

NAME – RAJDEEP JAISWAL

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BRANCH – BTECH CSE

SEC = 13 A

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SUB- DATA STRUCTURE LAB

Question 3.

Calculate the address of a random element present in a 2D array, given the base address as BA.

SOLUTION

Row-Major Order: If array is declared as $a[m][n]$ where m is the number of rows while n is the number of columns, then address of an element $a[i][j]$ of the array stored in row major order is calculated as,

$\text{Address}(a[i][j]) = \text{B. A.} + (i * n + j) * \text{size}$

Column-Major Order: If array is declared as $a[m][n]$ where m is the number of rows while n is the number of columns, then address of an element $a[i][j]$ of the array stored in column major order is calculated as

$\text{Address}(a[i][j]) = ((j*m)+i)*\text{Size} + \text{BA.}$