

Reversi (Othello) PICO

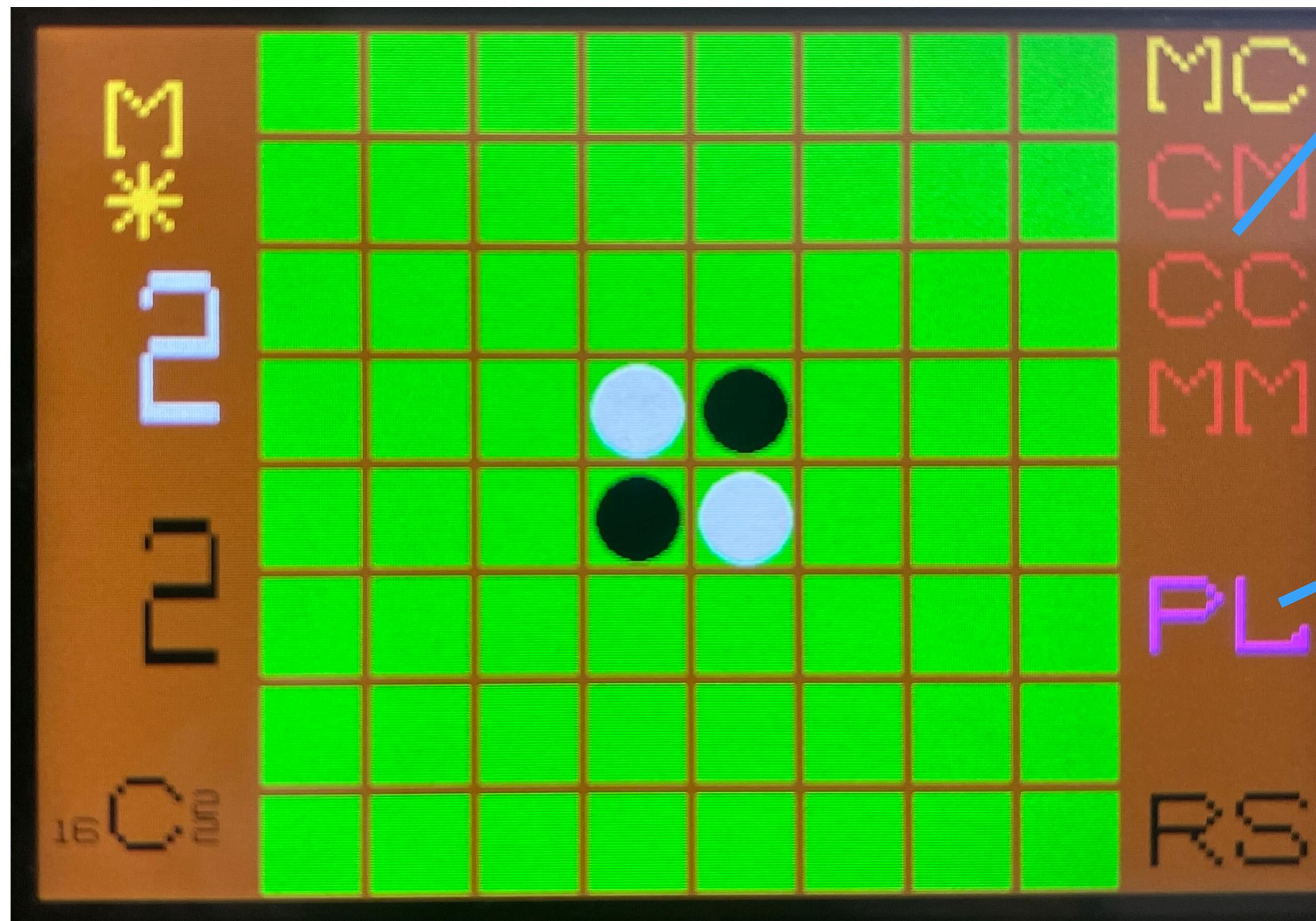
How to play

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Waveshare 3.5inch Touch LCD

How to play

Select play mode



- Tap MC, CM, CC or MM

MC: Man vs CPU

CM: CPU vs Man

CC: CPU vs CPU

MM: Man vs Man

- Tap PL (play)

To play game

Screen in play (CPU vs Man)

- White

C: CPU

*: White Turn

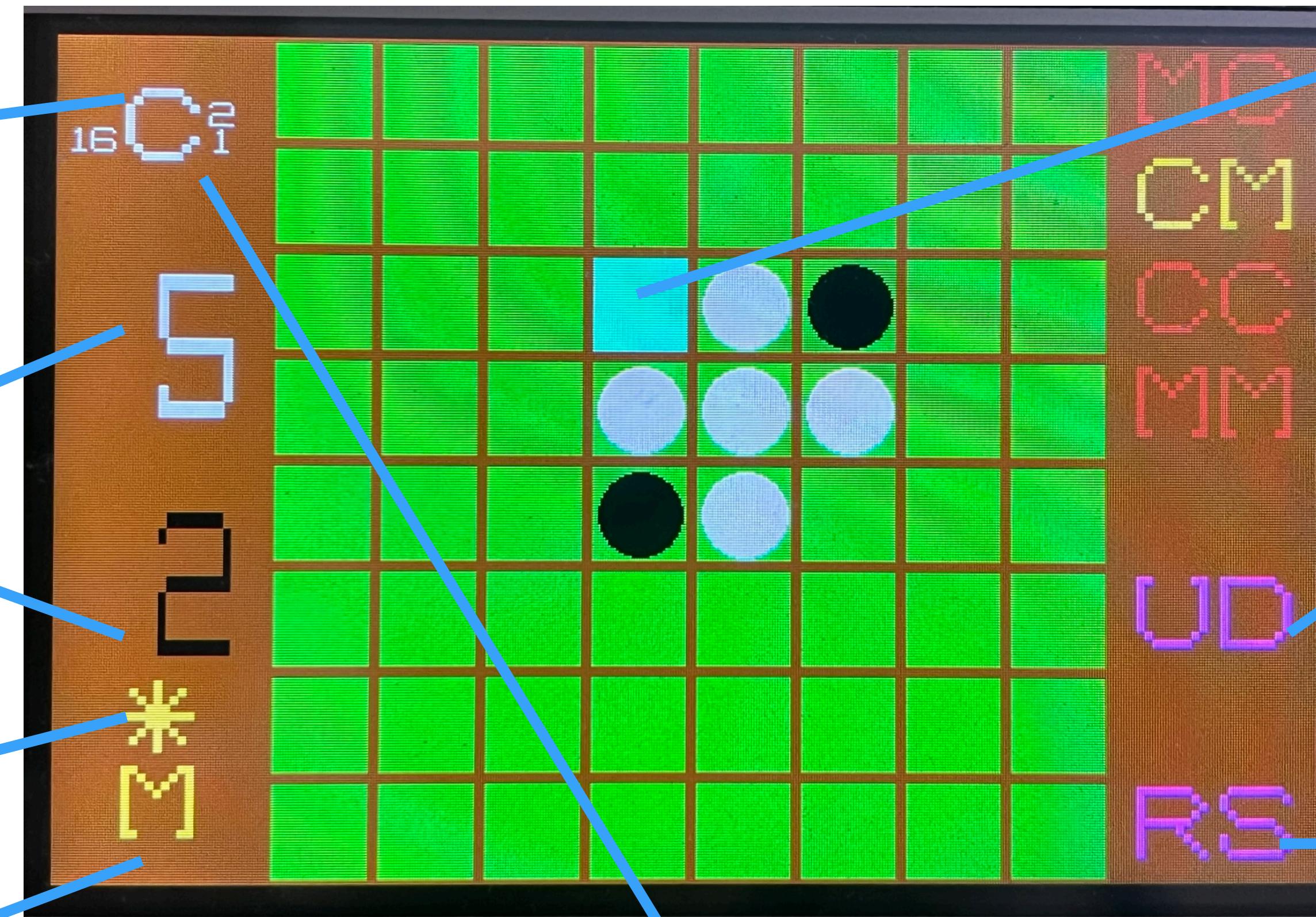
- Scores

- Black

*: Black Turn

Tap a cell to place
a black piece

M: Man



xCz: x, y, z = CPU algorithm (internal code)

x: maximum candidate's cells CPU tries placing a piece

y: 1=take many pieces

2=take few pieces

3=reduce cells opponent can place

z: maximum thought depth

- Tap a cell to place
Cell color changes into
sky blue. If OK, tap
same cell.

You can also chose
another cell.

Tap UD

To undo a previous
CPU turn

Tap RS

To reset & restart game

Screen in play (Man vs CPU)

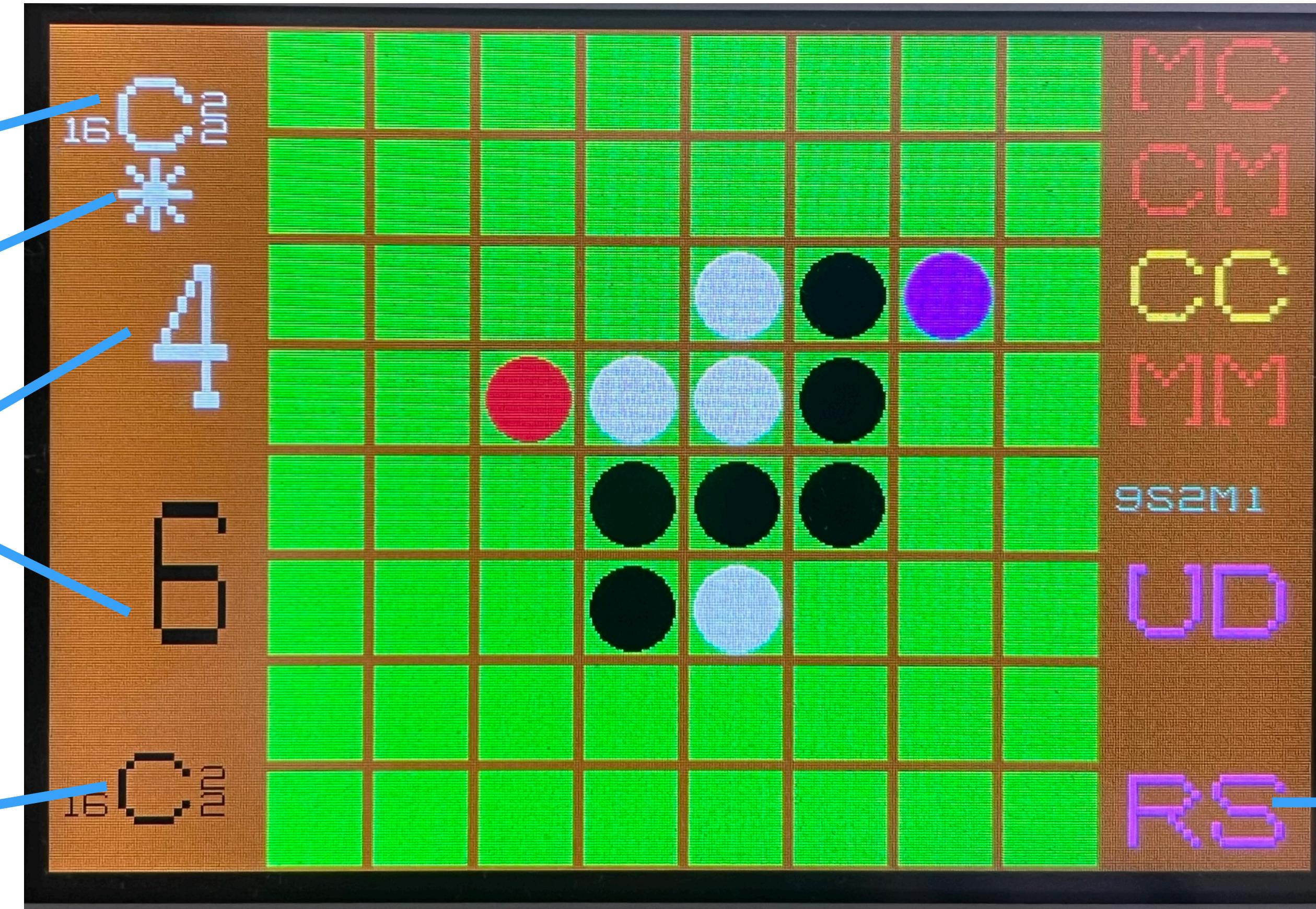
- White
 - M: Man
 - *: White Turn
 - Tap a cell to place a white piece
 - Scores
 - Black
 - *: Black Turn
 - C: CPU
-
- x^y_Cz : x, y, z = CPU algorithm (internal code)

Screen in play (CPU vs CPU)

- White

C: CPU

*: White Turn



- Scores

- Black

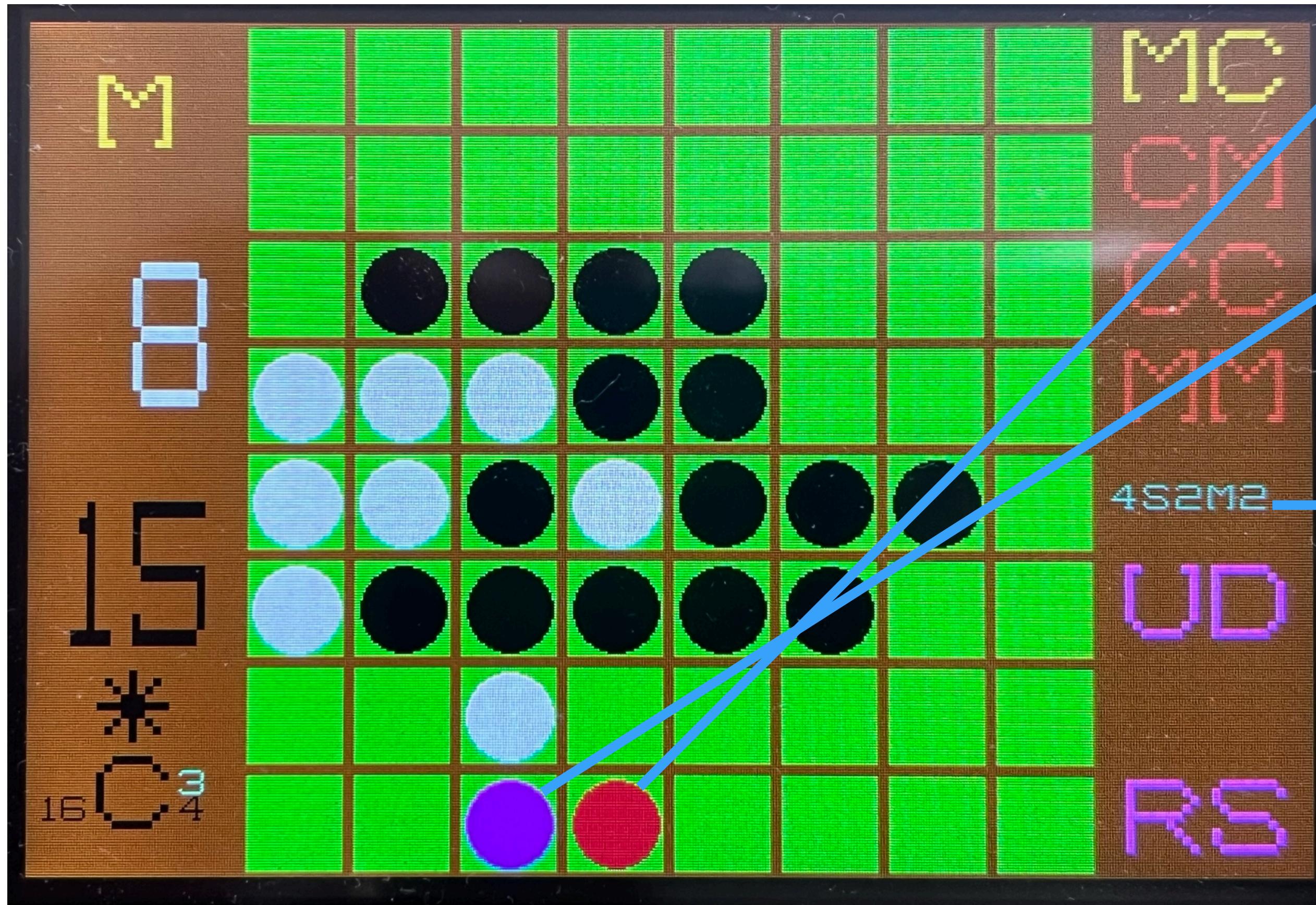
*: Black Turn

C: CPU

- Tap RS
To reset & restart game

x^y
 xCz : x, y, z = CPU algorithm (internal code)

Know the CPU Thought



- Red Circle Piece
Evaluating to place it here by Core0
- Violet Circle Piece
Evaluating to place it here by Core1
- Multi-Core tasks
 $nSxMy$
n: Number of candidates to place
S: Core0
x: Core0 thought count up
M: Core1
Y: Core0 thought count up

Thonny console

How to play

Select play mode

```
Shell x

>>> %Run -c $EDITOR_CONTENT

====SELECT GAME MODE====
MC: Man vs CPU *
CM: CPU vs Man
CC: CPU vs CPU
MM: Man vs Man
PL: Play
>> CM
====SELECT GAME MODE====
MC: Man vs CPU
CM: CPU vs Man *
CC: CPU vs CPU
MM: Man vs Man
PL: Play
>> MC
====SELECT GAME MODE====
MC: Man vs CPU *
CM: CPU vs Man
CC: CPU vs CPU
MM: Man vs Man
PL: Play
>> PL
|0|1|2|3|4|5|6|7|
0|_|_|_|_|_|_|_|_
1|_|_|_|_|_|_|_|_
2|_|_|_|_|_|_|_|_
3|_|_|_|0|_|_|_|_
4|_|_|_|#|0|_|_|_|_
5|_|_|_|_|_|_|_|_|_
6|_|_|_|_|_|_|_|_|_
7|_|_|_|_|_|_|_|_|_
W, B= (2, 2)
=====
=====TOUCH for WHITE=====
X, Y / UNDO / RESET>>
```

- Input MC, CM, CC or MM

MC: Man vs CPU

CM: CPU vs Man

CC: CPU vs CPU

MM: Man vs Man

* indicates the current mode

- Input PL (play)

To play game

Placing a piece and CPU turn

```
=====TOUCH for WHITE=====
X, Y / UNDO / RESET>>4, 2
|0|1|2|3|4|5|6|7|
0|_|_|_|_|_|_|_|_
1|_|_|_|_|_|_|_|_
2|_|_|_|0|_|_|_|_
3|_|_|_|0|0|_|_|_
4|_|_|#|0|_|_|_|_
5|_|_|_|_|_|_|_|_
6|_|_|_|_|_|_|_|_
7|_|_|_|_|_|_|_|_
W, B= (4, 1)
```

```
=====
=====TURN BLACK CPU=====
[CPU #:3]+..*
=====TURN 2 : BLACK CPU=====
|0|1|2|3|4|5|6|7|
0|_|_|_|_|_|_|_|_
1|_|_|_|_|_|_|_|_
2|_|_|_|0|_|_|_|_
3|_|_|_|0|0|_|_|_
4|_|_|#|#|#|_|_
5|_|_|_|_|_|_|_|_
6|_|_|_|_|_|_|_|_
7|_|_|_|_|_|_|_|_
W, B= (3, 3)
```

- Input X,Y of cell to place a piece
 - X: 0..7
 - Y: 0..7
 - Other characters not allowed.
- CPUs progress
 - CPU 0: White
 - CPU #: Black
 - CPU ?:n ⋯ n = Number of candidates to place
 - +: core0
 - *: core1
 - ∴ core0 is waiting for end of core1 task

Placing a piece and CPU turn

```
=====TURN 4 : BLACK CPU=====
|0|1|2|3|4|5|6|7|
0|_|_|_|_|_|_|_|_
1|_|_|_|_|_|_|_|_
2|_|_|0|0|_|_|_|_
3|_|_|0|0|_|_|_|_
4|_|_|#|#|_|_|_|_
5|_|_|_|_|_|_|_|_
6|_|_|_|_|_|_|_|_
7|_|_|_|_|_|_|_|_
W, B= (5, 3)
=====
=====TOUCH for WHITE=====
X, Y / UNDO / RESET>>UNDO
|0|1|2|3|4|5|6|7|
0|_|_|_|_|_|_|_|_
1|_|_|_|_|_|_|_|_
2|_|_|#|0|_|_|_|_
3|_|_|#|0|_|_|_|_
4|_|_|#|0|_|_|_|_
5|_|_|_|_|_|_|_|_
6|_|_|_|_|_|_|_|_
7|_|_|_|_|_|_|_|_
W, B= (3, 3)
=====
X, Y / UNDO / RESET>>RESET
==RESET==
GAME RESULT: WHITE= 3 / BLACK= 3
==SELECT GAME MODE==
MC: Man vs CPU *
CM: CPU vs Man
CC: CPU vs CPU
MM: Man vs Man
PL: Play
>> |
```

- Input UNDO

The game board is back to previous your turn.

- Input RESET

Back to menu.

Game over

```
=====TURN WHITE CPU=====
=====PASS WHITE CPU=====
|0|1|2|3|4|5|6|7|
0|#|0|0|0|0|0|0|
1|#|#|#|0|#|0|0|
2|#|#|#|0|0|0|#|0|
3|#|#|#|0|#|#|0|
4|#|#|0|#|0|#|#
5|#|#|0|0|#|#|#
6|#|#|#|#|#|#|#
7|#|#|#|0|0|0|0|
W, B= (24, 40)
=====
=====TURN BLACK CPU=====
=====PASS BLACK CPU=====
|0|1|2|3|4|5|6|7|
0|#|0|0|0|0|0|0|
1|#|#|#|0|#|0|0|
2|#|#|#|0|0|0|#|0|
3|#|#|#|0|#|#|0|
4|#|#|0|#|0|#|#
5|#|#|0|0|#|#|#
6|#|#|#|#|#|#|#
7|#|#|#|0|0|0|0|
W, B= (24, 40)
=====
GAME RESULT: WHITE= 24 / BLACK= 40
==SELECT GAME MODE==
    MC: Man vs CPU
    CM: CPU vs Man
    CC: CPU vs CPU *
    MM: Man vs Man
    PL: Play
>> |
```

• Game scores

• Menu

END