



3	4	5
6	7	8
9	1	2

5	3	1
8	9	7
2	4	5

8	7	6
14	16	15
11	5	7

2	3	4
5	6	7
8	9	10

11	12	13
14	15	16

add ho
sukt?

2x3

3x3

`vector<vector<int>> ans(1, vector<int>(1))`

`ans[0][0] = -1`

Matrix

1	2	3
4	5	6
7	8	9

Transpose

1	4	7
2	5	8
3	6	9

3x3

Equal

Row **Col**

0	1	2	3
0	1	2	3
1	5	6	7
2	9	10	11
3	13	14	15

Row **Col**

0	1	2	3
0	1	5	9
1	2	6	10
2	3	7	11
3	4	8	12

for (i=0; i < rowsize-1; i++)

{

****for (j=i+1; j < colszie; j++)****

{

****swap(mat[i][j], mat[j][i]);****

}

↑

$\begin{bmatrix} 4 & 19 & 21 \\ 23 & 22 & \\ 17 & 18 & \end{bmatrix}$

	0	1	2	3	4
0	1	2	3	4	5
1	6	7	8	9	10
2	11	12	13	14	15
3	16	17	18	19	20
4	21	22	23	24	25
5	26	27	28	29	30

$\begin{matrix} 1 & 2 & 3 & 4 & 5 \\ 10 & 15 & 20 & 25 & 30 \\ 21 & 26 & 11 & 6 & \end{matrix}$

$\text{for } (\text{int } i = \text{downStart}; i \leq \text{downEnd}; i++)$
 $\quad \text{cout} \ll \text{mat}[i][\text{colEnd}];$

$\text{for } (\text{int } j = \text{colEnd}; j >= \text{colStart}; j--)$
 $\quad \text{cout} \ll \text{mat}[\text{rowEnd}][j];$

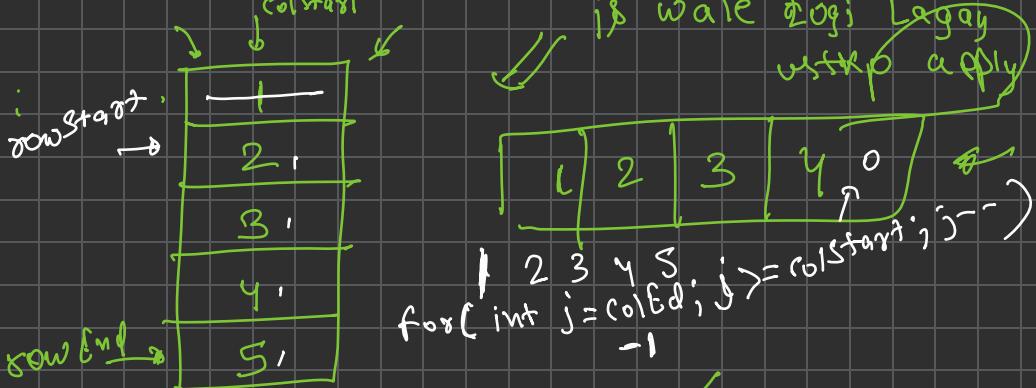
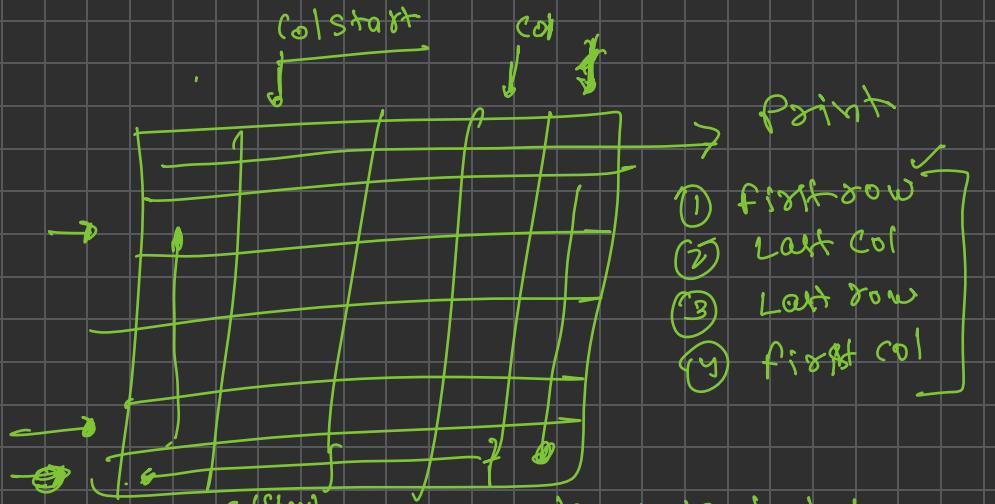
\downarrow ColStart
 \downarrow ColEnd

$\text{for } (\text{int } j = \text{colStart};$
 $\quad j \leq \text{colEnd}; j++)$
 $\quad \text{cout} \ll \text{mat}[j][\text{start}]$
 $\quad \uparrow$ start

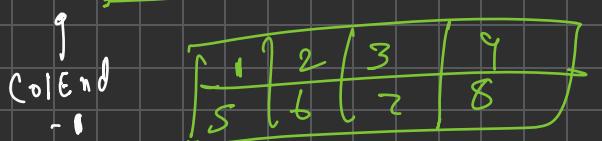
- ① Row no print karo.
downstart++
- ② Print Last column
~~except the first elem~~
- ③ Print the last row
in reverse order
etc 11
- ④ Print the first
column in reverse order
except
first &
last
elem

```
for( int i = rowEnd; i >= rowStart; i-- )
```

```
{ cout << mat[i][colstart];  
}
```



```
for( int j = colEnd; j >= colStart; j-- )
```



	0	1	2	3
0	1	2	3	4
1	5	6	7	8
2	9	10	11	12
3	13	14	15	16

90°
clockwise

	0	1	2	3
0	13	9	5	1
1	14	10	6	2
2	15	11	7	3
3	16	12	8	4

Col start → Transposed → Col End

	0	1	2	3
0	1	5	9	13
1	2	6	10	14
2	3	7	11	15
3	4	8	12	16

```

while ( colStart < colEnd )
{
    for ( i = 0 ; i < rowsize ; i++ )
        swap ( mat [ i ] [ colStart ], mat [ i ] [ colEnd ] )
}

```

4

$y = \text{col}$

$\text{row} = 3$

$\text{index} \Rightarrow \text{row_Index} * \text{colSize} + \text{colIndex}$

$$1 * 4 + 2$$

6

+ target = 26

if
find out

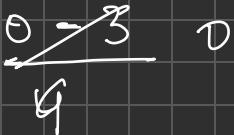
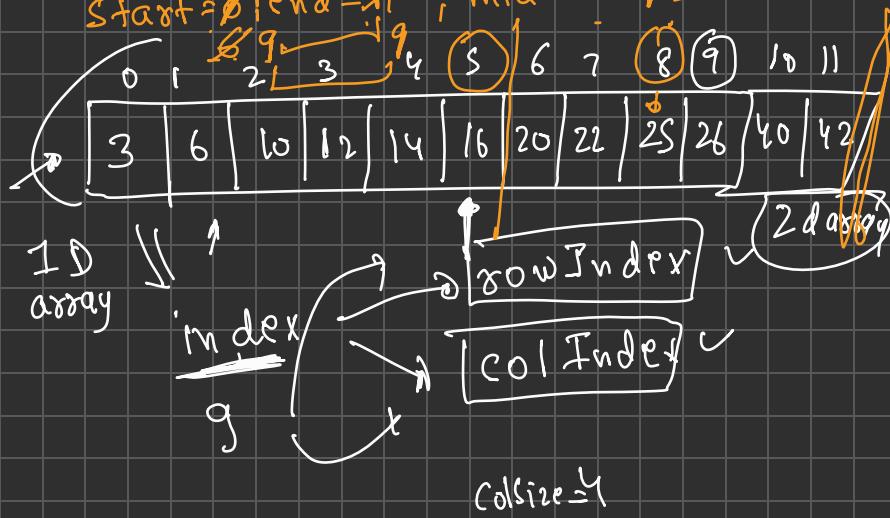
$O(m \times n)$

	0	1	2	3
0	3	6	10	12
1	14	16	20	22
2	25	26	40	42

Start = 0, end = 11, mid = 9, colSize = 4.

$$9 / 4 = 2$$

$$9 \% 4 \Rightarrow 1$$



$m \times n$ ✓

3	4	5	6	7
8	9	15	20	23
36	40	15	50	54
60	62	80	85	90
95	100	120	125	130

Target → 62

Paunch gay d4

0	1	2
0	1	2
1	4	5
2	6	-

2×3

0	1	4
0	1	4
1	2	5
2	3	6
3	-	1

3×2