ELF morphing machine

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Machine memory

The machine has hardcoded n linear transormations on the x-y plane. We denote them as f_i, with $f_i : \mathbb{N}^2 \to \mathbb{N}^2$, with $i = \overline{1, n}$. For security reasons, we don't store the transformation in the machine's memory, instead we consider A_i the real-valued matrix of f_i with respect to the canonical basis in $\mathbb{N}^2$. We store in memory $det(A_i)$ and $Tr(A_i)$. We also store M_i, a modal matrix for A_i, with its eigenvectors arranged from left to right in descending order of their corresponding eigenvalues.

Modus operandi

When inserting an elf into the machine, he or she is mathemagically transformed into a pair $(x, y) \in \mathbb{N}^2$. Then for each $i = \overline{1, n}$ the elf is morphed into $f_i(x, y)$. The previous version of the elf is then stored on the machine's internal x-y plane, at the position of his coordinates.