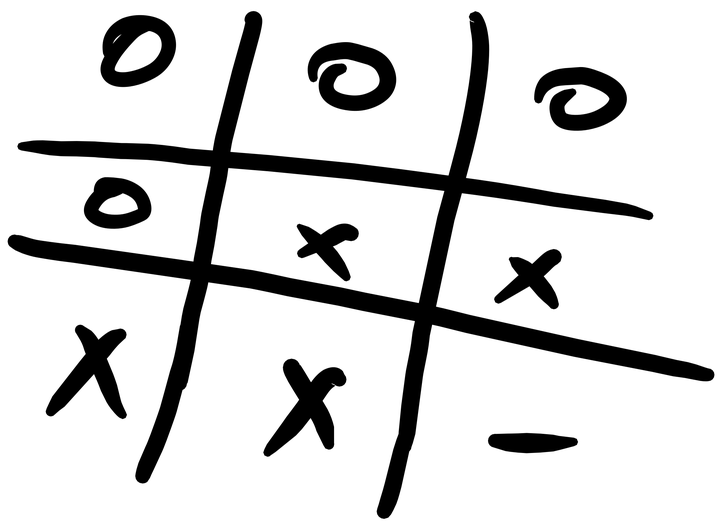
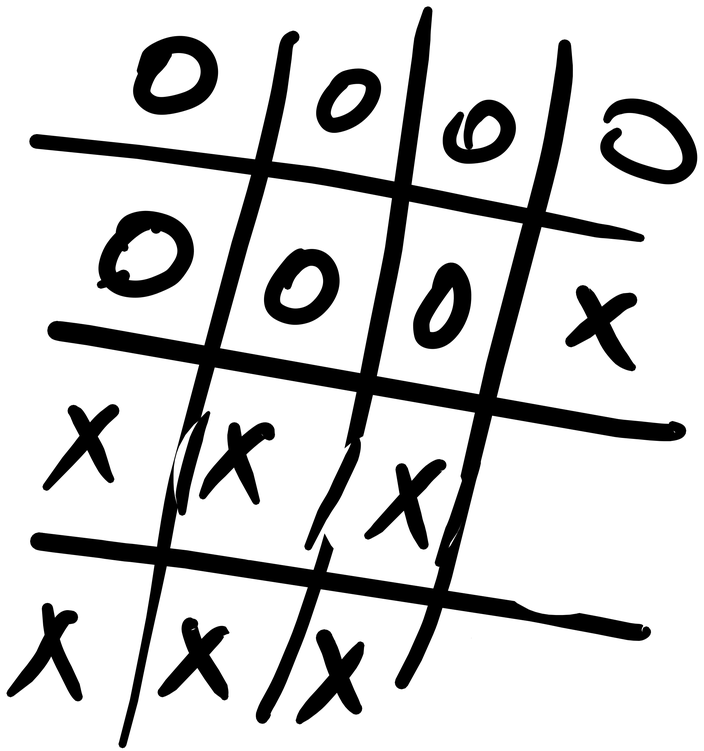


$$(22221111O)_3$$

$$= 19560$$



$(2222222 \setminus 1110110)_2$

$3^{16} - 1 = 7.$

$10^6 \approx$ Megabyte

44MB

43,046,720

For each board.

mcts { - The best move computed.
- The result (win/draw/loss)

1-bit flag { - whether the result is already computed

12 x 43 MB

Row → [0, 3] ~ 2 bits 4x4 ttt

Col → [0, 3] ~ 2 bits

Score → [-1, 0, 1] ~ 2 bits

Computed or not → {0, 1} ~ 1 bit

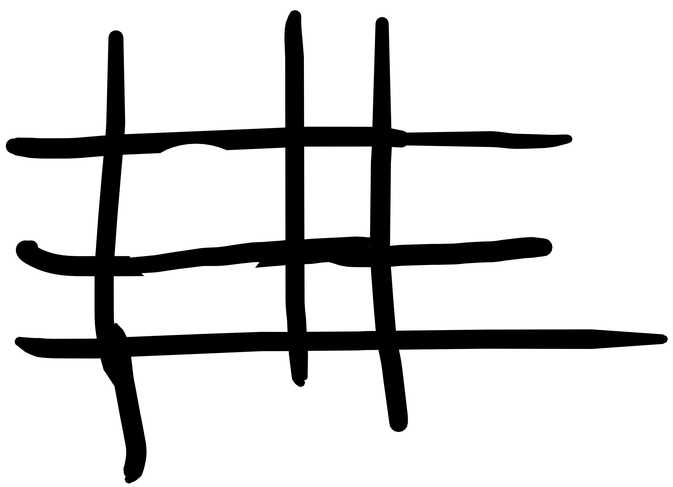
at most 7 bits of info

Per board position.

b7 b6 b5 b4 b3 b2 b1 b0

loss? draw? win? Col

row



→ index = 0

0 0 1 0 0 1 0 1

row = 2 col = 1 score = 0

00100110 → decimal → 38

2 6

row = 3 col = 3 4 score -1

0100 1111

0000 → 0

0001 → 1

0010

⋮

1001 → 9

1010 → A

1011 → B

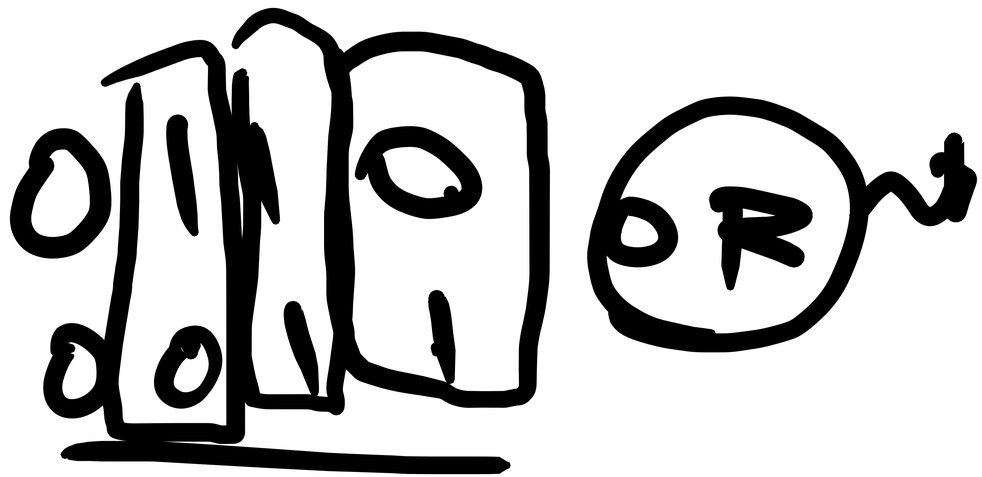
1100 → C

1101 → D

1110 → E

1111 → F

Bit-wise OR, Bit-wise AND,
left-Shift



is there atleast a single 1

0111

0110 | 0011 = 0111

b = 0 , say m.row = 2

0000 0000 —— 10

0000 0104

0000 0010 4 b

M.Col = 3 ⇝ 0000 0011

M.Col << 2 ⇝ 0000 1100 ⇝ dec 12

$12 = 3 \times 2^2$

25 << 3

decimal

25000

b = 0000 0010

m.col = 3 0000 0011

m.col << 2 0000 1100

b | (m.col << 2)

0000 0010

0000 1100

0000 1110

0000 1100

↓ hex

0 C

0010 0110

& 0000 0011

0000 0010 >> 2

0x(→ 0000 1100

& 0010 0110

0000 0100 >> 2 → 0000 0001

XO . .

XO . .

XO . .

OX . .

$\rightsquigarrow (0012002100210021)_3 = 2703706_{10}$