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If we were to write myMatrix[i] (where i is some integer type), then we would expect that expression to evaluate to the ith element of myMatrix according to the rules that we learned perviously. For example, if we wrote myMatrix[2], we would expect that to evaluate to the 2nd element of *myMatrix*, which is the three blue boxes in the figure below. This element is an array of three doubles, so we would expect the type to be **double** *, and as the first element of that array is at *0x7fff5c346b30* (in this particular example), we would expect that to be the value of the expression (as we represent arrays by a pointer to their first element). If you expect all of these things (based on what you have already learned), you would be correct.

Conceptual layout of a 4x3 matrix

myMatrix[0][0]	myMatrix[0][1]	myMatrix[0][2]
myMatrix[1][0]	myMatrix[1][1]	myMatrix[1][2]
myMatrix[2][0]	myMatrix[2][1]	myMatrix[2][2]
myMatrix[3][0]	myMatrix[3][1]	myMatrix[3][2]

In memory layout of myMatrix[4][3]

0x7fff5c346b58	myMatrix[3][2]
0x7fff5c346b50	myMatrix[3][1]
0x7fff5c346b48	myMatrix[3][0]
0x7fff5c346b40	myMatrix[2][2]
0x7fff5c346b38	myMatrix[2][1]
0x7fff5c346b30	myMatrix[2][0]
0x7fff5c346b28	myMatrix[1][2]
0x7fff5c346b20	myMatrix[1][1]
0x7fff5c346b18	myMatrix[1][0]
0x7fff5c346b10	myMatrix[0][2]
0x7fff5c346b08	myMatrix[0][1]
0x7fff5c346b00	myMatrix[0][0]

We may wish to index the two-dimensional array twice, such as myArray[2][1]. When the program evaluates this expression, it will first evaluate myArray[2], obtaining a pointer to the 3-element array which is the 2nd element of myArray. Then, it will index that array (which is an array of **doubles**), and evaluate to a **double**. Of course, myArray[2][1] is an lvalue, as it names a particular box, so we can use it on the left side of an assignment, e.g., myArray[2][1] = 3.14;. However, we should note that myArray[2] is not an Ivalue, just like myArray is not an Ivalue. The pointer that myArray[2] evaluates to is not actually stored anywhere, it is just calculated by pointer arithmetic from *myArray*.