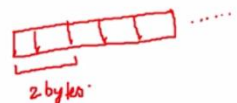# WHAT ARE ARRAYS IN C++?

- An array is a collection of items of similar type stored in contiguous memory locations.

- Sometimes, a simple variable is not enough to hold all the data.

- For example, lets say we want to store the marks of 2500 students, having 2500 different variables for this task is not feasible.

- To solve this problem, we can define an array with size 2500 that can hold the marks of all students.
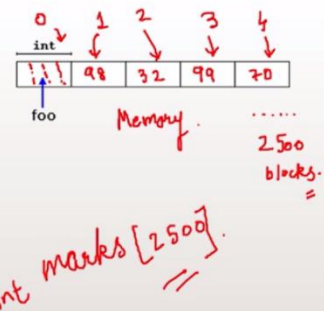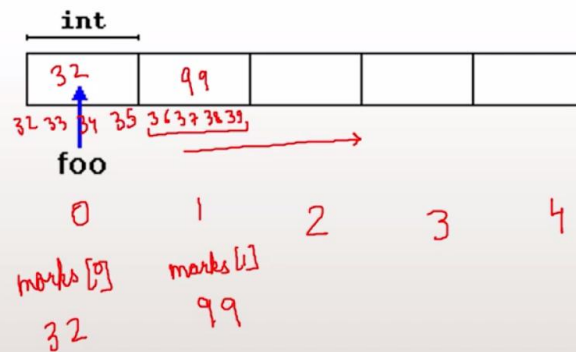

WHAT ARE ARRAYS IN C++?

2 bytes.

- An array is a collection of items of similar type stored in contiguous memory locations.

- Sometimes, a simple variable is not enough to hold all the data.

- For example, lets say we want to store the marks of 2500 students, having 2500 different variables for this task is not feasible.

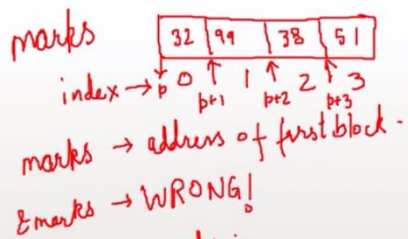- To solve this problem, we can define an array with size 2500 that can hold the marks of all students.

Memory.

2500 blocks.

int marks [2500].

C++ ARRAYS

int

| 32 | 99 | | | |

32 33 34 35 36 37 38 39

↑ foo

0   1   2   3   4

marks [0]   marks [1]
32   99

C++ POINTERS AND ARRAYS

marks

| 32 | 99 | 38 | 51 |

index → p 0 ↑ 1 ↑ 2 ↑ 3
         p+1 p+2 p+3

marks → address of first block.

&marks → WRONG!

p = marks ;
p+3
$*(p) = 32$
$*(p+1) = 99$ ✓
$*(p+2) = 38$ ✓ $*(p+3) = 51$

int a = 3;
&a → address of a

pointer arithmetic

address $_{new}$ = address $_{current}$ + i * sizeof(data type)

(p+i)   p

$32 + 1 * 4$
$= 36$