

CSE110 Review Questions

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2D Arrays

Question 1 Create a 2D int array that has 6 columns and 8 rows.

Answer:

```
int [][] array = new int [6][8];
int [][] array = new int [8][6]; // also acceptable
```

Question 2 Write the output generated when the following program executes.

```
public class TwoDArray {
    public static void main(String[] args) {
        int size = 4;
        int [][] t = new int [size][size];
        init(t, size);
        display(t, size);
        rearrange(t, size);
        display(t, size);
    }

    public static void display(int [][] t, int size) {
        System.out.println( "The 2D array" );
        for(int r = 0; r < size; r++) {
            for(int c = 0; c < size; c++)
                System.out.print(padWithBlanks(""+t[r][c], 4));
            System.out.println( );
        }
    }

    public static void init(int t[][], int size) {
        for(int r = 0; r < size; r++)
            for(int c = 0; c < size; c++)
                t[r][c] = (r+1)*(c+1);
    }

    public static String padWithBlanks(String numAsString, int width) {
        int blanksToPad = width - numAsString.length();
        for(int j = 1; j <= blanksToPad; j++)
            numAsString = " " + numAsString;
        return numAsString;
    }

    public static void rearrange(int t[][], int size) {
```

```

        for(int r = 0; r < size; r++) {
            int sum = 0;
            for(int c = 0; c < size; c++) {
                sum += t[r][c];
                t[r][c] = 0;
            }
            t[r][r] = sum;
        }
    }
}

```

Answer:

The 2D array

1 2 3 4

2 4 6 8

3 6 9 12

4 8 12 16

The 2D array

10 0 0 0

0 20 0 0

0 0 30 0

0 0 0 40