



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



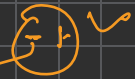
2	3	4
5	6	7
8	9	10

→

11	12	13
14	15	16

2x3

add ho
sakt?

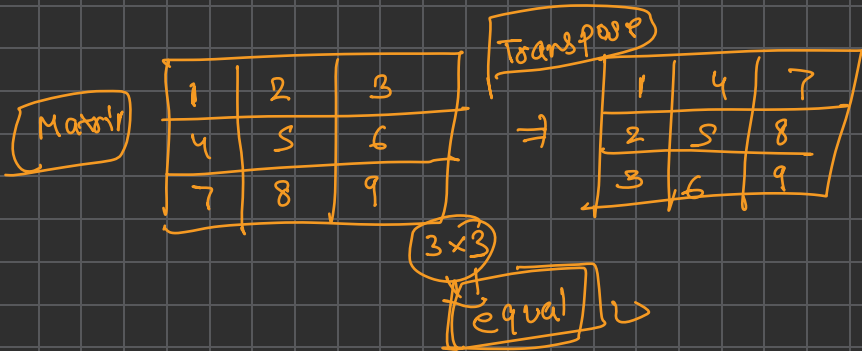


3x3

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

0
-1

`ans[0][0] = 1`



→ 0

→ 1

→ 2

→ 3

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

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

⇒

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

```

for (i=0; i < rowSize-1; i++)
{
    for (j=i+1; j < colSize; j++)
    {
        swap(mat[i][j], mat[j][i]);
    }
}

```

14 19 24
23 22
17 12

ColStart
ColEnd

For (int j = colStart; j <= colEnd; j++)
cout << mat[rowStart][j];

	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

- Row ko print karo rowStart se rowEnd tak
- Print Last column except the first element
- Print the last row in reverse order etc..
- Print the first column in reverse order

789

1 2 3 4 5
10 15 20 25 30
21 26 31 36

except
first &
last
element

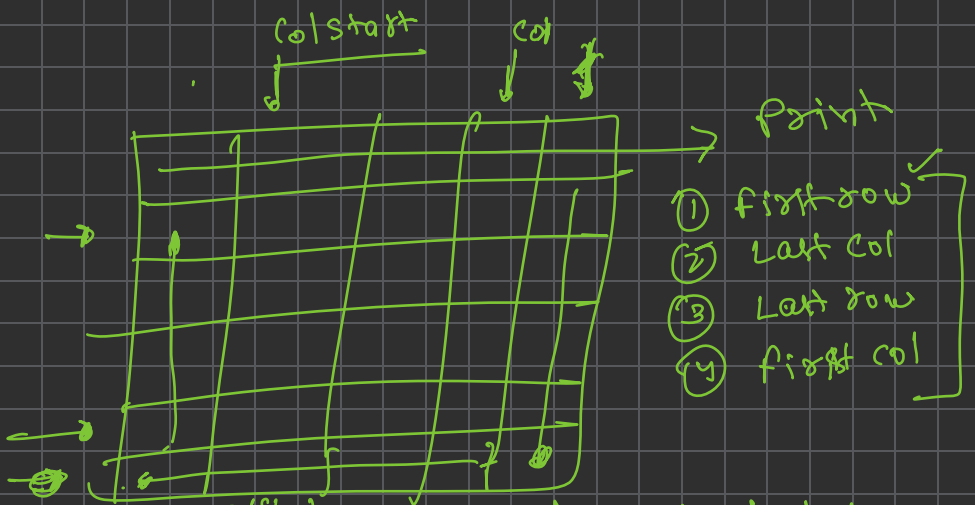
For (int i = rowStart; i <= rowEnd; i++)
cout << mat[i][colEnd];

For (int j = colEnd; j >= colStart; j--)
cout << mat[rowEnd][j];

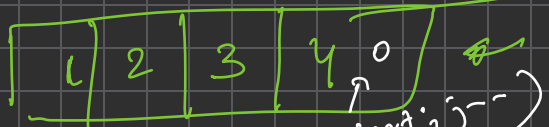
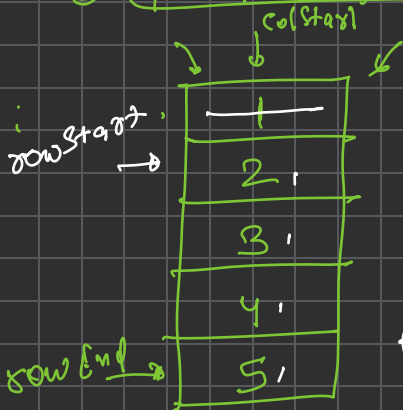
```

for (int i = rowEnd; i >= rowStart; i--)
{
    cout << mat[i][colStart];
}

```



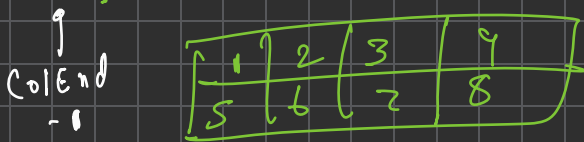
is wale dog; Lagay uskip apply



```

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

colstart → Transpose → ColEnd

	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 = col
row = 3

$$\text{index} \Rightarrow \text{row-Index} * \text{colSize} + \text{colIndex}$$

Start = 0, end

$$1 * 4 + 2 = 6$$

target = 26

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

$$\text{rowIndex} = \text{index} / \text{colSize}$$

$$\text{colIndex} = \text{index} \% \text{colSize}$$

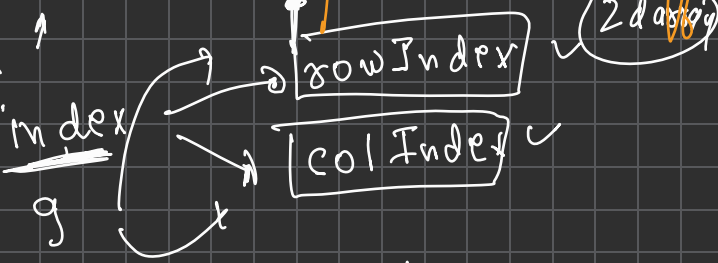
find out
 $O(m \times n)$

Start = 0, end = 11

mid = 9

0	1	2	3	4	5	6	7	8	9	10	11
3	6	10	12	14	16	20	22	25	26	40	42

1D array



colSize = 4

$$\frac{0-3}{4} = 0$$

$m+n$ ✓

3	4	5	6	7
8	9	15	20	25
36	40	45	50	54
60	62	80	85	90
95	100	120	125	130

Target 162 ✓

Launch
game

	0	1	2
0	1	2	3
1	4	5	6

2x3

	0	1
0	1	4
1	2	5
2	3	6

3x2