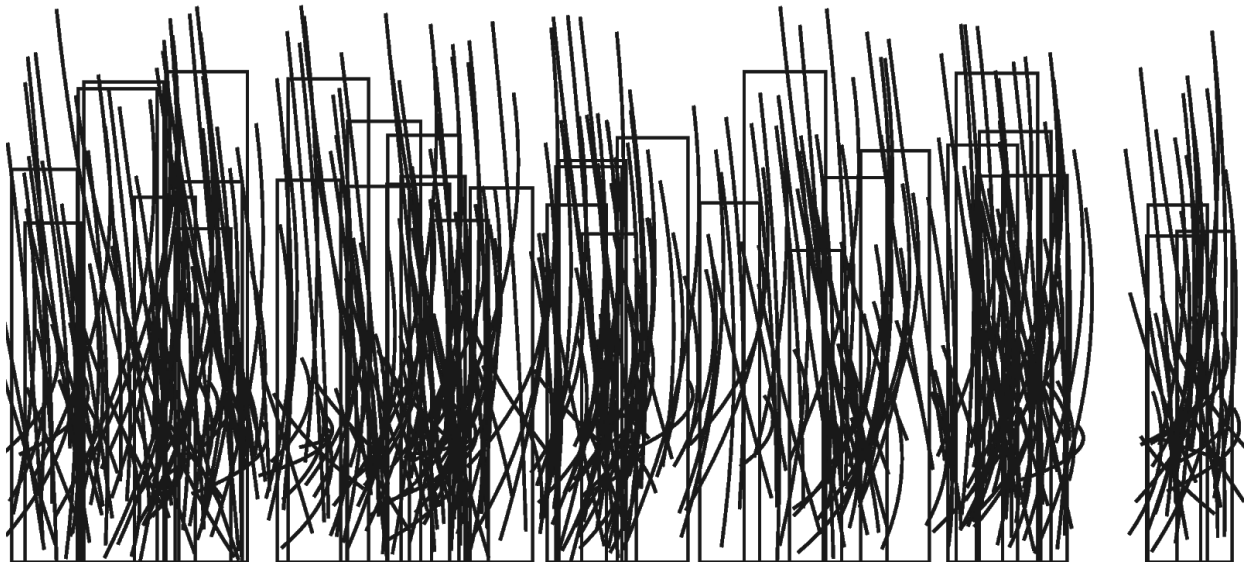
CITY ON FIRE



JOEL DARE

Foreword

I believe the best way to learn programming is by typing someone else's code.

This is a short book. It's created in the spirit of "zines" (pronounced zeen). Zines are short small-circulation self-published booklets. They're an art form that I've discovered and love.

In each issue you'll make an art piece by typing code from these pages into your computer. No previous experience, special tools, or skills are necessary. Along the way you'll start to absorb some computer programming techniques. In the end you'll create an art piece that's fun to display and discuss.

You'll be working in JavaScript, a language that works in your web browser.

Introduction

Our goal is to create a simple, abstract, image. You can print the finished image or use it as a screensaver or computer wallpaper. Try placing it on a colored background or printing it on textured paper. Get creative.

Remember that you don’t need to understand everything you’re entering. Just relax and copy the code. You should end up with a great piece of artwork you can be proud of.

Getting Started

You'll need a computer with a web browser. Nothing else is required. I've created a basic HTML file for you on *CodePen*, a tool that lets you write code online. Open the URL below to get started.

`https://codepen.io/codazoda/pen/aPVGGx`

As you work you'll probably run into some typos. If the image doesn't draw, or not in a way you expect, double check that you typed everything correctly and then look in the developer console to see if there are any errors. In Chrome, you can press Alt+Command+J (on Mac) or Control+Shift+J (on Windows) to open the console.

Once you've created an image that you're happy with you can save it by right clicking on the image and selecting *Save Image As*.

Complete Code

```
// Setup some params
const resolution = 300;
var width = 8 * resolution;
var height = 4 * resolution;

// Grab the canvas element and context
var canvas = document.getElementById("myCanvas");
var ctx = canvas.getContext("2d");

// Set the canvas width and height
canvas.width = width;
canvas.height = height;
```

```
// Set the stoke style
ctx.strokeStyle = "black";
ctx.lineWidth = 6;

// Loop a few times drawing buildings
var buildings = 35;
for(b=1; b<=buildings; b++) {
    // Figure out building height
    roofMin = height * 0.2; // 50% from top
    roofMax = height * 0.5; // 20% from top
    topY = rand(roofMin, roofMax);
    buildHeight = height - topY;
    buildWidth = Math.round(buildHeight / 6);
    // Pick the building location
```

```
topX = rand(0, width - buildWidth);
// Draw building as a rectangle
ctx.rect(topX, topY, buildWidth, buildHeight);
ctx.stroke();
// Loop to draw flames on each building
var flames = 10;
for(f=1; f<=flames; f++) {
    // Flalme X
    minX = topX - 50
    maxX = topX + buildWidth + 50;
    topOffset = rand(-50,50);
    flameTopX = rand(minX, maxX);
    flameBottomX = rand(minX, maxX);
    // Flame Y
    minTopY = height * 0.10;
```

```
maxTopY = height * 0.8;
flameTopY = rand(minTopY, maxTopY);
flameBottomY = rand(height, maxTopY);
// Draw the flame curve
ctx.moveTo(flameTopX, flameTopY);
curveX = flameTopX + 50;
maths = (flameBottomY - flameTopY) / 2;
curveY = flameTopY + maths;
// Reduce var length for mini zine width
cX = curveX;
cY = curveY;
fX = flameBottomX;
fY = flameBottomY;
// Draw the curve
ctx.quadraticCurveTo(cX, cY, fX, fY);
```

```
        ctx.stroke();
    }
}

// Pick a random number
function rand(min, max) {
    min = Math.ceil(min);
    max = Math.floor(max);
    let rand = Math.random();
    return Math.floor(rand * (max - min + 1)) + min;
}
```

Going On

If you've gotten this far, and have a complete working image, here are a couple ideas on how to make it your own. Save your work before you experiment.

Try swapping the size of the width and height to make the image portrait instead of landscape.

Try changing the color of the strokes used to draw.

More Reading

Splash of Code is a complete series of short zines. You'll find additional issues on our website at the address below.

`https://splashofcode.com`

In *City on Fire* you'll start to learn programming by creating a piece of minimalist abstract computer art by retyping code from this zine (pronounced zeen).

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Issue 3
Splash of Code