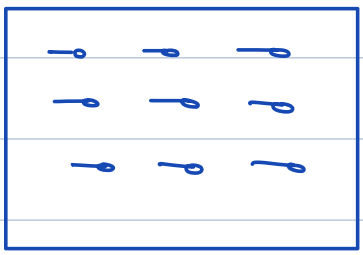
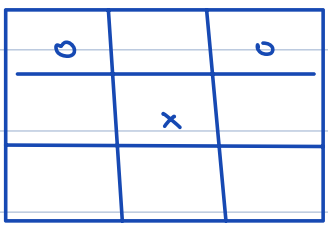
2d Arrays

↳ collection of similar items.





Chess board, Graphs, cricket stadium lights, etc.

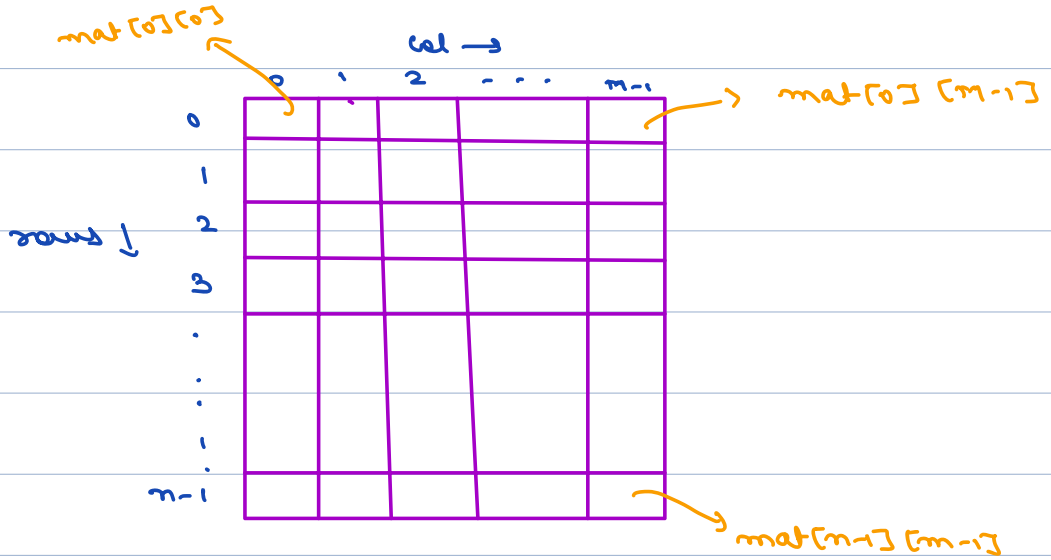
Syntax :-

```
int [][] arr = new int [row][col];
int [][] mat = new int [3][5];
```

row → row, col → col

↳ 15 elements.

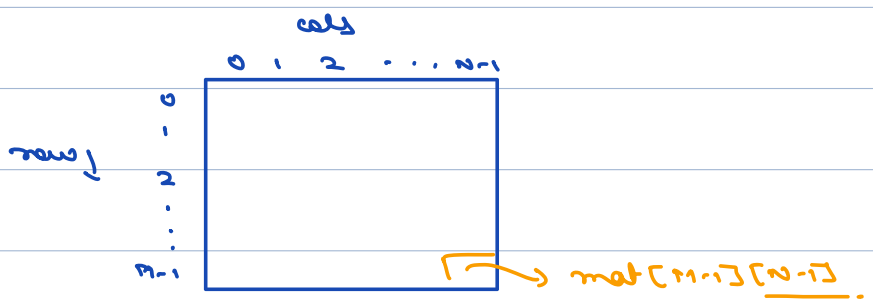
int [][] mat = new int [n][m];



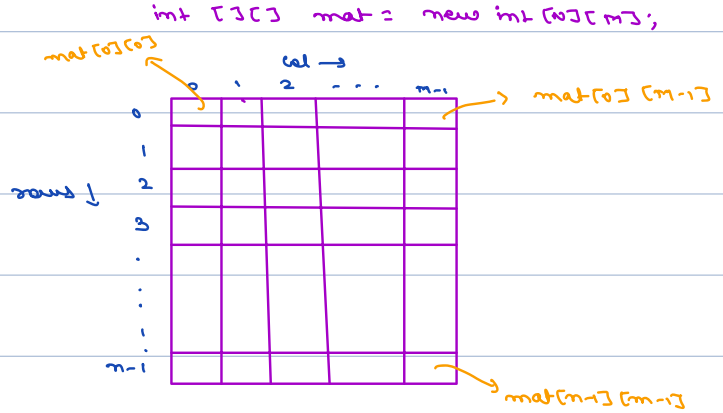
Ques) 5 cols & 7 rows.

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

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



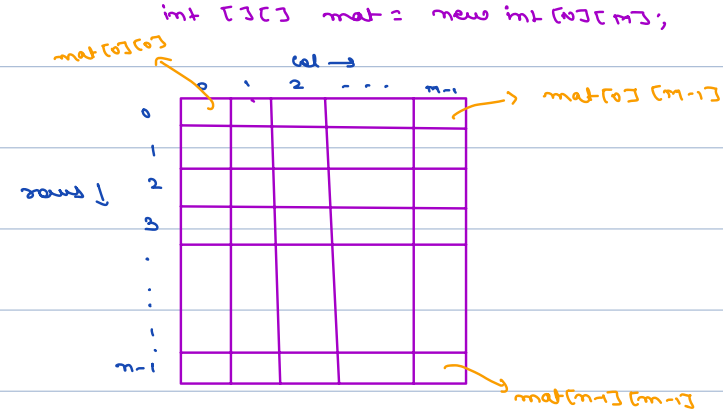
Ques) Given a matrix of size n×m, print its top row?



(0,0), (0,1), (0,2) ... (0, M-1)

```
for (j=0; j < m; j++) {
    print(mat[0][j])
}
```

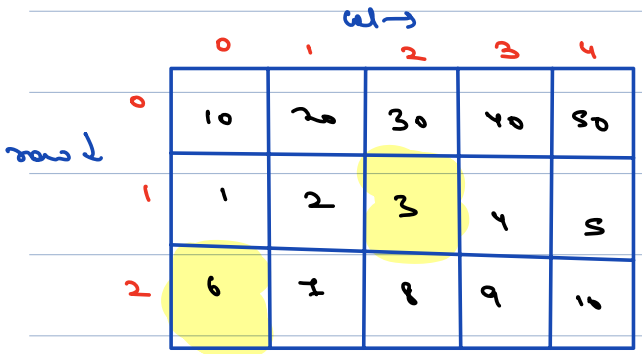
Ques) Given a n×m matrix, print its left most column.



(0,0), (1,0) (2,0), (3,0) ... (n-1,0)

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

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



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] + " ");
    }
    println();
}
```

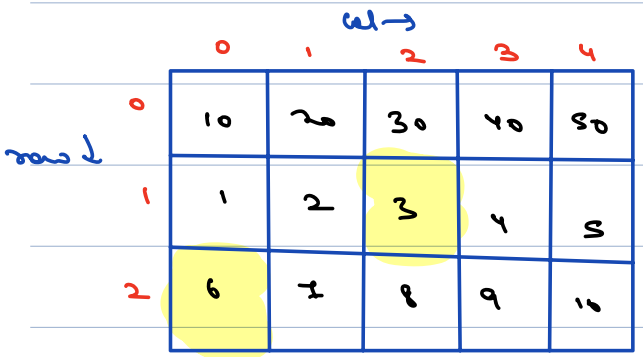
row = 0 to n-1

col = 0 to m-1

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*m, print it col by col



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] + " ");
    }
    println();
}
```

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]

https://www.scaler.com/topics/java/online-java-compiler/?snippet_slug=d895aef4dbc11283be5a