

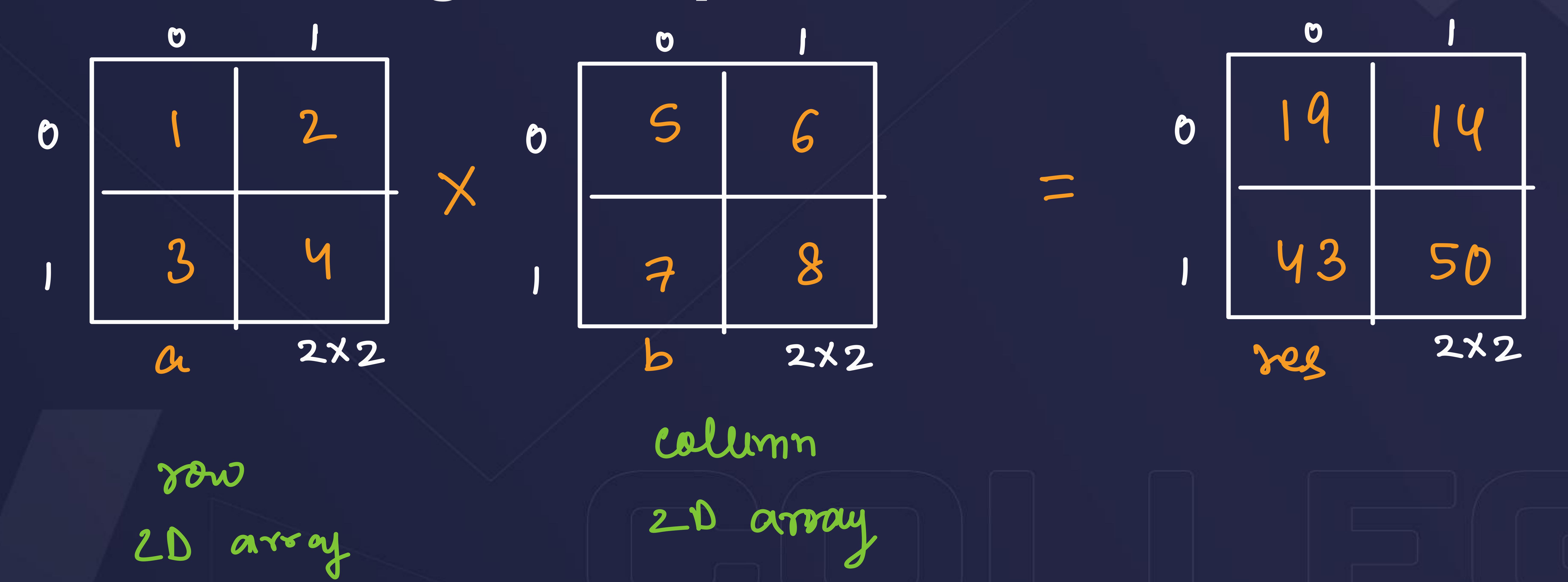
#### 2D Arrays-2

Lecture-15

Raghav Garg

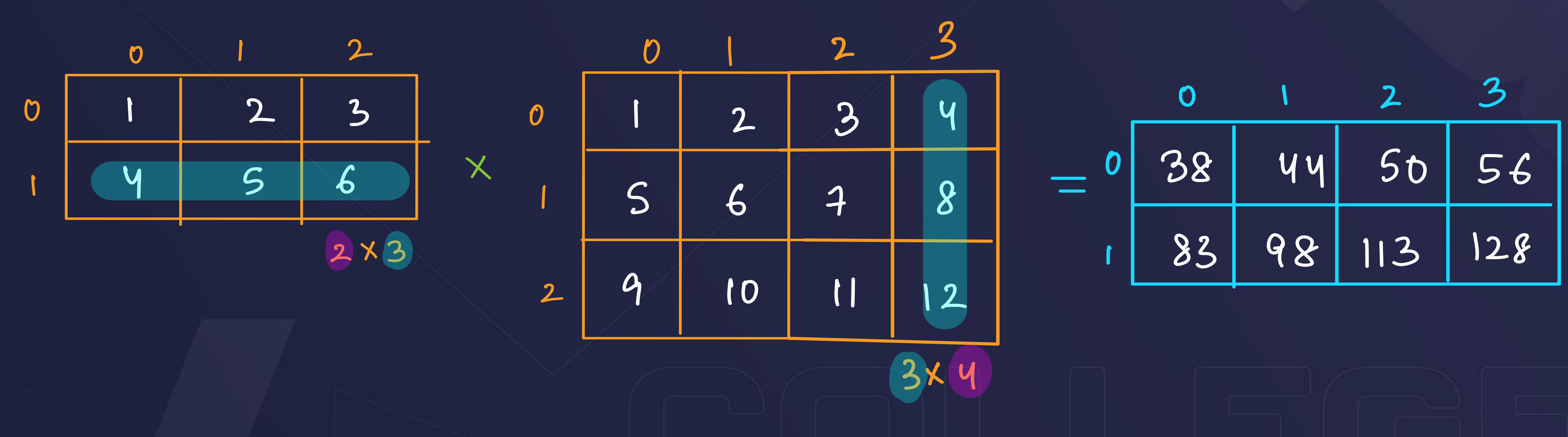


### Ques: Write a program to print the multiplication of two matrices given by the user.

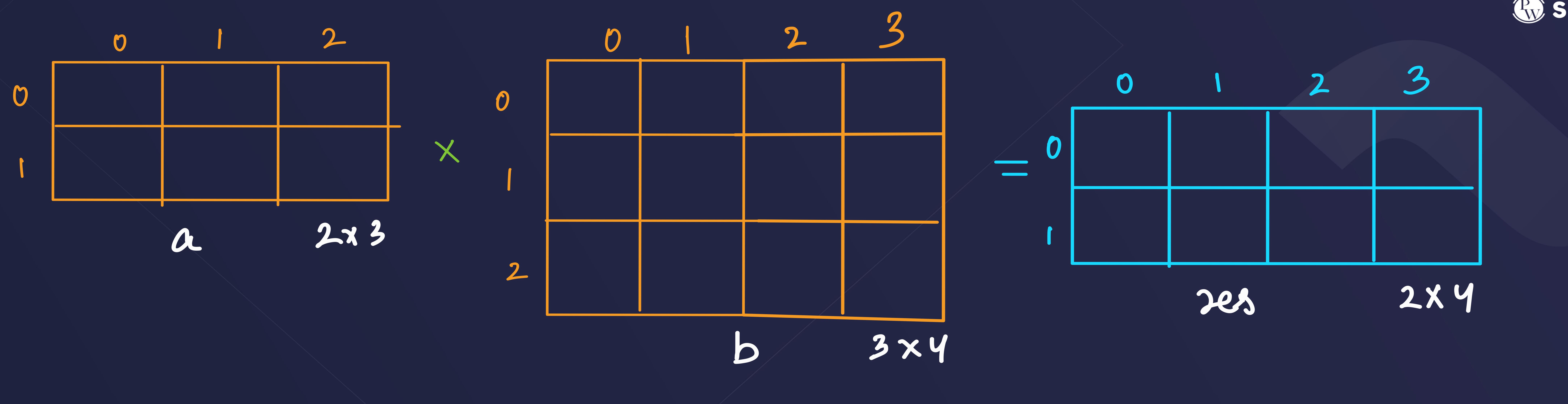




# Ques: Write a program to print the multiplication of two matrices given by the user.



BY SKILL:



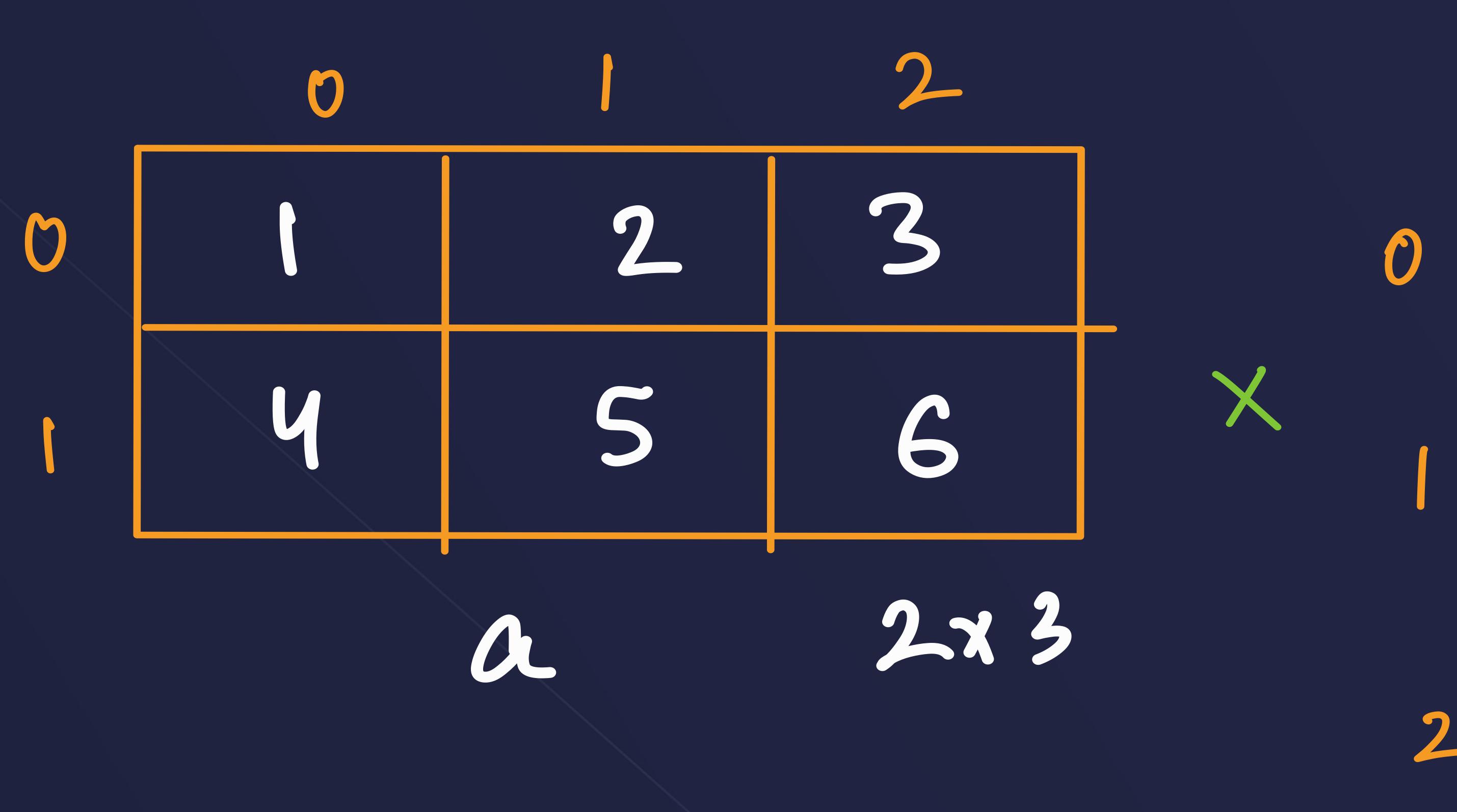
$$res [0][0] = a[0][0]^* b[0][0] + a[0][1]^* b[1][0] + a[0][2]^* b[2][0]$$

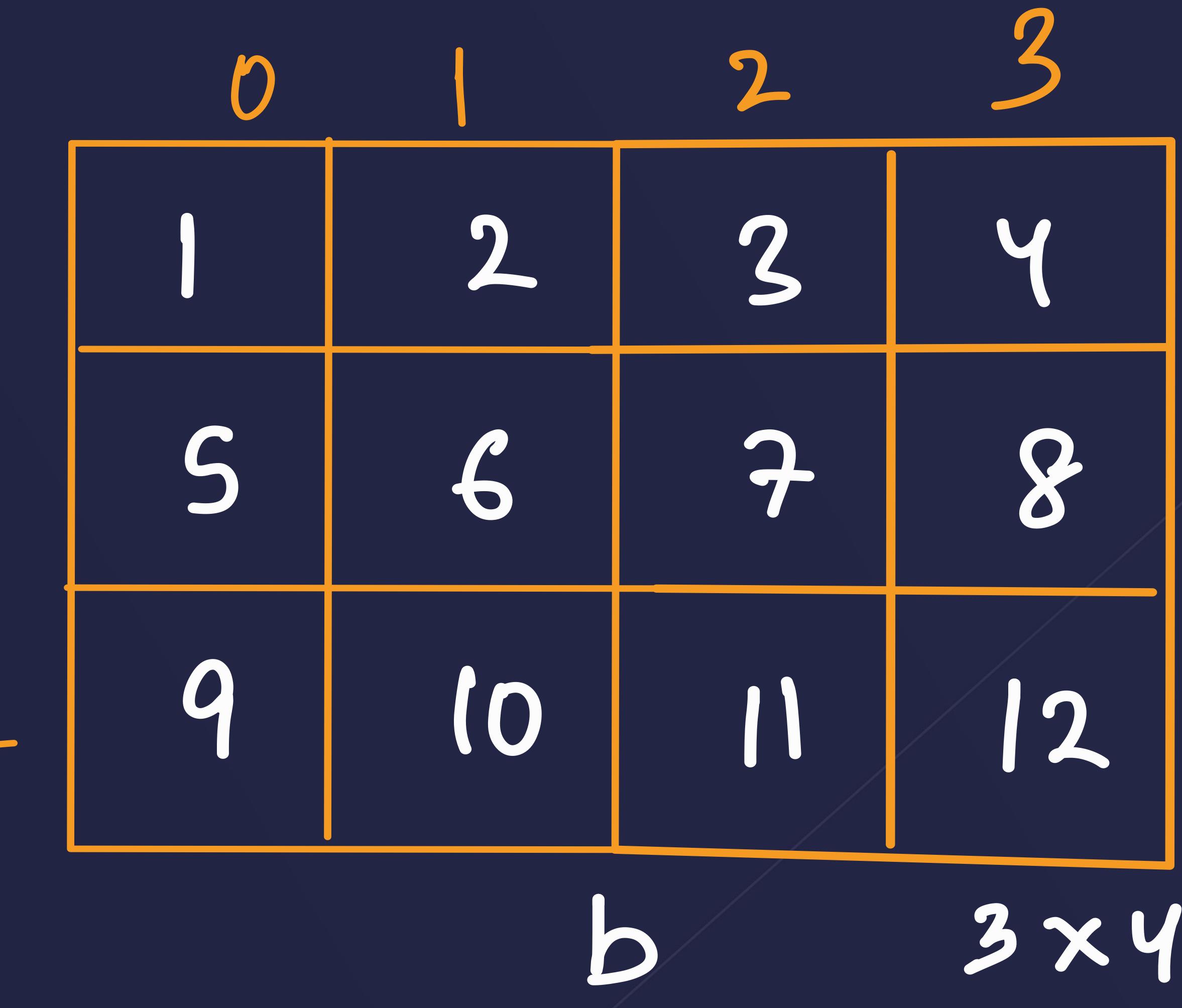
$$res [1][2] = a[1][0]^* b[0][1] + a[1][1]^* b[1][1] + a[1][2]^* b[2][1]$$

$$res [1][1] = a[1][0]^* b[0][1] + a[1][1]^* b[1][1] + a[1][2]^* b[2][1]$$

$$= \sum_{n=1}^{\infty} a[1][n]^* b[n][1]$$

BY SKILLS







```
int res[m][q];  m = 2, q = 4

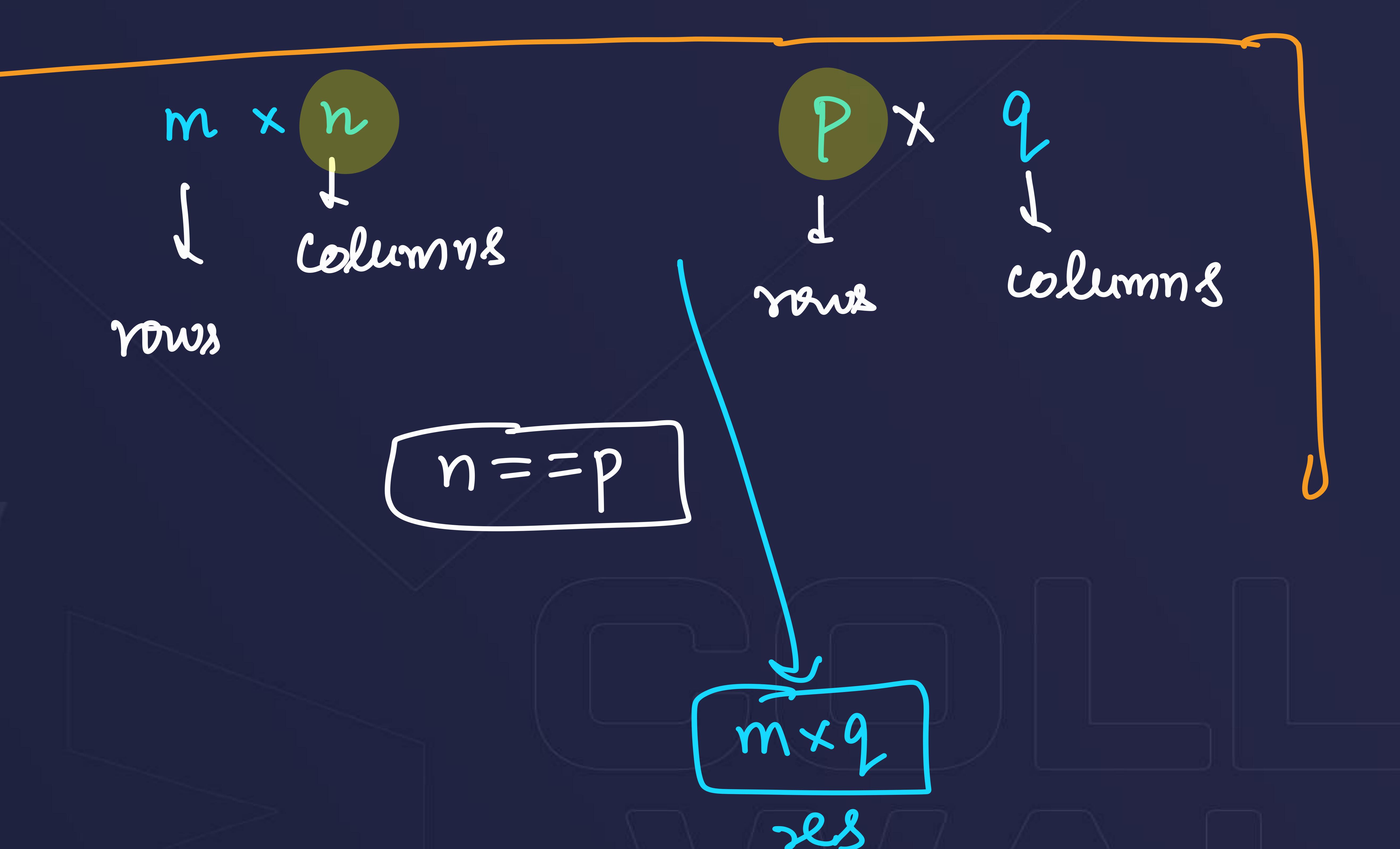
for(int i=0;i<m;i++){
    for(int j=0;j<q;j++){
        res[i][j] = 0;
        for(int k=0;k<p;k++){
            res[i][j] += a[i][k]*b[k][j];
        }
}

res[i][j] += a[i][k]*b[k][j];

cout<<endl;
```

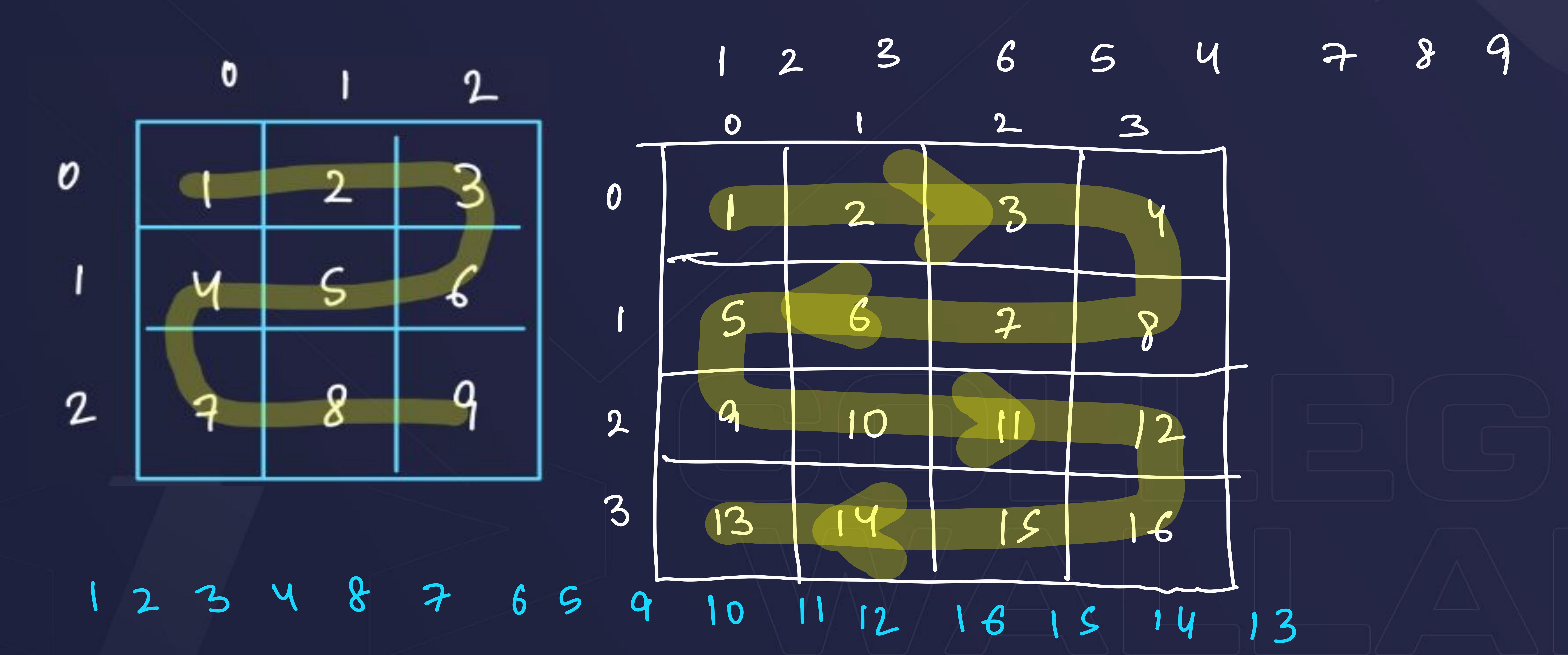


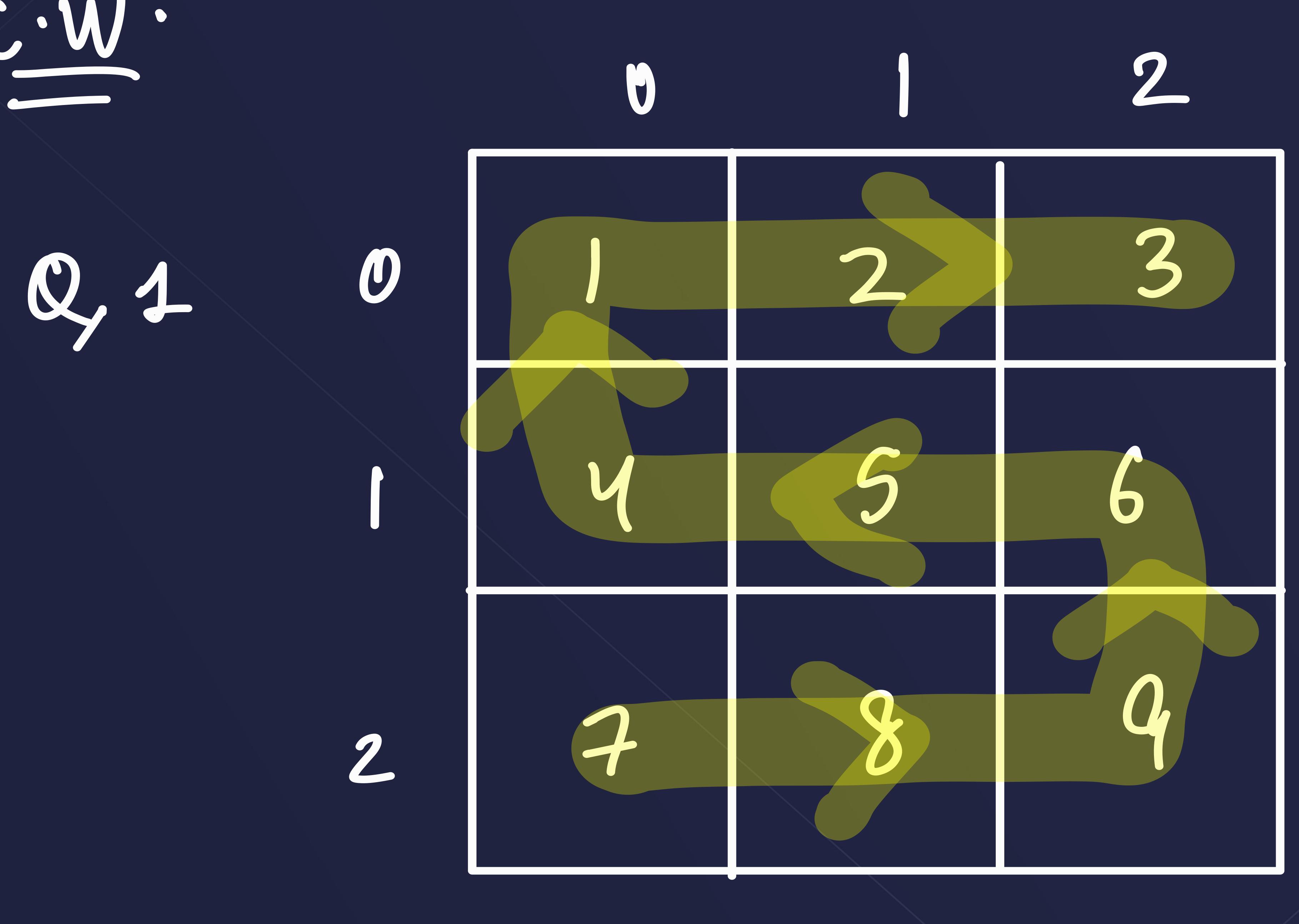
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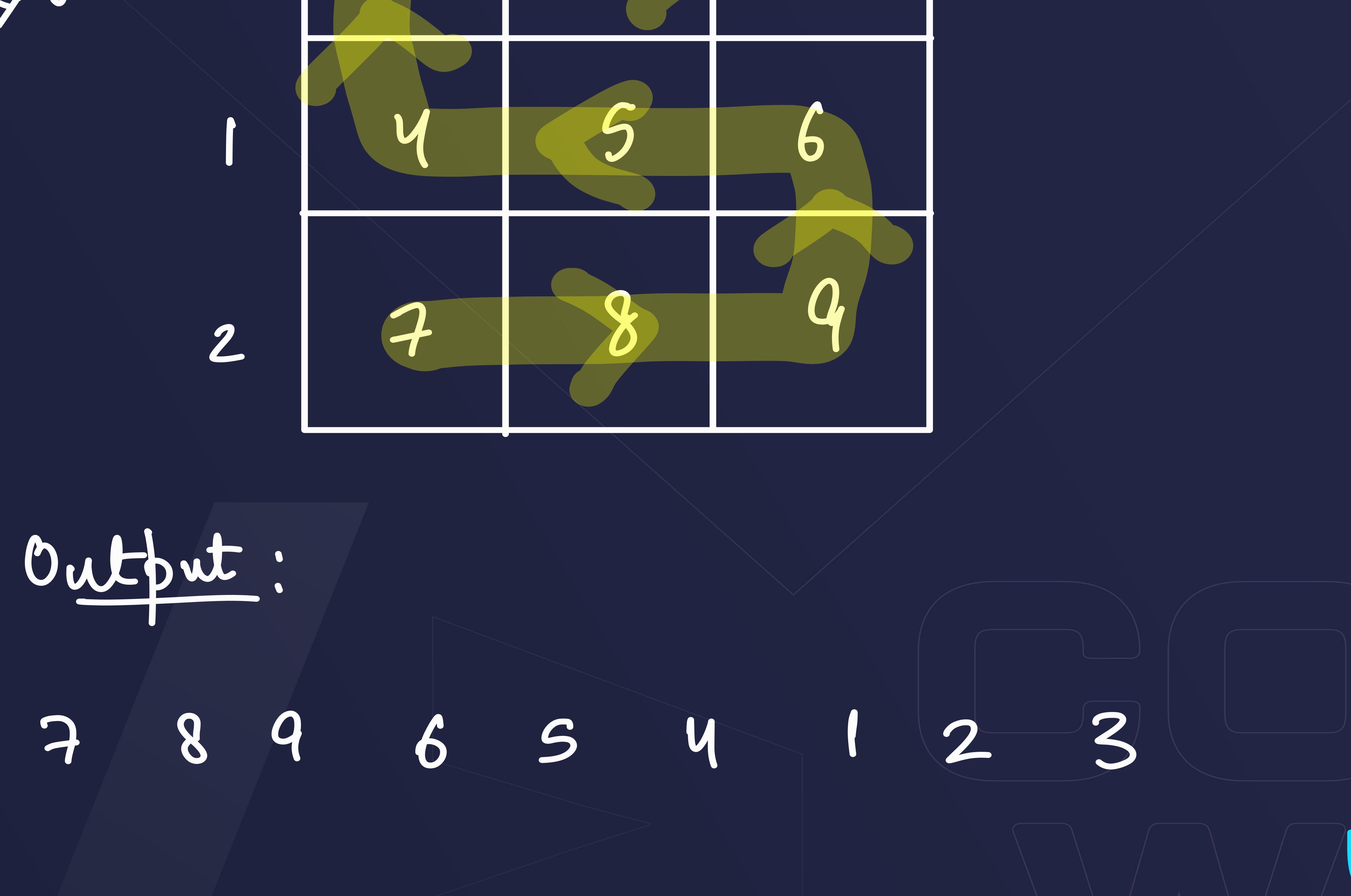


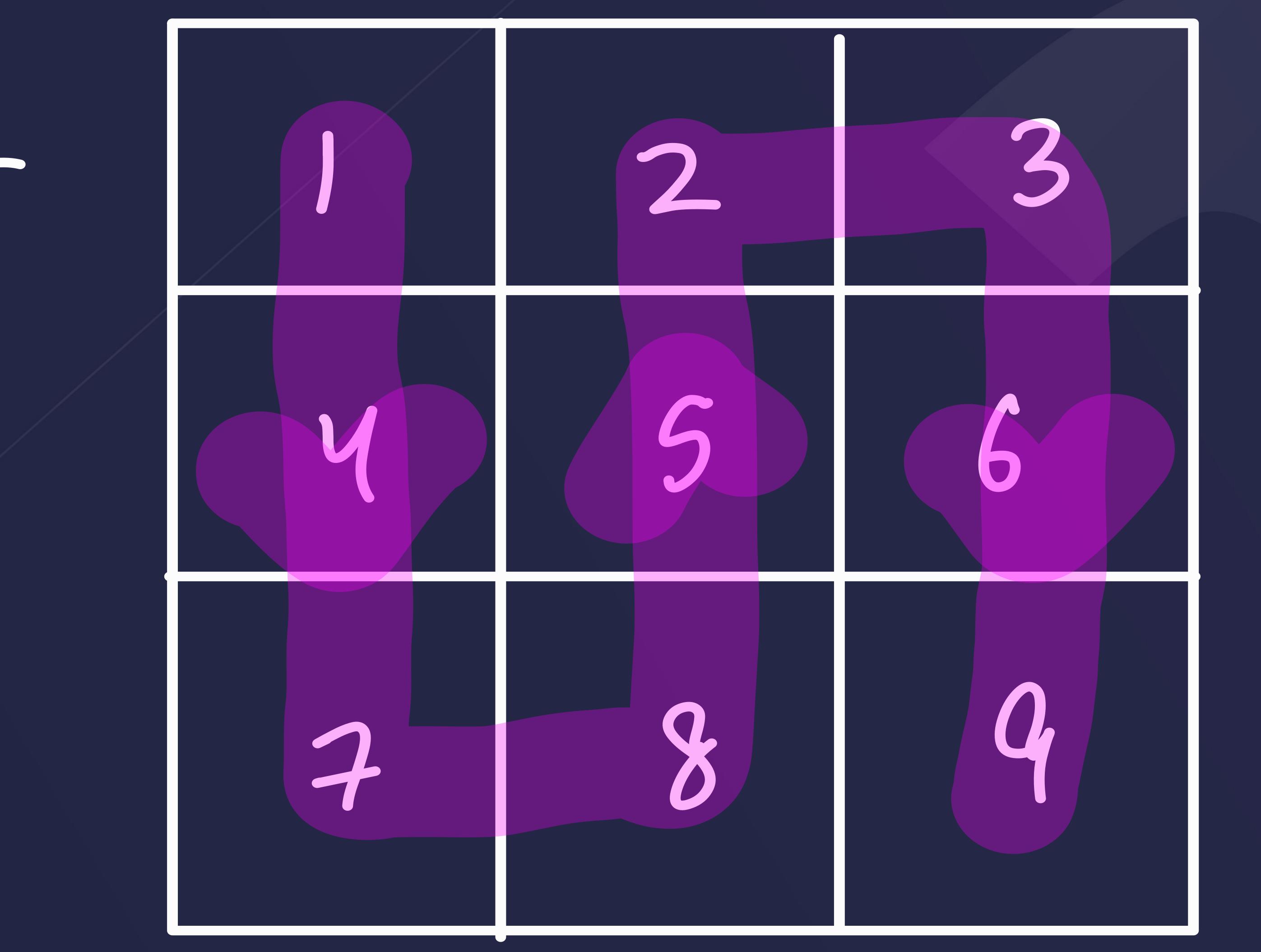


#### Ques: Write a program to print the matrix in wave form.







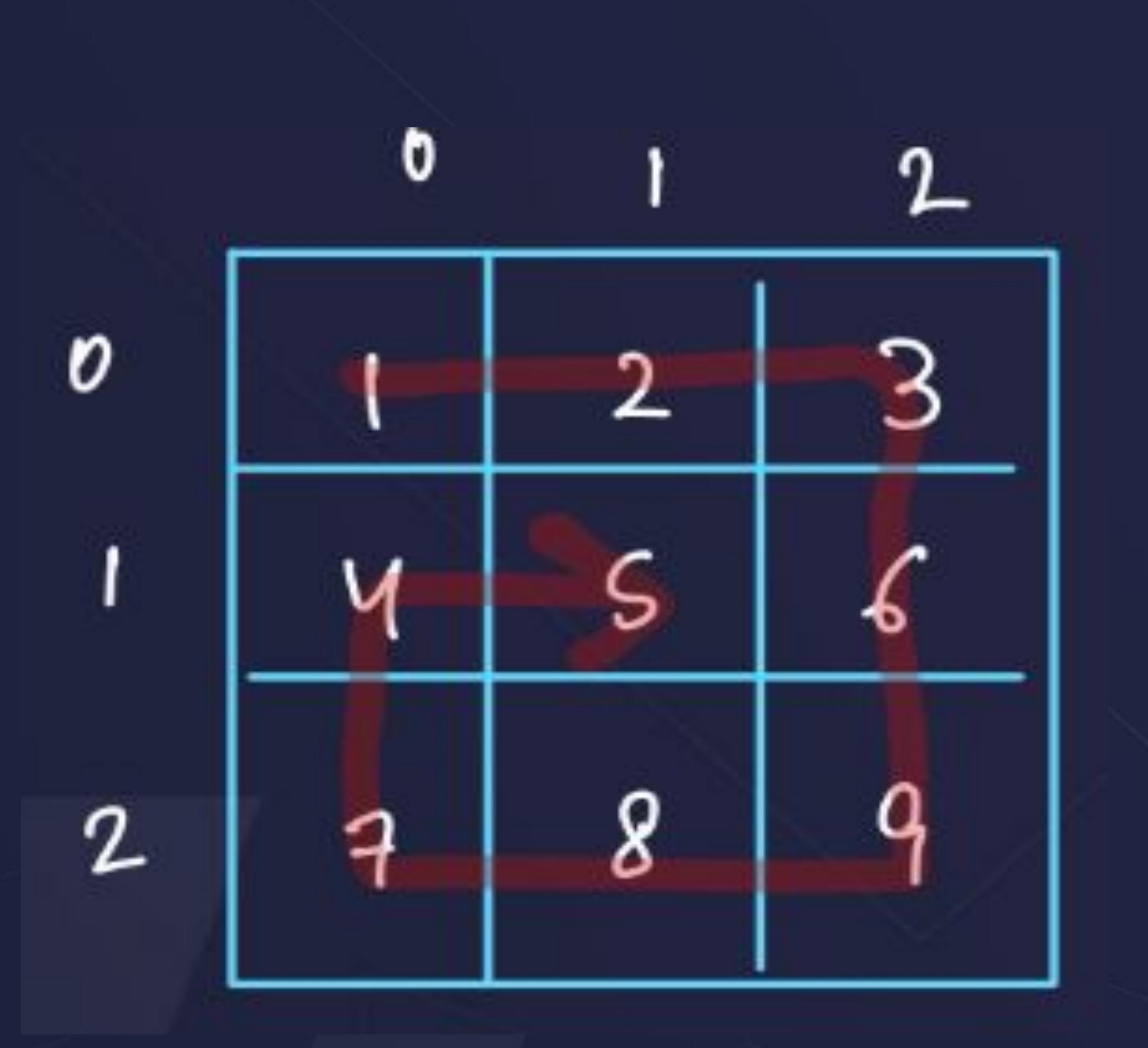


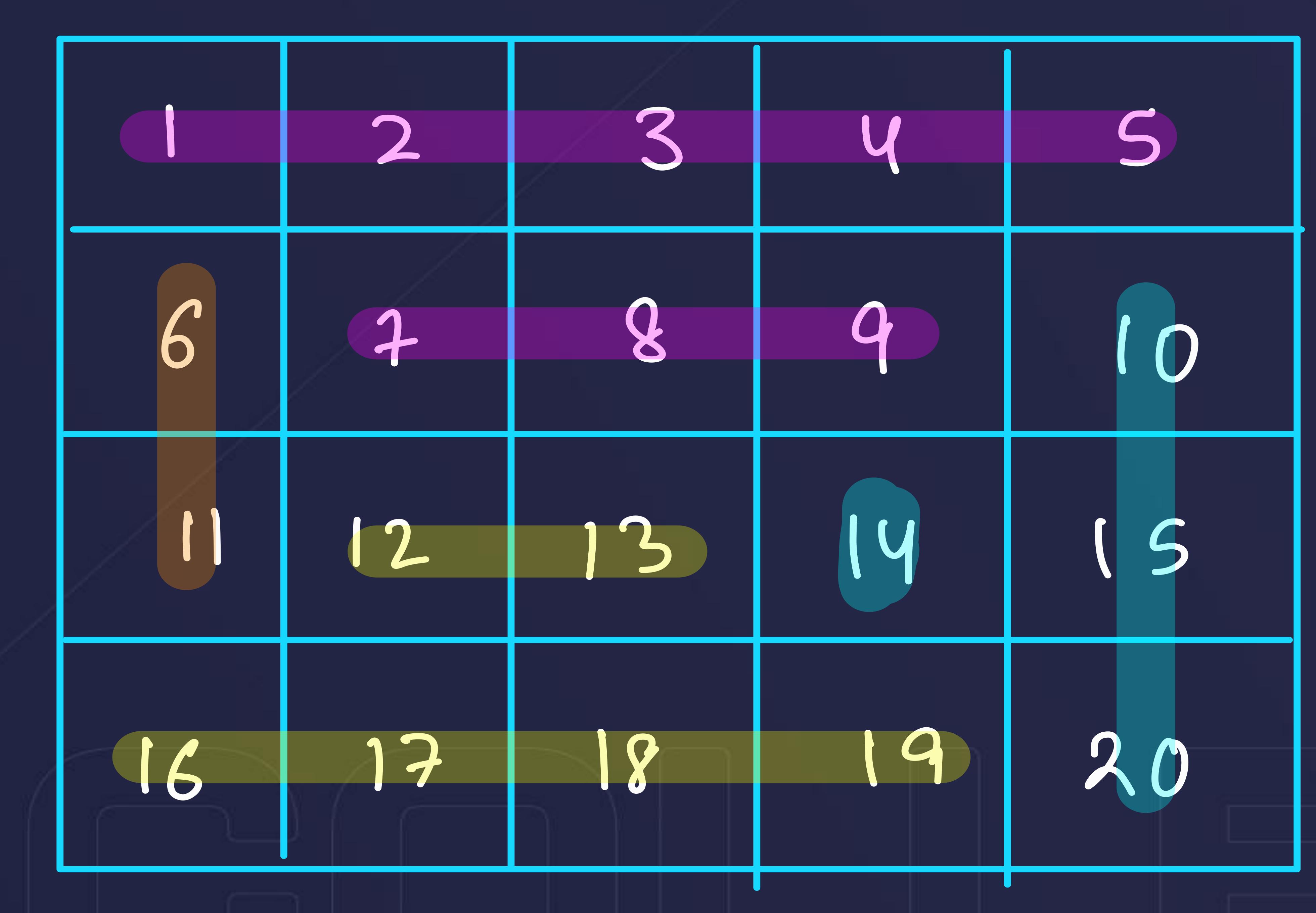
Column wise printing 1 4 7 8 5 2 3 6 9

1 4 7 2 8 369



#### Ques: Write a program to print the matrix in spiral form. Leetcode 54





o 1 2 3 4 5	
6 7 8 9	
2 11 12 13 14 (4	
3 16 17 18 19 20	

# Kint:
Right
Down
Left

Hint: 1 loop ke andar u loobe logenge

> MAAX MAM C MACH X

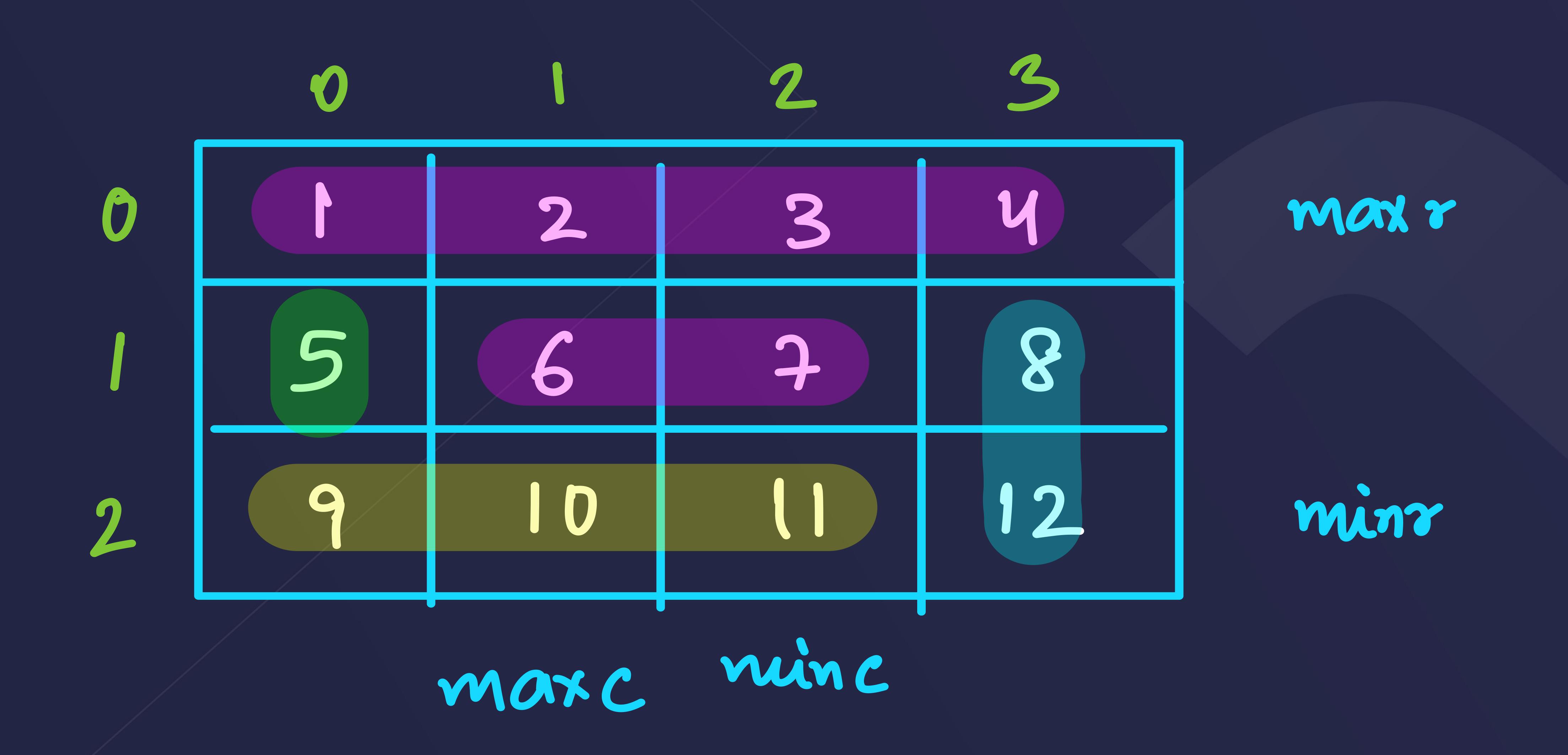
miny Right -> miny fix minc to maxc MUMY ++;

> Down > max c fix Many to maxy MAXC

```
11 12 13 14 15
                 MACXC
                 min C
11 left
for (int j = maxc; j >= minc; j--)5
   cont < arr [maxr][i] cc";
maxy
```

```
Right
 for (int j = minc; j <= maxc; j++){
    cout << arr [minr][j]<<"".
  many +;
for (int i= minr; i<= maxr; i++)
   cout << arr(i][maxc]<<";
 MOXC-
 for (int i = maxy; 17=miny; 1--) {
   cout < 2 arr [i] [minc] 2 < " ";
 nun C++;
```

```
while(minr<=maxr && minc<=maxc){</pre>
    for(int j=minc;j<=maxc;j++){</pre>
         cout<<arr[minr][j]<<";</pre>
    minr++;
        down
    for(int i=minr;i<=maxr;i++){</pre>
         cout<<arr[i] [maxc]<<";</pre>
    maxc--;
     //left
         cout<<arr[maxr][j]<<";</pre>
    maxr--;
    for(int i=maxr;i>=minr;i--){
         cout<<arr[i][minc]<<";</pre>
    minc++;
} // 1 2 3 4 8 12 11 10 9 5 6 7
```



RILLS

for(int j=maxc; j>=minc; j--){
23481211095676



# Thankyou!

SOLLEGIE WALLAH