

FINALS KING PYTHON

```
def outOfBounds(y, x):
```

```
    return y < 0 or x < 0 or y > 7 or x > 7
```

```
def getPos(string):
```

```
    return (8-int(string[1]), ord(string[0]) - ord('a'))
```

```
def find_king_status(pieces):
```

```
    pieces = pieces.strip().split(' ')
```

```
kingPos = (0, 0)
```

```
kingPos (0, 0)
```

```
board = [[False for i in range(8)] for j in range(8)]
```

```
whitePos = set()
```

```
for piece in pieces:
```

```
    pos = getPos(piece[1:])
```

```
    if piece[0] != 'K':
```

```
        whitePos.add(pos)
```

```
for piece in pieces:
```

```
    pos = getPos(piece[1:])
```

```
    if piece[0] == 'Q' or piece[0] == 'R':
```

```
        curPos = (pos[0]-1, pos[1])
```

```
        while not (outOfBounds(*curPos) or curPos in whitePos):
```

```
            board[curPos[0]][curPos[1]] = True
```

```
            curPos = (curPos[0]-1, curPos[1])
```

```
        if curPos in whitePos:
```

```
            board[curPos[0]][curPos[1]] = True
```

```
            curPos = (pos[0], pos[1]+1)
```

```

while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0], curPos[1]+1)
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
curPos = (pos[0]+1, pos[1])
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0]+1, curPos[1])
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
curPos = (pos[0], pos[1]-1)
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0], curPos[1]-1)
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
if piece[0] == 'Q' or piece[0] == 'B':
curPos = (pos[0]-1, pos[1]-1)
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0]-1, curPos[1]-1)
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
curPos = (pos[0]-1, pos[1]+1)
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0]-1, curPos[1]+1)
if curPos in whitePos:

```

```

board[curPos[0]][curPos[1]] = True
curPos = (pos[0]+1, pos[1]-1)
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0]+1, curPos[1]-1)
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
curPos = (pos[0]+1, pos[1]+1)
while not (outOfBounds(*curPos) or curPos in whitePos):
board[curPos[0]][curPos[1]] = True
curPos = (curPos[0]+1, curPos[1]+1)
if curPos in whitePos:
board[curPos[0]][curPos[1]] = True
if piece[0] == 'P':
curPos = (pos[0]-1, pos[1]-1)
if not outOfBounds(*curPos):
board[curPos[0]][curPos[1]] = True
board[curPos[0]][curPos[1]] = True
curPos = (pos[0]-1, pos[1]+1)
if not outOfBounds(*curPos):
board[curPos[0]][curPos[1]] = True
if piece[0] == 'N':
options = [1, -1, 2, -2]
for i in options:
for j in options:
if abs(i) + abs(j) == 3:
curPos = (pos[0]+i, pos[1]+j)
if not outOfBounds(*curPos):
board[curPos[0]][curPos[1]] = True

```

```
if piece[0] == 'K':
    kingPos = pos

for i in board:
    print([1 if i[j] else 0 for j in range(len(i))])

check = [board[kingPos[0]][kingPos[1]], True]
options = [(0, 1), (-1, 1), (-1, 0), (-1, -1), (0, -1), (1, -1), (1, 0),
(1, 1)]
for i in options:
    curPos = (kingPos[0]+i[0], kingPos[1]+i[1])
    if not outOfBounds(*curPos):
        check[1] &= board[curPos[0]][curPos[1]]

if not check[0] and not check[1]:
    return "SAFE"
elif check[0] and not check[1]:
    return "CHECK"
elif check[0] and check[1]:
    return "CHECKMATE"
else:
    return "STALEMATE"
```