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## Kriptografi

$S = [0, 1, 2, 3, 4, 5, \dots, 251, 252, 253, 254, 255]$

Key: Saputra

### KSA

Iterasi 1:  $S = [0, 1, 2, 3, 4, 5, \dots, 251, 252, 253, 254, 255]$

$i = 0$

$j = 0$

$$j = (j + S[i] + k[i \bmod \text{length}(k)]) \bmod 256$$

$$= (0 + 0 + k[0 \bmod 8] \bmod 256)$$

$$= (0 + k[0] \bmod 256)$$

$$= 0 + 115 \bmod 256$$

$j = 115$

$$\text{Swap } S[i], S[j] = S[0], S[115]$$

$$S = [115, 2, 3, 4, 5, \dots, 112, 113, 114, 0, 116, \dots, 253, 254, 255]$$

Iterasi 2

$i = 1$

$j = 115$

$$j = (j + S[i] + k[i \bmod \text{length}(k)]) \bmod 256$$

$$= (115 + 1 + k[1 \bmod 8] \bmod 256)$$

$$= (116 + k[1] \bmod 256)$$

$$= 116 + 97 \bmod 256$$

$j = 213$

$$\text{Swap } S[i], S[j] = S[1], S[213]$$

$$S = [115, 213, 2, 3, 4, \dots, 113, 114, 0, 116, \dots, 211, 212, 1, 214, \dots, 253, 254, 255]$$

Iterasi 3

$i = 2$

$j = 213$

$$j = (j + S[i] + k[i \bmod \text{length}(k)]) \bmod 256$$

$$= (213 + 2 + k[2 \bmod 8] \bmod 256)$$

$$= (116 + k[2] \bmod 256)$$

$$= 327 \bmod 256$$

$j = 71$





Iterasi 4

$i = 3$  (v)

$j = 71$

$$j = (j + s[i]) + k[i] \bmod \text{length}(k) \bmod 256$$

$$= (71 + 3 + k[3 \bmod 8]) \bmod 256$$

$$= (74 + k[3]) \bmod 256$$

$$= 74 + 117 \bmod 256$$

$$= 191 \bmod 256$$

$j = 191$

$$\text{Swap } s[i], s[j] = s[3], s[191]$$

$s = [115, 213, 71, 191, 4, \dots, 70, 2, 72, 73, \dots, 114, 0, 116, 117, \dots, 190, 3, 192, 193, \dots, 212, 1, 214, 215, \dots, 253, 254, 255]$

Iterasi 5

$i = 4$  (t)

$j = 191$

$$j = (j + s[i] + k[i] \bmod \text{length}(k)) \bmod 256$$

$$= (191 + 4 + k[4 \bmod 8]) \bmod 256$$

$$= (195 + k[4]) \bmod 256$$

$$= 195 + 116 \bmod 256$$

$$= 311 \bmod 256$$

$$= 55$$

$$\text{Swap } s[i], s[j] = s[4], s[55]$$

$s = [115, 213, 71, 191, 55, 85, 6, 7, \dots, 54, 4, 56, 57, \dots, 70, 2, 72, 73, \dots, 114, 0, 116, 117, \dots, 190, 3, 192, 193, \dots, 212, 1, 214, 215, \dots, 253, 254, 255]$

Iterasi 6

$i = 5$  (r)

$j = 55$

$$j = (j + s[i] + (k[i] \bmod \text{length}(k))) \bmod 256$$

$$= (55 + 5 + k[5 \bmod 8]) \bmod 256$$

$$= (60 + k[5]) \bmod 256$$

$$= 60 + 114 \bmod 256$$

$$= 174 \bmod 256$$

$$= 174$$

$$\text{Swap } s[i], s[j] = s[5], s[174]$$

$s = [115, 213, 71, 191, 55, 174, 6, 7, \dots, 54, 4, 56, 57, \dots, 70, 2, 72, 73, \dots, 114, 0, 116, 117, \dots, 173, 5, 175, 176, \dots, 190, 3, 192, 193, \dots, 212, 1, 214, 215, \dots, 253, 254, 255]$





Iterasi 7

$i = 6$  (a)

$j = 174$

$j = (j + s[i] + k[i \bmod \text{length}(k)]) \bmod 256$

$= (174 + 6 + k[6 \bmod 8]) \bmod 256$

$= (180 + k[6]) \bmod 256$

$= 180 + 97 \bmod 256$

$= 277 \bmod 256$

$j = 21$

Swap  $s[i], s[j] = s[6], s[21]$

$S = [15, 213, 71, 191, 55, 174, 21, 7, 8, \dots, 20, 6, 22, 23, \dots, 54, 4, 56, 57, \dots, 70, 2, 72, 73, \dots, 114, 0, 116, 117, \dots, 173, 5, 175, 176, \dots, 190, 3, 192, 193, \dots, 212, 1, 214, 215, \dots, 253, 254, 255]$

Iterasi 8

$i = 7$  (A)

$j = 21$

$j = (j + s[i] + k[i \bmod \text{length}(k)]) \bmod 256$

$= (21 + 7 + k[7 \bmod 8]) \bmod 256$

$= (28 + k[7]) \bmod 256$

$= 28 + 49 \bmod 256$

$j = 77 \bmod 256$

~~Swap~~  $= 77$

Swap  $s[i], s[j] = s[7], s[77]$

$S = [15, 213, 71, 191, 55, 174, 21, 77, 8, \dots, 20, 6, 22, 23, \dots, 54, 4, 56, 57, \dots, 70, 2, 72, 73, \dots, 76, 7, 78, 79, \dots, 114, 0, 116, 117, \dots, 173, 5, 175, 176, \dots, 190, 3, 192, 193, \dots, 212, 1, 214, 215, \dots, 253, 254, 255]$