

# Printing Shapes

## Task A. Box

Write a program box.html that asks the user to input width and height and prints a solid rectangular box of the requested size using asterisks.

Also, print a line Shape: between user input and the printed shape (to separate input from output).

Example:

Input width: 7  
Input height: 4

Shape:

```
*****  
*****  
*****  
*****
```

Hint:

- First, find how to print one row of stars (print the asterisk character width times followed by end-of-line).
- Then, once you know how to print one line of stars, repeat it height times (using a loop).
- Create the shape inside a string variable and then print the string variable

## Task B. Checkerboard

Write a program checkerboard.html that asks the user to input width and height and prints a rectangular checkerboard of the requested size using asterisks and spaces (alternating).

Example:

Input width: 11

Input height: 6

Shape:

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

Hint:

You used nested loops in the previous task that looked probably like

```
for (var row = 0; row < height; row++) {
  for (var col = 0; col < width; col++) {
    ...
  }
}
```

Inside the loops, you can add an if statement that will be conditionally printing asterisk \* or (space) depending on the coordinates row and col.

Again create the shape inside a string variable and then print the variable

## Task C. Cross

Write a program cross.html that asks the user to input the shape size, and prints a diagonal cross of that dimension.

Example:

Input size: 8

Shape:

```
*  *
*  *
*  *
**
**
*  *
*  *
*  *
```

### Task D. Lower triangle

Write a program `lower.html` that prints the bottom-left half of a square, given the side length.

Example:

Input side length: 6

Shape:

```
*
**
***
****
*****
*****
```

### Task E. Upper triangle

Write a program `upper.html` that prints the top-right half of a square, given the side length.

Example:

Input side length: 5

Shape:

```
*****
****
***
**
*
```

Task F. Upside-down trapezoid

**Write a program trapezoid.html that prints an upside-down trapezoid of given width and height.**

**However, if the input height is impossibly large for the given width, then the program should report, Impossible shape!**

Example 1:

**Input width: 12**

**Input height: 5**

**Shape:**

**\*\*\*\*\***

**\*\*\*\*\***

**\*\*\*\*\***

**\*\*\*\*\***

**\*\*\*\***

Example 2:

**Input width: 12**

**Input height: 7**

**Impossible shape!**

Hint:

**You can start with the number of**

**spaces = 0;**

**stars = width;**

**On each line, print that number of spaces followed by that number of stars. After that, the number of spaces gets incremented by 1, while the number of stars gets decremented by 2:**

**spaces += 1;**

**stars -= 2;**