

Pointer Variable \rightarrow address

int a = 5
a \rightarrow 5

pointer x

int *pa

*pa = Value

pointer

v = 50

*pv = *v
 \rightarrow 50

100 \rightarrow
a = 5
pa

\rightarrow 100
a = 5

pa = &a

pa = 100 * = Value
*pa = 5 by

pa = 100
*pa = Value 100

105
v

pv

100
50
v

Array Call by Value

pointer

\rightarrow Array name \rightarrow pointer

point a[0] \leftarrow
Array name . n

int n[10]

$\left\{ \begin{array}{l} \rightarrow \& n[0] = x \ n \\ \rightarrow \& n[0] = x \ n \end{array} \right\}$

Array function

function

(Array change)

\uparrow Array

function(Array)

Array change

function(↓ ↓)

C \uparrow

Important

$\left\{ \begin{array}{l} \& n[2] = \frac{n+2}{2} \\ \& n[3] = \frac{n+3}{2} \end{array} \right\}$

operation on pointer

int n = 5

int *pn

pn

pn+1

5
n
100

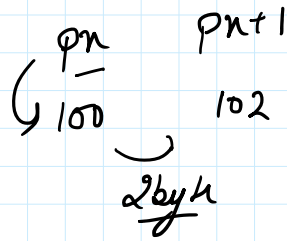
Comparison

\rightarrow 64 bit = integer (4 bytes)
 \rightarrow 16 bit = " = 16 bit
 \rightarrow 32 bit = " = 32 bit

on Language

↓
↓
↓
↓

int *pn

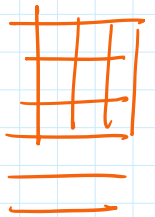


72 bit = " " " " " "

Important
 change pointer in size
 Same
 System

Pointer - M-D Array

Pointer to A Array } important
 Array of Pointer



int *a[30]

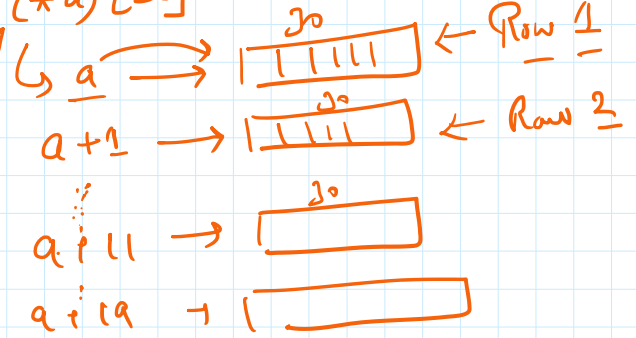
change

Important

Point to a group of
 contiguous 1D-Array
 20 element integer

int a[20][30]
 array a [20] [30]
 Row Col

int (*a)[30]



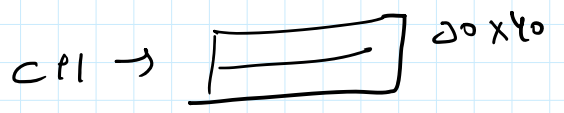
3-D Array

int C[20][30][40]

int (*C)[30][40]

2-D Array

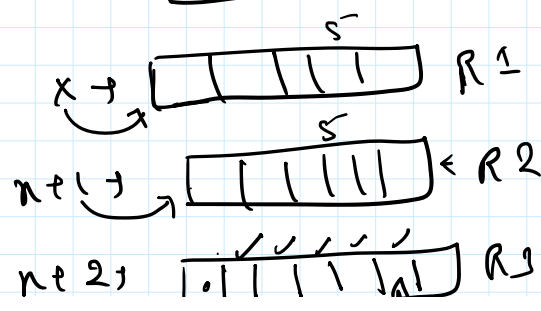
Pointer to Array



→ n[2][5]

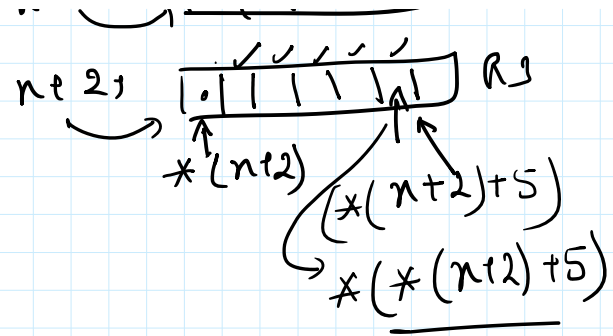
→ *(*(x+2)+5)

→ n[1][5]

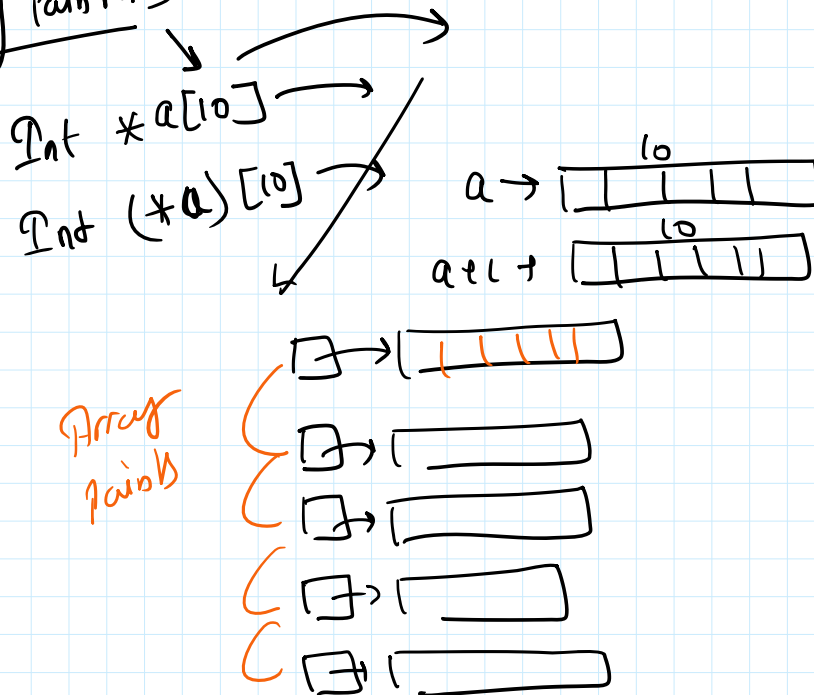




$\rightarrow a[i][5]$
 $\times (* (n+1) + 5)$

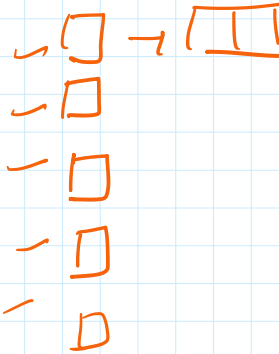


Arrays of Pointers



$\text{int } *a[10]$

10 & 20



3-D Array

$10 \times 20 \times 30$

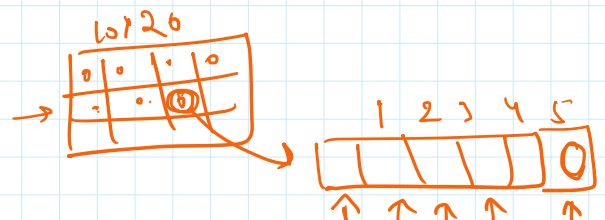
$\rightarrow \text{int } *t[10][20]$

$\downarrow \quad \downarrow$
 $t[2][3][5]$
 $\times (t[2][3] + 5)$

total pointers 10×20

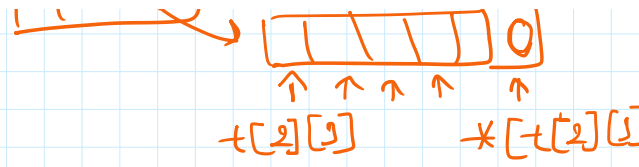
\rightarrow 200 pointers

1 each pointer point 1D Array



U

1 2 3 4 5



tsj