

# Leaving Pixels Behind: A VECTOR WORKFLOW FOR DESIGNERS



# TODD PARKER

---

filament group



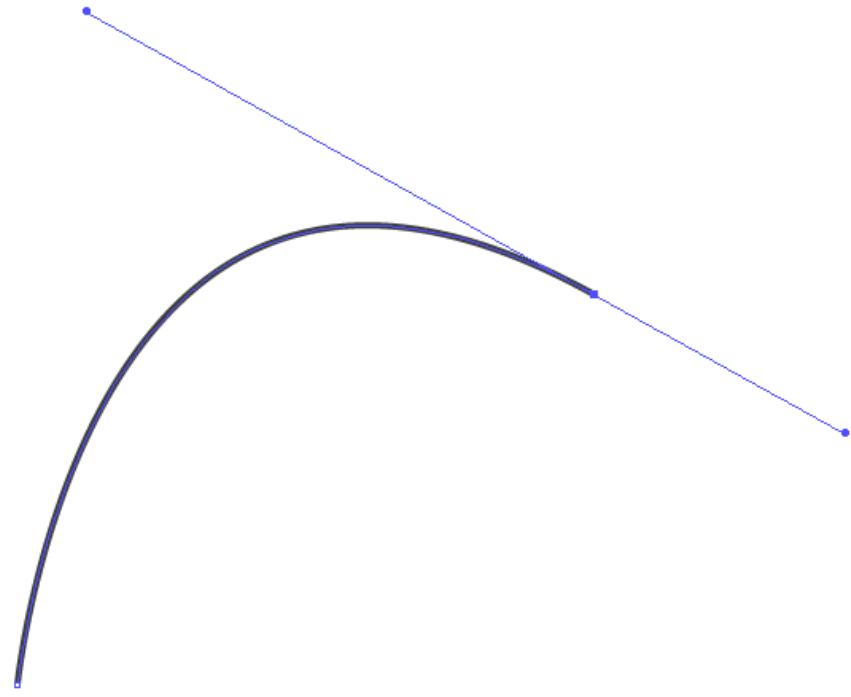
**MAKE THE WEB WORK FOR**  

---

**everyone**

# TOPICS

- I. Why go vector?
- II. SVG is awesome
- III. Creating SVGs in AI
- IV. Automating fallbacks
- V. Working in <code>



WHY GO

---

vector

THIS.



# OLDEST SCHOOL



ap...ng



ap...ng



ap...ng



ap...ng



ap...ng



ap...ng



ap...ng



arr...g



arr...g



arr...g



arr...g



arr...g



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# SPRITE LIKE A BOSS



# RETINA-IZED

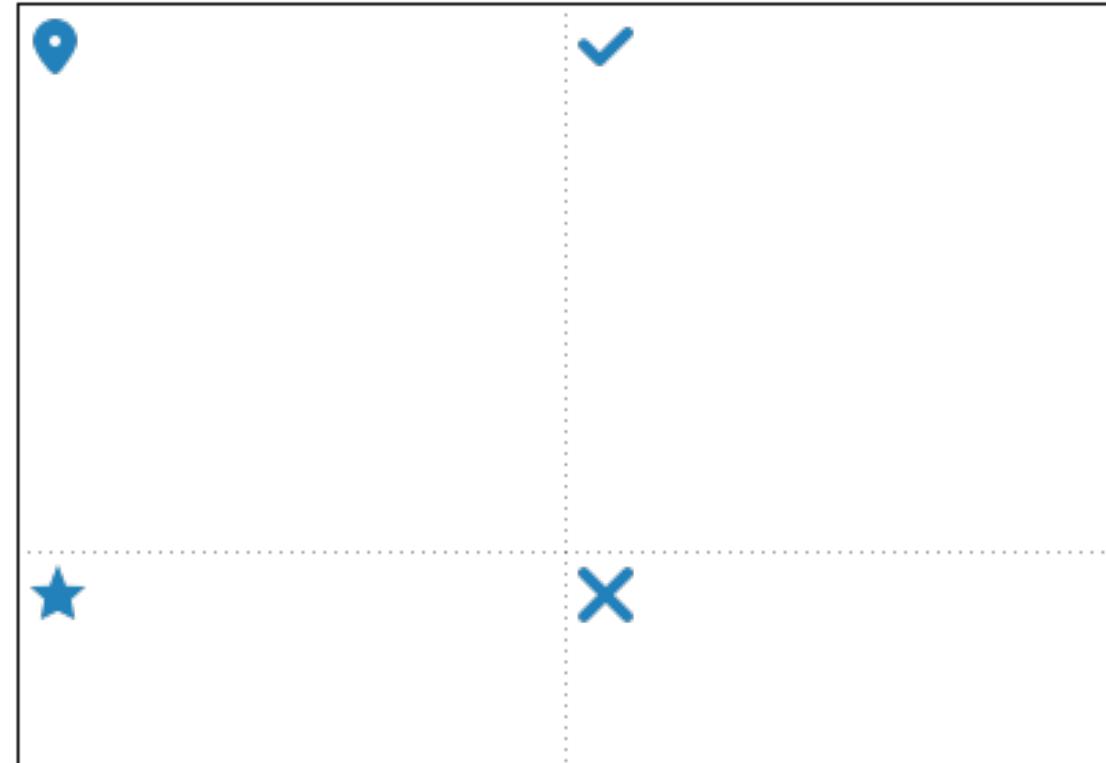
## Retina CSS Sprite Example

via miekd.com

sprite.png



sprite@2x.png





“Samsung’s 2014 phones will feature 560 PPI displays – 880 PPI in 2015...”

1x...2x...6x...12x...



THE GENIUS HACK

icon fonts

# Font Awesome

THE ICONIC FONT DESIGNED FOR BOOTSTRAP



Download

Version 4.0.3 · [GitHub Project](#) · [Old 3.2.1 Docs](#) · Created by [Dave Gandy](#)



<http://fortawesome.github.io/Font-Awesome/>

## Over 9,000 ready-to-use icons

The greatest choice of icons on the web, from the best icon designers



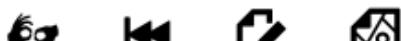
Elusive icons - 291 Free Icons



Streamline Icons - 100 Free Icons



Minicons - 210 Free Icons





1524

Followers



20K

Likes



3000

Followers



HRITHIK

★ Profile activity

5

SINGLE COLOR



Njan gandarvan\_song1



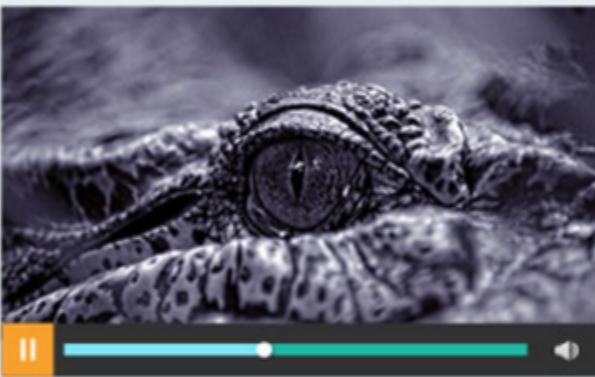
🎵 Njan gandarvan\_song1

🎵 The don't care \_jackson

🎵 03. Dangerous \_jackson

OUR OFFICE

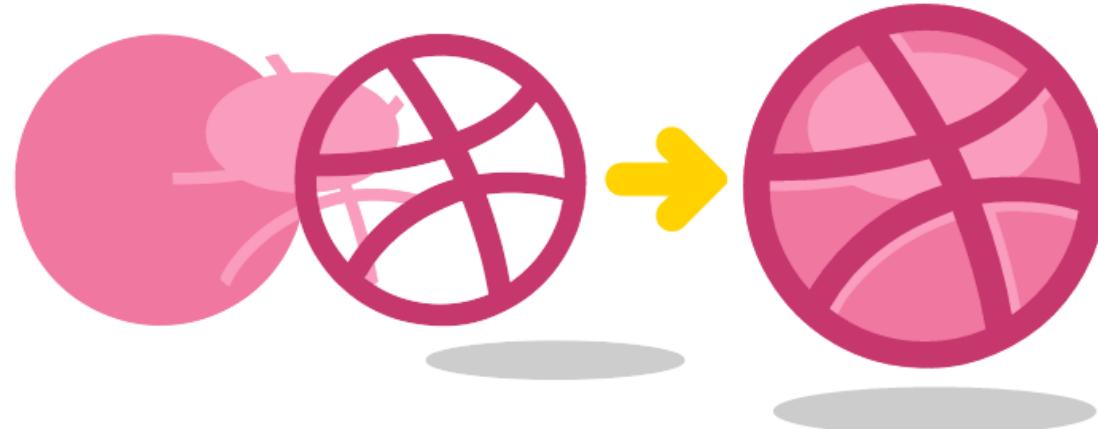
State, District



OUR TRAFIC OVERVIEW



# NO LIMITS !!!





**David Sleight**

@stuntbox



Follow

Just had some UI for a table turn into peace signs and a pair of skis. Unicode issues w/ icon fonts ain't theoretical  
[cl.ly/image/1J0W0g1A...](https://cl.ly/image/1J0W0g1A...)

Reply Retweet Favorite More

0

<https://twitter.com/stuntbox/status/426807768851681280>

0

UH-OH.



Twitter Support   
@Support

□ Twitter users love tweeting emoji from now you can view these emoji on web! #emojifirst  
□ □ □ □ □ □ □ □

12:42 PM - 2 Apr 2014

4,253 RETWEETS 2,379 FAVORITES

AT&T

5:45 PM

63%

# Font Awesome



The iconic font designed for Twitter Bootstrap by Dave G



# NO @FONT-FACE SUPPORT

Opera Mini - 261 million

Nokia XPress browser - 70 million

Blackberry 4 & 5 - stock browser - 20 million [1]

Android 2.1 - stock browser - 10 million [2]

Windows Phone 7 - 7.8 - 10-15 million [3]

Android 4 - UC Browser

Symbian 10 - Nokia Browser 8.3.1.4

WebOS - stock browser

Android 2.1 - Dolphin

# YIKES

**~370 million**  
devices don't  
support @font-face



**700 million**  
Total iOS devices  
worldwide



ANDROID

**1 billion**  
Total Android  
devices worldwide

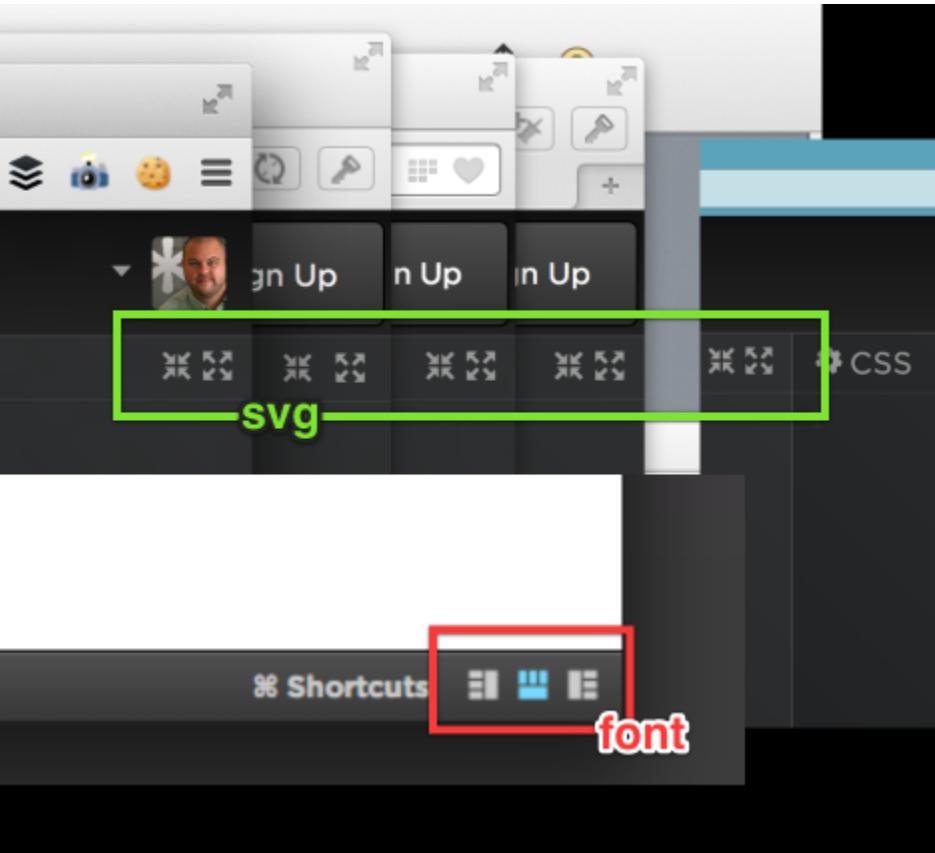
# ICON FONTS NEED A FALBACK

- **When @font-face isn't supported**, icon fonts either appear as:
  - a random character (A, 4, +, etc.)
  - a cryptic symbol like  (sup. P.U.A.)
  - blank space (private use area)
- **Using on 'standard' unicode characters** (ex: '>') as a fallback produces wildly different symbols across devices and fonts when @font-face isn't supported. There are rarely 'safe' characters for most icons we use.

BULLETPROOF  
BULLETPROOF  
ICONICONS



# CHRIS LIKES SVG



- Image crispness
- Positioning control
- Semantics
- Accessibility
- Ease of use
- Lack of browser quirks

A TRANSITIONAL TECHNIQUE

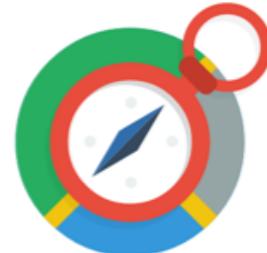
SIFR...cufón...

THE JOY OF

---

sv<sup>g</sup>

# FULL COLOR VECTORS



# CSS STYLING



## Theme

- Monochrome
- Slate**
- Sand
- X-Ray

## Styling

Hairline

Hollow    Rounded Line-caps

# RESPONSIVE



## OPTICAL CORRECTION

# INTERACTIVE



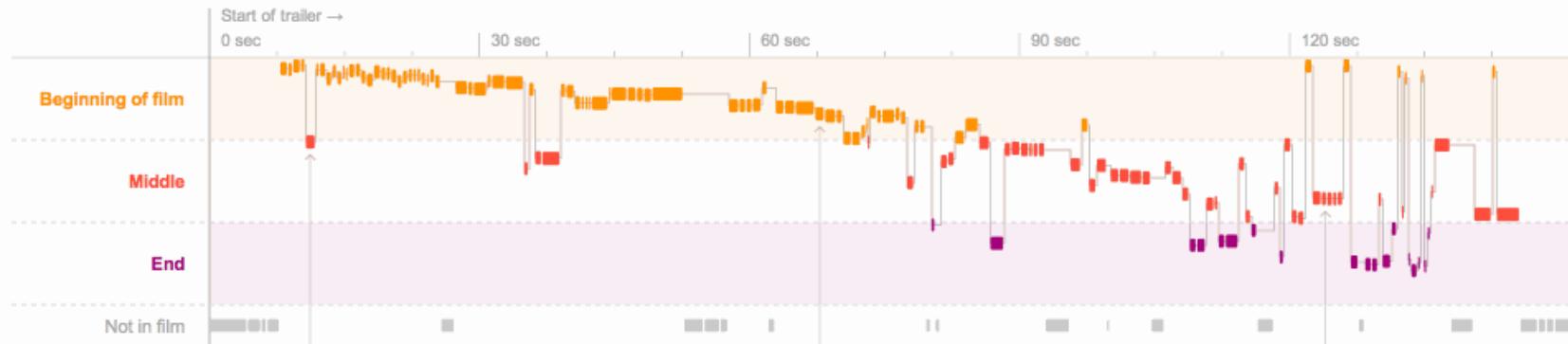
# ILLUSTRATIONS

<http://product.voxmedia.com/2013/11/25/5426880/polygon-feature-design-svg-animations-for-fun-and-profit>

# VISUALIZATIONS

Argo

The trailer for “Argo” balances two different tones, according to Mr. Garrett: thriller and Hollywood satire. “Thrillers have a very fast cutting style,” he said. “It’s a way of ratcheting up attention.” Shots are longer, on average, when the trailer turns to satire.



Bryan Cranston's character watches President Carter give an address on television; In the film, the television shows an address by an Iranian spokeswoman.

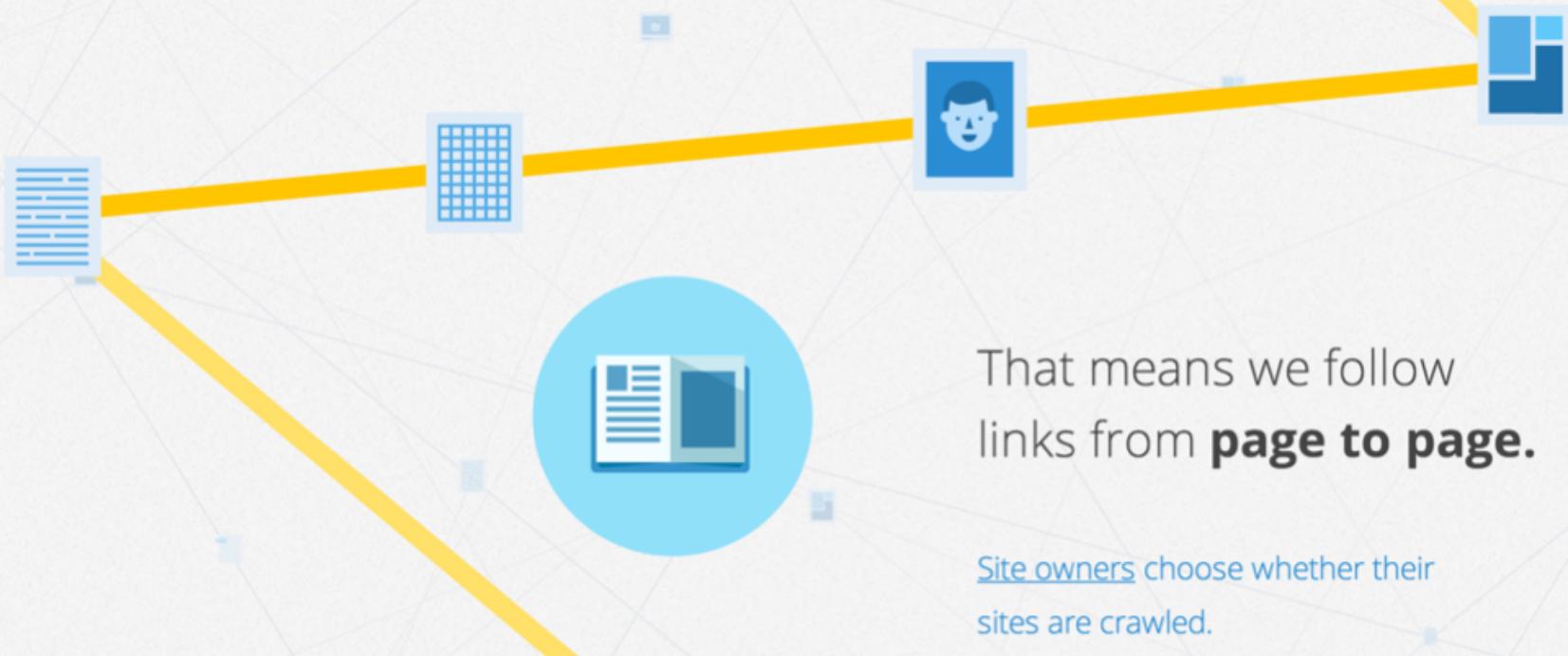
The Hollywood sign appears about halfway through the trailer. While intact in the trailer, the sign is shown in the disrepair of the 1970s in the film.

A scene showing the Americans surrounded by a crowd is bookended with shots from an earlier scene showing a much larger crowd.

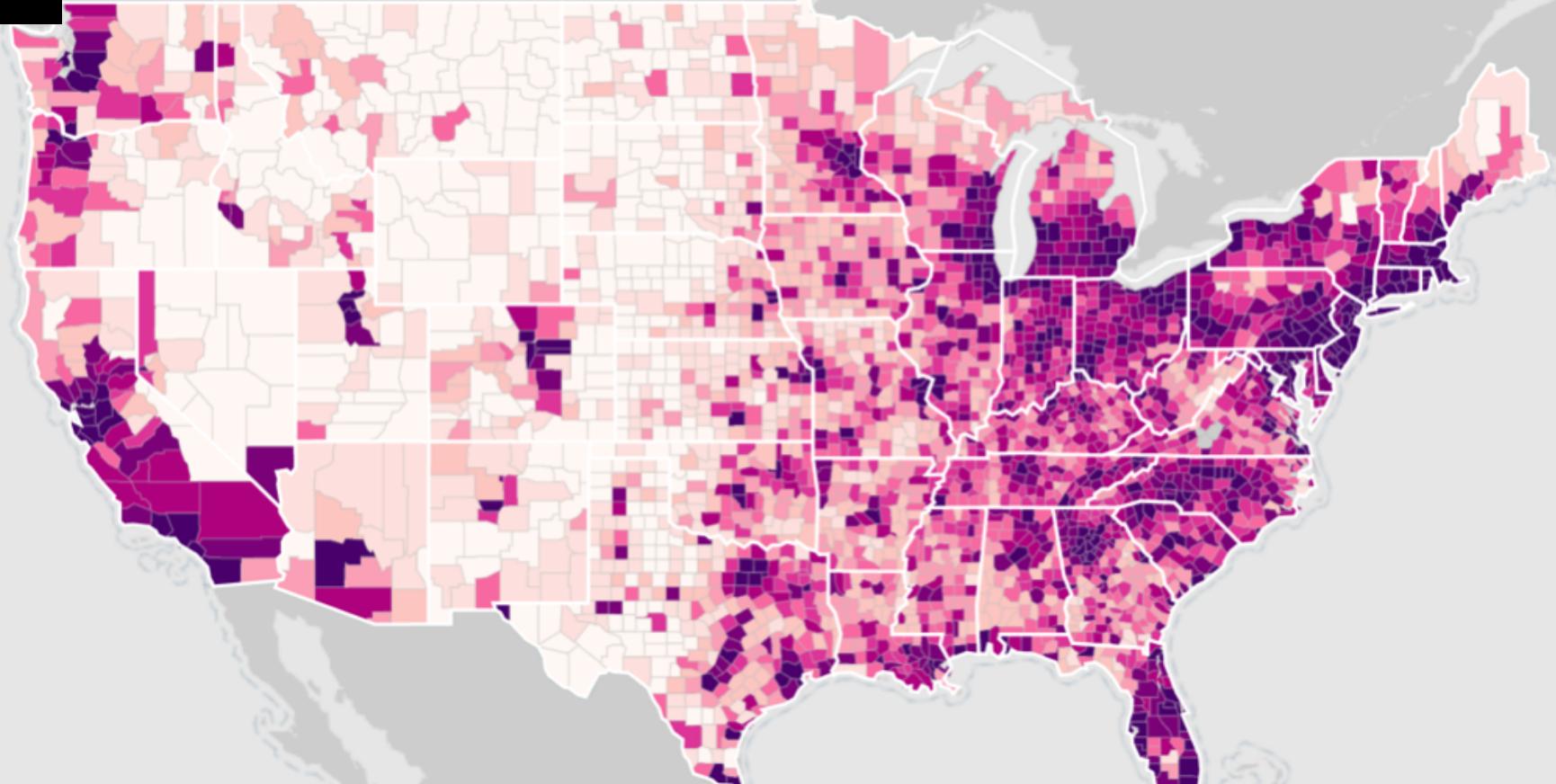
# INFOGRAPHICS

Google navigates the web by

## CRAWLING.



# MAPS



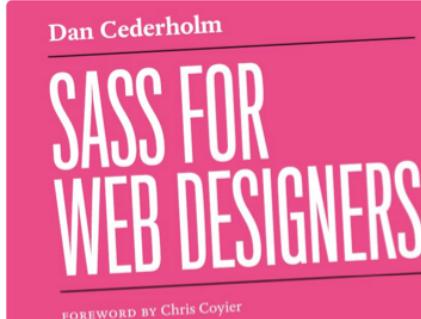
<http://d3js.org/>

# BITMAPS



<http://www.smashingmagazine.com/2013/06/02/clown-car-technique-solving-for-adaptive-images-in-responsive-web-design/>

Image: <http://britandgrit.com/?p=4589>



## Dan Cederholm SASS FOR WEB DESIGNERS

*foreword by CHRIS COYIER*

From getting started to advanced techniques, Dan Cederholm shares the key to taking better control of your stylesheets—and how to easily insert the power of Sass into your daily workflow.

Available in paperback, ePub, PDF, and mobi

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by MIKE MONTEIRO

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Mobile First

by LUKE WROBLEWSKI

[BUY](#)

Designing for Emotion

by AARRON WALTER

[BUY](#)

# ICON SETS GALORE



100 ICONS

Clear Icons

by  
Appzgear



Education

by  
Freepik



25 ICONS

Buildings

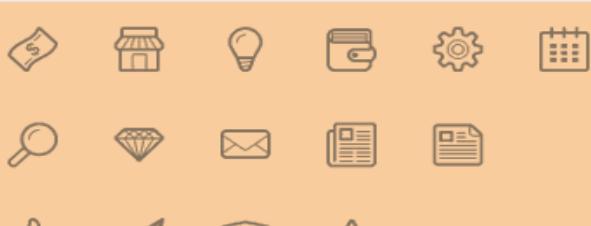
by  
Freepik



16 ICONS

Cloud computing

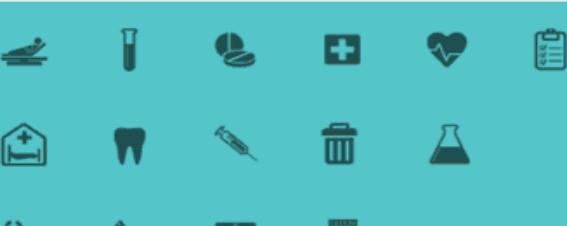
by  
Freepik



48 ICONS

Linecons

by



56 ICONS

Health

by

# ICONIC



• × ■  
The Noun Project

# flaticon



**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)**

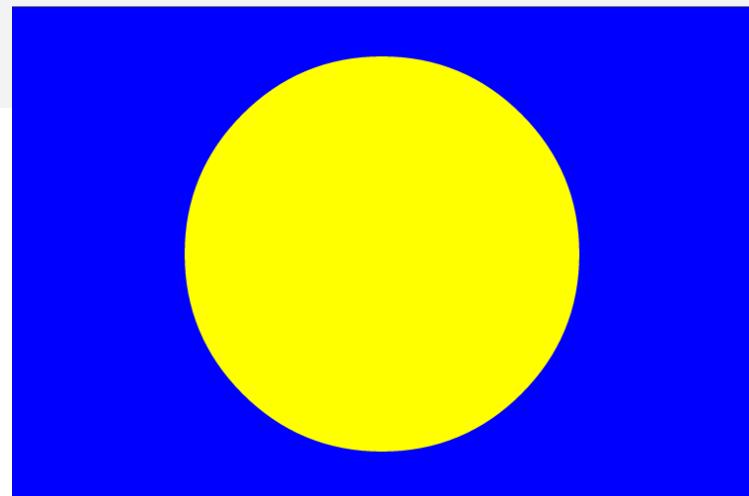
**...since 1999.**

# SVGs ARE TEXT FILES

```
1  <?xml version="1.0" encoding="utf-8"?>
2
3  <!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
.   "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
4
5  <svg version="1.1" xmlns="http://www.w3.org/2000/svg"
.   xmlns:xlink="http://www.w3.org/1999/xlink" width="32" height="32"
.   viewBox="0 0 32 32">
6
7      <path d="M26.667 0h-21.333c-2.933 0-5.334 2.4-5.334 5.334v21.332c0
.   2.936 2.4 5.334 5.334 5.334l21.333-0c2.934 0 5.333-2.398
.   5.333-5.334v-21.332c0-2.934-2.399-5.334-5.333-5.334zM27.206
.   16h-5.206v14h-6v-14h-2.891v-4.58h2.891v-2.975c0-4.042 1.744-6.445
.   6.496-6.445h5.476v4.955h-4.473c-1.328-0.002-1.492 0.692-1.492 1.985l-0.007
.   2.48h6l-0.794 4.58z" fill="#000000" />
8
9  </svg>
10
```

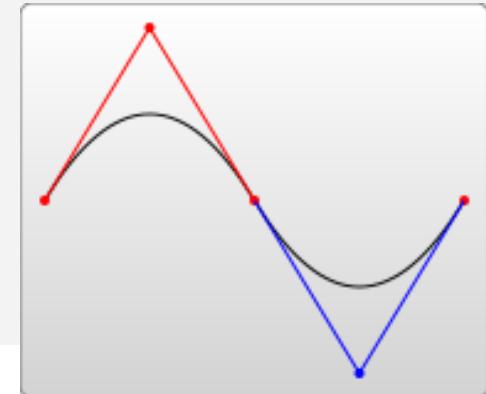
# BASIC SHAPES

```
<svg>  
  <rect width="100%" height="100%" fill="blue" />  
  <circle cx="150" cy="100" r="80" fill="yellow" />  
</svg>
```



# PATHS + GROUPS

```
<svg>
  <g id="foo">
    <path d="M10 80 Q 52.5 10, 95 80 T 180 80" stroke="black"
fill="transparent"/>
  </g>
</svg>
```



# CSS YOUR SVGS



```
<svg class="icon-twitter">  
  <use xlink:href="#icon-twitter"></use>  
</svg>
```

```
<svg class="icon-twitter footer">  
  <use xlink:href="#icon-twitter"></use>  
</svg>
```

```
.footer {  
  fill: red;  
}
```

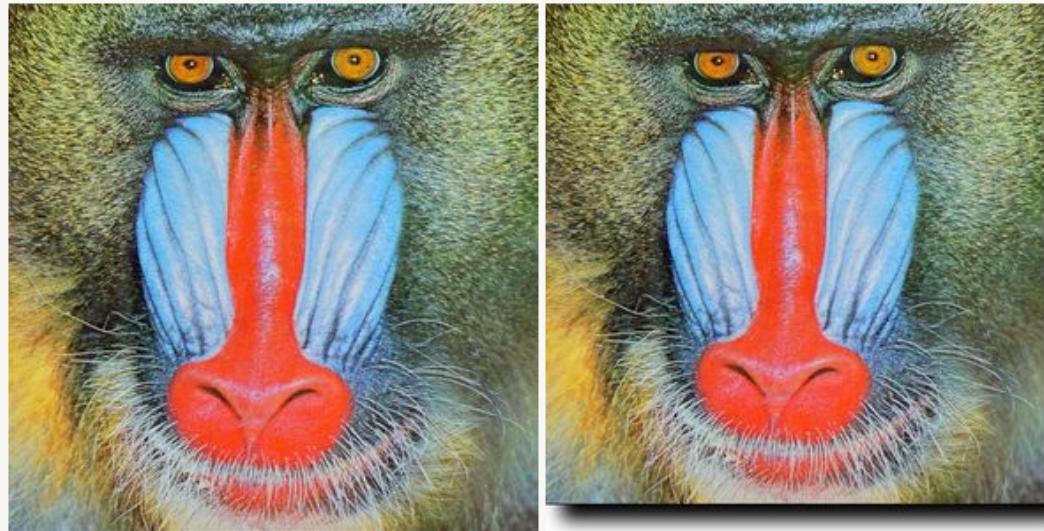
# SVG IS MASSIVE

|   |   |  |
|---|---|--|
| <a href="#">svg/attributes/color-interpolation-filters</a>  | <a href="#">svg/attributes/dominant-baseline</a>          |  |
| <a href="#">svg/attributes/enable-background</a>            | <a href="#">svg/attributes/fill</a>                       | <a href="#">svg/attributes/fill-opacity</a>      |
| <a href="#">svg/attributes/fill-rule</a>                    | <a href="#">svg/attributes/flood-color</a>                | <a href="#">svg/attributes/flood-opacity</a>     |
| <a href="#">svg/attributes/glyph-orientation-horizontal</a> | <a href="#">svg/attributes/glyph-orientation-vertical</a> | <a href="#">svg/attributes/kerning</a>           |
| <a href="#">svg/attributes/lighting-color</a>               | <a href="#">svg/attributes/marker</a>                     | <a href="#">svg/attributes/marker-end</a>        |
| <a href="#">svg/attributes/marker-mid</a>                   | <a href="#">svg/attributes/marker-start</a>               | <a href="#">svg/attributes/mask</a>              |
| <a href="#">svg/attributes/pointers</a>                     | <a href="#">svg/attributes/stop-color</a>                 | <a href="#">svg/attributes/stop-opacity</a>      |
| <a href="#">svg/attributes/stroke</a>                       | <a href="#">svg/attributes/stroke-dasharray</a>           | <a href="#">svg/attributes/stroke-dashoffset</a> |
| <a href="#">svg/attributes/stroke-linecap</a>               | <a href="#">svg/attributes/stroke-linejoin</a>            | <a href="#">svg/attributes/stroke-miterlimit</a> |
| <a href="#">svg/attributes/stroke-opacity</a>               | <a href="#">svg/attributes/stroke-width</a>               | <a href="#">svg/attributes/text-anchor</a>       |
| <a href="#">svg/browser support</a>                         | <a href="#">svg/data types</a>                            | <a href="#">svg/elements</a>                     |
| <a href="#">svg/elements/a</a>                              | <a href="#">svg/elements/circle</a>                       | <a href="#">svg/elements/clipPath</a>            |
| <a href="#">svg/elements/defs</a>                           | <a href="#">svg/elements/desc</a>                         | <a href="#">svg/elements/ellipse</a>             |
| <a href="#">svg/elements/etextContent</a>                   | <a href="#">svg/elements/feBlend</a>                      | <a href="#">svg/elements/feColorMatrix</a>       |

# FILTERS & EFFECTS

Apply SVG filters & effects to vectors or bitmaps

[drop-shadow\(16px 16px 20px black\)](#)

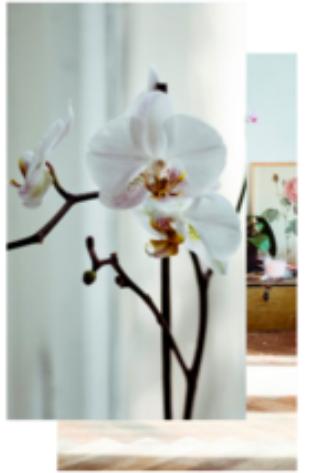


[blur\(10px\)](#)



# BLEND MODES

normal



lighten



darker



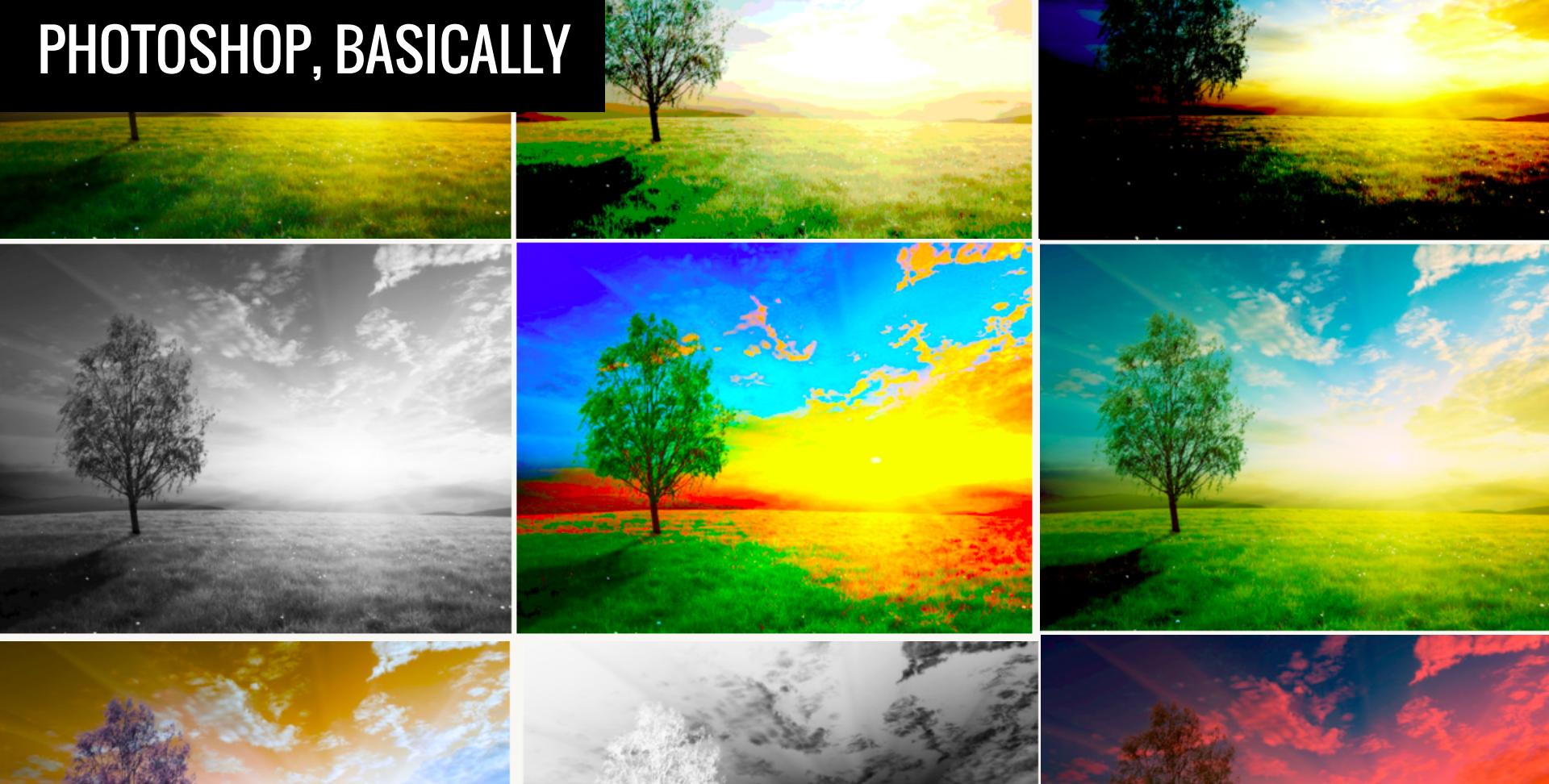
screen



multiply



# PHOTOSHOP, BASICALLY



[http://docs.webplatform.org/wiki/svg/tutorials/smarter\\_svg\\_filters](http://docs.webplatform.org/wiki/svg/tutorials/smarter_svg_filters)

LEARN HERE



[WebPlatform.org](https://webplatform.org)



**MDN** MOZILLA  
DEVELOPER  
NETWORK

SOLD, BUT

caniuse?

# SUPPORTS SVG

IE9+

Chrome 14+

Safari 4+

Firefox 3.6+

Opera 15+

Opera Mobile 12+

iOS 3+

Android 4.0+

BlackBerry 10

# NOPE

IE 6, 7, 8

Android 1-2.3

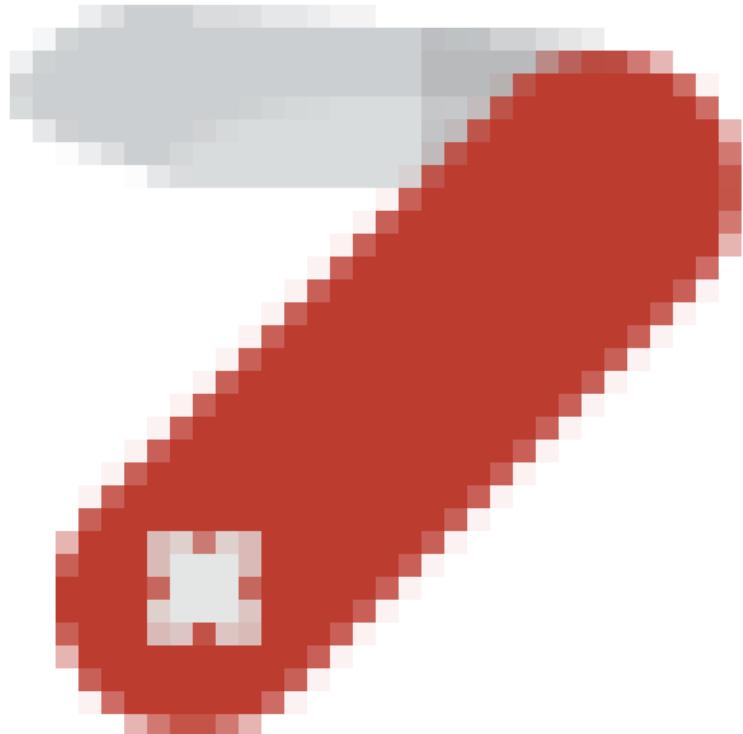
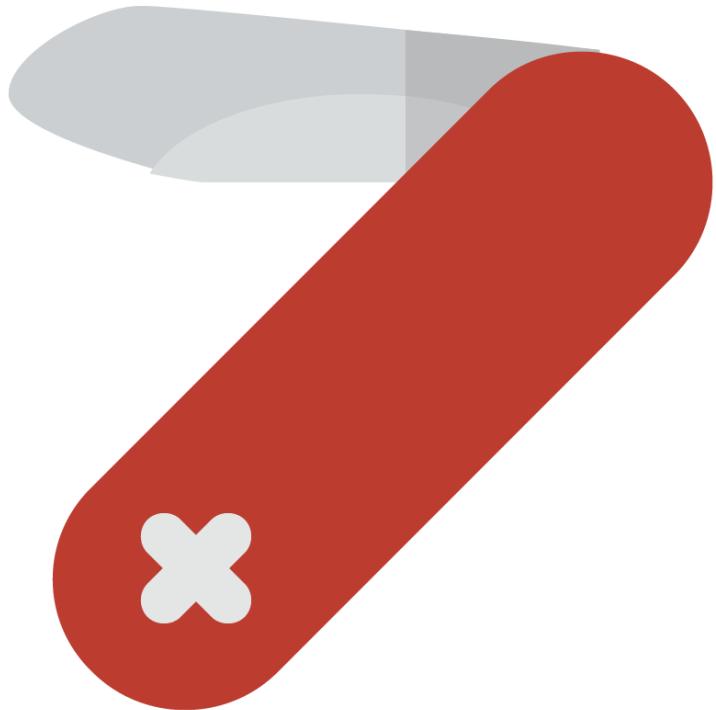


Opera Mini\*



\* Mini actually supports SVG but has really bad rendering bugs on 2x displays

# CLEARLY, WE NEEDFallbacks



HOW TO DECIDE:

svg or bitmap?

IS IT A PHOTO?



# HOW COMPLEX IS THE ARTWORK?



THIS IS 414kb



# VISUAL EFFECTS?



## DEFINITELY USE SVG



## TEST & DECIDE



at&t



## USE BITMAP

UNDERSTANDING

# svg file sizes

# FILE SIZE COMPARISON

*2x PNG 8*



12.6k

*SVG*



13.4k

# BECAUSE SVGS ARE TEXT...

```
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN" "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">

<svg version="1.1" xmlns="http://www.w3.org/2000/svg" x="0px" y="0px" width="18.398px" height="16px">

    <g>
        <path fill="#468100" d="M10.993,14.72H8.541L4.04,9.354H1.884V5.366H-1.891V1.22H3.663C0.812,0,1.497,0.04,2.048,0.127C6.253,1.43,6.775,1.629,7.271,1.938C7.765,2.243,8.16,2.631,8.45,3.105C0.288,0.48,0.432,1.072,0.432,1.778C0,0.991-0.264,1.821-0.793,2.484C7.565,8.03,6.842,8.523,5.939,8.844L10.993,14.72z M6.908"/>
    </g>

    <polygon fill="#468100" points="17.426,7.916 16.286,7.916 16.051,7.916 16.051,14.523 11.761,14.523 11.761,7.916 11.049,7.916 9.662,7.916 9.414,7.916 13.887,1.418 18.398,7.916 ">

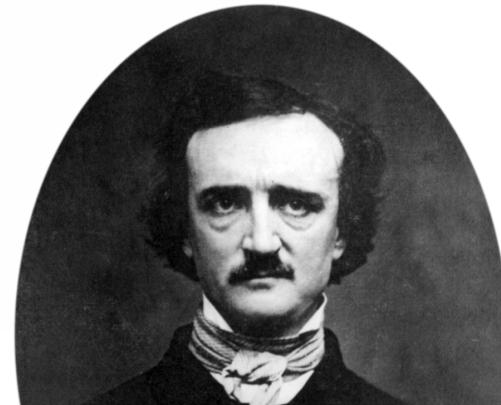
```

</svg>

# ...THEY CAN BE GZIP'd

```
bork@kiwi:~/work/hackerschool/gzip.jl$ julia gunzip.jl raven.txt.gz
Once upon a midnight dreary, while I {pon}dered weak an{d wea}{ry,}
Over many{ a }quaint{ and }curious volume of forgotten lore,
W{hile I }nodded, n{ear}ly napping, su{dde}n{ly }th{ere} ca{me }a t{apping,}
A
```

I



# SVGS CAN COMPRESS 60-80%

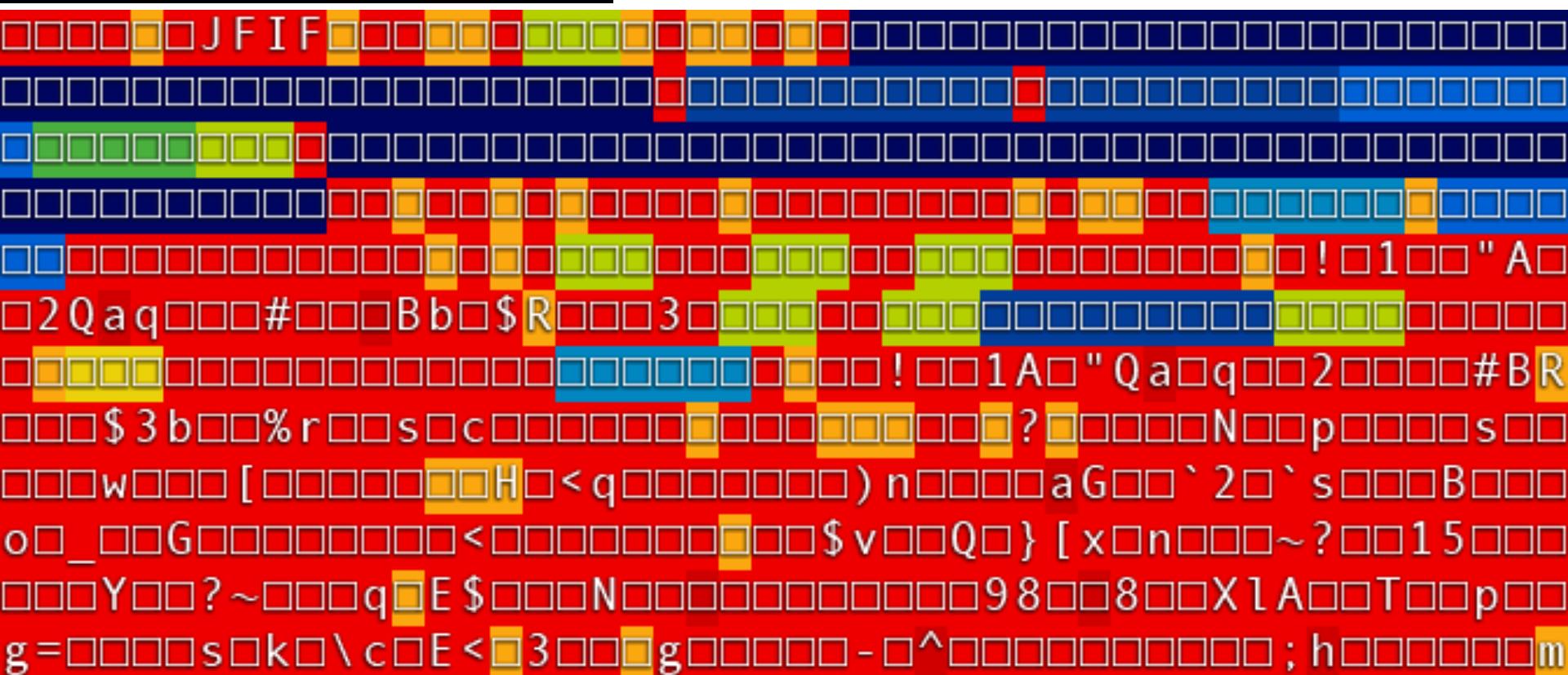


Good Fair Limited Expansion

# BITMAPS, NOT SO MUCH



Good Fair Limited Expansion



# FILE SIZE COMPARISON

*2x PNG 8*



12.6k

*SVG*



13.4k

# FILE SIZE COMPARISON

*2x PNG 8*



12.6k

*SVG*



3.8k GZIPPED

# VECTOR OR BITMAP?

- + IS IT A PHOTO?
- + ILLUSTRATION COMPLEXITY
- + VISUAL EFFECTS / LEVEL OF REALISM
- + FILE SIZE OF GZIP'D SVG vs. 2X BITMAP



# CREATING vectors

# POPULAR TOOLS



Sketch

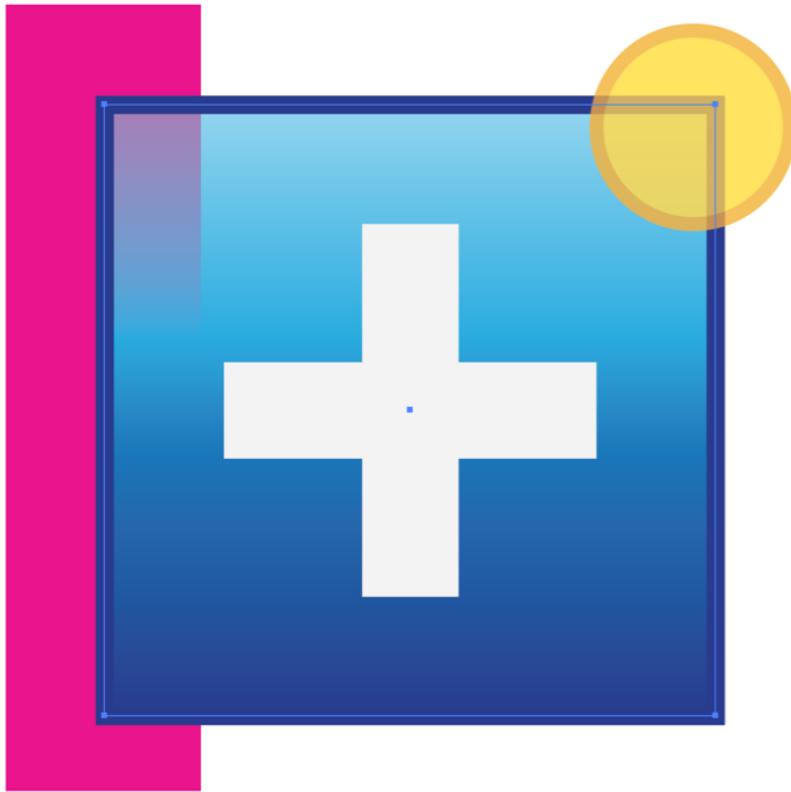
ILLUSTRATOR

do's and don'ts

# USE FILLS, GRADIENTS, STROKES



# OPACITY: OBJECTS + GRADIENT STEPS



# ROUNDED CORNERS

EFFECT

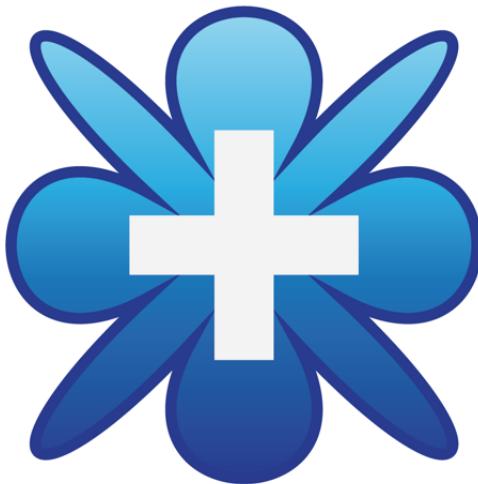


LIVE CORNERS

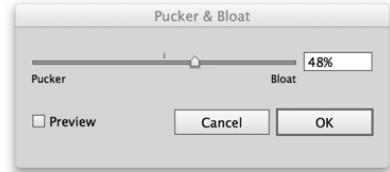
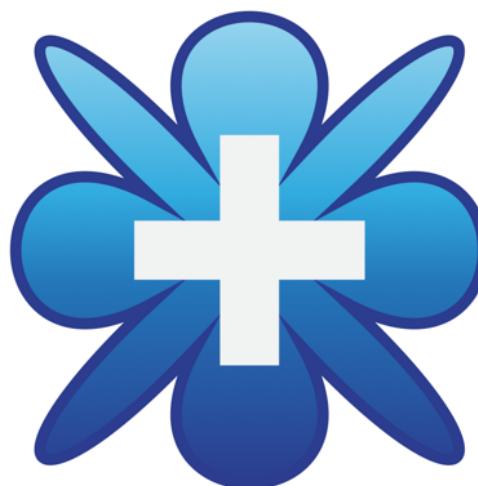


# EFFECT > PATH & TRANSFORM

ILLUSTRATOR



OUTPUT

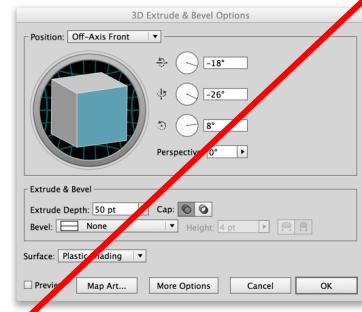


# AVOID 3D EFFECTS

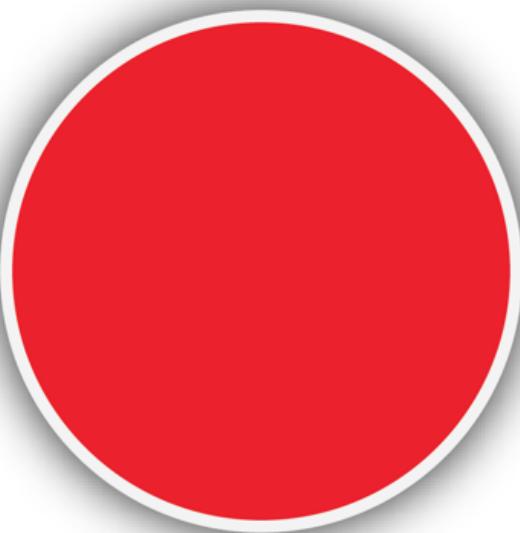
ILLUSTRATOR



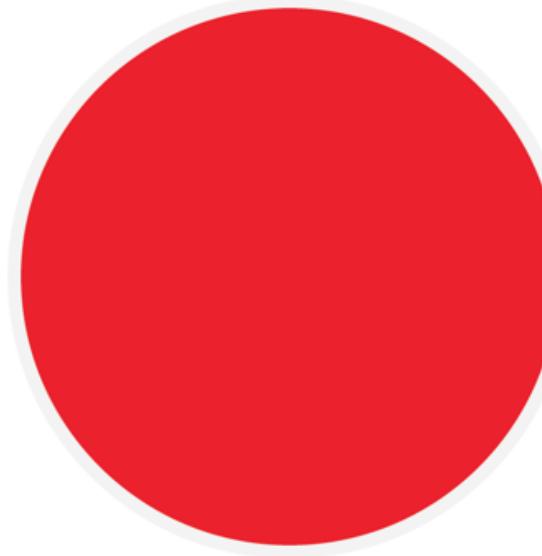
OUTPUT



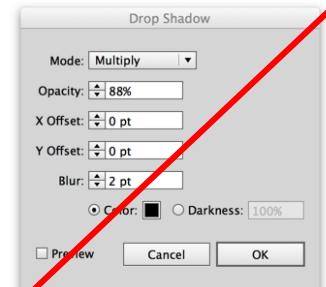
# AVOID DROP SHADOWS



13k



0.5k



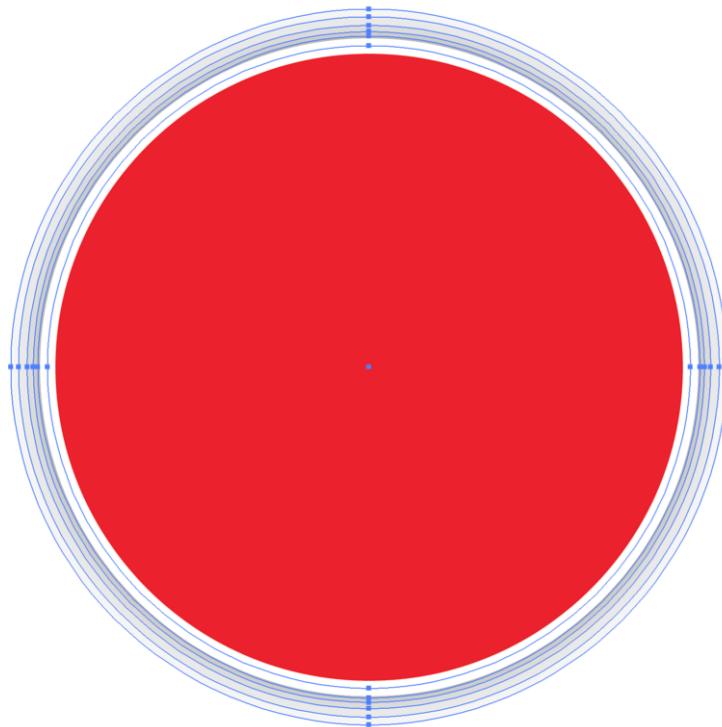
# RASTERIZED SHADOW

# EMBEDDED BITMAP

A black and white portrait of a man with short hair and a mustache. The image is heavily overexposed, making details difficult to discern. A large, semi-transparent watermark is overlaid across the center of the image. The top part of the watermark contains the word 'BEDDED' in a bold, sans-serif font. Below it, the letters 'TMAP' are also displayed in a similar font. The background of the image appears to be a plain, light-colored wall.

# “FAUX” SHADOW

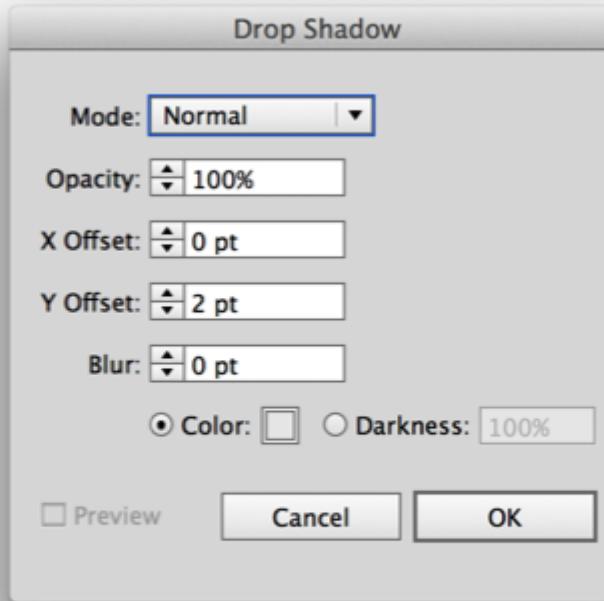
ADDS ~300 bytes



# “FLAT” SHADOW



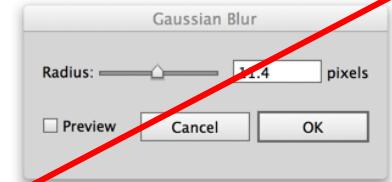
NO OPACITY OR BLUR!



# AVOID BLUR

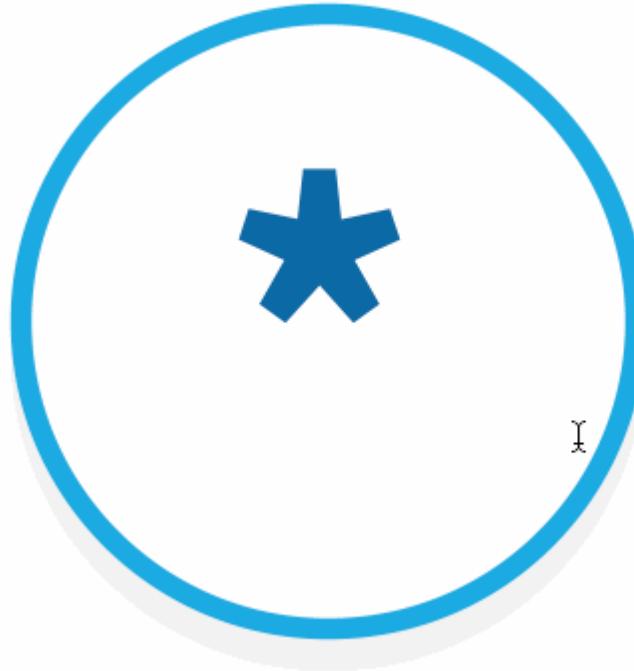


64k EMBEDDED BITMAP



Use SVG's gaussian  
blur filter for this.

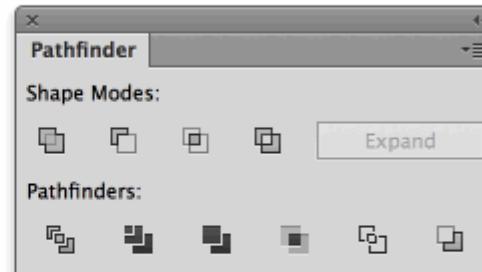
# OUTLINE TEXT



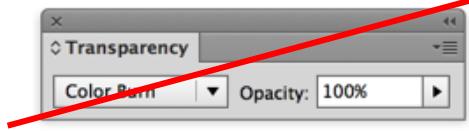
**IF NOT OUTLINED:**

```
<text font-family="'SourceSansPro-Bold'" font-size="10">?</text>
```

# PATHFINDER > UNITE

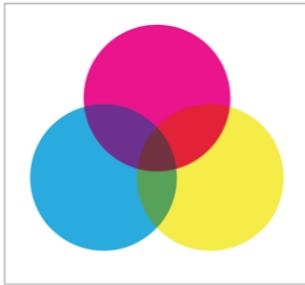


# AVOID BLEND MODES

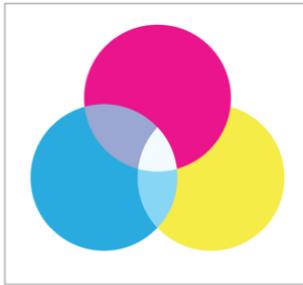


## ILLUSTRATOR

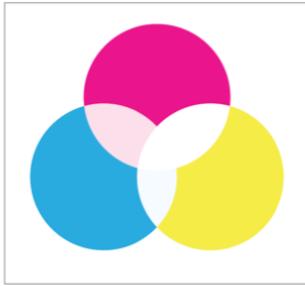
MULTIPLY



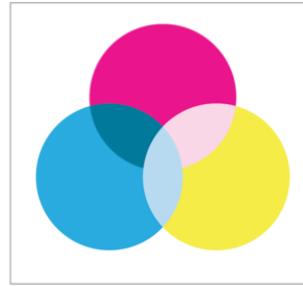
OVERLAY



SCREEN

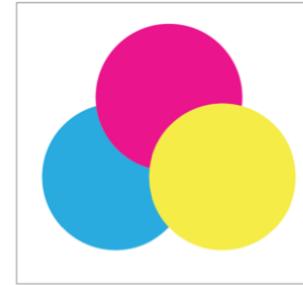


LUMINOSITY

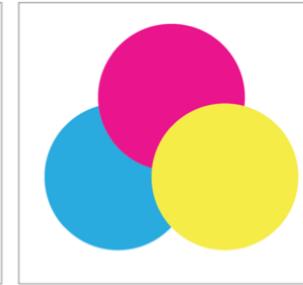


## SVG OUTPUT

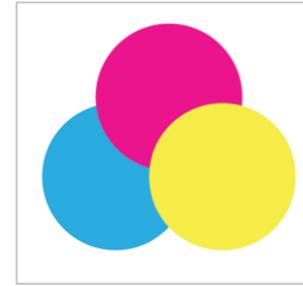
MULTIPLY



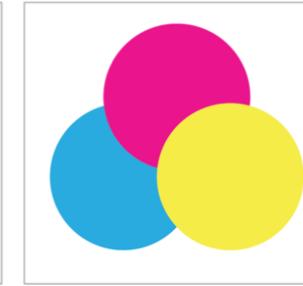
OVERLAY



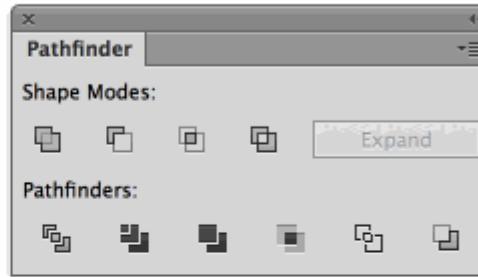
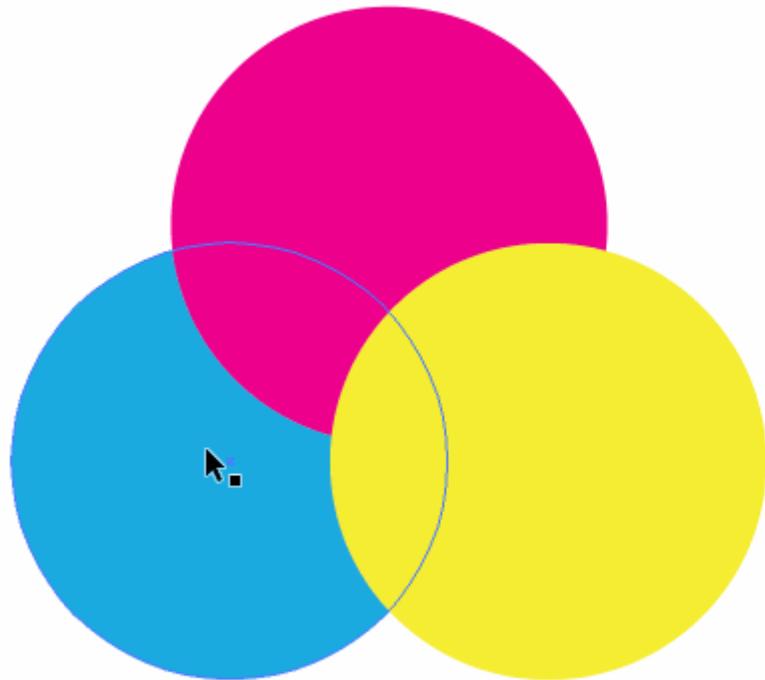
SCREEN



LUMINOSITY

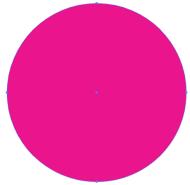


# RECREATE with PATHFINDER > INTERSECT

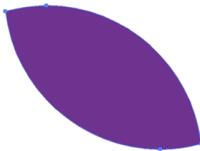


Select objects > copy >  
paste in place > apply  
intersect

# SIMPLER SHAPES FTW



```
<circle fill="#EC008B" cx="23.5" cy="42.7" r="18.2"/>
```

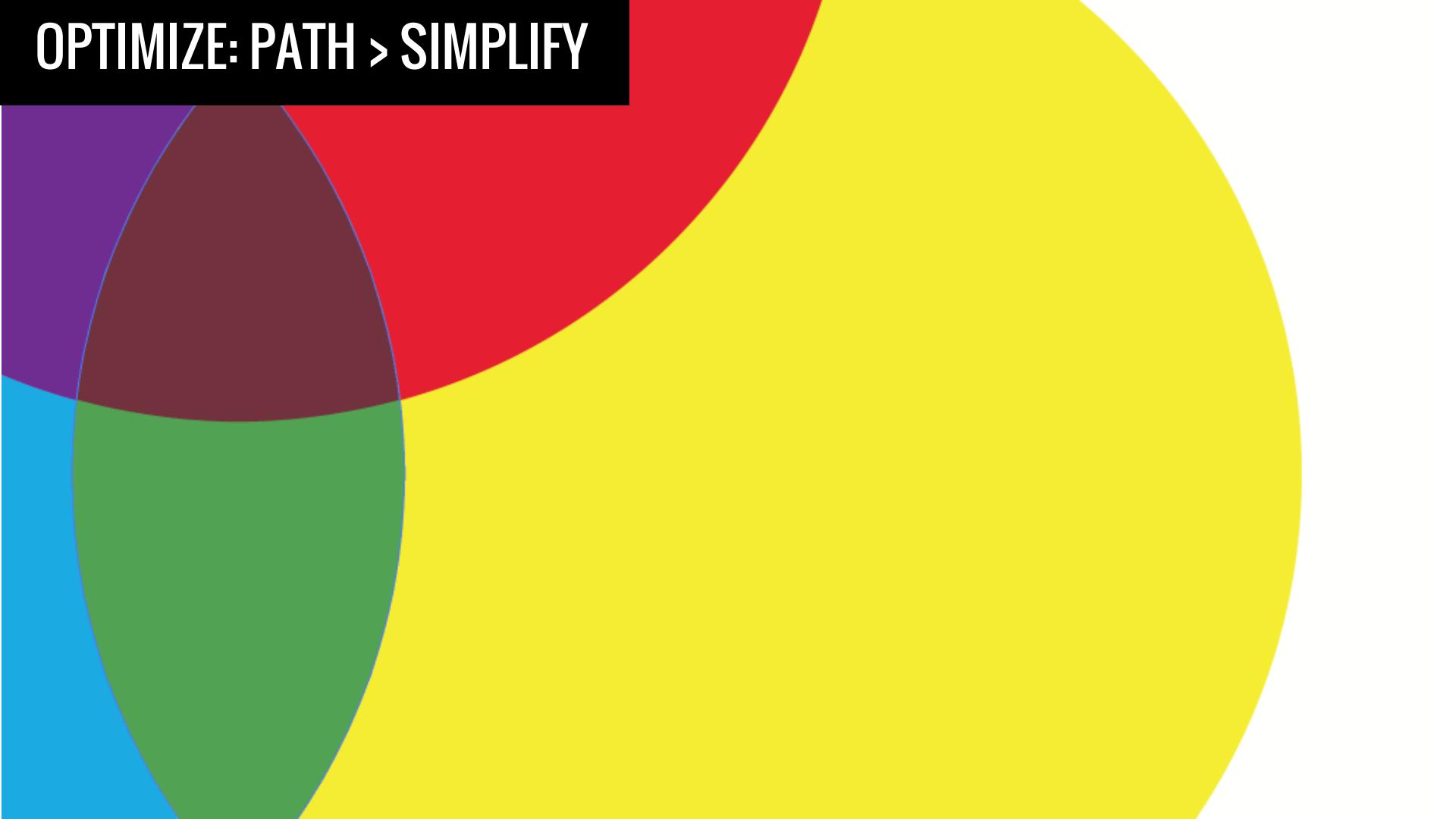


```
<path fill="#6F2D8F" d="M32,40.5c1.5,0.4,3.1,0.7,4.8,0.7  
c9.3,0,16.9-7,18-16c-1.5-0.4-3.1-0.7-4.8-0.7C40.  
7,24.5,33.1,31.5,32,40.5z"/>
```



```
<path fill="#71323E" d="M41.5,40.4c-0.1-0.5-0.1-1-0.3-1.5c0-0.1,0-0.1,0-0.2c-0.1-  
0.5-0.2-0.9-0.4-1.4c0-0.1-0.1-0.2-0.1-0.4c-0.1-0.4-0.3-0.8-0.4-1.2c-0.1-0.2-0.2-0.5-  
0.3-0.7c-0.1-0.3-0.2-0.5-0.4-0.8c-0.2-0.5-0.5-0.9-0.8-1.3c0,0,0,0,0-0.1c-0.6-0.9-  
1.3-1.8-2-2.6c-0.8,0.8-1.4,1.7-2,2.6c0,0,0,0,0c-0.3,0.4-0.5,0.9-0.8,1.3c-0.1,0.2-  
0.2,0.5-0.4,0.8c-0.1,0.2-0.2,0.5-0.3,0.7c-0.2,0.4-0.3,0.8-0.4,1.2c0,0.1-0.1,0.2-  
0.1,0.4c-0.1,0.5-0.3,0.9-0.4,1.4c0,0.1,0,0.1,0,0.2c-0.1,0.5-0.2,1-0.3,1.5c0,  
0,0,0.1,0,0.1c0.7,0.2,1.4,0.3,2,0.4c0.2,0,0.4,0.1,0.6,0.1c0.2,0,0.5,0.1,0.7,0.1c0.  
5,0,1,0.1,1.5,0.1s1,0,1.5-0.1c0.2,0,0.5,0,0.7-0.1c0.2,0,0.4-0.1,0.6-0.1c0.7-0.1,1.4-  
0.3,2-0.4C41.5,40.4,41.5,40.4,41.5,40.4z"/>
```

# OPTIMIZE: PATH > SIMPLIFY

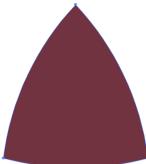


## BEFORE - 1.75k file



```
<path fill="#71323E" d="M41.5,40.4c-0.1-0.5-0.1-1-0.3-1.5c0-0.1,0-0.1,0-0.2c-0.1-0.5-0.2-0.9-0.4-1.4c0-0.1-0.1-0.2-0.1-0.4c-0.1-0.4-0.3-0.8-0.4-1.2c-0.1-0.2-0.2-0.5-0.3-0.7c-0.1-0.3-0.2-0.5-0.4-0.8c-0.2-0.5-0.5-0.9-0.8-1.3c0,0,0,0,0-0.1c-0.6-0.9-1.3-1.8-2-2.6c-0.8,0.8-1.4,1.7-2,2.6c0,0,0,0,0c-0.3,0.4-0.5,0.9-0.8,1.3c-0.1,0.2-0.2,0.5-0.4,0.8c-0.1,0.2-0.2,0.5-0.3,0.7c-0.2,0.4-0.3,0.8-0.4,1.2c0,0.1-0.1,0.2-0.1,0.4c-0.1,0.5-0.3,0.9-0.4,1.4c0,0.1,0,0.1,0,0.2c-0.1,0.5-0.2,1-0.3,1.5c0,0,0,0.1,0,0.1c0.7,0.2,1.4,0.3,2,0.4c0.2,0,0.4,0.1,0.6,0.1c0.2,0,0.5,0.1,0.7,0.1c0.5,0,1,0.1,1.5,0.1s1,0,1.5-0.1c0.2,0,0.5,0,0.7-0.1c0.2,0,0.4-0.1,0.6-0.1c0.7-0.1,1.4-0.3,2-0.4C41.5,40.4,41.5,40.4,41.5,40.4z"/>
```

## AFTER - 1.18k file



```
<path fill="#71323E" d="M43.7,49.5c-0.5-3.8-2.2-7.3-4.8-10.1c-2.6,2.8-4.3,6.4-4.8,10.2c3.1,0.8,6.4,0.8,9.5,0C43.7,49.6,43.7,49.6,43.7,49.5C43.6,49,43.7,49.6,43.7,49.5z"/>
```

# WHAT WORKS

- Multiple elements, grouping
- Colors + gradients
- Fill + strokes
- Opacity (on gradient stops too)
- Rounded corners (effect or smart)
- 2D Transforms (pucker, bloat)
- Flat drop shadows



# THINGS TO AVOID

- Blurred drop shadows\*
- Gaussian blur effect\*
- 3D effects
- Blend modes (multiply, luminosity)
- Embedding fonts
- Overly complex paths

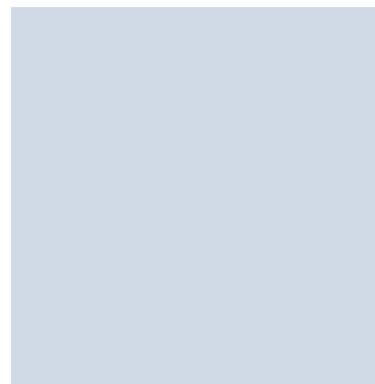
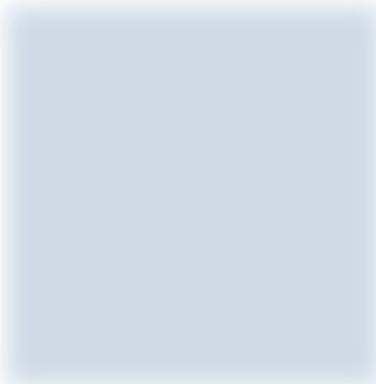
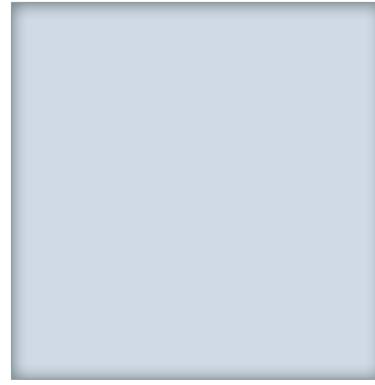
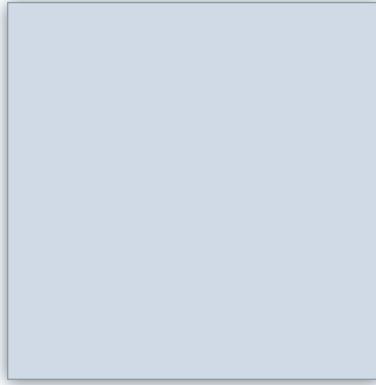


# \* SKETCH IS SMARTER



Sketch

SVG Filters for blur, shadow, reflection



# FILTERS, NOT BITMAPS

version="1.1" xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:sketch="http://sketching.com/sketch" -->

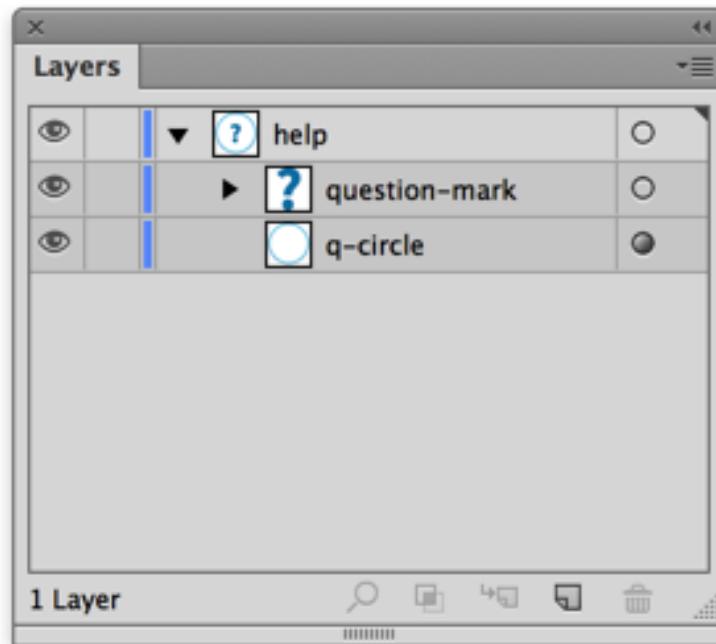
```
6
7 <defs>
8   <filter x="-50%" y="-50%" width="200%" height="200%" filterUnits="objectBoundingBox" id="filter-1">
9     <feOffset dx="0" dy="2" in="SourceAlpha" result="shadowOffsetOuter1"></feOffset>
10    <feGaussianBlur stdDeviation="7.5" in="shadowOffsetOuter1" result="shadowBlurOuter1"></feGaussianBlur>
11    <feColorMatrix values="0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.35 0" in="shadowBlurOuter1" type="matrix" result="shadowMatrixOuter1"></feColorMatrix>
12    <feMerge>
13      <feMergeNode in="shadowMatrixOuter1"></feMergeNode>
14      <feMergeNode in="SourceGraphic"></feMergeNode>
15    </feMerge>
16  </filter>
17
18  <filter x="-50%" y="-50%" width="200%" height="200%" filterUnits="objectBoundingBox" id="filter-2">
19    <feOffset dx="0" dy="1" in="SourceAlpha" result="shadowOffsetInner1"></feOffset>
20    <feGaussianBlur stdDeviation="7.5" in="shadowOffsetInner1" result="shadowBlurInner1"></feGaussianBlur>
21    <feComposite in="shadowBlurInner1" in2="SourceAlpha" operator="arithmetic" k2="-1" k3="1" result="shadowInnerInner1"></feComposite>
22    <feColorMatrix values="0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.35 0" in="shadowInnerInner1" type="matrix" result="shadowMatrixInner1"></feColorMatrix>
23    <feMerge>
24      <feMergeNode in="SourceGraphic"></feMergeNode>
25      <feMergeNode in="shadowMatrixInner1"></feMergeNode>
26    </feMerge>
27  </filter>
28
29  <filter x="-50%" y="-50%" width="200%" height="200%" filterUnits="objectBoundingBox" id="filter-3">
30    <feGaussianBlur stdDeviation="10" in="SourceGraphic" result="blur"></feGaussianBlur>
31  </filter>
32 </defs>
33
34 <g id="Page-1" stroke="none" stroke-width="1" fill="none" fill-rule="evenodd" sketch:type="MSPage">
35   <rect id="Rectangle-1" stroke="#979797" fill="#D8D8D8" filter="url(#filter-1)" sketch:type="MSShapeGroup" x="20" y="13" width="316" height="320"></rect>
36   <rect id="Rectangle-2" stroke="#979797" fill="#D8D8D8" filter="url(#filter-2)" sketch:type="MSShapeGroup" x="379" y="13" width="316" height="320"></rect>
37   <rect id="Rectangle-3" fill="#D8D8D8" filter="url(#filter-3)" sketch:type="MSShapeGroup" x="20" y="378" width="316" height="320"></rect>
38   <rect id="Rectangle-4" fill="#D8D8D8" sketch:type="MSShapeGroup" x="379" y="378" width="316" height="320"></rect>
39 </g>
40 </svg>
```

ILLUSTRATOR

exporting

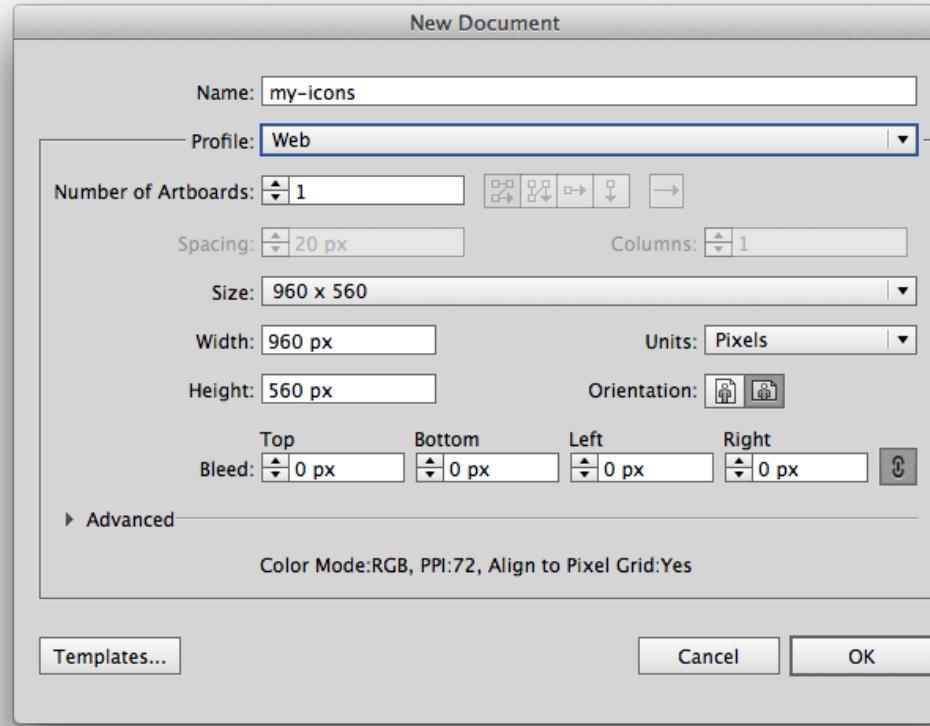


# NAMED LAYERS >> ID's

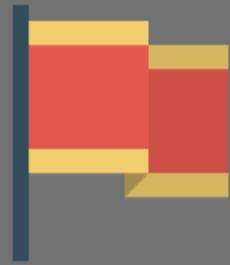


```
<svg version="1.1" id="help">  
  
<g id="q-circle">  
  <g>  
    <circle fill="#E5E5E5" cx="304.4" cy="396.1" r="10" />  
  </g>  
  <g>  
    <circle fill="#FFFFFF" cx="304.4" cy="394.1" r="10" />  
  </g>  
</g>  
  
</svg>
```

# START WITH A NEW AI FILE

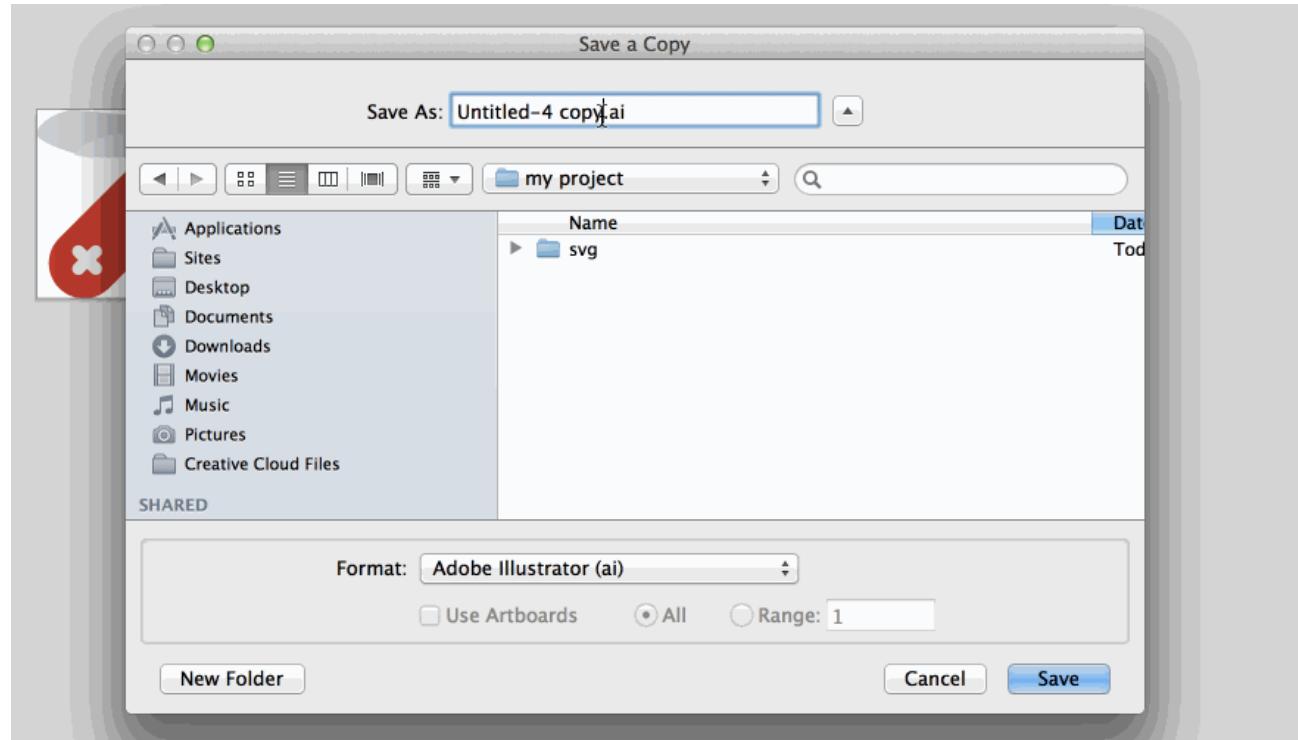
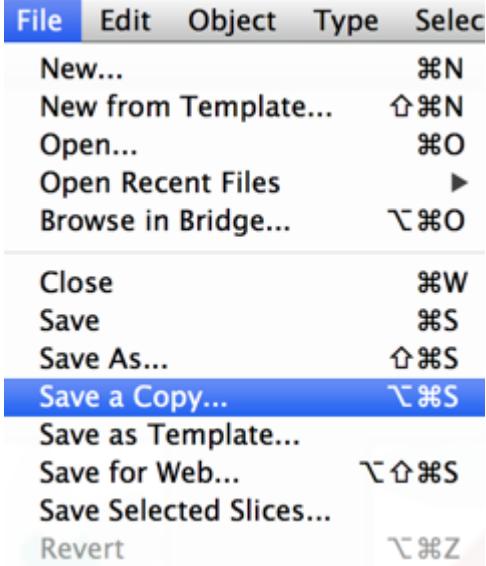


# ARTBOARDS FOR EACH ICON



File Edit View Insert Tools Window Help Name: Artboard 2 X: -110.32 pt Y: 395.14 pt W: 46.9 pt H: 30.97 pt Artboards: 1

# SAVE A COPY...



# WAT

SVG

- Adobe CEF
- SVG
- Convert to outline

Style Elements

- Presentation Attributes
- Style Attributes
- Style Attributes (Entity References)
- Style Elements

SVG Options

SVG Profiles: **SVG 1.1**

Fonts

Type: **SVG**

Subsetting: **Only Glyphs Used**

Options

Image Location:  Embed  Link

Preserve Illustrator Editing Capabilities

Advanced Options

CSS Properties: **Style Elements**

Include Unused Graphic Styles

Decimal Places: **1** Encoding: **Unicode (UTF-8)**

Optimize for Adobe SVG Viewer  Output fewer <tspan> elements

Include Slicing Data  Use <textPath> element for Text on Path

Include XMP  Responsive

Description

ⓘ Hold the cursor over a setting for additional information.

Less Options SVG Code... Cancel OK

Unicode (UTF-8)

ISO 8859-1

Unicode (UTF-8)

Unicode (UTF-16)

Output fewer <tspan> elements

More Options

# WAT

SVG Profiles:

- SVG 1.1
- SVG 1.0
- ✓ SVG 1.1
- SVG Tiny 1.1
- SVG Tiny 1.1 +
- SVG Basic 1.1
- SVG Tiny 1.2

SVG

- Adobe CEF
- ✓ SVG
- Convert to outline

Style Elements

- Presentation Attributes
- Style Attributes
- Style Attributes (Entity References)
- ✓ Style Elements

SVG Options

SVG Profiles: **SVG 1.1**

Fonts

Type: **SVG**

Subsetting: **Only Glyphs Used**



Description

ⓘ Hold the cursor over a setting for additional information.

Less Options    SVG Code...        Cancel    OK

- Unicode (UTF-8)
- ISO 8859-1
- ✓ Unicode (UTF-8)
- Unicode (UTF-16)

Output fewer <tspan> elements

More Options

# JUST DO THIS

PRE-OUTLINE

AVOID BITMAPS  
ANYWAY

PRESENTATION ATTR

“1” IS ENOUGH

UNCHECK ALL  
THIS GARBAGE

SVG Options

SVG Profiles: **SVG 1.1**

SVG 1.1

Fonts

Type: **Convert to outline**

Subsetting: **Only Glyphs Used**

Options

Image Location:  Embed  Link

Preserve Illustrator Editing Capabilities

UNCHECK

Advanced Options

CSS Properties: **Presentation Attributes**

Include Unused Graphic Styles

Decimal Places: **1**

Encoding: **Unicode (UTF-8)**

UTF-8

Optimize for Adobe SVG Viewer

Output fewer <tspan> elements

Include Slicing Data

Use <textPath> element for Text on Path

Include XMP

Responsive

UNCHECK  
OMITS HEIGHT + WIDTH

# ALL DONE!

| svg               | --        | Today 4:00 PM | Folder    |
|-------------------|-----------|---------------|-----------|
| icon_mountain.svg | 1 KB      | Today 3:58 PM | SVG Image |
| icon_flag.svg     | 823 bytes | Today 3:58 PM | SVG Image |
| icon_knife.svg    | 1 KB      | Today 3:58 PM | SVG Image |
| icon_map.svg      | 1 KB      | Today 3:58 PM | SVG Image |

# OPTIONAL: REMOVE PREFIXES

| ▼  svg        | --        | Today 4:31 PM | Folder    |
|--|-----------|---------------|-----------|
|  mountain.svg | 1 KB      | Today 3:58 PM | SVG Image |
|  flag.svg     | 823 bytes | Today 3:58 PM | SVG Image |
|  knife.svg    | 1 KB      | Today 3:58 PM | SVG Image |
|  map.svg      | 1 KB      | Today 3:58 PM | SVG Image |

# READYMADE ICONS - ICOMOON.IO

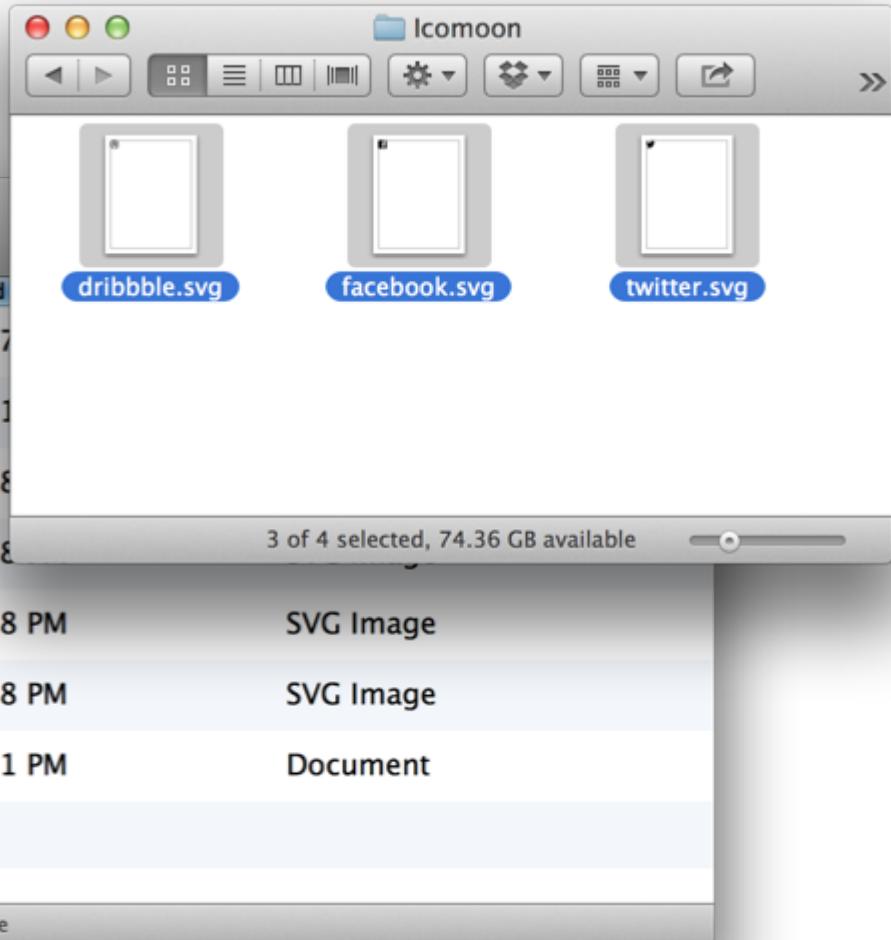
The screenshot shows the icomoon.io application interface. At the top, there is a header bar with a back button, forward button, refresh button, and a URL field containing "icomoon.io/app/#/select". To the right of the URL field are icons for star, globe, and menu. Below the header is a toolbar with a list icon, an "Import Icons" button (purple), and several other icons for file operations like "New", "Delete", "Duplicate", and "Edit". There is also a search bar with the placeholder "search..." and a "Font" button with a circular arrow icon.

The main area of the interface is a grid of 4 rows by 10 columns of icons. The icons include various directional arrows (up, down, left, right, diagonal), checkmarks, and other symbols such as a magnifying glass, a checkmark in a square, a circle with a dot, a circle with a cross, a scissors icon, a funnel icon, and mathematical symbols like  $\Sigma$  and  $\Omega$ .

At the bottom of the grid, there are two buttons: "SVG" and "Font" with a circular arrow icon. A cursor arrow is visible at the bottom center of the grid.

# EASY PEAS

| my project   |           |               |                                     |
|--------------|-----------|---------------|-------------------------------------|
| Name         | Size      | Date Modified |                                     |
| .DS_Store    | 6 KB      | Today 4:17    |                                     |
| svg          | --        | Today 4:31    |                                     |
| mountain.svg | 1 KB      | Today 3:58    |                                     |
| flag.svg     | 823 bytes | Today 3:58    | 3 of 4 selected, 74.36 GB available |
| knife.svg    | 1 KB      | Today 3:58 PM | SVG Image                           |
| map.svg      | 1 KB      | Today 3:58 PM | SVG Image                           |
| .DS_Store    | 6 KB      | Today 4:31 PM | Document                            |



# AUTOMATING

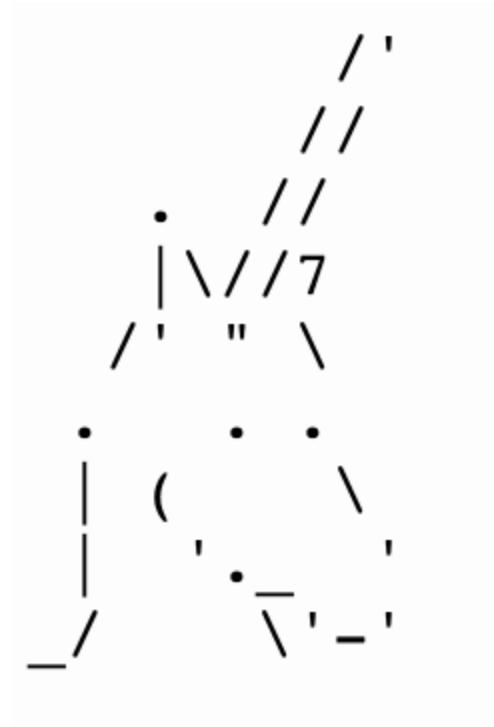
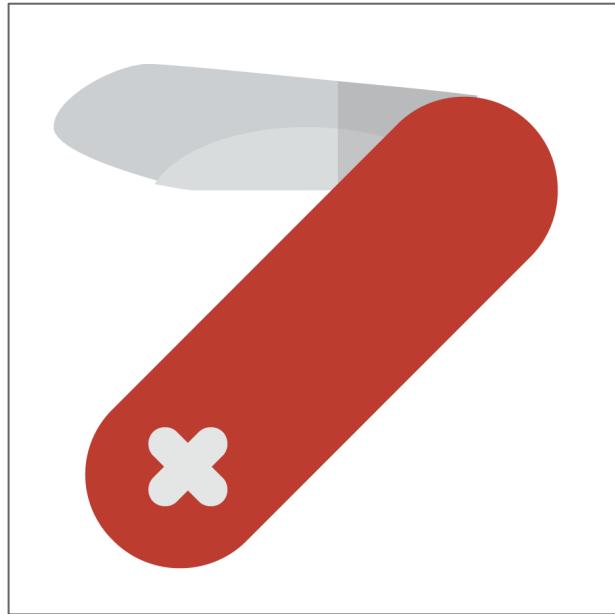
---

# fallbacks

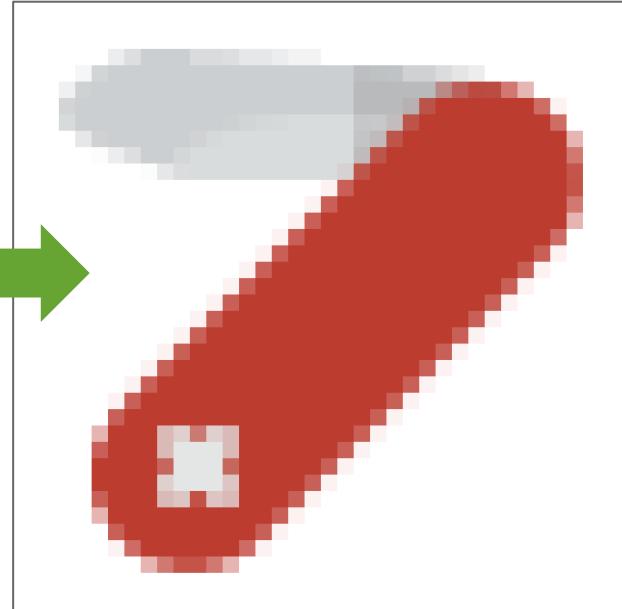
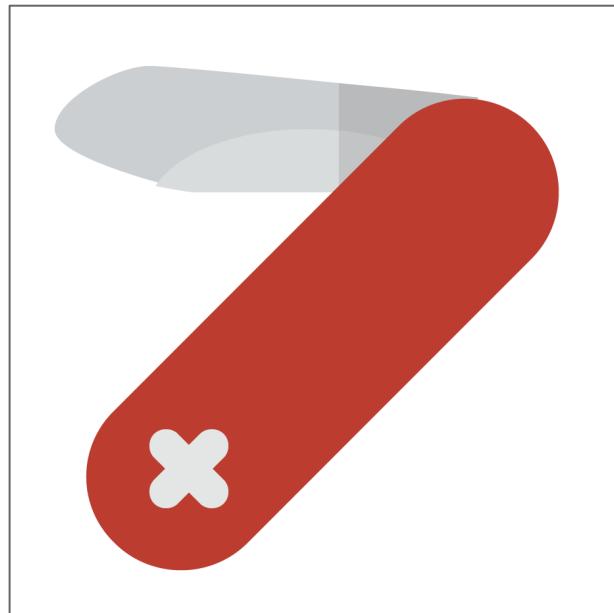
# BEHOLD, THE GRUMPICON!



# TAKER OF SVGS



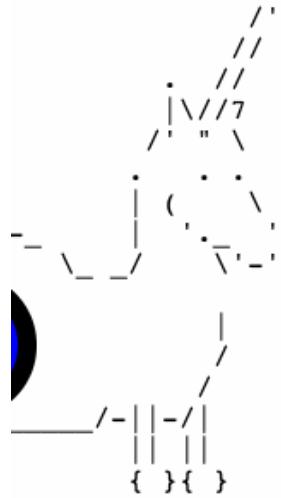
# MAKER OF FALLBACKS



1x PNG BITMAPS BASED ON EACH SVG

# GRUMPI

www.grumpicon.com

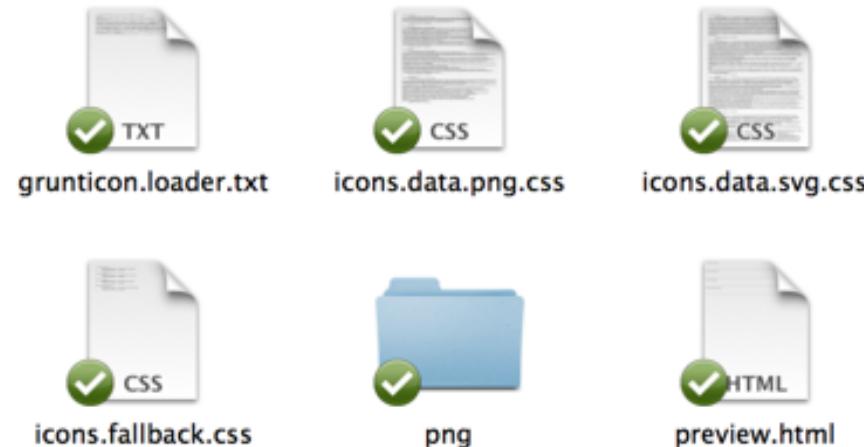


<http://grumpicon.com>

# WHAT'S INSIDE?



grunticon.zip  
19 KB



# PREVIEW FILE



file:///Downloads/grunticon/preview.html

.icon-dribbble:



.icon-facebook:



.icon-flag:



.icon-knife:



# 3 SUPPORT TIERS

SVG SUPPORT,  
INLINE SVG

IE9+, Chrome 14+, Safari 4+, Firefox 3.6+,  
Opera 15+, iOS 3+, Android 4.0, Opera Mobile,  
BB Playbook

---

PNG Fallback,  
DATA URI CSS

IE8, Android 1.x-2.x, Opera Mobile/Mini

---

PNG Fallback,  
SEPARATE IMAGES

IE6-7, Non-JS environments

# AUTO-GENERATED

SVG SUPPORT,  
INLINE SVG



IE9+, Chrome 14+, Safari 4+, Firefox 3.6+,  
Opera 15+, iOS 3+, Android 4.0, Opera Mobile,  
BB Playbook

PNG Fallback,  
DATA URI CSS



IE8, Android 1.x-2.x, Opera Mini

PNG Fallback,  
SEPARATE IMAGES



IE6-7, Non-JS environments

# ICON CSS

## SVG SUPPORT, INLINE SVG



icons.data.svg.css

```
.icon-flag {  
    background-image: url('data:image/svg+xml; charset=US-ASCII, S  
    background-repeat: no-repeat;  
}
```

## PNG Fallback, DATA URI CSS



icons.data.png.css

```
.icon-flag {  
    background-image: url('data:image/png; base64, iVBORw0KGgoAAA  
    background-repeat: no-repeat;  
}
```

## PNG Fallback, SEPARATE IMAGES



icons.fallback.css



png

```
.icon-flag {  
    background-image: url('png/flag.png');  
    background-repeat: no-repeat;  
}
```



flag.png

# ICON CSS

## SVG SUPPORT, INLINE SVG



```
.icon-flag {  
    background-image: url('data:image/svg+xml; charset=US-ASCII,  
    background-repeat: no-repeat;  
}
```

We embed the SVGs as plain text with whitespace removed so GZIP can work efficiently.

This CSS file is essentially a “text sprite” = one request for all the SVG data and style rules that can be cached by the browser.

↑  
**SVGs ARE PLAIN TEXT, NOT BASE 64**

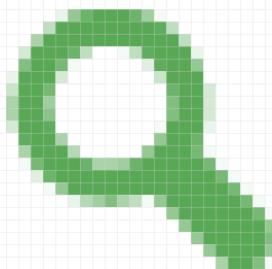
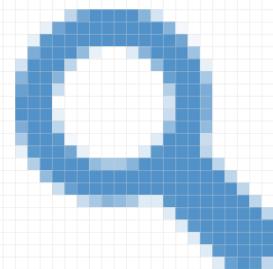
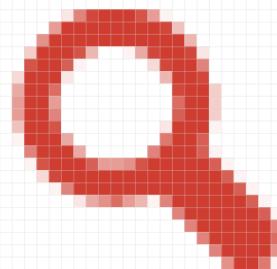
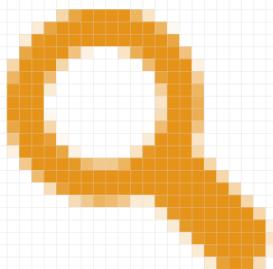
```
.icon-icon_flag {  
    background-image: url('data:image/svg+xml; charset=US-ASCII,%3C%3Fxml%  
    20version%3D%221.0%22%20encoding%3D%22utf-8%22%3F%3E%0D%0A%3C%21--%20Generator%  
    3A%20Adobe%20Illustrator%2017.1.0%2C%20SVG%20Export%20Plug-In%20.%20SVG%  
    20Version%3A%206.00%20Build%200%29%20%20-%3E%0D%0A%3C%21DOCTYPE%20vg%  
    20PUBLIC%20%22-/W3C//DTD%20SVG%201.1//EN%22%20%22http%3A//www.w3.  
    org/Graphics/SVG/1.1/DTD/svg11.dtd%22%3E%0D%0A%3Csvg%20version%3D%221.1%22%  
    20id%3D%22Layer_1%22%20xmlns%3D%22http%3A//www.w3.org/2000/svg%22%20xmlns%  
    3Axlink%3D%22http%3A//www.w3.org/1999/xlink%22%20x%3D%220px%22%20y%3D%220px%22%  
    0D%0A%09%20width%3D%2227px%22%20height%3D%2232px%22%20viewBox%3D%22%20%20%202027%  
    2032%22%20enable-background%3D%22new%20%200%202027%2032%22%20xml%3Aspace%3D%  
    22preserve%22%3E%0D%0A%3Cg%20id%3D%22flag%22%3E%0D%0A%09%3Cpath%20fill%3D%22%  
    23344E5C%22%20d%3D%22M2%2C0v32H0V0H2z%22/%3E%0D%0A%09%3Cpath%20fill%3D%22%  
    23CC4E44%22%20d%3D%22N14%2C5h13v19H14C14%2C24%2C14%2C5%2C14%2C5z%22/%3E%0D%0A%  
    09%3Cpath%20fill%3D%22%23D8B863%22%20d%3D%22M17%2C5v3h10V5H17z%20M14%2C24h13v-  
    3H14V24z%22/%3E%0D%0A%09%3Cpath%20fill%3D%22%23A28A48%22%20d%3D%22M14%2C21h3l-  
    3%2C3V21z%22/%3E%0D%0A%09%3Cpath%20fill%3D%22%23E2584C%22%20d%3D%22M2%  
    2C2h15v19H2V2z%22/%3E%0D%0A%09%3Cpath%20fill%3D%22%23F1CD6F%22%20d%3D%22M2%  
    2C2v3h15V2H2z%20M2%2C21h15v-3H2V21z%22/%3E%0D%0A%3C/g%3E%0D%0A%3C/svg%3E%0D%  
    0A');  
    background-repeat: no-repeat;
```

# YU NO SPRITE?

The screenshot shows the homepage of iconizr. At the top left is a yellow circular badge with the text "Did you know that iconizr can help you with CSS icons? Just drag and drop them like shower and winter!". The main title "ICON1ZR" is in large blue capital letters. A blue ribbon banner at the top right says "BETA WEBSITE". Below the title is a text block explaining the service: "takes your SVG drawings and processes them to a CSS icon kit, coming in several different flavors. It prefers high-resolution (retina) SVG over PNG icons, data URLs over CSS sprites and single images and provides fallbacks for even the least capable browsers. It outputs Sass along with (or instead of) CSS code." It also says "To start using iconizr, simply drop your SVG icons here". Below this is a placeholder text "(or click to select them)". A note below states: "With this free service, you may process up to 50 icons in a single pass, with each icon file being 300 kB or less in size. Icons will be limited to a maximum of 300 x 300 pixels resolution. If you need more, please feel free to download and setup iconizr on your local machine (or drop me a line).\*" At the bottom, there's a note about the command-line version and social media links for the developer, Jonchi Kugath.



# COLOR VARIATIONS



# SVGs PER COLOR

Make multiple SVGs for each color to support fallback generation and **let GZIP do its thing.**



search-orange.svg



search-red.svg



search-blue.svg

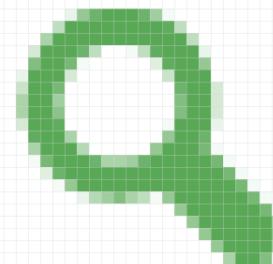
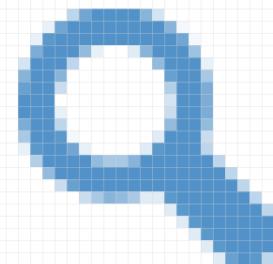
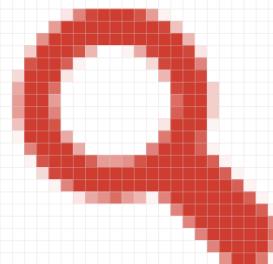
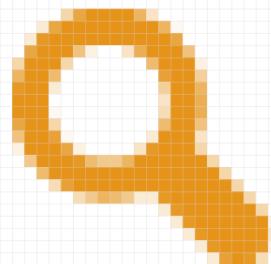
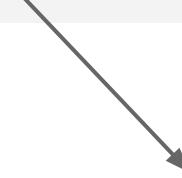


search-green.svg

```
.color-orange { fill: #F38316; }  
.color-red { fill: #DC0014; }  
.color-blue { fill: #0587C1; }  
.color-green { fill: #00A14B; }
```

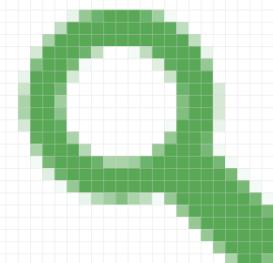
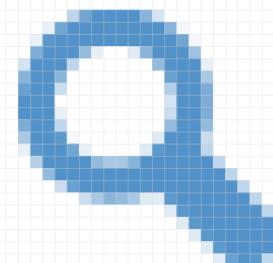
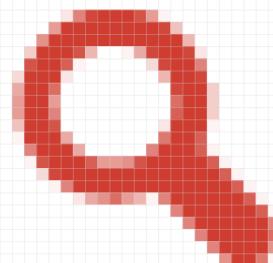
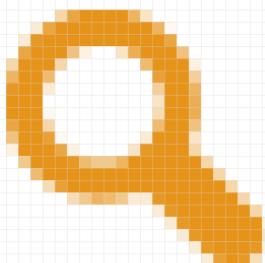
# GRUNTICON COLOR OPTION

**search.colors-DC0014-0587C1-00A14B.svg**



# GRUNTICON COLOR OPTION

**search.colors-error-quiet-success.svg**



# CONTROL VIA ARTBOARD NAMING



Artboard Options

Name: `search.colors-DC0014-0587C1-00A14B`

Preset: Custom

Width: 21.04 px X: 7539.82 px

Height: 21 px Y: -7642.93 px

Orientation:

Constrain proportions (i) Current proportions: 1

Display

Show Center Mark  
 Show Cross Hairs  
 Show Video Safe Areas  
Video Ruler Pixel Aspect Ratio:

Global

Fade region outside Artboard  
 Update while dragging

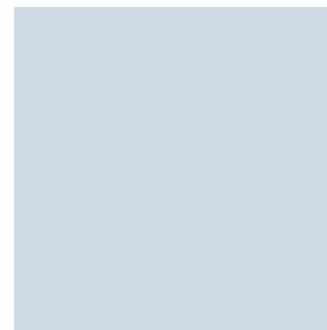
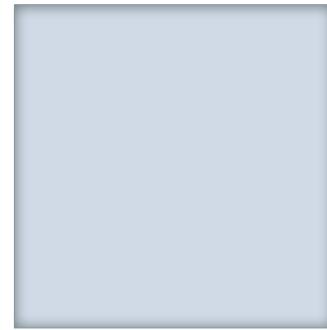
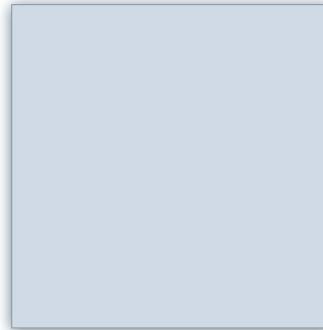
(i) Artboards: 9

(i) To create a new artboard within an artboard, press Shift

A screenshot of the Adobe Photoshop Artboard Options panel. The panel shows settings for the current artboard, including its name, dimensions (width 21.04 px, height 21 px), orientation (portrait), and various display and global options like fading and updating while dragging.

# SVG FILTERS ARE TRICKY\*

'  
//  
//  
. // / 7  
/ " \ \  
. . .  
| ( . \ '  
\_ / \ - -'



\* We're working on it.

FORGET GRUMPI

use grunt

# COMMAND LINE FTW



This repository

Search or type a command



Explore Gist Blog Help



toddparker



PUBLIC



filamentgroup / grunticon



Unwatch



108



Star

2,046



Fork

108

A mystical CSS icon solution. — Edit

416 commits

3 branches

35 releases

22 contributors



branch: master

grunticon /

Rev version

jlembbeck authored 19 minutes ago

latest commit 4ad069d0f7



example

Update previewTemplate docs

17 days ago

lib

customizable previewTemplate in configuration

2 months ago

tasks

Fix #148

20 minutes ago

test

Remove integration tests until we can get the build fixed consistently

17 days ago

.gitignore

Add to the gitignore some folder that might pop up during testing

4 months ago

&lt;&gt; Code

Issues

17

Pull Requests

0

Wiki

Pulse

Graphs

Network

Settings

<https://github.com/filamentgroup/grunticon>



# Grunt for People Who Think Things Like Grunt are Weird and Hard

Chris Coyier

11 December 2013

Published in [Code](#)

[73 comments](#)

Front-end developers are often told to do certain things:

- ◆ **Work in as small chunks of CSS and JavaScript** as makes sense to you, then concatenate them together for the production website.
- ◆ **Compress your CSS and minify your JavaScript** to make their file sizes as small as possible for your production website.
- ◆ **Optimize your images** to reduce their file size without affecting quality.

<http://24ways.org/2013/grunt-is-not-weird-and-hard/>

THEN THESE

# Grunticon



in Development

**Martin LeBlanc**  
*Founder and CEO of  
Iconfinder*

## Getting started with Grunticon

<http://blog.iconfinder.com/get-started-with-grunticon/>  
<http://mduncan.me/2014/02/06/grunticon-command-line-tool.html>

# GRUNT TASK

```
grunt.registerTask('icons', [
  'chmod:writeable',
  'clean:grunticon',
  'copy:grunticon',
  'svgmin',
  'grunticon',
  'chmod:readonly'
]);
```

# VECTOR WORKFLOW



> **grunt icons**

WORKING IN

---

<code>

TWO EASY STEPS

using grunticons

# 1. ADD CSS LOADER TO <HEAD>

<head>

```
<!-- Unicode CSS Loader: place this in the head of your page -->
<script>
/* grunticon Stylesheet Loader | https://github.com/filamentgroup/grunticon | (c) 2012 Scott Jehl, Filament Group, Inc. | MIT license. */
window.grunticon=function(e){if(e&&3==e.length){var t=window,n=!!t.document.createElementNS&&!!t.documentElement.createElementNS("http://www.w3.org/2000/svg","svg").createSVGRect&&!!document.implementation.hasFeature("http://www.w3.org/TR/SVG11/feature#Image","1.1"),A=function(A){var o=t.documentElement.createElement("link"),r=t.documentElement.getElementsByTagName("script")[0];o.rel="stylesheet",o.href=e[A&&n?0:A?1:2],r.parentNode.insertBefore(o,r)},o=new Image;o.onerror=function(){A(!1)},o.onload=function(){A(1==o.width&&1==o.height)},o.src="data:image/gif;base64,R0lGODlhAQABAIAAAAAAAP///ywAAAAAQABAAACAUwAOw=="}};

grunticon( [ "[YOUR PATH HERE]/icons.data.svg.css", "[YOUR PATH HERE]/icons.data.png.css", "[YOUR PATH HERE]/icons.fallback.css" ] );</script>

<noscript><link href="[YOUR PATH HERE]/icons.fallback.css" rel="stylesheet"></noscript>

</head>
```

## 2. USE LIKE A TYPICAL BG IMAGE

```
<button class="btn icon icon-flag">I Love  
Vectors</button>
```



I LOVE VECTORS

USING SVG

content <img>

**LOGO IS CONTENT, NOT DECORATION**



---

**MENU   DRINKS   LIVE MUSIC   DIRECTIONS**

---

# EXPORT SVG + PNG VERSIONS



Save for Web

Original Optimized 2-Up

Preset  
Name: [Unnamed]  
PNG-8  
Selective  
No Dither  
 Transparency  
No Transp... | A We

Image Size  
New Size:  
Width: 272  
Height: 272  
Percent: 400  
Art Optimized

Color Table

0% dither  
Selective palette  
33 colors

200% R: -- G: -- B: -- Alpha: -- Hex: -- Index: --  Browser Dither Export: All Slices Done

# IMG + ONERROR

```

```

**DOWNSIDE:** The SVG will be requested in all browsers, regardless of support

# PICTUREFILL ALTERNATIVE

```
<picture>
  <source type="image/svg+xml" srcset="logo.svg"
    <img srcset="logo.png" alt="...">
</picture>
```

# SVG IS THE FUTURE.



ALL GOOD GIFS COURTESY OF @BEEP

DON'T FEAR THE

---

vector

# THANKS.

---

---



toddmparker

[filamentgroup.com](http://filamentgroup.com)