

Let's solve it

22

A
logically

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

count = 1;

3 x 5

for i
{ for j

count[j] =

3

count

row major (A)
vs

column major (B)

row

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

col

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

physically

C programming language
conveys are following
"low major" (fact)

A ✓

$$C = \begin{bmatrix} \text{circled } x & x & x & x \\ x & x & x & x \\ x & x & x & x \end{bmatrix}$$

3×4

$$= \begin{bmatrix} \text{circled } a_0 & \text{circled } a_1 & \dots & \dots \\ \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots \end{bmatrix}$$

3×4

$$+ \begin{bmatrix} \text{circled } b_0 & b_1 & b_2 & b_3 \\ \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots \end{bmatrix}$$

3×4

for ($i=0, i < 3, i++$)

{ for ($j=0, j < 4, j++$)

$$\{ \begin{matrix} \uparrow \\ C[i][j] = a[i][0] \cdot b_0 + b[i][j] \end{matrix}$$

$\times 3$

1	1
0	0
	1
	2
	3
1	0
	1
	2
	3
2	0
	1
	2
	3

int sales[person][products]

person

	0	1	2	3	4	5	6	7
0	1	2	2	1	5	9	3	
1	2							
2	2							
3	9							
4	7							

Sales By Product

	p0	p1	p2	p3				

Sales By person

```

int salesByPerson[5];
int sum;
for (i = 0; i < 5; i++)
{
    sum = 0;
    for (c = 0; c < 7; c++)
    {
        sum = sum + sales[i][c];
    }
    salesByPerson[i] = sum;
}

```

```
int salesByProduct[7];
```

```
for (c = 0; c < 7; c++)
```

```
{
```

```
    sum = 0;
```

```
    for (r = 0; r < 5; r++)
```

```
    { sum += sales[r][c];
```

```
    salesByProd[c] = sum;
```

```
}
```

0-4

0-6

int toSales = 0

Put together everything

```
for (r = 0; r < 5; r++)
```

```
{  
    for (c = 0; c < 7; c++)
```

```
    {  
        toSales += sales[r][c]
```

```
    }
```

```
}
```