STEAMCODED.ORG

Coding a Fractal in SVG on a 800 by 800 grid
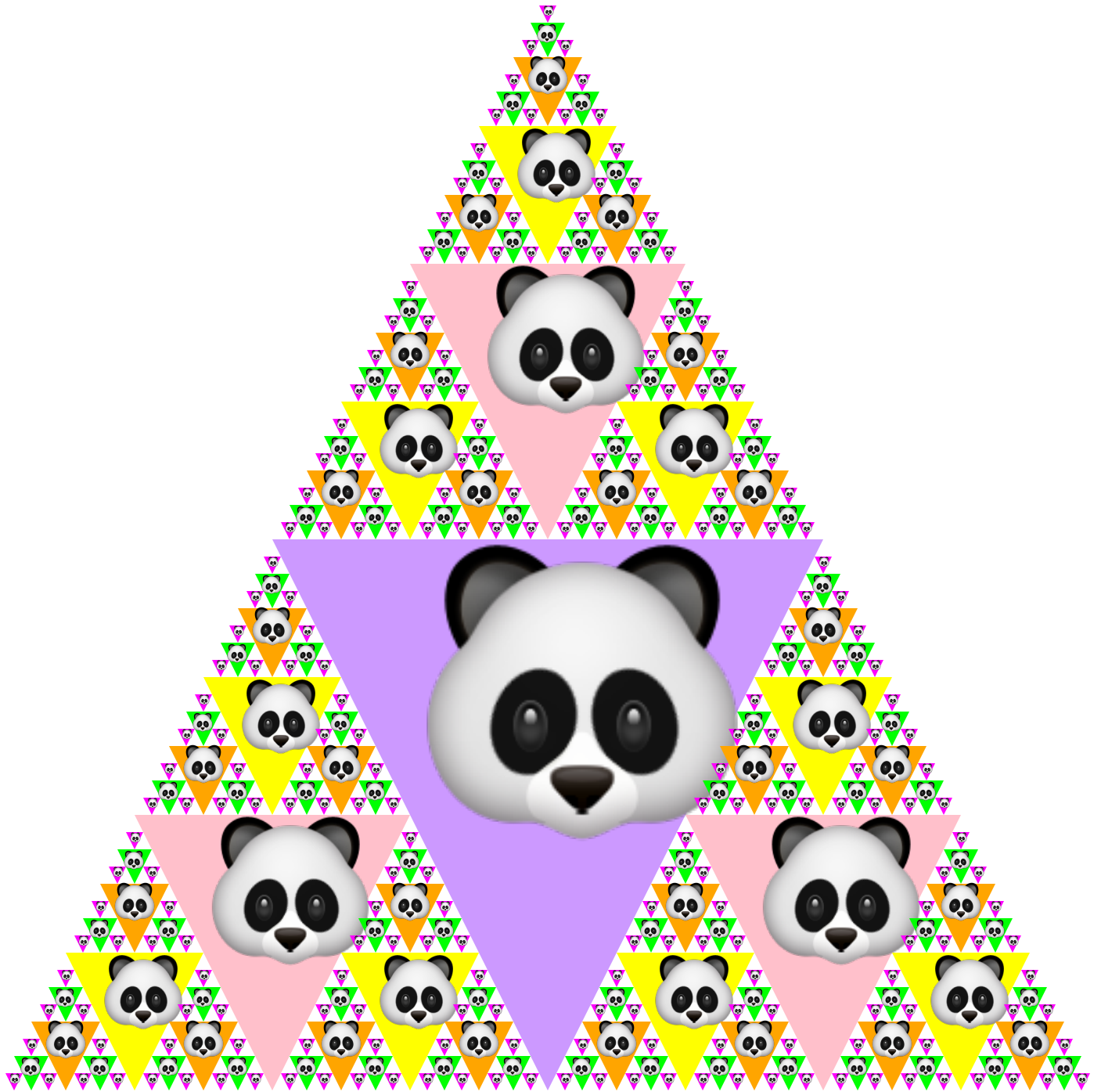
Copy the code from: http://steamcoded.org/lessons/grid800x800.svg.txt and save the file as Fractal.svg and open the file in a browser.

In the editor, add the SVG elements (per instructions below) where indicated in the SVG code, i.e. inside the second grouping (<g> element). **Important:** Save the file and refresh the browser after each step.

1:    Create a group <g> element, style="fill:red;display:initial;"

2:    Draw a triangle using the <path> element with attribute id="t1",
      move to (0,0) line to (800,0) line to (400,800) closepath z,
      path definition attribute should look like: d="M0,0L800,0L400,800z"

3:    Create a group element outside the group from step 1 with style="fill:#cc99ff;"
      Note: Be sure to use proper indentation on group elements for easy reading code

4:    Create a group element inside the group from step 3 with id="f0"

5:    Create a <use> element inside the group from step 4 with attributes:
      id="bg" xlink:href="#t1" transform="translate(200,400) scale(0.5)"

6:    Add a rotate transformtion to the group element in step 1
      rotate 180 degrees about (400,400): transform="rotate(180,400,400)"

7:    Create a group element outside the group from step 3 with id="filler"

8:    Create a group element inside the group from step 7 with style="fill:pink;"

9:    Create a group element inside the group from step 8 with id="f1"

10:   Create a <use> element inside the group from step 9 with attributes:
      x="400" y="0" xlink:href="#f0" transform="scale(0.5)"

11:   Copy code created in steps 8-10 and paste outside the group created in step 7
      Change the fill of the pasted code from pink to yellow, the group id from f1 to f2, and
      the use elements reference from #f0 to #f1

12:   Copy use element of the code in step 11 and paste it twice below the use element.
      Change the attributes of the 2 use elements as follows: 1st copy: x="200" y="400" 2nd
      copy: x="600" y="400"

13:   Copy code created in steps 11-12 and paste outside the group created in step 11
      Change the fill of the pasted code from yellow to orange, the group id from f2 to f3, and
      all 3 use elements reference from #f1 to #f2

14: Copy code created in step 13 and paste outside the group created in step 13
Change the fill of the pasted code from orange to lime, the group id from f3 to f4, and
all 3 use elements reference from #f2 to #f3

15: Copy code created in step 14 and paste outside the group created in step 14
Change the fill of the pasted code from lime to magenta, the group id from f4 to f5, and
all 3 use elements reference from #f3 to #f4

16: Create a <use> element inside the group from step 7 with attributes:
x="-200" y="400" xlink:href="#filler"

17: Copy the <use> element from step 16 and paste below, change to x="200" and y="400"

When complete, change the style attribute of the first element from "display:initial" to
"display:none" which hides the grid. Then change the style style attribute of the
second element from "opacity:0.5" to "opacity:1"

Copy your Fractal.svg file and rename the copy Fractal2.svg.

1:   Create a <defs> element near the top of the code

2:   Create a <symbol> element inside the defs element with id="unicode"

3:   Create a <text> element inside the symbol element
     <text x="400" y="590" style="font-size:200px;text-anchor:middle;">🐼</text>

4:   Create another <use> element below the use element with id="bg" and
     give it attributes id="fg" and xlink:href="#unicode"

5:   Change the unicode character in the symbol:
     Note: Some characters will use the same color as the background (id="bg"),
     if so, add to the style attribute for the <text> element: color:black; so it shows up

     pi: 960
     Yin Yang: 9775
     smiley 9787
     soccer ball: 9917
     snowman: 9924
     beach: 9969
     sailboat: 9973
     sun: 127774
     tulip: 127799
     hibiscus: 127802
     sun flower: 127803
     tree: 127794
     christmas tree: 127876
     trophy: 127942
     football: 127944
     dragon: 128009
     mouse: 128045
     rabbit: 128048
     frog: 128056
     bear: 128059
     panda: 128060
     smiley: 128578
     turkey: 129411
     or any found at http://unicode-table.com

6:   Create another <symbol> element inside the defs element with id="monkey" and
     copy the code from the monkey.svg (just the grouping with the opacity style) and insert it
     inside the symbol
     then add a transform="translate(265,400) scale(0.45)" attribute to the <g> element

7:   Change the <use> element from xlink:href="#unicode" to xlink:href="#monkey"