E	Y

or

G	I
V	E
T	H
E	M
O	N
E	Y

ENCRYPTION

eg:- Let P = GIVETHEMONEY

then write it in a form of grid

G	I	V	E
T	H	E	M
O	N	E	Y

or

G	I
V	E
T	H
E	M
O	N
E	Y

let key be the pattern “Read from right to left from top right corner”

Then encrypted text, C_1 = EVIGMEHTYENO

C_2 = IGEVHTMENOYE

DECRYPTION

eg:- So C= EVIGMEHTYENO

and key is the pattern “Read from right to left from top right corner” & size =3x4

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T	H	E	M
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So corresponding P = GIVETHEMONEY

ENCRYPTION

eg:- Let P = GIVETHEMONEY
then write it in a form of grid

G	I	V	E
T	H	E	M
O	N	E	Y

let key be “Read in zigzag manner starting from bottom left corner in bottom up fashion”

ENCRYPTION

eg:- Let P = GIVETHEMONEY
then write it in a form of grid

G	I	V	E
T	H	E	M
O	N	E	Y

let key be “Read in zigzag manner starting from bottom left corner in bottom up fashion”

Then cipher = OTGIHNEEVEMY

DECRYPTION

eg:- So C= OTGIHNEEVEMY

and key is “Read in zigzag manner starting from bottom left corner in bottom up fashion”
& size = 3x4

DECRYPTION

eg:- So C= OTGIHNEEVEMY

and key is “Read in zigzag manner starting from bottom left corner in bottom up fashion”
& size =3x4

O			

T			
O			

G			
T			
O			

DECRYPTION

eg:- So C= GTOIHNVEEEMY

and key is “Read in zigzag manner starting from bottom left corner in bottom up fashion”
& size = 3x4

G	I		
T			
O			

G	I		
T	H		
O			

G	I		
T	H		
O	N		

DECRYPTION

eg:- So C= GTOIHNVEEEMY

and key is “Read in zigzag manner starting from bottom left corner in bottom up fashion”

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G	I	V	
T	H	E	
O	N	E	

DECRYPTION

eg:- So C= GTOIHNVEEEMY

and key is “Read in zigzag manner starting from bottom left corner in bottom up fashion”

& size =3x4

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T	H	E	M
O	N	E	Y

So the plain text can be read in row by row.

P = GIVETHEMONEY



THANK YOU

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