*Animation on the Web*

# Animating SVG graphics with CSS

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SVG
ALL THE THINGS
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# Hello!

## Matt Andrews

*Freelance Multidisciplinary Designer & Front-end Developer*

I have been involved with the web/internet since the late 90's. My first job was designing and developing at a dot-com.

I am by no means an expert, there is always more to learn.

I currently design and build stuff on the web.

### Interests:

PWA's, Javascript, React.js, so much to learn ...

# What are SVG Graphics?

Scalable Vector Graphics (SVG) is an XML-based vector image format for two-dimensional graphics with support for interactivity and animation. The SVG specification is an open standard developed by the World Wide Web Consortium (W3C) since 1999. SVG images and their behaviors are defined in XML text files.

### The takeaway is:

Being a vector graphic as opposed to bitmap means they are resolution independent. They will maintain a sharp edge regardless of size or device.

# Why use SVG Graphics?

### Scalability:

SVG graphics maintain the same resolution regardless of device or pixel density.

### File size:

SVG graphics are generally smaller files sizes and only need to be generated once. Saves production time on UI elements.

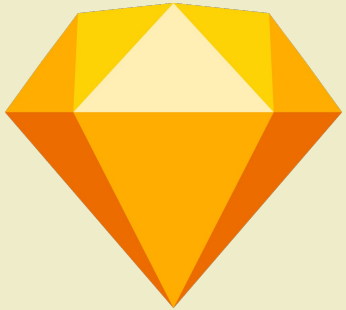
### Dynamic Graphics:

SVG graphics can be manipulated on the fly by with code. Used for charts and graphs, and dashboards.

### Great for UI elements

# Tools to create and edit SVG graphics


**Adobe Illustrator**
Part of the Adobe Creative Suite



**Sketch**
Only available on Mac

**InkScape**
Free option

# How to add SVG graphics to HTML

## <img> element

```
<img src="older-browser.png" alt="support older browsers" srcset="new-browser.svg">
```

## Inline

```
<svg width="300" height="200">
    <rect />
</svg>
```

# CSS3 Animations

An animation lets an element gradually change from one style to another.

You can change as many CSS properties you want, as many times you want. A lot of opportunity for manipulation.

To use CSS3 animation, you must first specify some keyframes for the animation.

Keyframes hold what styles the element will have at the duration of the animation.

# CSS3 Animations

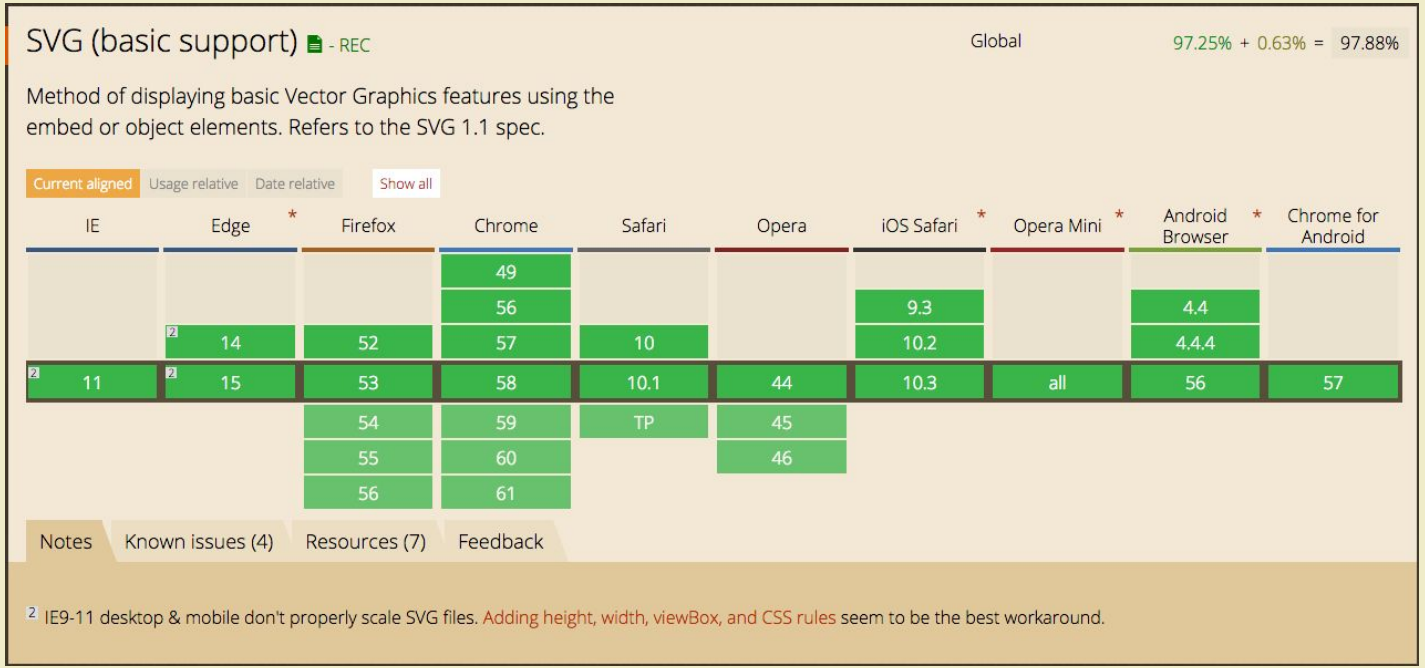
(code)

```
.pulse-effect {
        animation: pulse .5s infinite;
        -ms-animation: pulse .5s infinite;
        -webkit-animation: pulse .5s infinite;
}

@keyframes pulse {
        0% {opacity: 1;}
        50% {opacity: .5;}
        100% {opacity: 1;}
}
```

For better browser support, use prefixes.

# SVG Browser Support




https://caniuse.com/#search=svg

# *Let's take a look (demo)*

# Resources

**Vivus:**
Vivus is a lightweight JavaScript class (with no dependencies) that allows you to animate SVGs, giving them the appearence of being drawn.
https://maxwellito.github.io/vivus/

**Snap.svg**
The JavaScript SVG library for the modern web
http://snapsvg.io/

**XML Formatting:**
https://www.freeformatter.com/xml-formatter.html

# Q&A