# Day 2 : 2D Array & Pointers

* For 1D Array

$$A[i] = *(A+i)$$

* For 2D Array we can think of

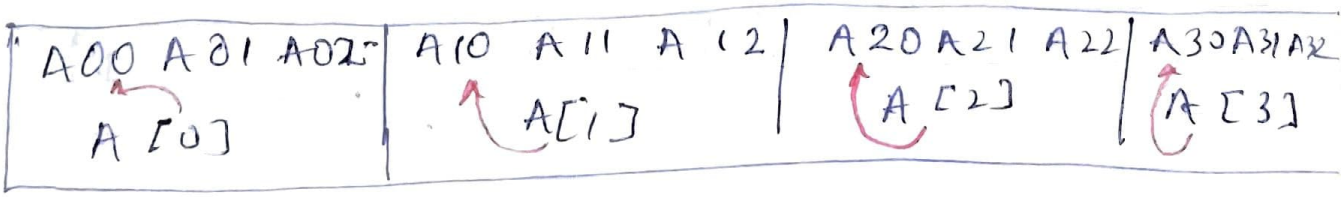
$A[0]$ = address of row 0 = $*(A+0)$
$A[1]$ = address of row 1 = $*(A+1)$

* In general,

$$A[i][j] = *(A[i]+j)$$
$$= *(*(A+i)+j)$$

$**A = A[0][0]$

* int A[4][3]




A ↑ Base address of 2D array.

address ( A[i][j] ) = address ( A[0][0] ) +

(i x n + j) x size (int)

A[i] ≈ *(A+i)

&A[i][0] = &(*(A[i] + 0)) = &*A[i]

= A[i]

Types

* &A : address of entire array
* &A[0] : Same as A

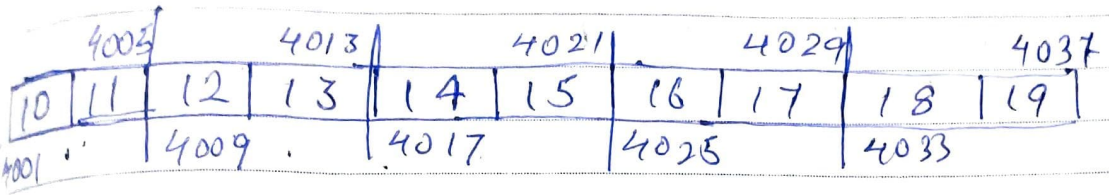
&(*A) = A

* &A[0][0] : Address of first element

&A[0][0] = &(*(A[0] + 0))

= *A

Example




A [5][2] → Five 1-D array of size 2.

A [0] – Address of 0th row = *(A+0)
A [1] – " of 1st row = *(A+1)
A [i] – " ith " = *(A+i)
A [n] – Adress of nth row = *(A+n)

A [2] = 4017

A [2]+1 = 4021

value of A[2][1] = *(A[2]+1)

= *(*(A+2)+1)

A [i][j] = *(*(A+i)+j)

A[i][j] = *(A[i]+j) = *(*(A+i)+j)