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Laporan Praktikum Kriptografi 2

Soal : Mengenkripsi plaintext dan mendekripsikan ciphertextnya menggunakan affine cipher.

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

Kalimat : SAYA SYAKIRA RAHMA

Affine Cipher

a = 3; b = 5;

3^{-1} mod 26 = 9 karena,

gcd(3, 5)

26 = 3.8 + 2

3 = 2.1 + 1

2 = 1.2 + 0

t_0 = 0, t_1 = 1

$t_2 = (t_0 - (q_1.t_1)) \bmod 26 = (0 - (8.1)) \bmod 26 = 18$

$t_3 = (t_1 - (q_2.t_2)) \bmod 26 = (1 - (1.18)) \bmod 26 = \mathbf{9}$

Jadi, $3^{-1} = 9$

Enkripsi → $E_K(x) = (ax + b) \bmod 26$	**Deskripsi → $D_K(y) = a^{-1} (y - b) \bmod 26$**
• S = 18 E(S) = (3.18 + 5) mod 26 = 59 mod 26 = 7 = H • A = 0 E(A) = (3.0 + 5) mod 26 = 5 mod 26 = 5 = F • Y = 24 E(Y) = (3.24 + 5) mod 26	• H = 7 E(H) = (9(7 - 5) mod 26 = 18 mod 26 = 18 = S • F = 5 E(F) = (9(5 - 5) mod 26 = 0 mod 26 = 0 = A • Z = 25 E(Z) = (9(25 - 5) mod 26

= 77 mod 26
= 25 = Z

- A = 0
  E(A) = (3.0 + 5) mod 26
  = 5 mod 26
  = 5 = F
- S = 18
  E(S) = (3.18 + 5) mod 26
  = 59 mod 26
  = 7 = H
- Y = 24
  E(Y) = (3.24 + 5) mod 26
  = 77 mod 26
  = 25 = Z
- A = 0
  E(A) = (3.0 + 5) mod 26
  = 5 mod 26
  = 5 = F
- K = 10
  E(K) = (3.10 + 5) mod 26
  = 35 mod 26
  = 9 = J
- I = 8
  E(I) = (3.8 + 5) mod 26
  = 29 mod 26
  = 3 = D
- R = 17
  E(R) = (3.17 + 5) mod 26
  = 56 mod 26
  = 4 = E
- A = 0
  E(A) = (3.0 + 5) mod 26
  = 5 mod 26
  = 5 = F
- R = 17
  E(R) = (3.17 + 5) mod 26
  = 56 mod 26
  = 4 = E
- A = 0
  E(A) = (3.0 + 5) mod 26
  = 5 mod 26
  = 5 = F
- H = 7
  E(H) = (3.7 + 5) mod 26
  = 26 mod 26
  = 0 = A
- M = 12

= 180 mod 26
= 24 = Y

- F = 5
  E(F) = (9(5 - 5) mod 26
  = 0 mod 26
  = 0 = A
- H = 7
  E(H) = (9(7 - 5) mod 26
  = 18 mod 26
  = 18 = S
- Z = 25
  E(Z) = (9(25 - 5) mod 26
  = 180 mod 26
  = 24 = Y
- F = 5
  E(F) = (9(5 - 5) mod 26
  = 0 mod 26
  = 0 = A
- J = 9
  E(J) = (9(9 - 5) mod 26
  = 36 mod 26
  = 10 = K
- D = 3
  E(D) = (9(3 - 5) mod 26
  = -18 mod 26
  = 8 = I
- E = 4
  E(E) = (9(4 - 5) mod 26
  = -9 mod 26
  = 17 = R
- F = 5
  E(F) = (9(5 - 5) mod 26
  = 0 mod 26
  = 0 = A
- E = 4
  E(E) = (9(4 - 5) mod 26
  = -9 mod 26
  = 17 = R
- F = 5
  E(F) = (9(5 - 5) mod 26
  = 0 mod 26
  = 0 = A
- A = 0
  E(A) = (9(0 - 5) mod 26
  = -45 mod 26
  = 7 = H
- P = 15

E(M) = (3.12 + 5) mod 26 = 41 mod 26 = 15 = P • A = 0 E(A) = (3.0 + 5) mod 26 = 5 mod 26 = 5 = F	E(P) = (9(15 - 5) mod 26 = 90 mod 26 = 12 = M • F = 5 E(F) = (9(5 - 5) mod 26 = 0 mod 26 = 0 = A
SAYASYAKIRARAHMA = HFZFHZFJDEFEFAPF	**HFZFHZFJDEFEFAPF = SAYASYAKIRARAHMA**

Link Repo : https://github.com/syakirarahma/shiftcipher