

2D Array Worksheet

1) Design.java

Write a program that uses a single 2-D array. Do not use curly brackets to assign values. Instead, use nested loops and if-else or switch.

x	o	o	o	x
o	x	o	x	o
o	o	z	o	o
o	x	o	x	o
x	o	o	o	x

2) Trace / Document for 3 outer loops and draw the final array. In your documentation, use a chart with columns: outer loop, inner loop, counter, a, b. Assume the array is 6 rows, 7 columns, and filled with zeros when you start.

```
counter = 1;
for( int a = 1; a < 6; a++){
    for( int b = 5; b >= 0; b--){
        if( b % a == 0){
            arr[a][b] = counter;
            counter ++;
        }
        else{
            arr[b][a] = counter;
            counter --;
        }
    }
}
```

3) Document the arrays, using a chart with columns: outer loop, inner loop, i, j, and x. Finally, draw a picture of each array (after the program portion has executed).

```
int [][] arr1 = new int [5][5];
int [][] arr2 = new int [5][5];
x = 1;
for( int i = 0; i < 5; i++){
    for( int j = 1; j < 6; j++){
        arr1[i][j-1] = x;
        x++;
        if(x == 6)
            x+=2;
    }
}
for( int i = 4; i >= 0; i--)
    for( int j = 4; j > -1; j--)
        arr2[j][i] = arr1[i][j];
```

4) OneTwoThreeGo.java

Make an array that will first display all zeros, then upon user input of the word “go”, will use loops to place data in the array and display the pattern shown. No gridlines need to be included – just the numbers.

1	1	1	1	1
1	2	2	2	1
1	2	3	2	1
1	2	3	2	1
1	2	2	2	1
1	1	1	1	1