Nama : Farhan Maulana Alief

NPM : 140810190073

Kelas : A

Tugas Praktikum

Kriptografi

- **Enskripsi (Affine Cipher)**

  Plainteks : AKUBERMAINFUTSAL

  Key : (3,4)

  Rumus :

$E(x) = (\alpha \times x) + \beta \ mod\ 26$

A	K	U	B	E	R	M	A	I	N	F	U	T	S	A	L
0	10	20	1	4	17	12	0	8	13	5	20	19	18	0	11

Enkripsi :

A = E(0) = $((3 \times 0) + 4)\ mod\ 26$ = 4 mod 26 = 4

K = E(10) = $((3 \times 10) + 4)\ mod\ 26$ = 34 mod 26 = 8

U = E(20) = $((3 \times 20) + 4)\ mod\ 26$ = 64 mod 26 = 12

B = E(1) = $((3 \times 1) + 4)\ mod\ 26$ = 7 mod 26 = 7

E = E(4) = $((3 \times 4) + 4)\ mod\ 26$ = 16 mod 26 = 16

R = E(17) = $((3 \times 17) + 4)\ mod\ 26$ = 55 mod 26 = 3

M = E(13) = $((3 \times 12) + 4)\ mod\ 26$ = 40 mod 26 = 14

A = E(0) = $((3 \times 0) + 4)\ mod\ 26$ = 4 mod 26 = 4

I = E(8) = $((3 \times 8) + 4)\ mod\ 26$ = 28 mod 26 = 2

N = E(13) = $((3 \times 13) + 4)\ mod\ 26$ = 43 mod 26 = 17

F = E(5) = $((3 \times 5) + 4)\ mod\ 26$ = 19 mod 26 = 19

U = E(20) = $((3 \times 20) + 4)\ mod\ 26$ = 64 mod 26 = 12

T = E(19) = $((3 \times 19) + 4)\ mod\ 26$ = 61 mod 26 = 9

S = E(18) = $((3 \times 18) + 4)\ mod\ 26$ = 58 mod 26 = 6

A = E(0) = $((3 \times 0) + 4)\ mod\ 26$ = 4 mod 26 = 4

L = E(11) = $((3 \times 11) + 4)\ mod\ 26$ = 37 mod 26 = 11

E	I	M	H	Q	D	O	E	C	R	T	M	J	G	E	L
4	8	12	7	16	3	14	4	2	17	19	12	9	6	4	11

E(x) = EIMHQDOECRTMJGEL

- **Deskripsi (Affine Cipher)**

  Cipherteks : EIMHQDOECRTMJGAL

  Key = (3,4)

  gcd (a,m)

  gcd (3,26)

  26 = 3 * 8 + 2

  3 = 2 * 1 + 1

  2 = 1 * 2 + 0

  $t_0 = 0 , t_1 = 1$

  $t_2 = (t_0 - (q_1 . t_1)) \; mod \; 26$

  = (0 – (8 . 1)) mod 26 = -8 mod 26 = 18

  $t_3 = (t_1 - (q_2 . t_2)) \; mod \; 26$

  = (1 – (1. 18)) mod 26 = -17 mod 26 = 9

  $\alpha^{-1} = 9$

  Deskripsi

  Rumus :

$D(y) = \alpha^{-1}(y - \beta) \; mod \; 26$

E	I	M	H	Q	D	O	E	C	R	T	M	J	G	E	L
4	8	12	7	16	3	14	4	2	17	19	12	9	6	4	11

D(4) = 9 (4 – 4) mod 26 = 0 mod 26 = 0

D(8) = 9 (8 – 4) mod 26 = 36 mod 26 = 10

D(12) = 9 (12 – 4) mod 26 = 72 mod 26 = 20

D(7) = 9 (7 – 4) mod 26 = 27 mod 26 = 1

D(16) = 9 (16 – 4) mod 26 = 108 mod 26 = 4

D(3) = 9 (3 – 4) mod 26 = -9 mod 26 = 17

D(14) = 9 (14 – 4) mod 26 = 90 mod 26 = 12

D(4) = 9 (4 – 4) mod 26 = 0 mod 26 = 0

D(2) = 9 (2 – 4) mod 26 = -18 mod 26 = 8

D(17) = 9 (17 – 4) mod 26 = 117 mod 26 = 13

D(19) = 9 (19 – 4) mod 26 = 135 mod 26 = 5

D(12) = 9 (12 – 4) mod 26 = 72 mod 26 = 20

D(9) = 9 (9 – 4) mod 26 = 45 mod 26 = 19

D(6) = 9 (6 – 4) mod 26 = 18 mod 26 = 18

D(4) = 9 (4 – 4) mod 26 = 0 mod 26 = 0

D(11) = 9 (11 – 4) mod 26 = 63 mod 26 = 11

A	K	U	B	E	R	M	A	I	N	F	U	T	S	A	L
0	10	20	1	4	17	12	0	8	13	5	20	19	18	0	11

D(y) = AKUBERMAINFUTSAL