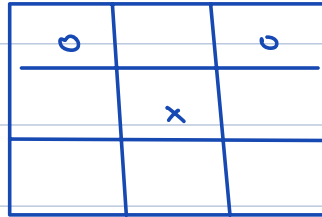
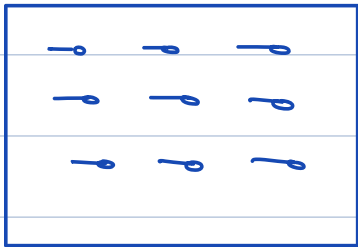


2d Arrays



collection of similar items.



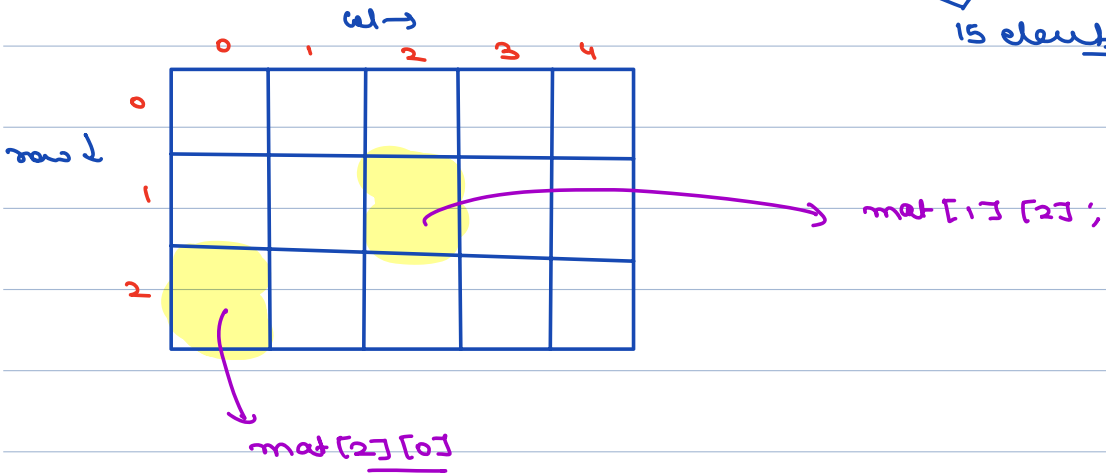
chess board, graphs, cricket stadium
light, etc.

Syntax :-

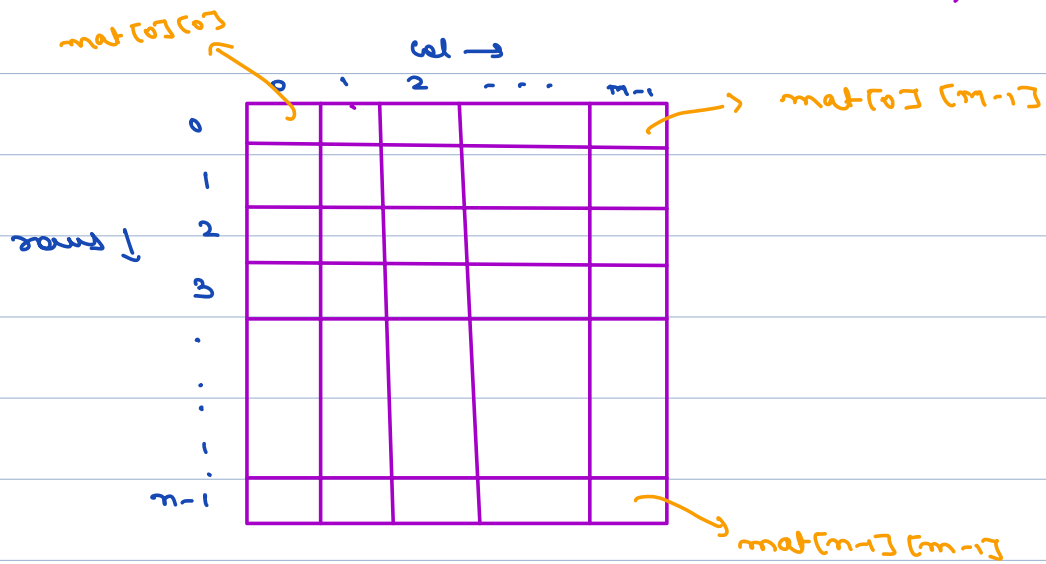
```
int [][] arr = new int[row][col];
```

```
int [][] mat = new int [3][5];
```

✓
15 cliffs.



```
int [][] mat = new int[N][M];
```



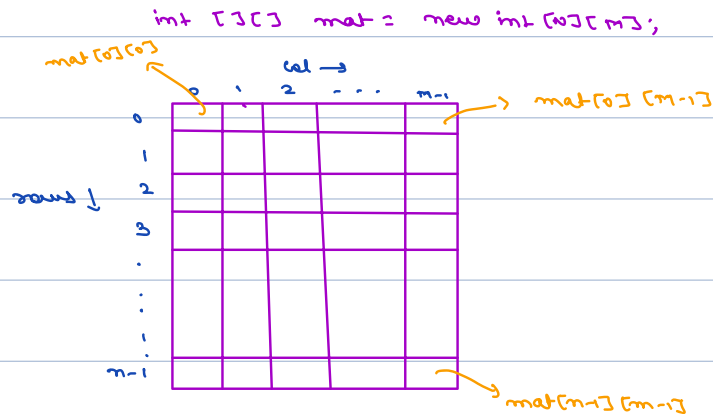
Ques) 5 cols & 7 rows.

```
int [][] mat = new int[7][5];
```

If you have a matrix of size M*N, what is the index of the bottom right corner?



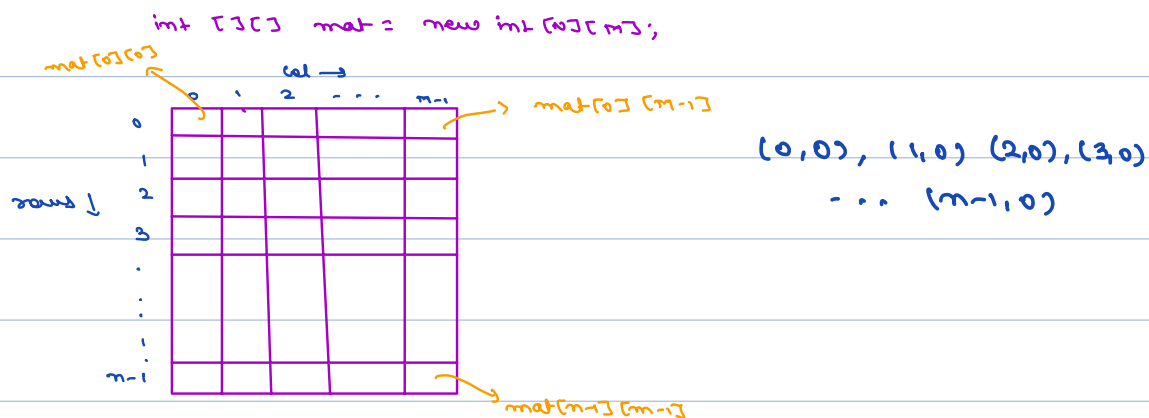
Ques) Given a matrix of size $N \times M$,
print its top row.



$(0,0), (0,1), (0,2) \dots (0,M-1)$

```
for (j=0; j < M; j++) {
    |   print(mat[0][j])
    |
    3
```

Ques) Given a $N \times M$ matrix, print its
left most column.



```
for (row = 0; row < n; row++) {
    print (mat[row][0]);
}
```

Ques) Given a matrix of n x m, print it row by row.

row ↓

	0	1	2	3	4
0	10	20	30	40	50
1	1	2	3	4	5
2	6	7	8	9	10

O/p

```
10 20 30 40 50
1 2 3 4 5
6 7 8 9 10
```

```
for (row = 0; row < n; row++) {
    for (col = 0; col < m; col++) {
        print (arr[row][col] + " ");
    }
    print("\n");
}
```

arr[0][0] arr[0][1] ... arr[0][m-1]
 → arr[1][0] arr[1][1] ... arr[1][m-1] :

Ques) Given a matrix of N x M, print it
col by col

		0	1	2	3	4
0	10	20	30	40	50	
1	1	2	3	4	5	
2	6	7	8	9	10	

O/p

10	1	6
20	2	7
30	3	8
40	4	9
50	5	10

```

for (col=0; col<M; col++) {
    for (row=0; row<N; row++) {
        print (arr[row][col] + " ");
    }
    print ln();
}

```

arr[0][0] arr[1][0] arr[2][0] ... arr[n-1][0]
arr[0][1] arr[1][1] arr[2][1] ... arr[n-1][1]