

```
// Documentation, imports, class header, constants here...
```

```
public static void main(String[] theArgs) {
    Scanner input = null;
    // other declarations . . .

    int[][] a = null;    // a is a 2D array not yet instantiated.

    // Other declarations/code such as opening files . . .

    // Assign 'a' to a reference of a 2D array created in get2DArray.
    a = get2DArray(input);

    // Other code here . . .

} // End of main

/**
 * get2DArray creates and reads integers into a 2D array in Row
 * Major order and returns a reference to this array.
 *
 * @param input is a Scanner to an input file.
 *
 * @return a 2D integer array filled with input values.
 */
public static int[][] get2DArray(Scanner theIn){
    int rowSize = theIn.nextInt();
    int colSize = theIn.nextInt();

    // Creates a 2D array with rowSize rows and colSize columns:
    int[][] a = new int[rowSize][colSize];

    // Now read rowSize X colSize number of integers into a in
    // Row Major order (Note the loop condition):
    for (int i = 0; i < a.length; i++) {
        for (int j = 0; j < a[i].length && theIn.hasNextInt(); j++) {
            a[i][j] = theIn.nextInt();
        }
    }

    // Return this local filled 2D array to the calling program
    return a;
}
```