



# Shogi: The Japanese Chess Game

AUTHOR: Rolando Mignone

2

BOARD V\_2.0

Last Move: none

1.	2.	3.	4.	5.	6.	7.	8.	9.
\ L	\ N	\ S	\ G	\ K	\ G	\ S	\ N	\ L
	\ R						\ B	
\ P	\ P	\ P	\ P	\ P	\ P	\ P	\ P	\ P
/ P \	/ P \	/ P \	/ P \	/ P \	/ P \	/ P \	/ P \	/ P \
	/ B \						/ R \	
/ L \	/ N \	/ S \	/ G \	/ K \	/ G \	/ S \	/ N \	/ L \

SENTE'S PIECES: 9P, 2L, 2N, 2S, 2G, 1R, 1B

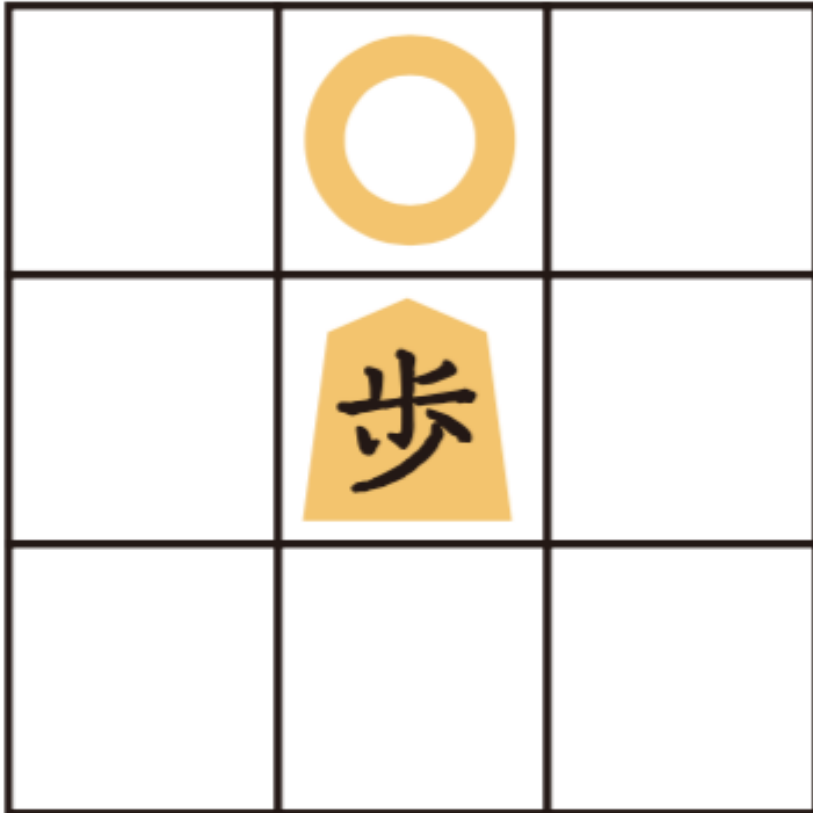
GOTE'S PIECES: none

```
int board[9][9] = {
    {7,6,5,4,8,4,5,6,7},
    {0,2,0,0,0,0,0,3,0},
    {1,1,1,1,1,1,1,1,1},
    {0,0,0,0,0,0,0,0,0},
    {0,0,0,0,0,0,0,0,0},
    {0,0,0,0,0,0,0,0,0},
    {1,1,1,1,1,1,1,1,1},
    {0,3,0,0,0,0,0,2,0},
    {7,6,5,4,8,4,5,6,7},
};
```

```
int color[9][9] = {
    {2,2,2,2,2,2,2,2,2},
    {0,2,0,0,0,0,0,2,0},
    {2,2,2,2,2,2,2,2,2},
    {0,0,0,0,0,0,0,0,0},
    {0,0,0,0,0,0,0,0,0},
    {0,0,0,0,0,0,0,0,0},
    {1,1,1,1,1,1,1,1,1},
    {0,1,0,0,0,0,0,1,0},
    {1,1,1,1,1,1,1,1,1},
};
```

# THE PAWN

3



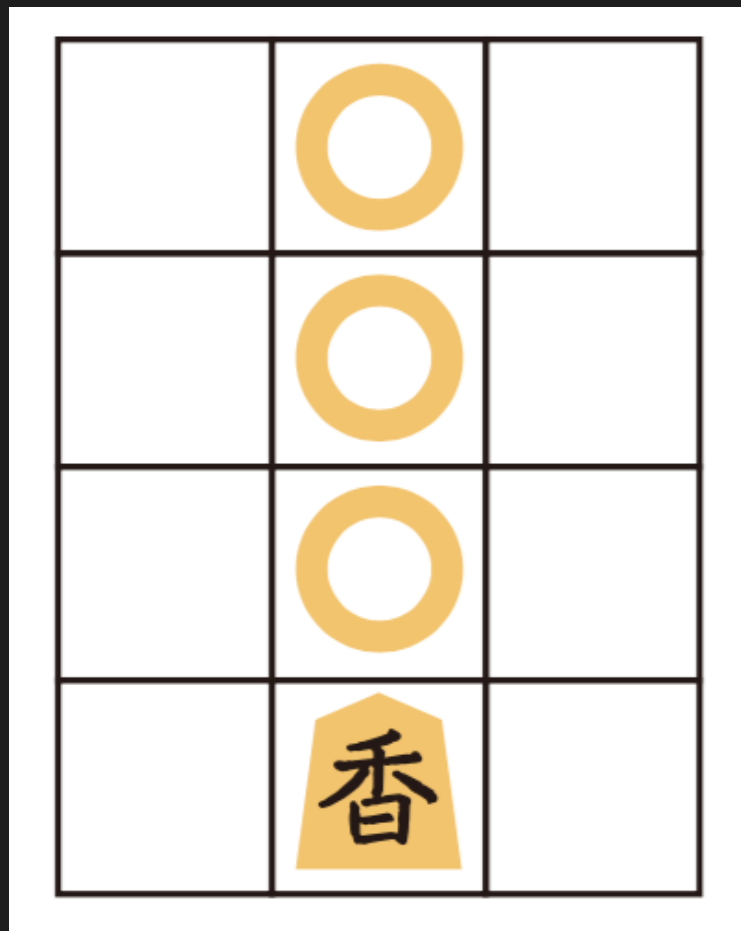
BOARD V\_2.0

/ P\ and \ P/

```
if((board[move[2]][move[3]] == n ||  
color[move[2]][move[3]] == gote) &&  
ch == sente && (move[0]-move[2]) == 1 &&  
move[1] == move[3])
```

# THE LANCE

4



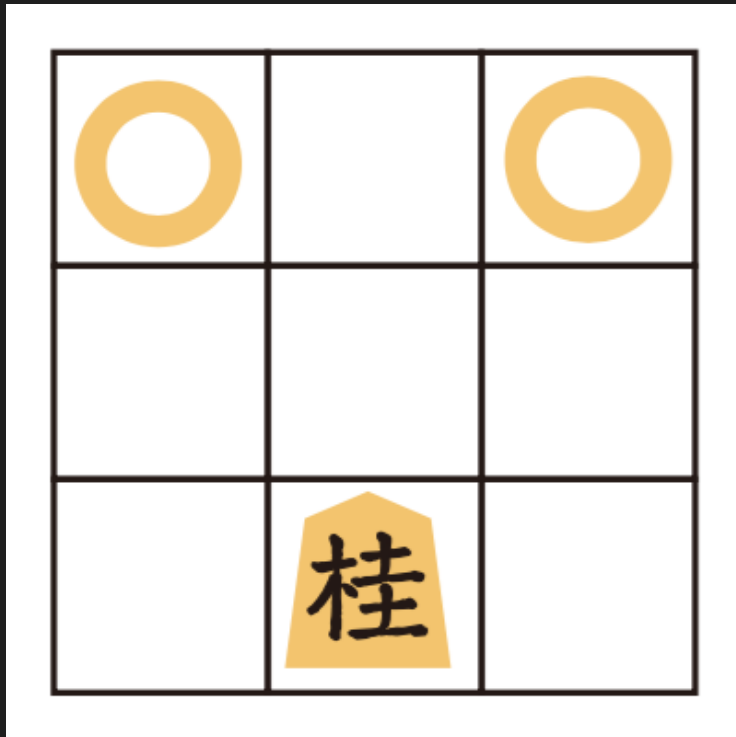
BOARD V\_1.0

/ L\ and \ L/

```
if((board[moveCk[2]][moveCk[3]] == n ||  
color[moveCk[2]][moveCk[3]] == gote) &&  
ck_h == sente && (moveCk[0]-moveCk[2]) >= 1 &&  
moveCk[1] == moveCk[3])
```

# THE KNIGHT

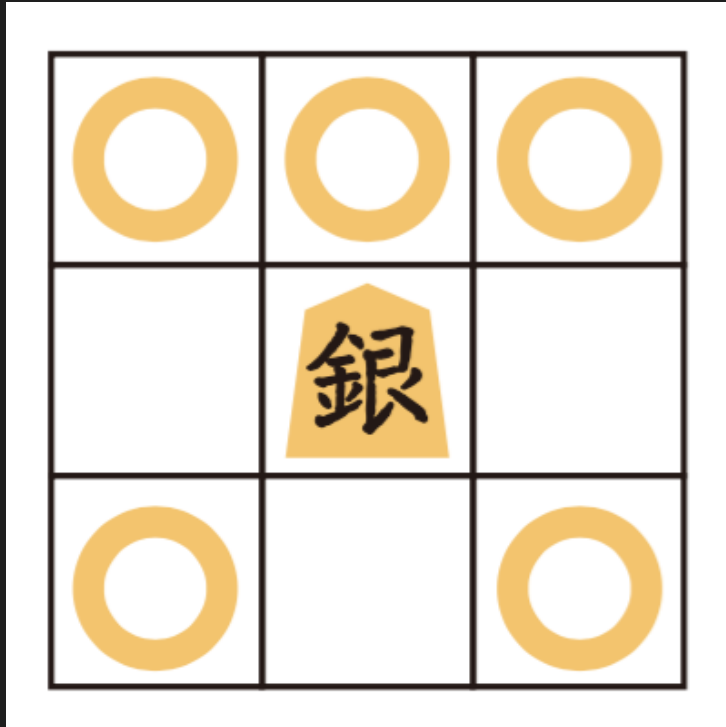
5



BOARD V\_1.0

/ N\ and \ N/

```
if((board[move[2]][move[3]] == n ||  
color[move[2]][move[3]] == gote) &&  
ch == sente && move[2] == move[0]-2 &&  
(move[3] == move[1]-1 || move[3] == move[1]+1))
```



BOARD V\_1.0

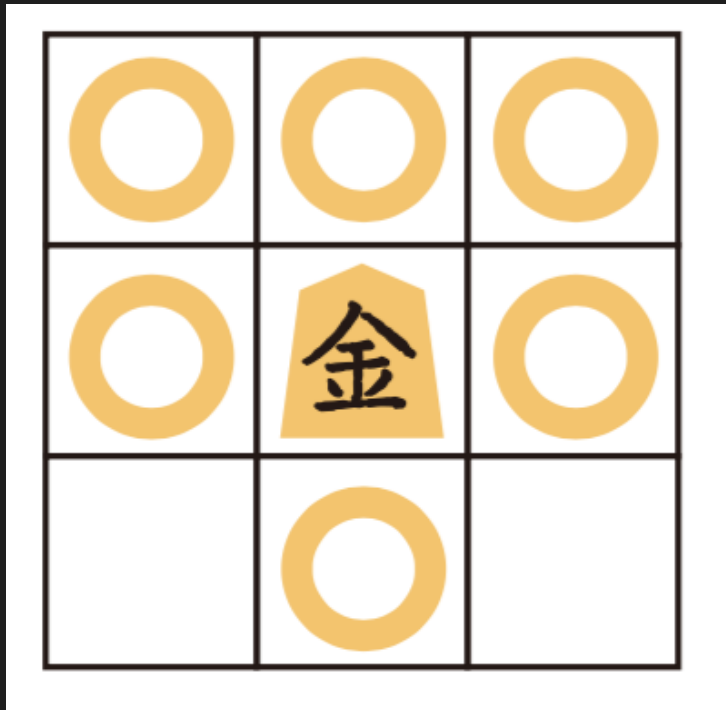
/ K\ and \ K/

```
if((board[moveCk[2]][moveCk[3]] == n ||  
color[moveCk[2]][moveCk[3]] == gote) && ck_h ==  
sente &&
```

```
((moveCk[0]+1 == moveCk[2] || moveCk[0]-1 ==  
moveCk[2]) && (moveCk[1]+1 == moveCk[3] ||  
moveCk[1]-1 == moveCk[3] || moveCk[1] ==  
moveCk[3]) && !(moveCk[2] == moveCk[0]+1 &&  
moveCk[1] == moveCk[3])))
```

# THE GOLD

7



BOARD V\_1.0

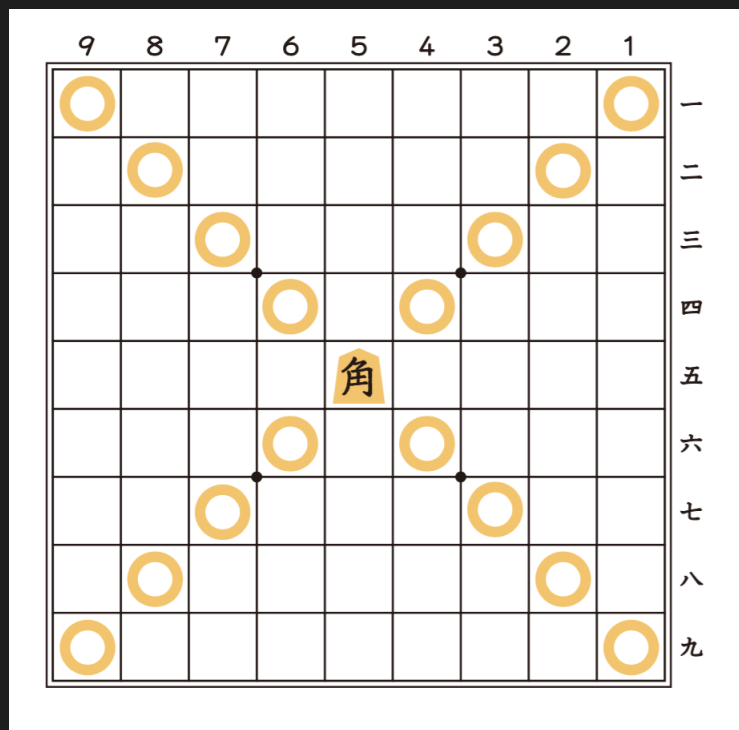
/ K\ and \ K/

```
if((board[moveCk[2]][moveCk[3]] == n ||  
color[moveCk[2]][moveCk[3]] == gote) &&
```

```
ck_h == sente && ((moveCk[0]+1 == moveCk[2] ||  
moveCk[0]-1 == moveCk[2] || moveCk[0] ==  
moveCk[2]) && (moveCk[1]+1 == moveCk[3] ||  
moveCk[1]-1 == moveCk[3] || moveCk[1] ==  
moveCk[3]) && !((moveCk[2] == moveCk[0]+1 &&  
moveCk[3] == moveCk[1]+1) || (moveCk[2] ==  
moveCk[0]+1 && moveCk[3] == moveCk[1]-1))))
```

# THE BISHOP

8



BOARD V\_1.0

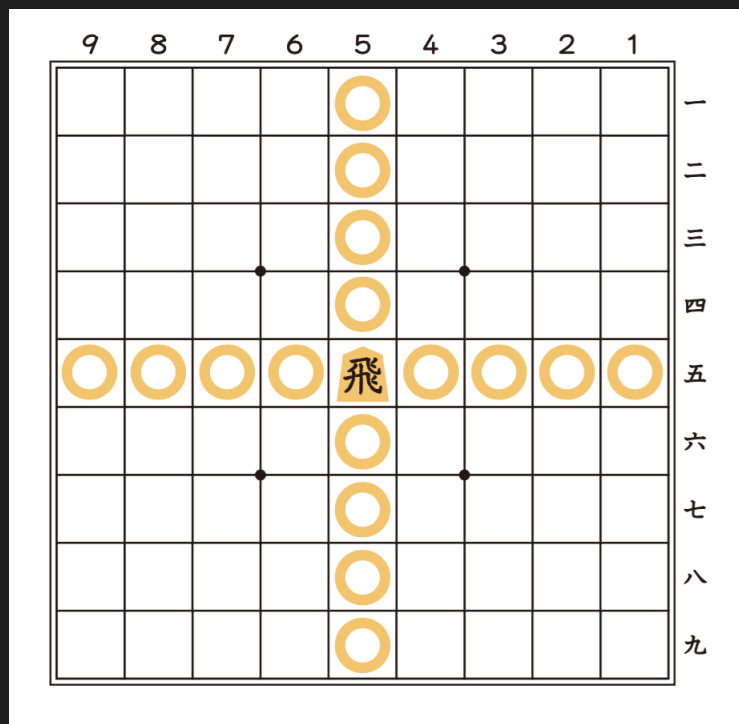
/ B\ and \ B/

```
if((board[move[2]][move[3]] == n |  
color[move[2]][move[3]] == gote) &&  
ch == sente &&  
  
(move[0] - move[2] == move[3] - move[1] ||  
move[0] - move[2] == move[1] - move[3] ||  
move[2] - move[0] == move[1] - move[3] ||  
move[2] - move[0] == move[3] - move[1]))
```



# THE ROOK

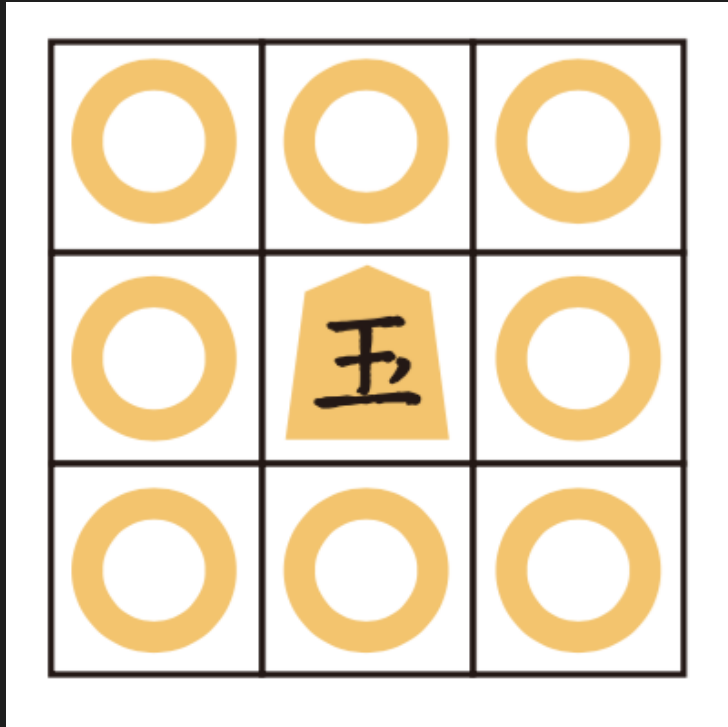
9



BOARD V\_1.0

/ R\ and \ R/

```
if((board[move[2]][move[3]] == n ||  
color[move[2]][move[3]] == gote) && ch == sente  
&& (move[1] == move[3] || move[0] == move[2]))
```



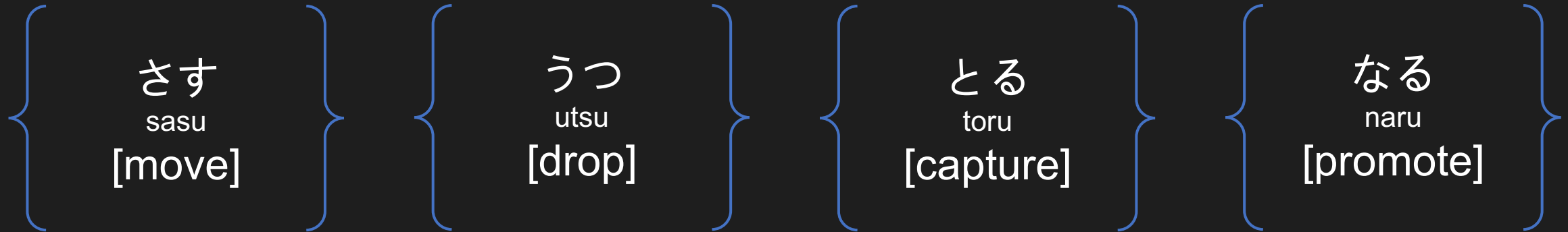
BOARD V\_1.0

/ K\ and \ K/

```
if((board[moveCk[2]][moveCk[3]] == n ||  
color[moveCk[2]][moveCk[3]] == gote) &&  
ck_h == sente &&
```

```
((moveCk[0]+1 == moveCk[2] ||  
moveCk[0]-1 == moveCk[2] || moveCk[0] ==  
moveCk[2]) && (moveCk[1]+1 == moveCk[3] ||  
moveCk[1]-1 == moveCk[3] || moveCk[1] ==  
moveCk[3])))
```

Shogi is a game played by two players. The first one who capture the opponent's King or Jewel will win the game.



Two players move pieces by turns. Making a move is called "Sasu" in Japanese.

A piece that you have captured and held outside the board is named "Mochigoma" or a hand piece. Putting this piece on the board is called "Utsu." You can not drop two pawns on the same column.

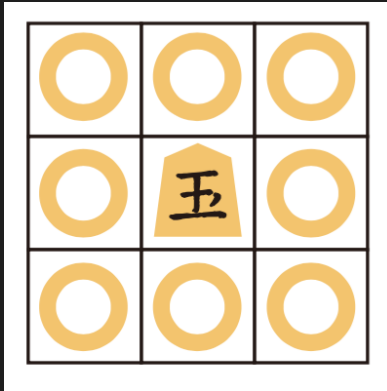
You can capture the opponent's piece in your possible path. To capture a piece is referred to as "Toru."

When your piece enters the opponent's camp, you may turn over the piece to be transformed. This turning over is called "promotion," and promoted piece is called "Narigoma".

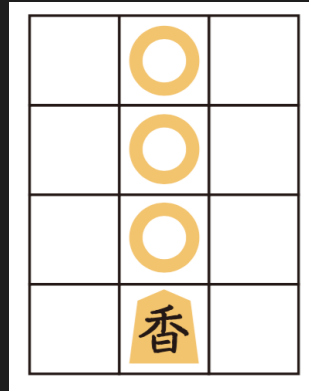
# さす〜 Sasu

12

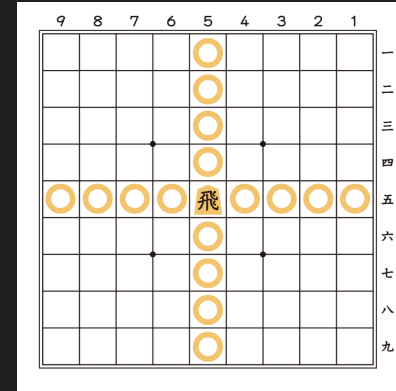
KING - / K\



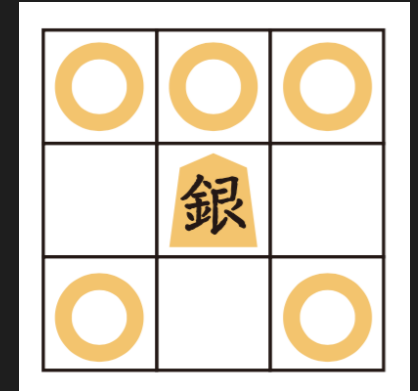
LANCE - / L\



ROOK - / R\



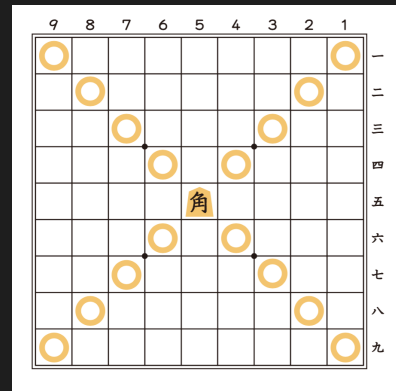
SILVER - / S\



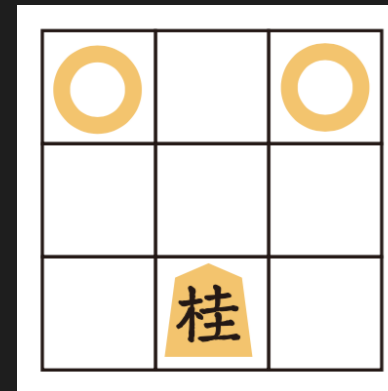
PAWN - / P\



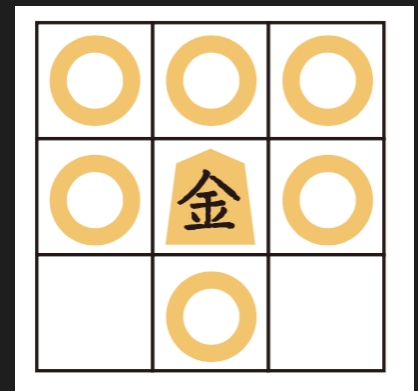
BISHOP - / B\



KNIGHT - / N\

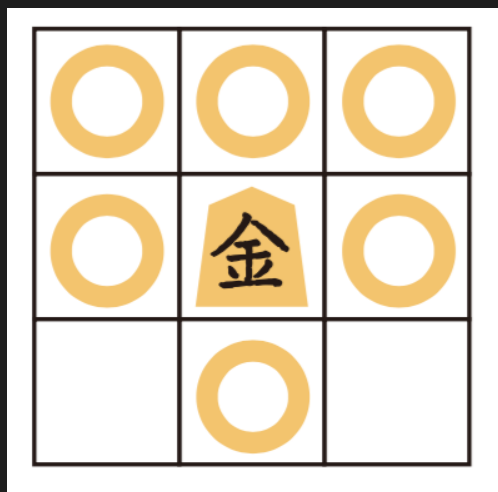


GOLD - / G\



△ 歩 ゝ / P\    △ 桂 ゝ / N\    △ 香 ゝ / L\    △ 銀 ゝ / S\

△ 金 ゝ / G\



# HOW TO PLAY

14

Compile & run:

■ Linux: `$gcc main.c -o a.out // Compile`

■ Mac: `$clang main.c // Compile`

■ `$/a.out // Run`

Make moves:

■ `[raw1][col1][raw2][col2] // (ex. "7363", move the pawn in the position "73" to the position "63")`

Drop pieces:

■ `"0000" // Opens the menu`

■ `[piece] // Code of the piece to drop (ex. "1", to drop a pawn)`

■ `[raw][col] // Coordinates of the piece that u want to drop`

Win the game:

■ Check mate the enemy king and take it down, the one who do this will be the winner of the game.

```
./a.out
Last move: 1111

  1.  2.  3.  4.  5.  6.  7.  8.  9.
+---+---+---+---+---+---+---+---+---+
|\ L/|\ N/|\ S/|\ G/|\ K/|\ G/|\ S/|\ N/|\ L/| 1.
+---+---+---+---+---+---+---+---+---+
|      |\ R/|      |      |      |      |      |\ B/| 2.
+---+---+---+---+---+---+---+---+---+
|\ P/|\ P/|\ P/|\ P/|\ P/|\ P/|\ P/|\ P/|\ P/| 3.
+---+---+---+---+---+---+---+---+---+
|      |      |      |      |      |      |      |      | 4.
+---+---+---+---+---+---+---+---+---+
|      |      |      |      |      |      |      |      | 5.
+---+---+---+---+---+---+---+---+---+
|      |      |      |      |      |      |      |      | 6.
+---+---+---+---+---+---+---+---+---+
|/ P\|/ P\|/ P\|/ P\|/ P\|/ P\|/ P\|/ P\| 7.
+---+---+---+---+---+---+---+---+---+
|      |/ B\|      |      |      |      |      |      |/ R\| 8.
+---+---+---+---+---+---+---+---+---+
|/ L\|/ N\|/ S\|/ G\|/ K\|/ G\|/ S\|/ N\|/ L\| 9.
+---+---+---+---+---+---+---+---+---+

SENTE'S TEGOMA: 0P, 0L, 0N, 0S, 0G, 0R, 0B

GOTE'S TEGOMA: 0P, 0L, 0N, 0S, 0G, 0R, 0B

Sente Moves, your move is?
```

Shogi has spawned a rich literature of proverbs:

- ▲ Exchanging your Rook Pawn gives a four-fold advantage
- ▲ A Pawn-anchored Gold is as solid as a Rook
- ▲ A four piece mating net will always catch its prey
- ▲ Bring the Horse back to camp
- ▲ The stab in the back is the best way to get a Gold in hand
- ▲ 5e is a strategic point



Ryuu no oshigoto – a shogi story

```
printf("Have a good game!");
```