

2d \rightarrow 1d
index
conversion
formula
to get
value at
2d index

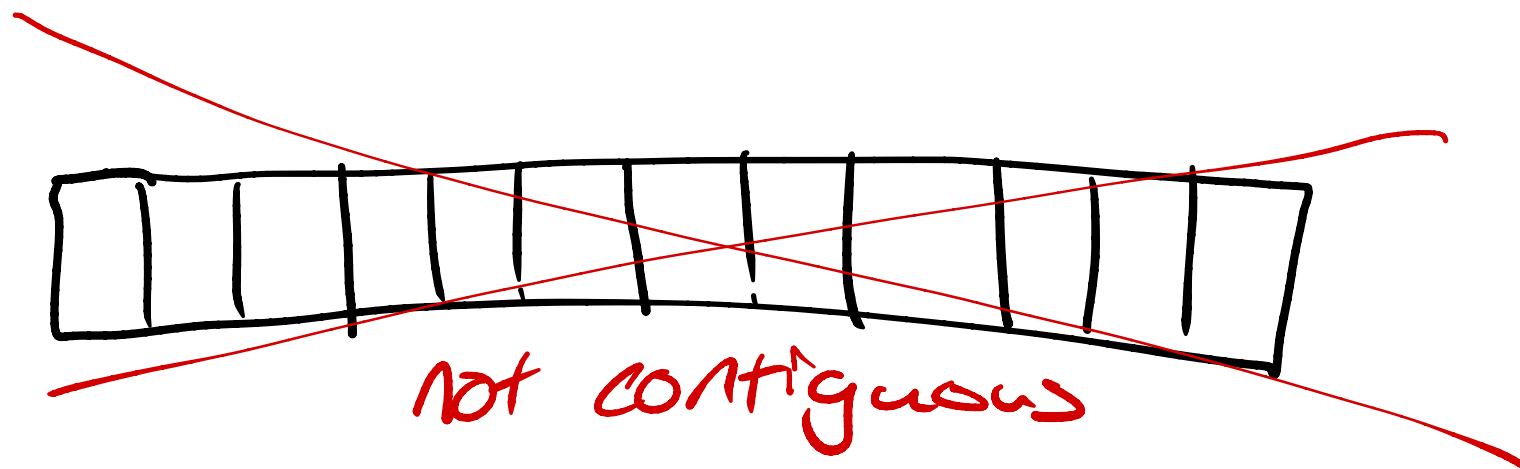
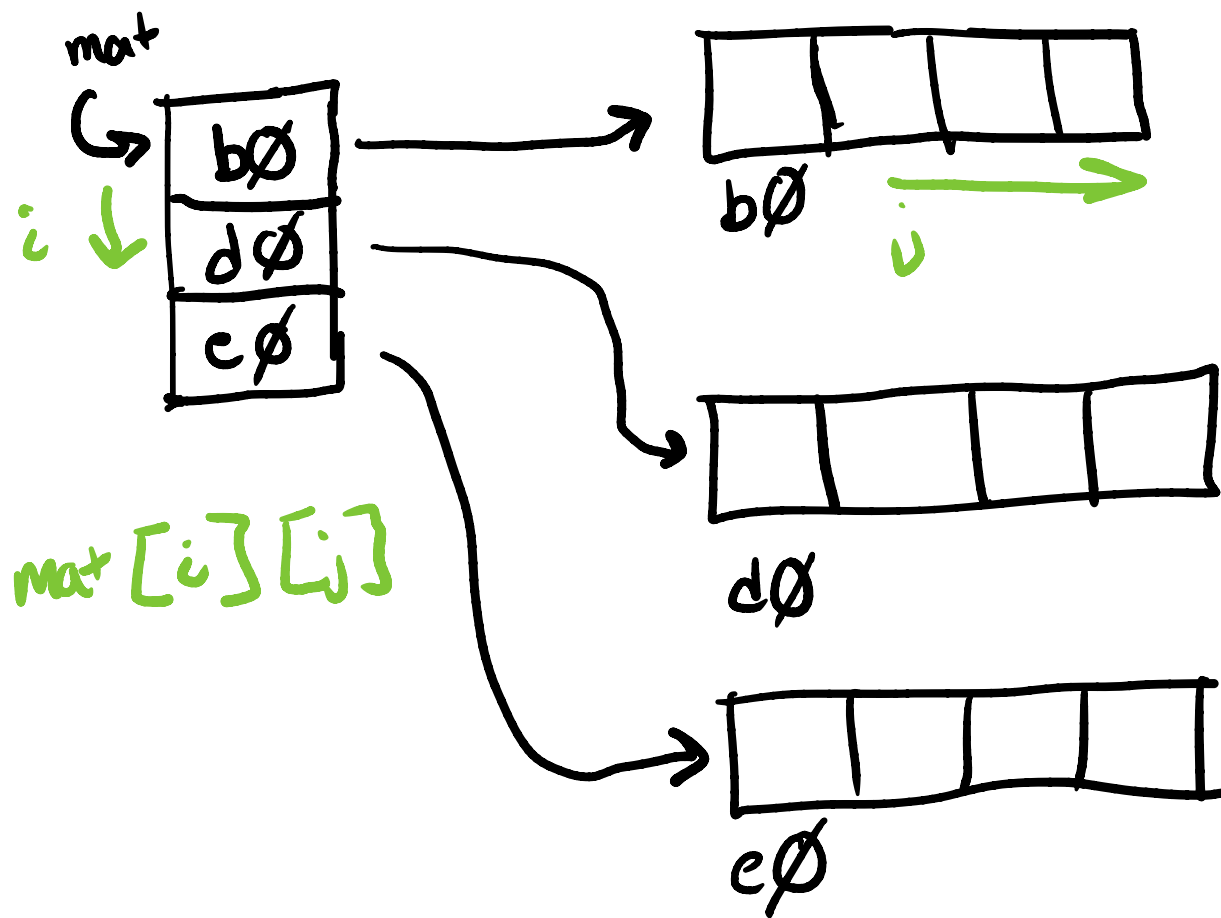
Goal: access row i , column j
Ex: how to access row 1, column 2 \leftarrow

$\ast(\text{mat} + 6)$
How can go from 2d index to 1D index
 $6 = \text{mat} + 4 + 2$

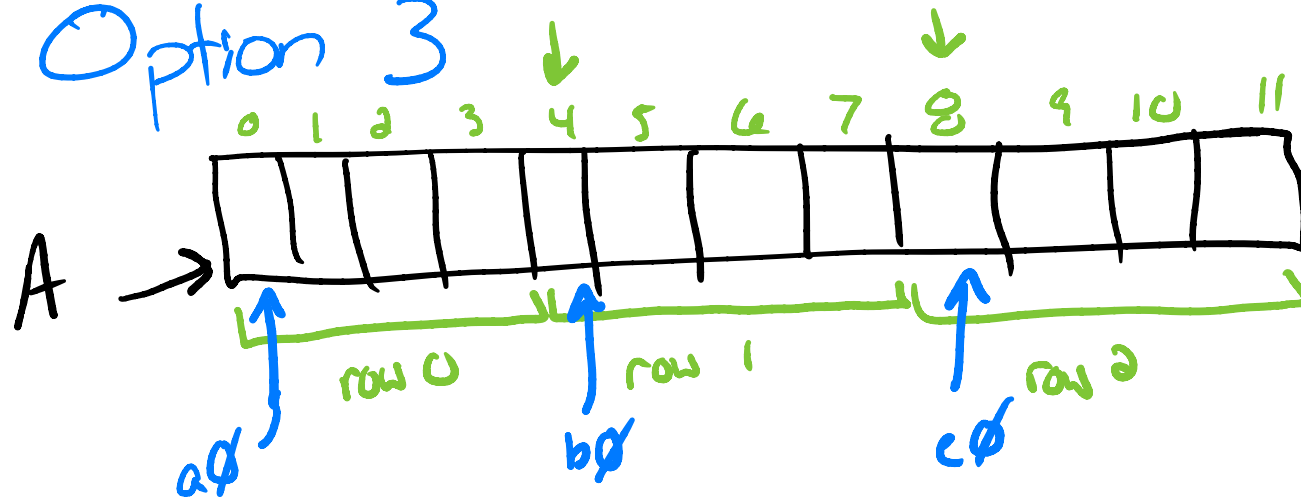
$$\text{mat}[i][j] = \ast(\text{mat} + i \ast \text{ncols} + j)$$

0	1	2	3
4	5	6	7
8	9	10	11

\leftarrow what we are trying
to represent (conceptually)

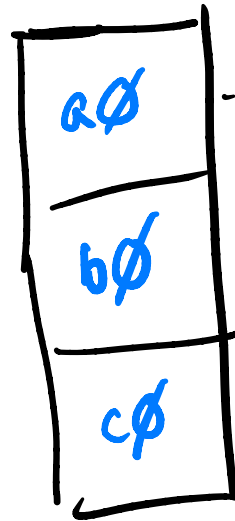


Option 3



$n_{cols} = 4$
 $n_{rows} = 3$

mat
stores
int *



$$A + 0 = A + i * n_{cols}$$

$$A + 4 = A + i * n_{cols}$$

$$A + 8 = A + i * n_{cols}$$

$$i = 0$$

$$i = 1$$

$$i = 2$$

$\text{malloc}(n_{rows} * n_{cols} * \text{size of (int)})$

→ contiguous