The codes \( G^n \) are defined recursively. The initial code \( G^1 \) is defined to be

\[
\begin{bmatrix}
0 & 1 & 1 & 0 \\
0 & 0 & 1 & 1 \\
1 & 0 & 0 & 1 \\
1 & 1 & 0 & 0 \\
\end{bmatrix}
\]

The next two Gray codes produced by this recursive process are

\[
G^n = \begin{cases}
G^{n-1} & \text{if } n > 0 \\
G_1 & \text{if } n = 0
\end{cases}
\]

Equivalent, we have that

\[
G^n = \begin{cases}
G_{n-1} & \text{if } n > 0 \\
G_0 & \text{if } n = 0
\end{cases}
\]

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\]

The binary n-figures and its will be written as a list of 2^n vectors, as follows:

\[
[1^0, 1^0, 1^1, 1^1, 1^1, 1^0, 1^1, 1^1]
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