Puzzle to CNF:

- n^3 variables.
  - $x_{i, j, k}$, row i, column j, number k.
    - k from 0 to n-1 instead of from 1 to n.
- Encode variables.
  - $x_{i, j, k}$ encode into ((i * n) + j) * n + k.
- Each tile only have 1 number ($x_{i, j, 0}$ ~ $x_{i, j, k}$ should have exactly one 1).
  - ($x_{i, j, 0}$ + $x_{i, j, 1}$ + … + $x_{i, j, n-1}$)
  - (~$x_{i, j, k1}$ + ~$x_{i, j, k2}$), 0 <= k1, k2 <= n – 1 and k1 != k2
- Each number occurs only once in each row.
- Each number occurs only once in each column.
- Each number occurs only once in each block.

Run Minisat:

- fork, execl, wait.

Assignment to puzzle:

- If a variable is been set. Decode it and fill the number to the board.