**Nama: Aliya Sania**

**NPM: 1408102110035**

## Tugas 2

## Praktikum Kriptografi

Enkripsikan nama lengkap anda menggunakan Affine Cipher dan kembalikan menjadi plainteks, a=9 b=[2 digit NPM akhir].

Plaintext: ALIYA SANIA

a = 9, b = 35

**ENKRIPSI**

ALIYA → 0 11 8 24 0

**E(x) = (ax + b) mod 26**

E(0) = (9(0)+35) mod 26 =35 mod 26 =9 → J

E(11) = (9(11)+35) mod 26 =134 mod 26 =4 → E

E(8) = (9(8)+35) mod 26 =107 mod 26 =3 → D

E(24) = (9(24)+35) mod 26 =251 mod 26 =17 → R

E(0) = (9(0)+35) mod 26 =35 mod 26 =9 → J

**ALIYA → E(x) → JEDRJ**

SANIA → 18 0 13 8 0

**E(x) = (ax + b) mod 26**

E(18) = (9(18)+35) mod 26 =197 mod 26 =15 → P

E(0) = (9(0)+35) mod 26 =35 mod 26 =9 → J

E(13) = (9(13)+35) mod 26 =152 mod 26 =22 → W

E(8) = (9(8)+35) mod 26 =107 mod 26 =3 → D

E(0) = (9(0)+35) mod 26 =35 mod 26 =9 → J

**SANIA → E(x) → PJWDJ**

**Hasil Enkripsi: JEDRJ PJWDJ**

**Kembalikan menjadi teks semula**

Mencari $a^{-1}$

GCD (9, 26)

26=92+8

9=81+1

1=11+0

t0=0, t1=1

t2= (0-(21)) mod 26 =-2 mod 26 =24

t3= (1-(124)) mod 26 =-23 mod 26 =3

$a^{-1}$ = **3**

**Deskripsi**

JEDRJ → 9 4 3 17 9

D(y) = $a^{-1}$ (y - b) mod 26

D(9) = (3(9-35)) mod 26 =-78 mod 26 =0 → A

D(4) = (3(4-35)) mod 26 =-93 mod 26 =11 → L

D(3) = (3(3-35)) mod 26 =-96 mod 26 =8 → I

D(17) = (3(17-35)) mod 26 =-54 mod 26 =24 → Y

D(9) = (3(9-35)) mod 26 =-78 mod 26 =0 → A

**JEDRJ → D(x) → ALIYA**

PJWDJ → 15 9 22 3 9

D(y) = $a^{-1}$ (y - b) mod 26

D(15) = (3(15-35)) mod 26 =-60 mod 26 =18 → S

D(9) = (3(9-35)) mod 26 =-78 mod 26 =0 → A

D(22) = (3(22-35)) mod 26 =-39 mod 26 =13 → A

D(3) = (3(3-35)) mod 26 =-96 mod 26 =8 → I

D(9) = (3(9-35)) mod 26 =-78 mod 26 =0 → A

**PJWDJ → D(x) → SANIA**

**Hasil Dekripsi: ALIYA SANIA**