① Spiral Matrix.

↳ Print all elemts in spiral fashion.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

SR = 0, SC = 0, ER = 3 = (m-1), EC = 3 = (n-1)

SR = 2, ER = 1] Not possible

output : 1 2 3 4 8 12 16 15 14 13 9 5 6 7 11 10

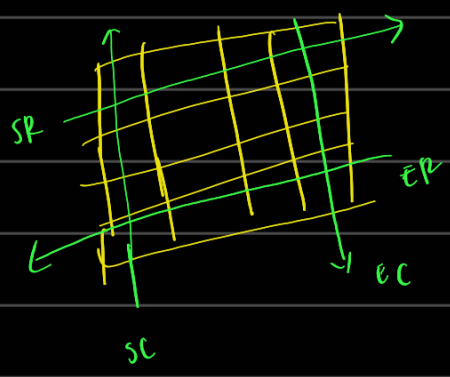
Approach:

1st loop

Start Row	→ 0	SR → 1
End Row	→ 3	ER → 2
Start col	→ 0	SC = 1
End col.	→ 3	ER = 2

While (SR <= ER && SC <= End col)

Print → top, Right, bottom, left.



Diagonal Sum:

For n = odd.

1	2	3
4	5	6
7	8	9

→ (1+5+9 + 3+7) = 25

5 should be included twice

Diagonal Sum

n = m, n = even = 4

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

PD = 1+6+11+16 = 34

SD = 4+7+10+13 = 34

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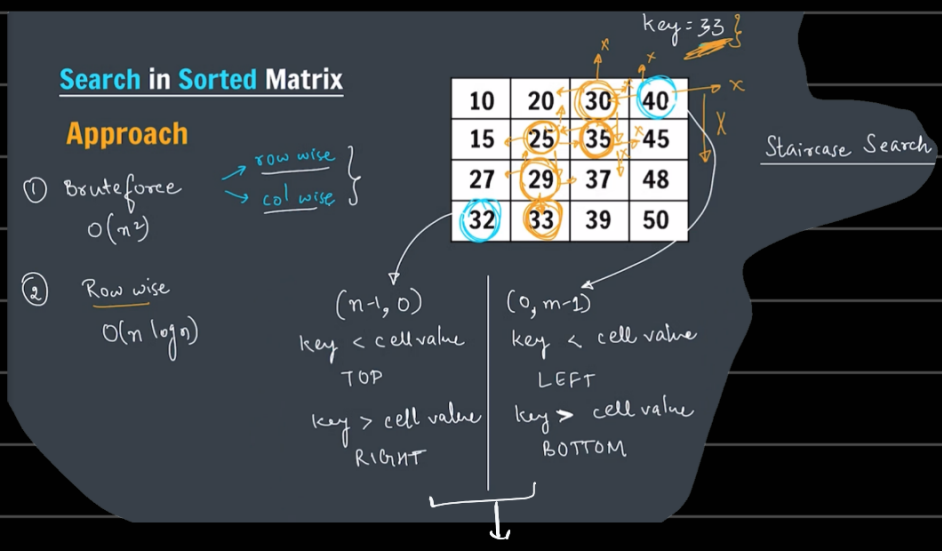
34 Secondary → (0,3), (1,2), (2,1), (3,0)

34 Primary → (0,0), (1,1), (2,2), (3,3)

Search



2 places, where we can go ahead.

→ Top right.

↳ i = 0, j = cols - 1

if key < cellval : j -- (move left in same row)

elif key > cellval : i ++ (move bottom in same col)

10	20	30	40
15	25	35	45
27	29	37	48
32	33	39	50

→ consider key = 31

q = row
j = col.

① 31 < 40 → left

② 31 > 30 → bottom

③ 31 < 35 → left

④ 31 > 25 → bottom

⑤ 31 > 29 → bottom i = 2, j = 1

⑥ 31 < 33 → left i = 3, j = 1

⑦ 31 < 32 → left. i = 3, j = 0

↳ i = 3, j = 1

j >= 0

consider k = 34.

34 > 29 → both → 2, 1

34 > 33 → both → 3, 1

↳ → 4, 1

i should be less than 4

→ i < num rows.