

Carbide

Guillermo Webster and Kevin Kwok (2016)

Experimental programming environment with a variety of intriguing features. (I can't get the environment to load, and the site CSS is periodically failing for me).

antimatter15 > Fractal Tree saved a few seconds ago antimatter15

Visualize any DOM element with the "HTML Element" Widget

This is the recursive definition of the `drawTree` function. It takes four arguments:

- `x1`: The starting X coordinate
- `y1`: The starting Y coordinate
- `length`: the length of the line segment to draw
- `angle`: The cumulative angle of the line segment
- `n`: The number of levels left to draw

Stop drawing the tree whenever there are no more branches left to draw

Manipulate anything by dragging nice friendly sliders around

```
var canvas = document.createElement('canvas')
canvas.width = 700
canvas.height = 400
canvas.style.width = '100%'
var ctx = canvas.getContext('2d');

function drawTree(x1, y1, length, angle, n){
  var x2 = x1 + length * Math.cos(angle*Math.PI/180);
  var y2 = y1 - length * Math.sin(angle*Math.PI/180);

  ctx.beginPath();
  ctx.moveTo(x1, y1);
  ctx.lineTo(x2, y2);

  ctx.strokeStyle = n < 2 ? "green" : "brown";
  ctx.lineWidth = n - 1;
  ctx.stroke();

  if(n == 0) return;

  drawTree(x2, y2, length*0.75, angle+27, n-1);
  drawTree(x2, y2, length*0.75, angle-57, n-1);
}

drawTree(350.5, 367, 100, 90, 11)
```

Element Object



0 value = 27 100

0 value = 57 100

517.50ms tree.js

- **Back propagation** (edit program output and input changes)
- Add **probes** to the variables, expressions, or subexpressions of running programs.
- **Extensible widgets for a variety of data types** that visualize and edit these values, e.g. numbers, sliders, HTML, map data, colors, graphics, strings, matrices, JavaScript object, JSON, binary data, etc...
- Supports (in theory) any language, although JavaScript is most supported right now.
- **Programming notebook** style cells (can't find a visual of this though). They point out you need fewer cells than other environments since so much visualization is handled for you.
- Rich text comments. (Pictures would be even better).
- Polished visuals and interaction design.