**CS 211 - Practice Assessment 2**

The code presented in represents a 2D array using if-else statements and for-loop. The code has an array size of 3 rows and 2 columns.

for(int row = 0; row < nums.length; row++) {

for(int col = 0; col < nums[row].length; col++) {

nums[row][col] = (row + 1) \* (col + 1);

}

}

The outer loop which is “for(int row = 0; row < nums.length; row++)” determines if the number of rows is less than the length of the array which in the case is 3 which means that the row variable serves as the row index(0,1,2). Furthermore, if the outer loop was satisfied, it will go to the inner loop “ for(int col = 0; col < nums[row].length; col++)” this iterates the column of the in the row where in this case, it has 2 columns, the col variable has a column index of (0,1). The “nums[row][col] = (row + 1) \* (col + 1)” assignment statement creates a multiplication table pattern.

| row | row < nums.length |  |  |
| --- | --- | --- | --- |
| 0 | TRUE |  |  |
|  | col | col < nums[row].length | nums[row][col] = (row + 1) \* (col + 1) |
|  | 0 | TRUE | nums[0][0] = 1 \* 1 = 1 |
|  | 1 | TRUE | nums[0][1]= 1 \* 2 = 2 |
|  | 2 | FALSE |  |
| row | row < nums.length |  |  |
| 1 | TRUE |  |  |
|  | col | col < nums[row].length | nums[row][col] = (row + 1) \* (col + 1) |
|  | 0 | TRUE | nums[1][0] = 2 \* 1 = 2 |
|  | 1 | TRUE | nums[1][1]= 2 \* 2 = 4 |
|  | 2 | FALSE |  |
| row | row < nums.length |  |  |
| 2 | TRUE |  |  |
|  | col | col < nums[row].length | nums[row][col] = (row + 1) \* (col + 1) |
|  | 0 | TRUE | nums[2][0] = 3 \* 1 = 3 |
|  | 1 | TRUE | nums[2][1]= 3\* 2 = 6 |
|  | 2 | FALSE |  |