

Nested Loops: The Tree Problem

Intro

A sprite in your Scratch program will stamp itself multiple times to draw a tree of a user-specified size.

Analysis

Size 4 tree			
Line		Spaces	Asterisks
1	*	3	1
2	***	2	3
3	*****	1	5
4	*****	0	7
5	*	3	1
		size - line	2 * line - 1

Size 3 tree			
Line		Spaces	Asterisks
1	*	2	1
2	***	1	3
3	*****	0	5
4	*	2	1
		size - line	2 * line - 1

Trunk spacing is always size - 1

Pseudocode

Open the data file

Read in the first number

Loop over all the remaining numbers

 Read the current number; it's the size of the tree we have to draw

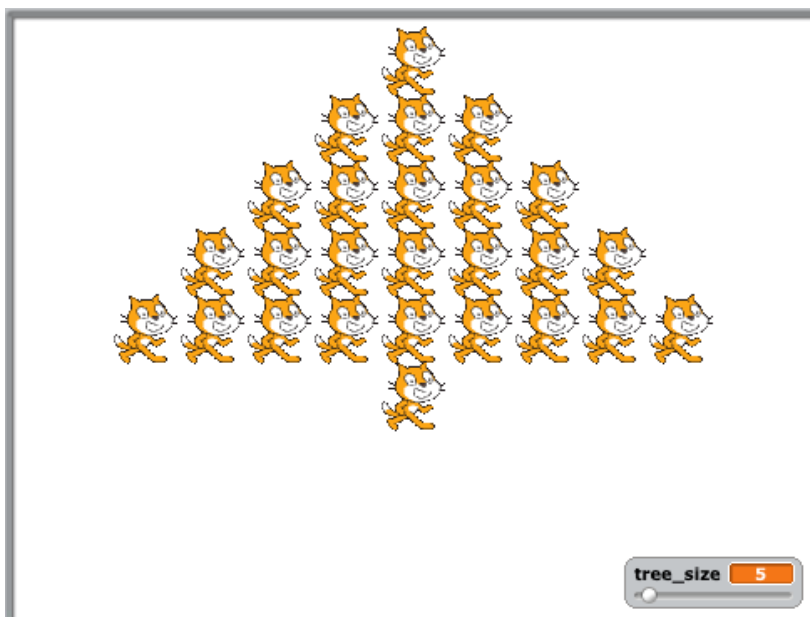
 Loop over the lines in the tree (that's what the size represents)

 Write out some spaces (tree size minus the line we're on)

 Write out some asterisks (line times 2 minus 1)

 Draw a trunk (that's tree size - 1 spaces followed by a '*')

Details



The image at the left is a sample solution. Your program does NOT have to look exactly like this.

You can choose the kind of sprite, the spacing between sprites, whether or not your tree is centered and where the slider is.

What is important is that you have regular spacing, the correct number of sprites per line and the correct number of lines in your trees.