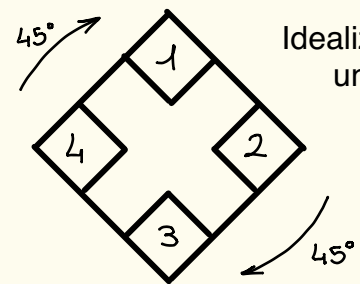
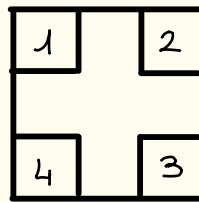
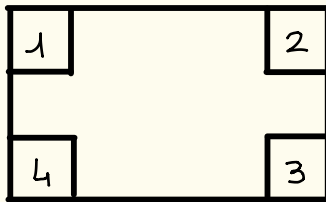


Playable Card

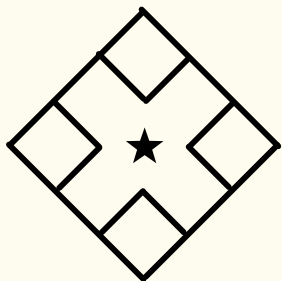


Idealizzazione di una carta

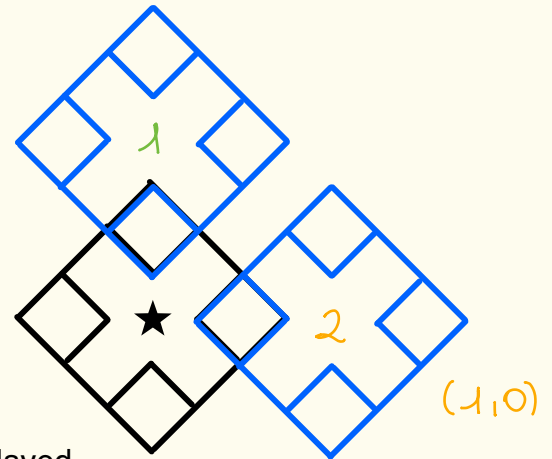
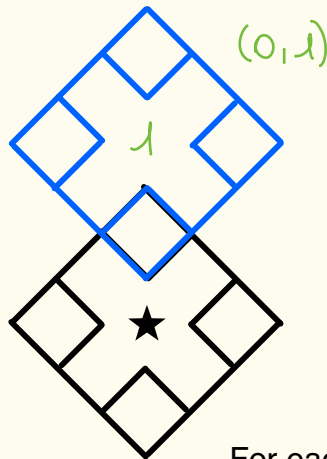
★ StarterCard

Resource/Gold Card (1..21)

$(0,0)$

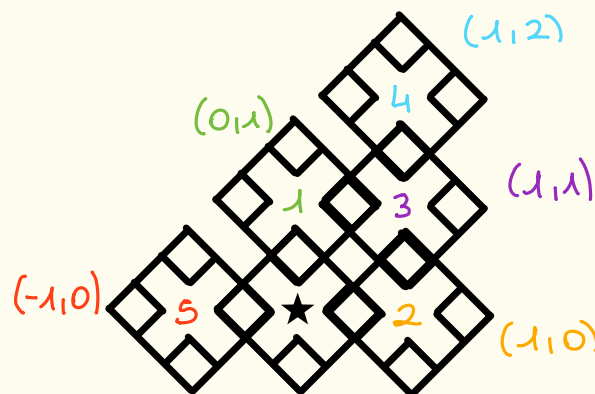


-StarterCard has coordinates  $(0,0)$



-For each card played we increase the its coordinates depending where it's been placed

<CardList>		
Card	X	Y
0	0	0
1	0	1
2	1	0
3	1	1
4	1	2
5	-1	0



Hp: calculate the “Emming’s distance” between 2 cards to establish if they’re near.  
 If the absolute value of the difference (called “D”) between a coordinate of 2 cards is  $\leq 1$  (while the other coordinate is equal) the cards are adjacent. Furthermore, if  $D > 2$ , the distance between the cards is  $D-1$  “cards”.

<CardList>		
Card	X	Y
0	0	0
1	0	1
2	1	0
3	1	1
4	1	2
5	-1	0

### Procedure:

1) copy the vector (in order to maintain the order of the played card) and put it in ascending order (X has priority over Y)

<CardList>		
Card	X	Y
5	-1	0
0	0	0
1	0	1
2	1	0
3	1	1
4	1	2

2) for each pair of cards calculate the difference between the coordinates

$$\star (C_1, C_2) = (D_x, D_y)$$

$$(5, 0) = (1, 0) / (5, 1) = (1, 1) / (5, 2) = (2, 0) / (5, 3) = (2, 1) / (5, 4) = (2, 2)$$

$$(0, 1) = (0, 1) / (0, 2) = (1, 0) / (0, 3) = (1, 1) / (0, 4) = (1, 2)$$

$$(1, 2) = (1, 1) / (1, 3) = (1, 0) / (1, 4) = (1, 1)$$

$$(2, 3) = (0, 1) / (2, 4) = (0, 2)$$

$$(3, 4) = (0, 1)$$

For example: adjacent cards for the StartCard are 5,1,2

Thanks to this we have the distance between every card

The list is a list of CardData that contains the card itself and his coordinates through the class Cards (2 int)

\*Every player has this structure

CardData
<ul style="list-style-type: none"> <li>- card: PlayableCard</li> <li>- cards: Cards</li> </ul>
<ul style="list-style-type: none"> <li>+ setCoords(int x,y)</li> <li>+ getCard()</li> <li>+ getCoords(): Coords</li> </ul>