

1. Let `grid` be a 2D array of `String`.

(a) What java statement would you use to find the number of rows in `grid`?

(b) What java statement would you use to fin the number of columns in `grid`?

(c) What java statement would you use to get the `String` stored in the third row of the first column of `grid`?

2. Let `board` be a 2D array of `boolean`.

(a) What Java code snippet would declare `board`?

(b) What Java code would initialize `board` so that all elements are `true`?

(c) Recall on homework problem #15 (from November 15, 2023) you made checkerboard pattern by adding the row index and column index and if the sum is even, the color of the square is dark; if the sum is odd, the square is light. Change `board` so that it follows the same “checker board” pattern, only set it to `false` or `true` instead of dark or light.

3. Make the class `MultiplicationTable` which has the following:
 - (a) A single instance variable called `table` that will contain any desired number of rows and columns of `int`
 - (b) A constructor that takes two parameters that specify how many rows and columns that the table should have. (Remember, in general, the constructor should initialize any and all instance variables). Initialize `table` so that each element contains the product of its row index and its column index. For example, the entry at row 3, column 4 should contain 12, because $3 \times 4 = 12$.
 - (c) A method that returns the number of rows in the table
 - (d) A method that returns the number of columns in the table
 - (e) A `toString` method that prints the table so that each row is on its own line, and there is a “|” between the columns.