# 765 Couple Holding Hands

each couple is even-odd pair

(GREEDY APPROACH)

i.e (0, 1)
(2, 3)

Note1
If the number we are looking at is even (say it is $x$)
It is paired with odd number of value $x+1$

Note2
If the number we are looking at is odd (say it is $y$)
It is paired with even number of value $y-1$

Algo

count = 0
For x in range(0, len(row), 2):

#CASE 1

Considered number is even
∴ next number should be row[x]+1
if not then shuffle

if row[x] % 2 == 0 and row[x+1] != row[x]+1:

index = row.index(row[x]+1)

row[index] = row[x+1]

row[x+1] = row[x]+1

count += 1

Considered number is odd
∴ next number should be row[x]-1
if not then there is switch

#CASE 2

if row[x] % 2 != 0 and row[x+1] != row[x]-1:

index = row.index(row[x]-1)

row[index] = row[x+1]

row[x+1] = row[x]-1

count += 1

return count

Eg:

[0, 2, 1, 3]

count = 0

| | | | |
|---|---|---|---|
| 0 | 2 | 1 | 3 |

For x = 0

row[0] = 0

row[1] = 2

row[0] % 2 == 0 and row[1] != row[0] + 1

ind = row.index(row[x]+1) #(2)

row[ind] = row[x+1]

row[x+1] = row[x] + 1

count += 1.

$\boxed{\text{count} = 1}$

| | | | |
|---|---|---|---|
| 0 | 1 | 2 | 3 |

For x = 2

row[2] = 2

row[3] = 3

row[2] % 2 == 0 and row[3] == row[2] + 1

→ no swapping

∴ count = 1

return count