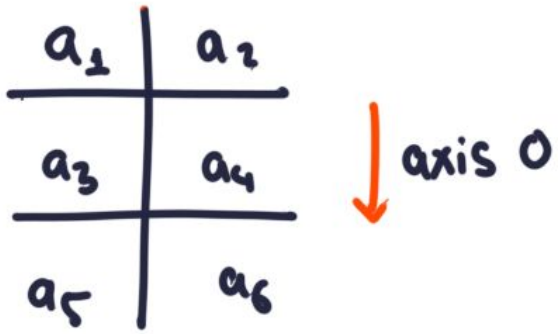
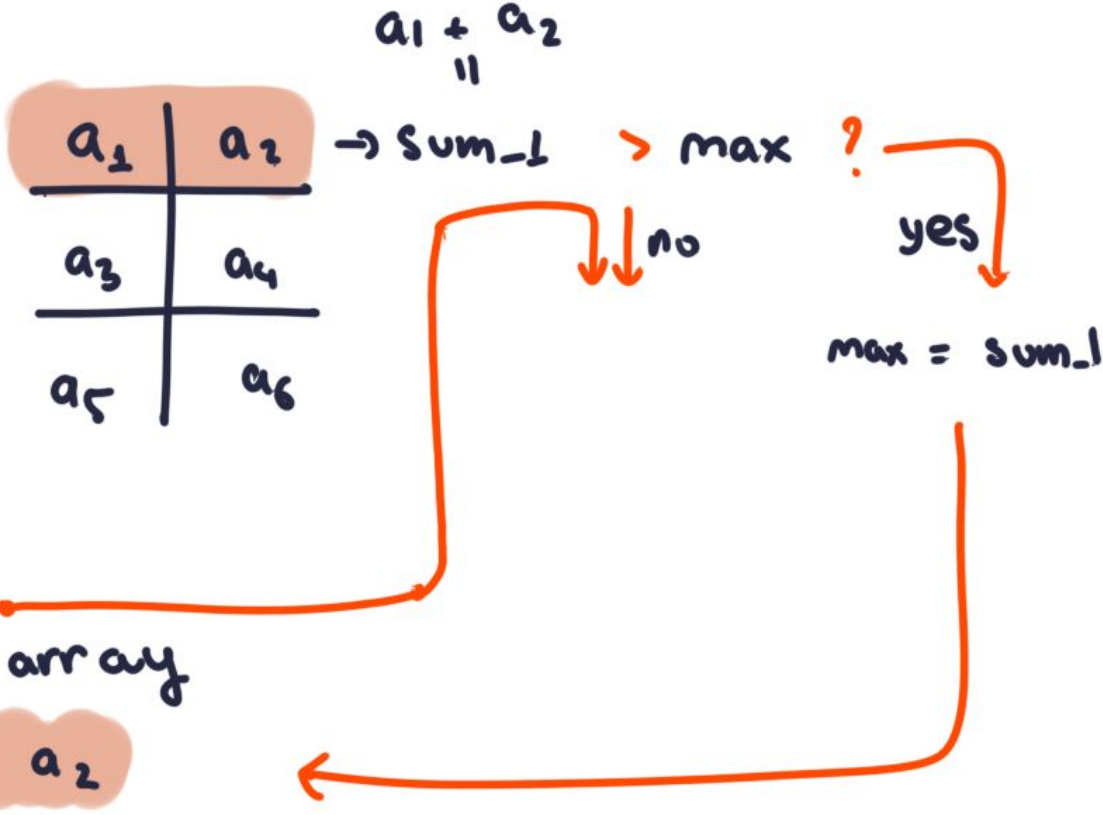
Exercise 8

function 1


a_1 a_2
a_3 a_4
a_5 a_6
axis 0


$a_1 + a_2$
a_1 a_2
a_3 a_4
a_5 a_6
→ sum_1
> max ?
no
yes
max = sum_1
output array
a_1 a_2

function 2

a_1	a_2
a_3	a_4
a_5	a_6

axis 1

a_1	a_2
a_3	a_4
a_5	a_6

$j = 0$

(1) sum_t > max ?

(2) yes

(2) no → next column

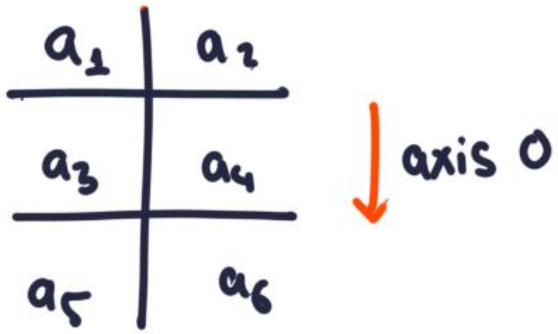
(3) max = sum_t

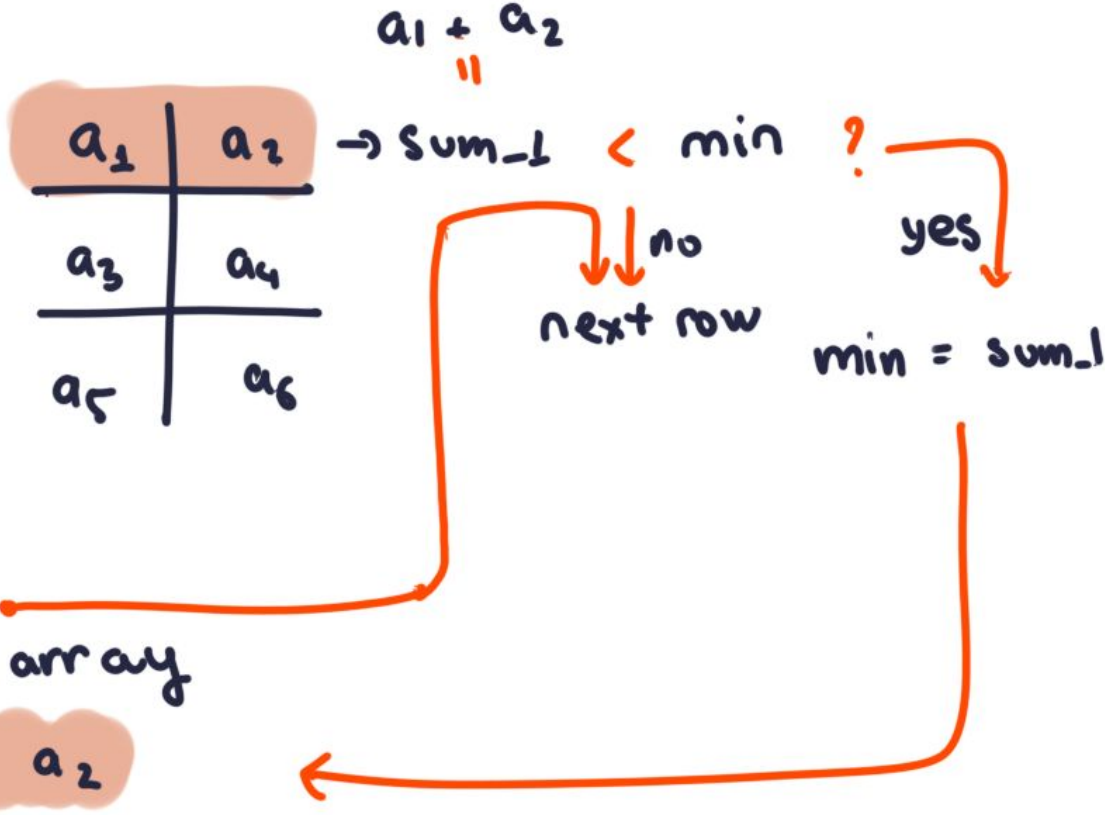
(4) output array

a_1	a_3	a_5

(5)

function 3


a_1 a_2
a_3 a_4
a_5 a_6
axis 0


$a_1 + a_2$
a_1 a_2
a_3 a_4
a_5 a_6
→ sum_1 < min ?
no
next row
yes
min = sum_1
output array
a_1 a_2

function 4

a_1	a_2
a_3	a_4
a_5	a_6

axis 1

a_1	a_2
a_3	a_4
a_5	a_6

$j = 0$

(1) sum_t < min ?

(2) yes

(2) no → next column

(3) min = sum_t

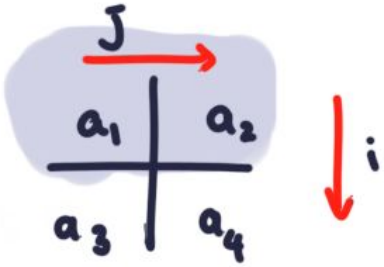
(4) out put array

a_1 a_3 a_5

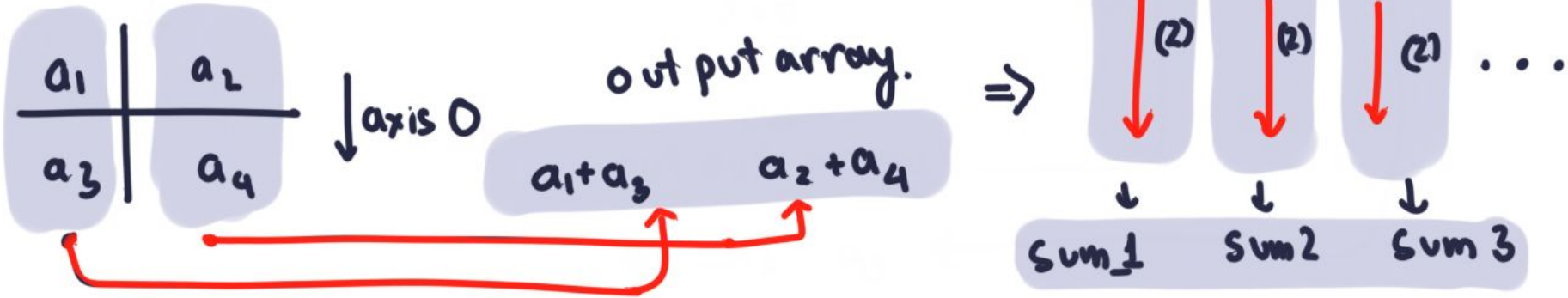
(5)

function 5

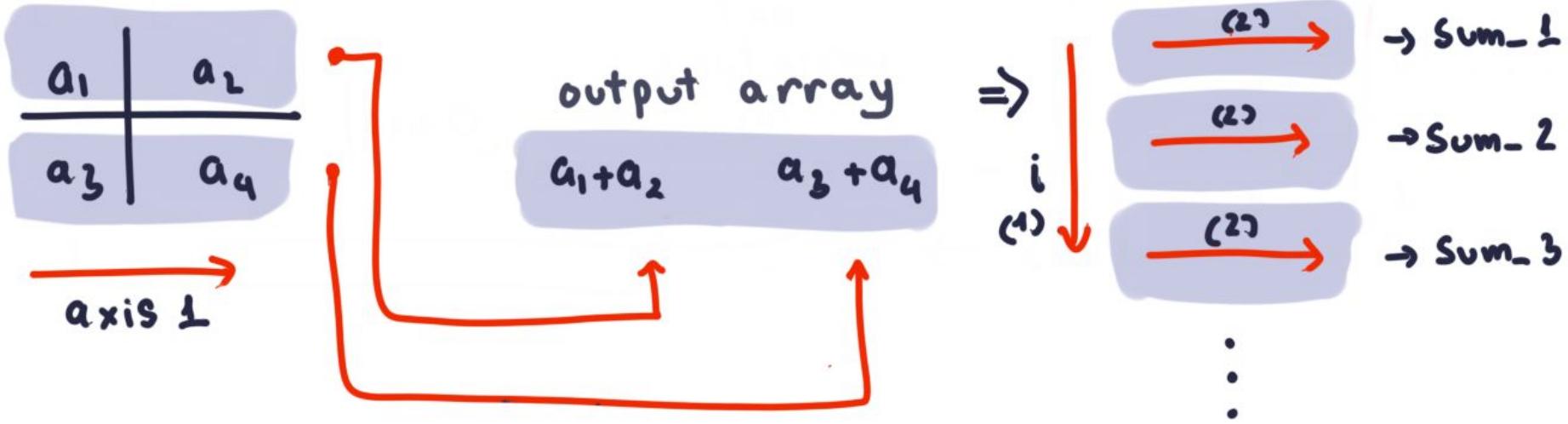
a_1	a_2
a_3	a_4



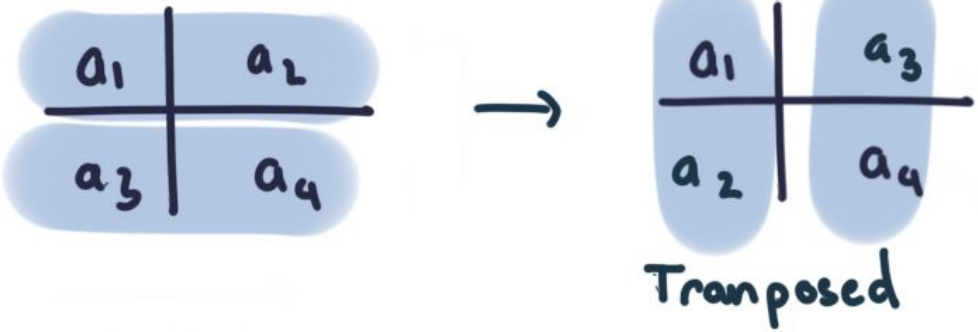
function 6



function 7



function 8



Linear Algebruh

$A \rightarrow A^T$

$a_{ij} \rightarrow a'_{ji}$

⇒ C code :

```
tranposed[i][j] = array[j][i];
```

function g

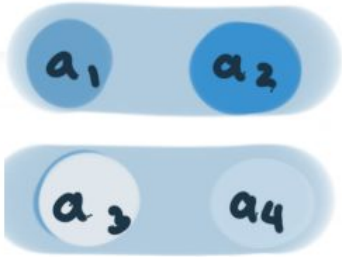
a_1 a_2 → vector1

a_3 a_4 → vector2

⇓

a_1	a_2
a_3	a_4

2×N matrix



array[0][ ] ≈ vector1

array[1][ ] ≈ vector2

array[0][0]	array[0][1]
array[1][0]	array[1][1]

function 10

a_1	a_2
a_3	a_4

HEIGHT

WIDTH

flatten → $a_1\ a_2\ a_3\ a_4$

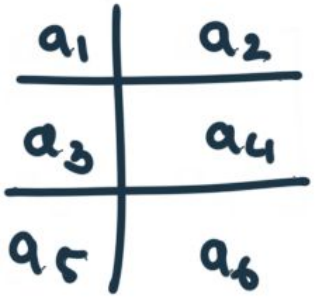
Using : index_flatten = i x WIDTH + j

Why ? :

⇒

⇒

function 11

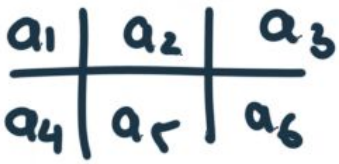


flatten →

$a_1\ a_2\ a_3\ a_4\ a_5\ a_6$

temp array.

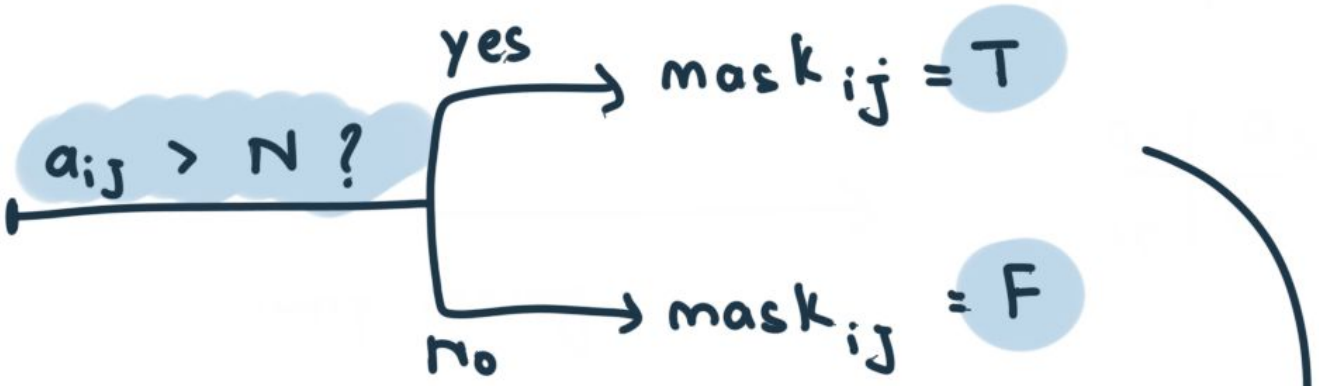
reverse flatten →



Using. $\text{flatten\_index} = i \times \text{WIDTH} + j$

function 12

a_1	a_2
a_3	a_4
a_5	a_6

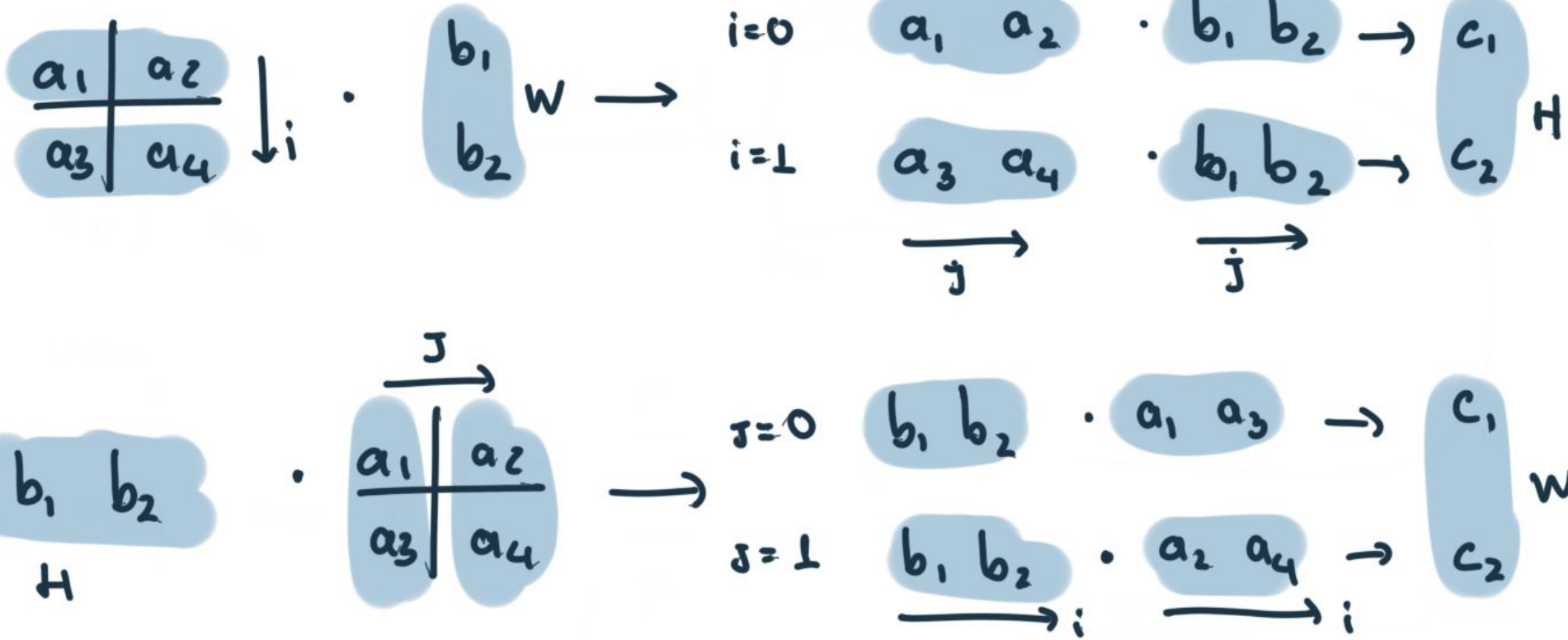


mask

F	F
T	T
F	F

function 13

Algebruh



function 14

Algebruh

$$A \cdot B = C$$

$$c_{ij} = \sum a_{ik} \cdot b_{kj}$$