MAKING ANY FUNCTION INTO A REVERSIBLE FUNCTION BY ADDING 1 MORE INPUT.

\[ x \xrightarrow{\oplus} y \rightarrow y \oplus f(x) \]

\[ n = 2 \quad f(x) = x_0 \oplus x_1 \]

\[ U_1 \xrightarrow{y'} = y \oplus f(x_0 \oplus x_1) \]

\[ \text{const.} \quad \delta(x) = 0 \]

\[ U_0 : y' = y \oplus f(x) = y \]

BALANCED \[ f(x) = \oplus \]

\[ y' = y \oplus x \]