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Exercise 2

Plain Text = PYTHON

$K = \begin{bmatrix} 7 & 2 \\ 6 & 5 \end{bmatrix}$

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

PYTHON = 15 24 19 7 14 13

Matriks 1 = $\begin{bmatrix} 15 \\ 24 \end{bmatrix}$

Matriks 2 = $\begin{bmatrix} 19 \\ 7 \end{bmatrix}$

Matriks 3 = $\begin{bmatrix} 14 \\ 13 \end{bmatrix}$

Determinan matriks kunci = $\begin{bmatrix} 7 & 2 \\ 6 & 5 \end{bmatrix}$ = (7 x 5) - (2 x 6) = 23 (ganjil)

$$\begin{bmatrix} 7 & 2 \\ 6 & 5 \end{bmatrix}\begin{bmatrix} 15 \\ 24 \end{bmatrix} = \begin{bmatrix} 249 \\ 150 \end{bmatrix} \bmod 26 = \begin{bmatrix} 15 \\ 20 \end{bmatrix} = \begin{bmatrix} P \\ U \end{bmatrix}$$

$$\begin{bmatrix} 7 & 2 \\ 6 & 5 \end{bmatrix}\begin{bmatrix} 19 \\ 7 \end{bmatrix} = \begin{bmatrix} 175 \\ 73 \end{bmatrix} \bmod 26 = \begin{bmatrix} 19 \\ 21 \end{bmatrix} = \begin{bmatrix} T \\ V \end{bmatrix}$$

$$\begin{bmatrix} 7 & 2 \\ 6 & 5 \end{bmatrix}\begin{bmatrix} 14 \\ 13 \end{bmatrix} = \begin{bmatrix} 176 \\ 93 \end{bmatrix} \bmod 26 = \begin{bmatrix} 20 \\ 15 \end{bmatrix} = \begin{bmatrix} U \\ P \end{bmatrix}$$

PYTHON = PUTVUP

Cipher Text = PUTVUP