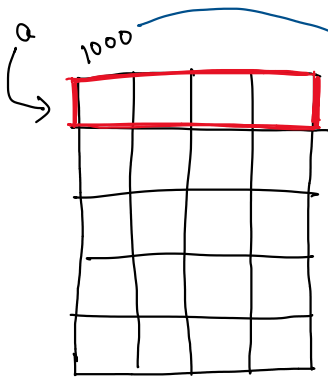


## 11a - 2D Arrays

Friday, 14 August 2026 19:08

```
int a[rows][cols]
```

```
int a[5][4]
```



$a$  points to the first row

$a+1$  " " " 2nd row

1000 is:

- address of the first integer

- " " " " row

- " " " " byte

- " " " " entire array

$a \equiv 1000$ .

$a$  points to first row.

$*a$  points to first element.

$\therefore a = 1000$

$*a = 1000 \rightarrow$  This star lets you access the first box

$**a$  = value at  $a[0][0]$

## Accessing element

|      |    |    |    |    |
|------|----|----|----|----|
| 1000 | 1  | 2  | 3  | 4  |
|      | 5  | 6  | 7  | 8  |
|      | 9  | 10 | 11 | 12 |
|      | 13 |    |    |    |
|      |    |    |    |    |

$$\rightarrow a[2][3] = 12$$

$$\rightarrow *(*a + 2) + 3 = 12$$

- i)  $a + 2$  is row 3
- ii)  $*a + 2$  gives access to entire array on row 3

iii)  $*(*a + 2) + 3$  is the 4th index on row 3

iv)  $*(*(*a + 2) + 3)$  is value inside that cell

$$\rightarrow *(a[2] + 3)$$

$$\rightarrow *(*a + 11)$$

$$\rightarrow a[0][11]$$

$$\rightarrow a[8][-1] = 12$$