8-bit Single-Error Correcting System

$N = \underline{8},\ M = \underline{4} \geq \log_2 (8 + 4)$

$$X_1 = X_3 \oplus X_5 \oplus X_7 \oplus X_9 \oplus X_{11}$$
$$X_2 = X_3 \oplus X_6 \oplus X_7 \oplus X_{10} \oplus X_{11}$$
$$X_4 = X_5 \oplus X_6 \oplus X_7 \oplus X_{12}$$
$$X_8 = X_9 \oplus X_{10} \oplus X_{11} \oplus X_{12}$$

Shorthand :  (Exclusive-OR)

Code Generator:



