Algorithm

Every time when the input to the coordinates is given by the player the table gets updated along with the existing values.


```
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
#    ---1----    ---2----    ---3----    ---4----    ---5----    ---6----    ---7----    ---8----    ---9----    ---10----   #
# 1 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 2 ( #, 1 )  (  ,   )  ( @, 1 )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 3 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 4 ( @, 1 )  (  ,   )  (  ,   )  ( #, 1 )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 5 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 6 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 7 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 8 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 9 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
#10 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #

Score @ : 2              Score #: 2

Player: @ Enter the index 3 2
```



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# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
#    ---1----    ---2----    ---3----    ---4----    ---5----    ---6----    ---7----    ---8----    ---9----    ---10----   #
# 1 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 2 ( #, 1 )  (  ,   )  ( @, 1 )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 3 (  ,   )  ( @, 1 )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 4 ( @, 1 )  (  ,   )  (  ,   )  ( #, 1 )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 5 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 6 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 7 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 8 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# 9 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
#10 (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )  (  ,   )   #
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #

Score @ : 3              Score #: 2

Player: # Enter the index
```

This process happens until a cell reaches its limit and then when it expands it follows **Breadth First Search.** That is from the current cell each soldier would reach an adjacent cell.


```
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
#    ---1----   ---2----   ---3----   ---4----   ---5----   ---6----   ---7----   ---8----   ---9----   ---10----   #
# 1 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 2 ( #, 1 ) (   ,    ) ( @, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 3 ( #, 2 ) ( @, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 4 ( @, 2 ) (   ,    ) (   ,    ) ( #, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 5 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 6 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 7 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 8 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 9 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
#10 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #

Score @ : 3            Score #: 3

Player: @ Enter the index 4 1▯
```



```
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
#    ---1----   ---2----   ---3----   ---4----   ---5----   ---6----   ---7----   ---8----   ---9----   ---10----   #
# 1 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 2 ( @, 2 ) (   ,    ) ( @, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 3 (   ,    ) ( @, 2 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 4 ( @, 1 ) ( @, 1 ) (   ,    ) ( #, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 5 ( @, 1 ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 6 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 7 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 8 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# 9 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
#10 (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    ) (   ,    )   #
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #

Score @ : 6            Score #: 1

Player: # Enter the index ▯
```

The cell at which limit exceeded is pushed into the queue and then all the adjacent cells of it are visited and if those cells capacity is 1 less than its limit then when a soldier reaches there again it expands. In short the cells that have the tendency to expand are pushed into the queue again. The same process happens until the cell is not capable to expand.