

## Sparse Matrix

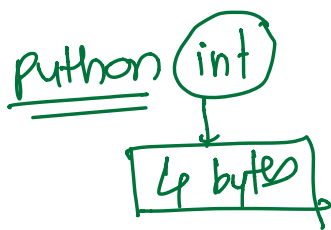
$$\begin{matrix} & 0 & 1 & 2 \\ \rightarrow & 0 & 0 & 3 \\ \rightarrow & 0 & 0 & 6 \\ \rightarrow & 0 & 8 & 9 \end{matrix}$$

CSR  $\rightarrow$  Compressed Sparse Row.

row\_offset  $\rightarrow$  no of non-zero elements

column\_index  $\rightarrow$  column index location of non-zero element

values (data)  $\rightarrow$  actual values



0	1	2	4	- row offset
2	2	1	2	- column
3	6	8	9	- values

16 bytes

CSC  $\rightarrow$  Compressed Sparse Column

$\rightarrow$	$\begin{bmatrix} 0 & 0 & 3 \\ 0 & 0 & 6 \\ 0 & 8 & 9 \end{bmatrix}$	non-zero elements	
		(row loc, col loc) value	
		(0, 2)	$\rightarrow$ 3
		(1, 2)	$\rightarrow$ 6
		(2, 1)	$\rightarrow$ 8
		(2, 2)	$\rightarrow$ 9