

Q1: Row major - $L_0 + [i * n + j] * w$ — \circ for $w = 4$

$A[1 \dots 10]$

~~Indices is starting from 1~~

$[1 \dots 15]$

Indices is starting from 1

$$\text{from } 1 \rightarrow L_0 + (i-1) * n + (j-1)$$

$$100 + (i-1) * 15 + (j-1)$$

$$100 + (15i - 15) + j - 1$$

$$100 + 15i - 15 + j - 1$$

$$\underline{15i + j + 84} \quad \text{Ans}$$

Q2: $w = 4$

$L_0 = 2000$

for values we have to use 2^{**} .

	0	1	2
0	1, 2, 3	4, 5, 6	7, 8, 9
1	12, 13, 14	15, 16, 17	18, 19, 20
2	21, 22, 23	24, 25, 26	27, 28, 29
3	30, 31, 32	33, 34, 35	36, 37, 38

for ~~address~~ address

we can use

1 asterisk or no asterisk

$\#(*(\alpha + 2) + 1) = 8$

$(*(\alpha + 2) + 1) = 2028$ (Address of $[2][1]$)

$\#(\alpha + 2) = 2024$ (Address of $[2][0]$).

$$n+3 = 2036$$

$$*(n+3) = 2036$$

$$*(n+2)+3 = 2036 \text{. Ans.}$$

Q3.

$$\times [l] [m] [n]$$

find datatype and dimensions of array.

$$\times [l] (m) [n] . \times [i] [j] [k] .$$

$$t_0 = i * 1024$$

$$t_1 = j * 32$$

$$t_2 = k * 4$$

$$t_3 = t_0 + t_1$$

$$n=8, w=4, m=32$$

$$t_4 = t_3 + t_2$$

$$t_5 = x[t_4].$$

float;

$$= L_0 + [i * m * n + j * n + k] * w$$

$$L_0 + [i * m * n * w + j * n * w + k * w]$$

$$k * 4 = k * w \Rightarrow w = 4$$

$$j * n * w = j * 32 = \cancel{n * w} = 32$$
$$n = \frac{32}{4} = 8.$$

$$i * m * n * w = i * 1024$$

$$1024 = m * 8 * 4 \Rightarrow m = 1024 / 32$$