① Sekvencu 1011010111100 kodirati pravougaonom šemom 3×4.

X=1011,0101,1100

1011 | 1
0101 | 0
1100 | 0
0010

X=1011101010110000010

X=10111010101100000010

Kodirana poruka

② Hemingovim kodom kodirati sekvencu X=1011.

$x_3 x_5 x_6 x_7$

X=1011

$X_1 = x_3 \oplus x_5 \oplus x_7 = 1 \oplus 0 \oplus 1 = 0$

$X_2 = x_3 \oplus x_6 \oplus x_7 = 1 \oplus 1 \oplus 1 = 1$

$X_4 = x_5 \oplus x_6 + x_7 = 0 \oplus 1 \oplus 1 = 0$

X = 0 1 1 0 0 1 1 → kodirana poruka

$x_1\ x_2\ x_3\ x_4\ x_5\ x_6\ x_7$

③ Sekvenca X = 1110010 kodirana je kodom H(7). Dekodirati!

X = 1110010

$$F \cdot X = \begin{bmatrix} 1 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 1 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \\ 1 \\ 0 \\ 0 \\ 1 \\ 0 \end{bmatrix} = \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}$$

šesta pozicija

X = 1100000, x = 1000 dekodirana sekvenca

$1 \oplus 1 = 0$
$0 \oplus 0 = 0$
$0 \oplus 1 = 1$
$1 \oplus 0 = 1$

P_1: $X = (1, 0, 1, 1)$ $\|X\| = \sum_{i=1}^{4} x_i = 1+0+1+1 = 3$

P_2: $X = (0, 1, 0, 1)$ $X \oplus y = (0 \oplus 1, 1 \oplus 1, 0 \oplus 1, 1 \oplus 0)$

$y = (1, 1, 1, 0)$ $X \oplus y = (1, 0, 1, 1)$

$d(x, y) = \sum (x_i + y_i)$

$d(x, y) = 3$