

HOORAY ICON FONTS

<the workshop>

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welcome!

8:00 - 9:00: Designing icons

*What makes a great icon? Icon design best practices. Considerations for icon fonts. **Sketching icons.***

9:00 - 10:00: Constructing glyphs

*Setting up glyph templates. Working with sketches. Establishing grids. Proper path construction. **Building Glyphs.***

10:00 - 11:00: Building Icon Fonts

*Online services. @font-face kit construction. Choosing software. Setting up font properties & exporting fonts. **Creating fonts.***

11:00 - 12:00: Using Icon Fonts

*Downloading web font kits. Determining code approach. Structuring HTML. Writing efficient CSS. Stacking icons. **Utilizing Icon Fonts.***



Designing Icons

“Icons are little miracle workers. They circumvent language obstacles, give concise warnings and directions, convey our moods and show which buttons to press.”

-John Hicks

What is an icon?

Icons are not logos. Icons don't communicate brand or identity, they communicate instructions, ideas, and actions.

Icons educate.

The history of icons is long



Rio Pinturas, Argentina 9,000 years old

The history of icons is long



Hopi Indian Petroglyphs, 800 years old

The history of icons is long



Image stone, Gotland, Sweden 400 AD

The evolution of icons represents the need to have shared imagery which communicate ideas and information.

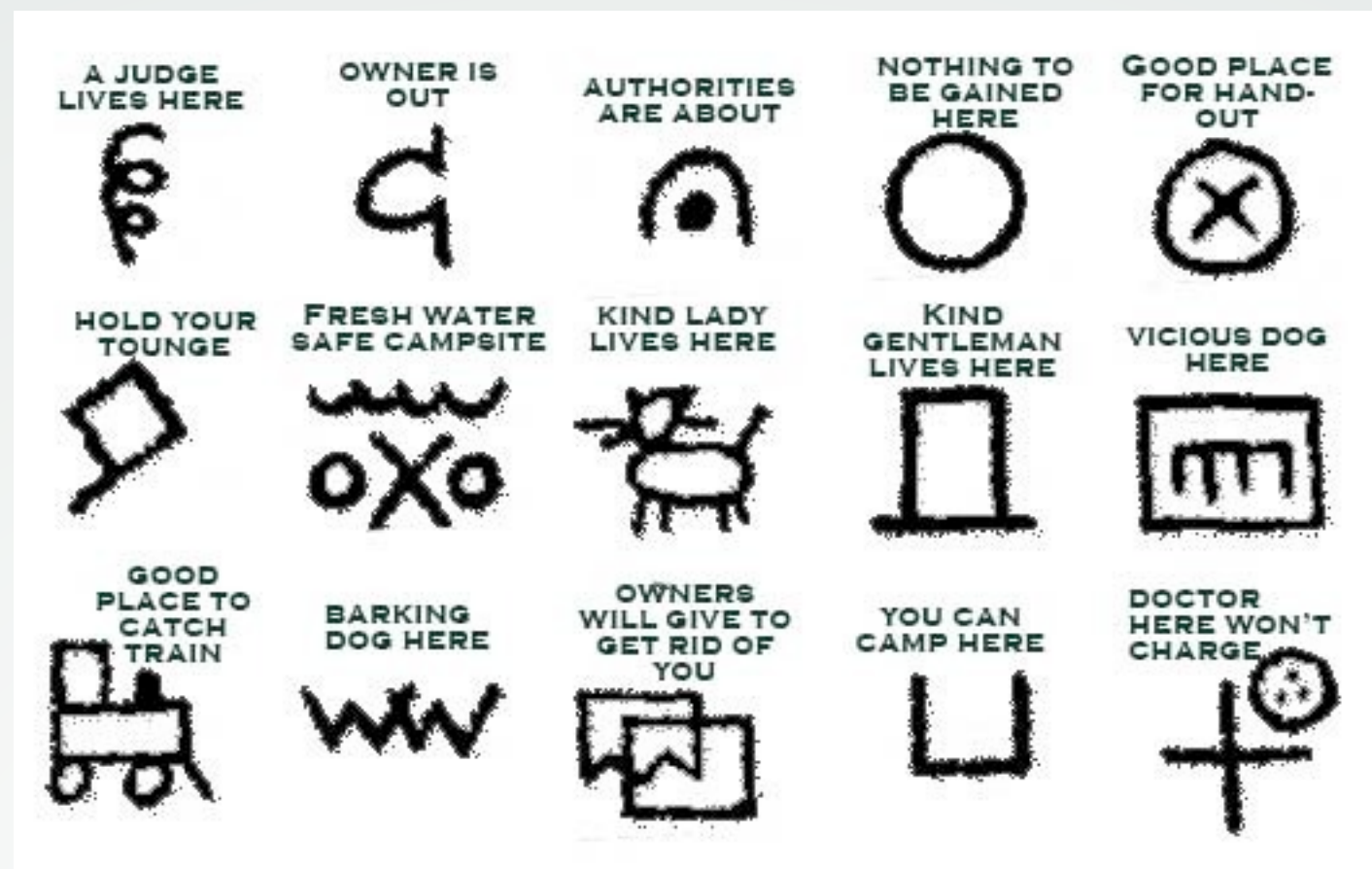
Icons are languages.

Some languages need to be shared



Isotype symbols, Gerd Arntz 1928

Others are only for the initiated



Hobo symbols, 1920 - 1930

Others are only for the initiated

Not all icons have to be representative of the idea they intend to communicate. Indeed, throughout history some icons were designed specifically to obscure their true meaning.



Icon types



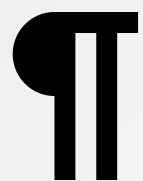
Pictograms

Visual representations of the objects or actions they represent



Ideograms

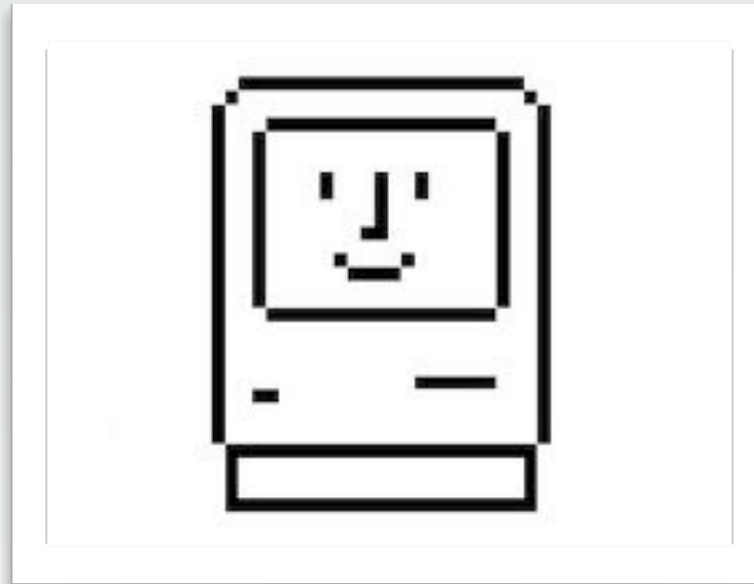
Visual representations of abstract ideas or concepts



Arbitrary

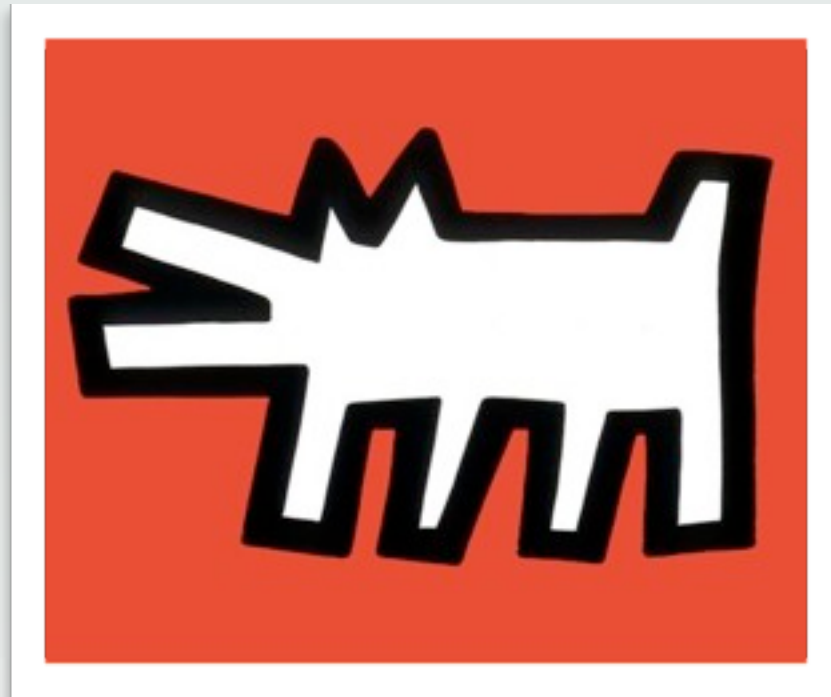
Invented symbols that don't relate to any physical object, their meanings must be learned

The approach to designing icons depends largely upon which type of icon you're creating.



“It doesn’t matter if the feature an icon represents is immediately and intuitively obvious; what matters is that once you’ve made the link in your head - once you’ve learned what an icon does - **some quality of the icon makes that link unbreakable.”**

-Susan Kare



“I am intrigued with the shapes people choose as their symbols to create a language. There is within all forms a basic structure, an indication of the entire object with a minimum of lines that becomes a symbol. **This is common to all languages, all people, all times.”**

-Keith Haring

Tips for designing icons

Design icons that function together

Design on a grid and preview them at size

Simplicity is a virtue

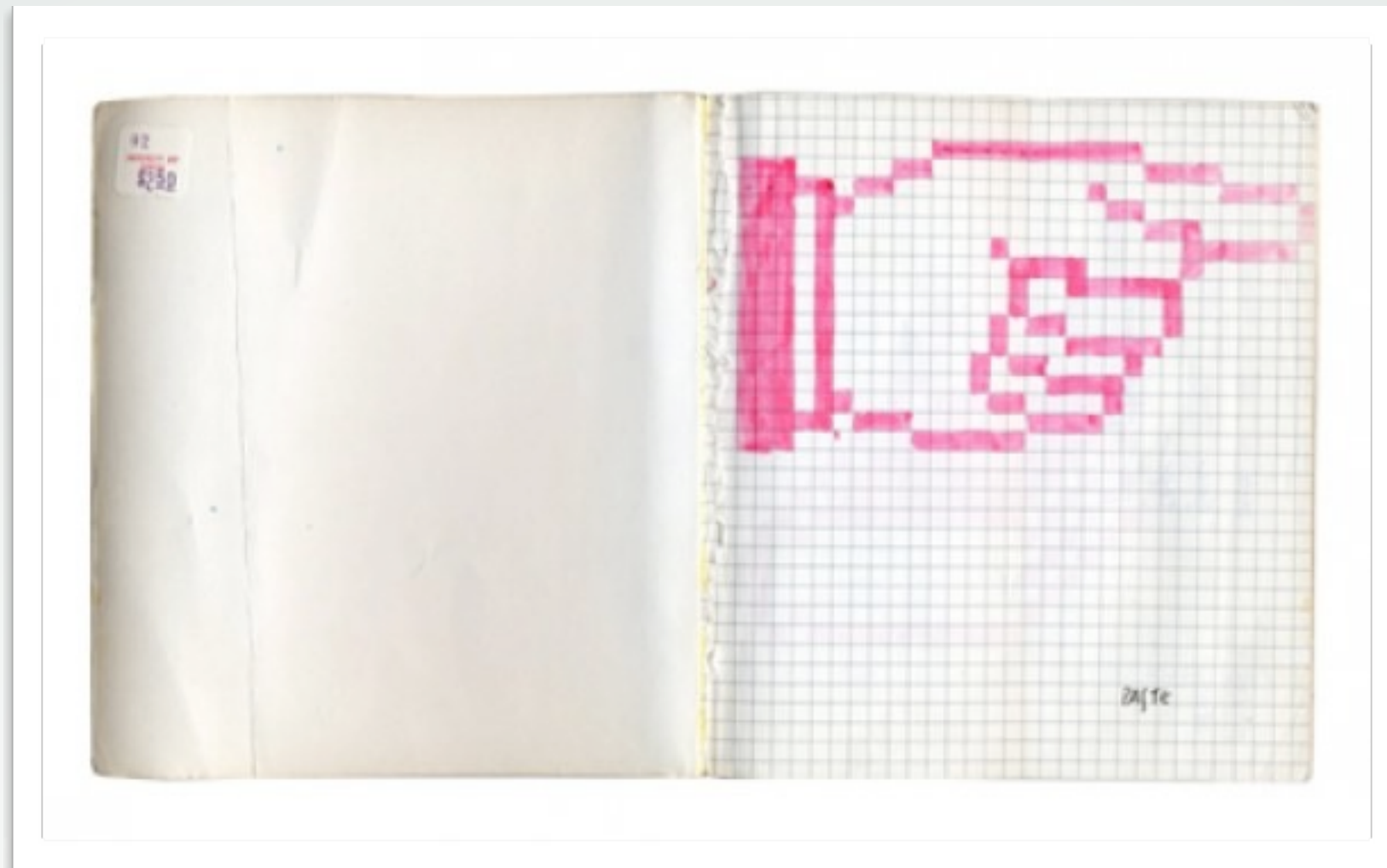
Keep perspective consistent

Build on existing conventions

Use existing conventions



The importance of the grid



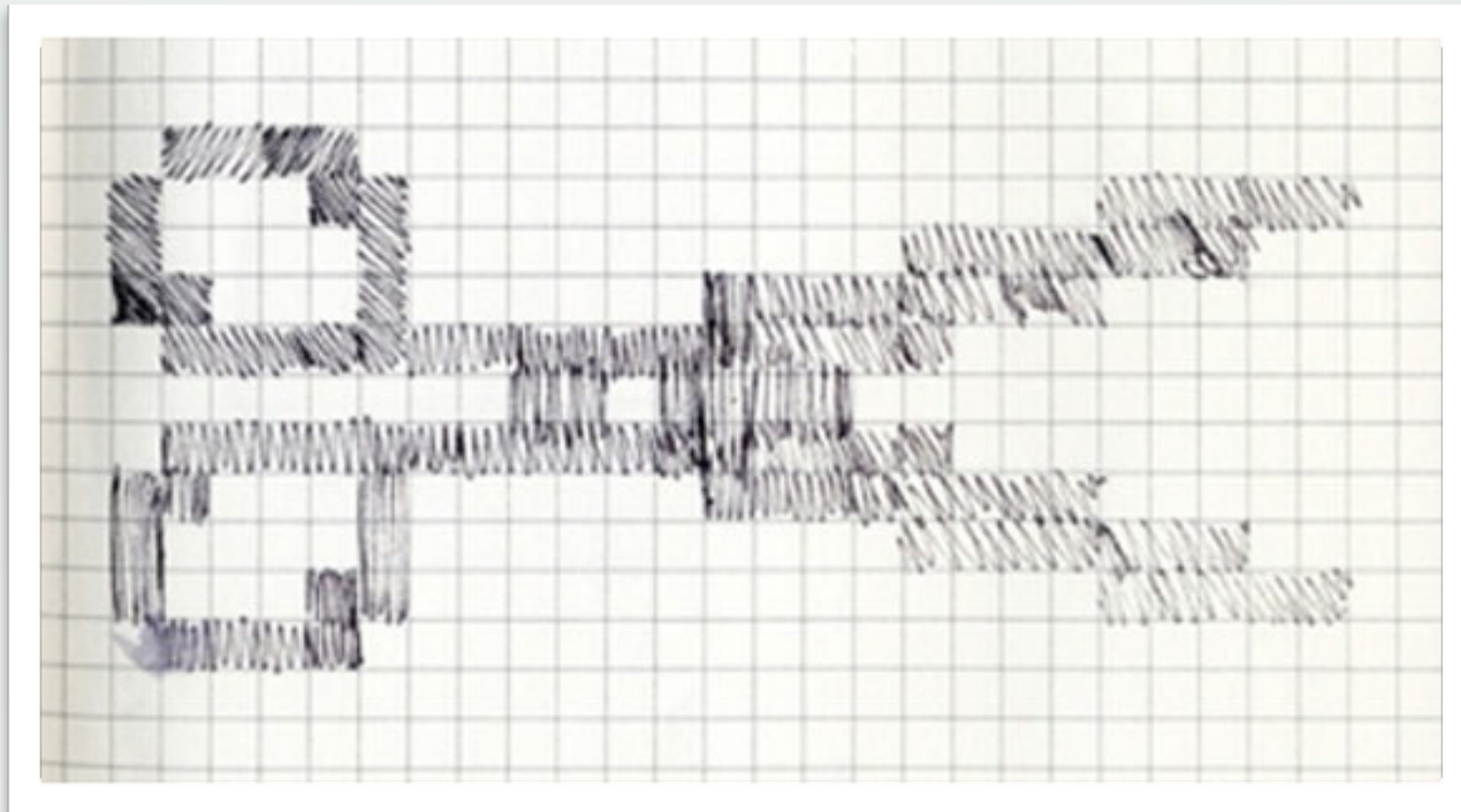
Sketchbook -Susan Kare

The importance of the grid



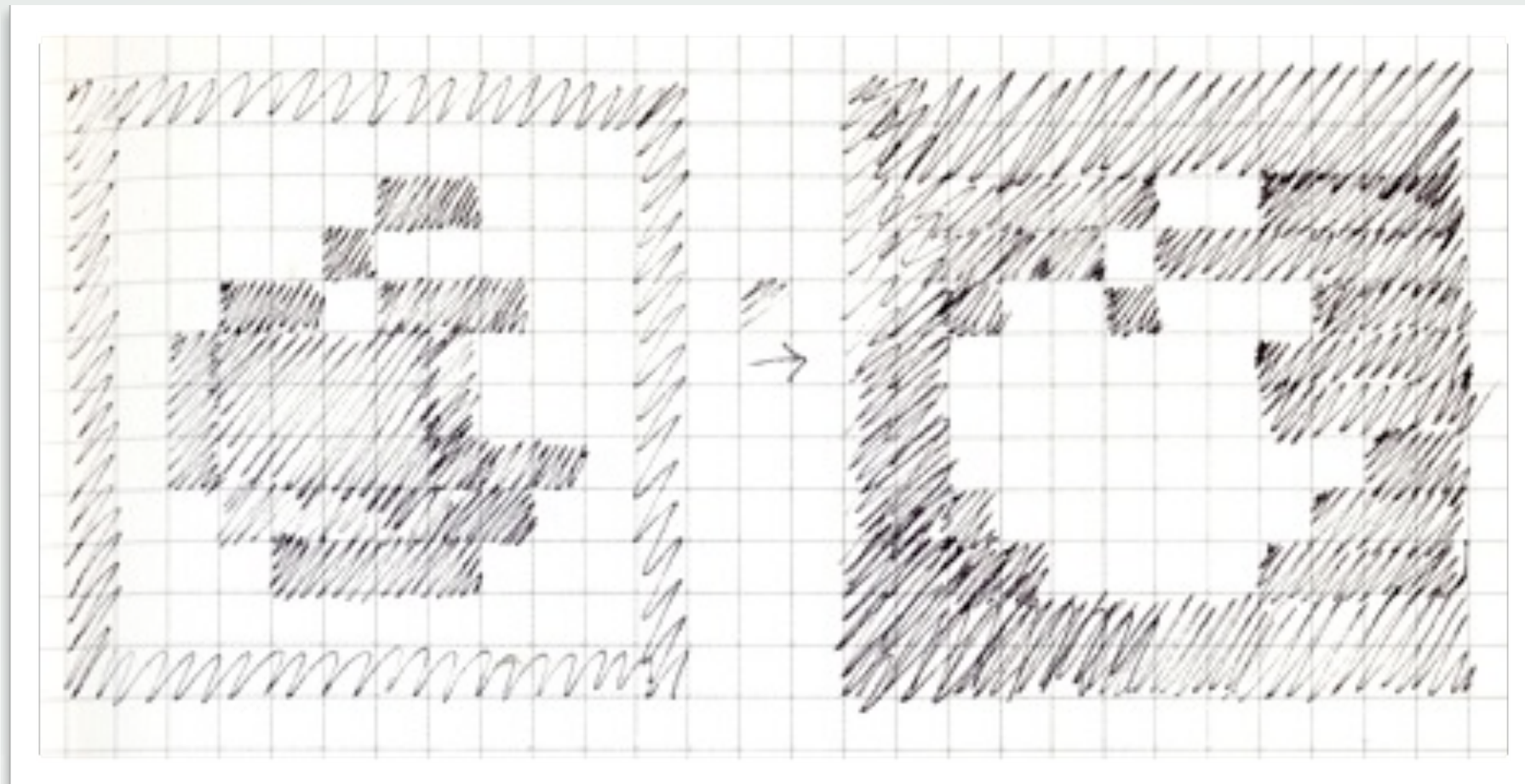
Sketchbook -Susan Kare

The importance of the grid



Sketchbook -Susan Kare

The importance of the grid



Sketchbook -Susan Kare

The importance of the grid

When sketching icons, use a grid that represents the default target size of the icon

This could be multiples of 8, 10, 12, or whatever system best represents your UI

Sketching within these constraints will result in more effective, and more creative icons

DESIGN CHALLENGE!

SKETCHING ICONS



Constructing Glyphs

**“When we experience disappointment
with the relationship with letters let's not
be afraid to do what come naturally to us:
Let's draw.”**

-Gerard Huerta

Great! I've sketched my icons,
now what?

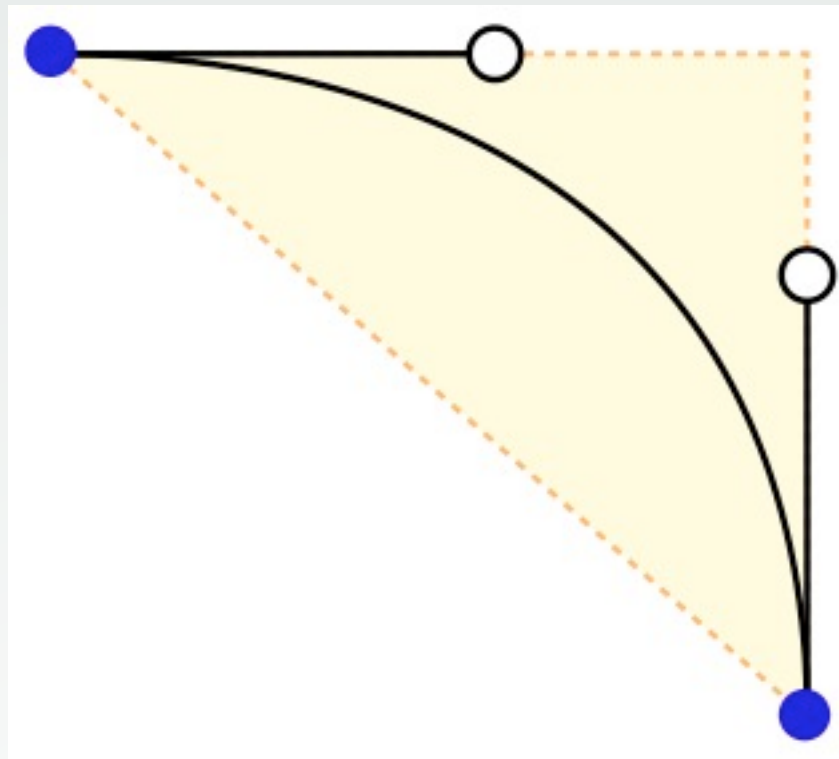


Drawing vectors



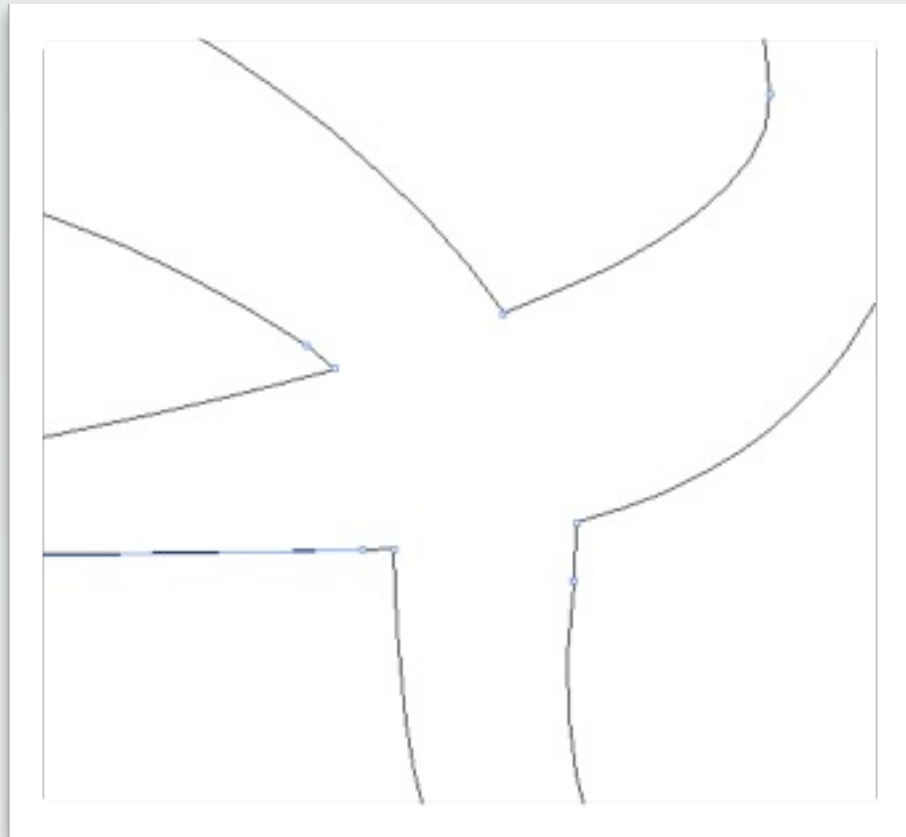
It's helpful for the vector editor you
use to have solid SVG export or
save capabilities

Vector considerations for fonts

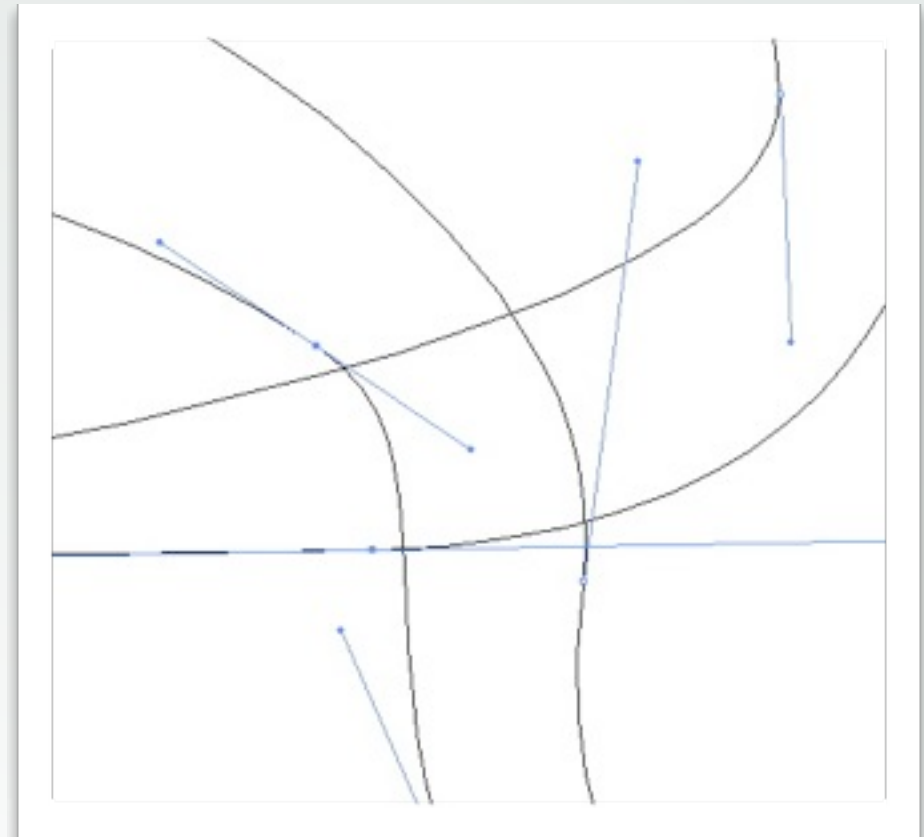


**Draw good paths. Curve controls
should fit within a triangle.**

Avoid intersecting paths

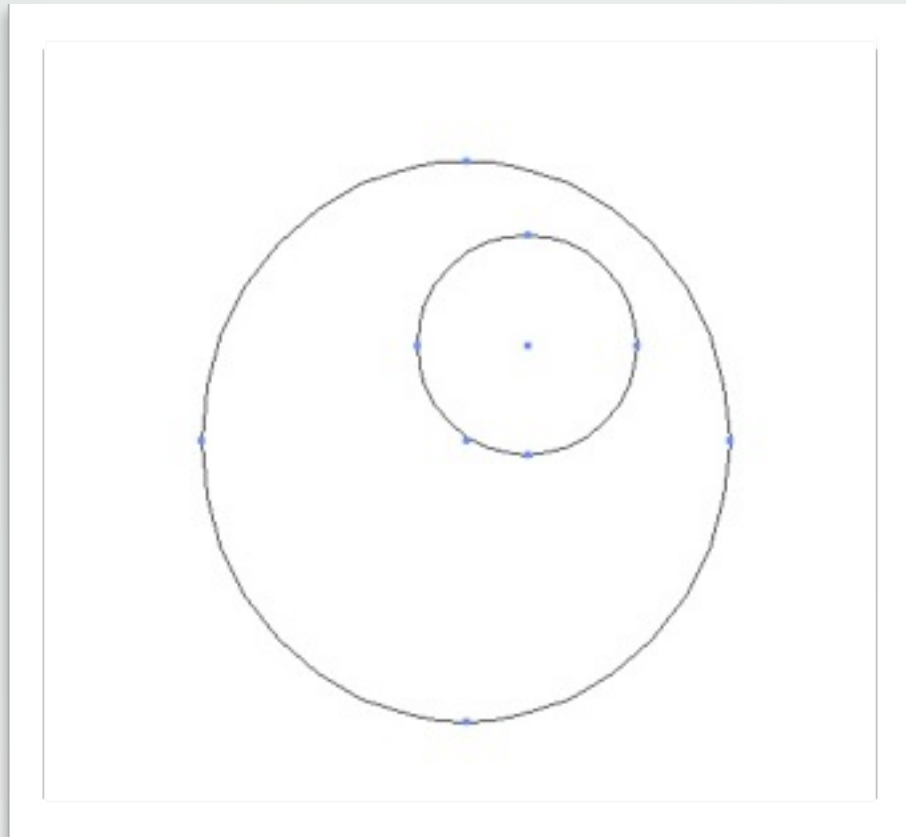


This

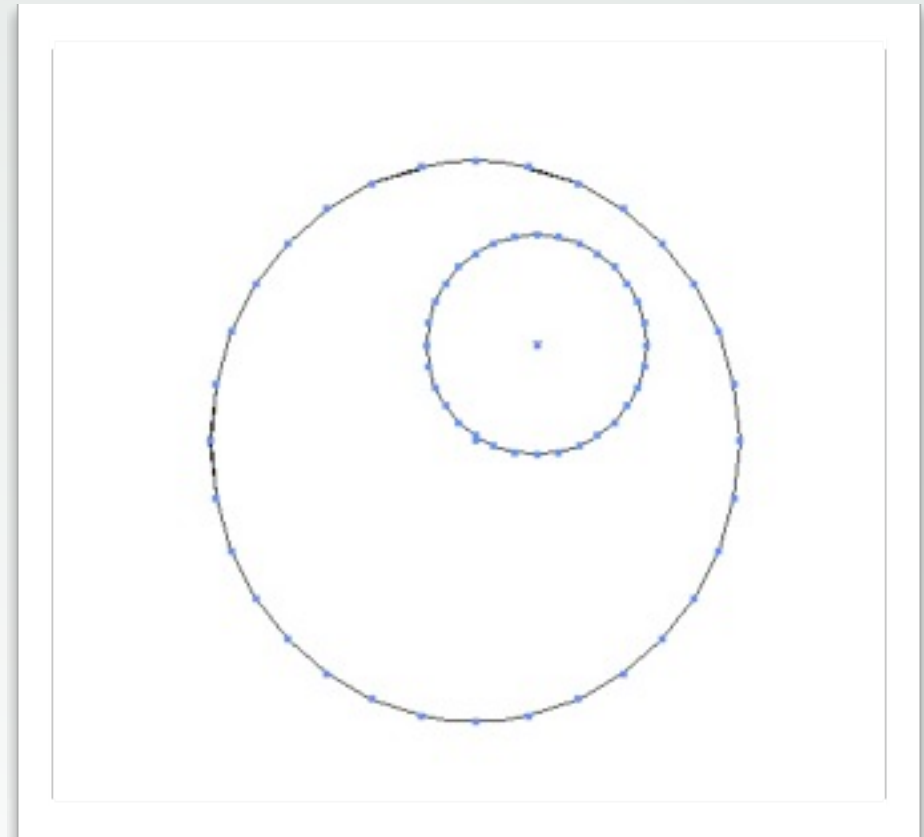


Not this

Use as few anchor points as possible

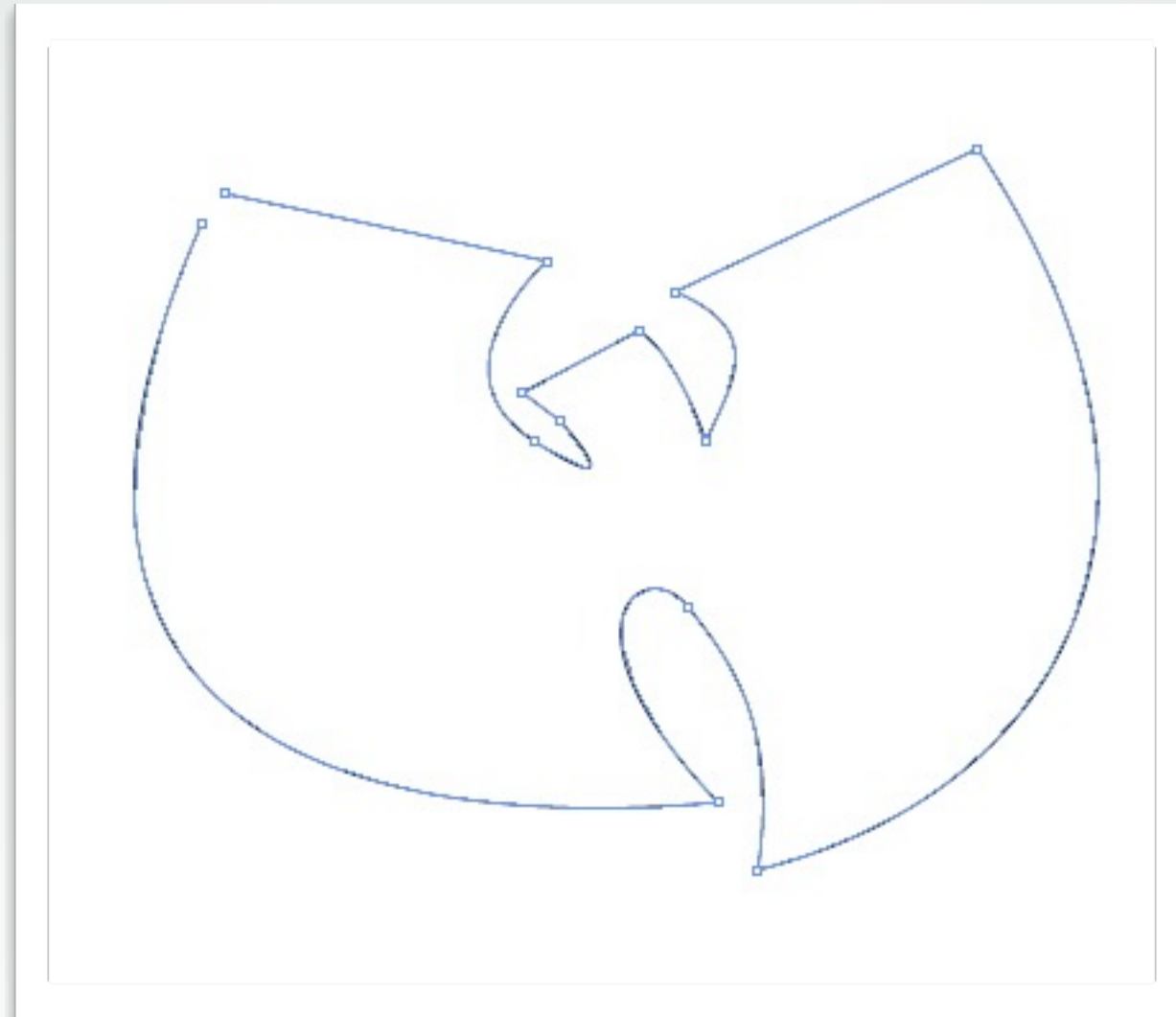


This



Not this

Make sure all paths are closed

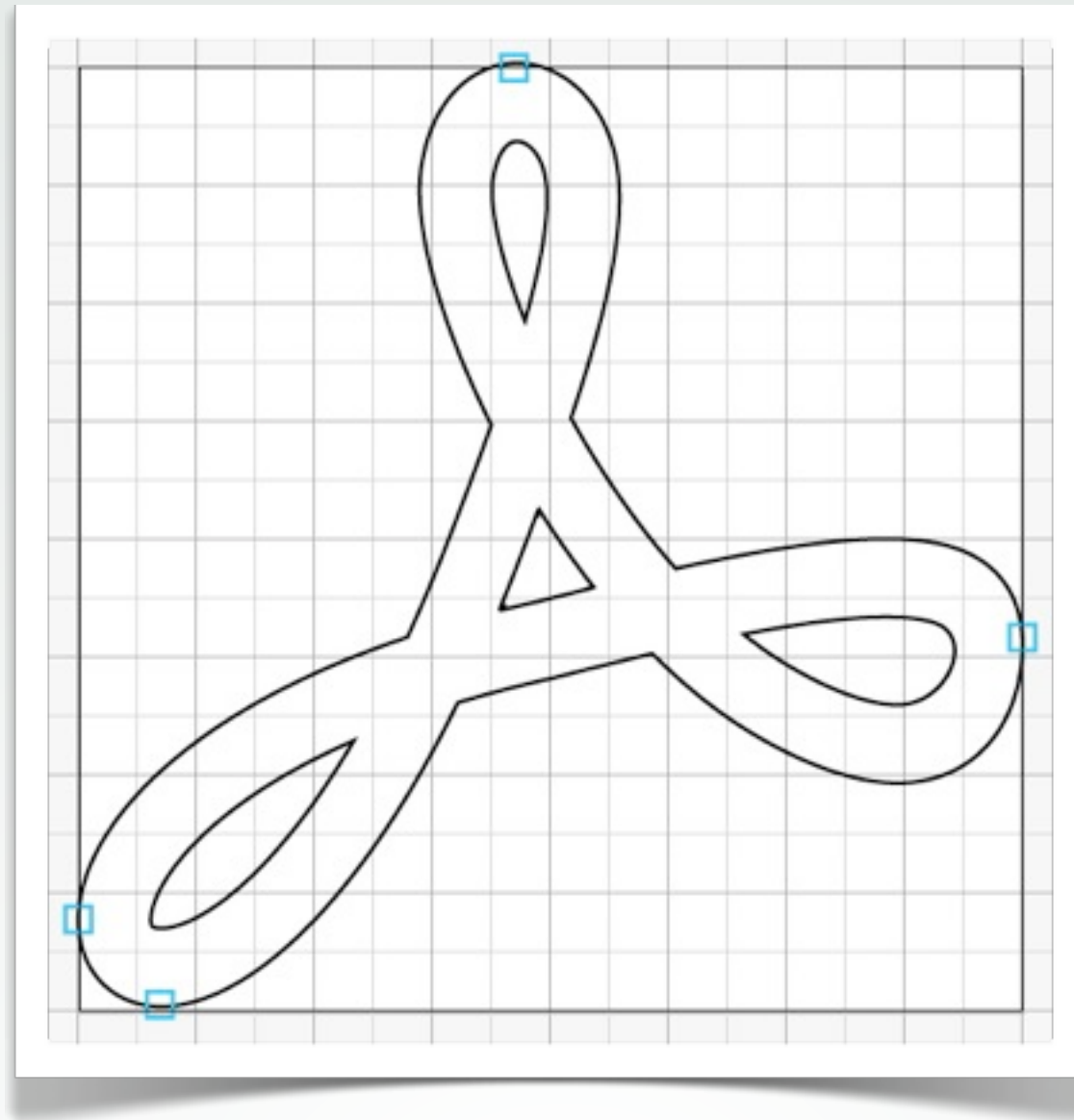


Icon Fonts are useful, but force you into the constraints of storing an icon in an individual glyph.

Because of this you need to understand the needs of the font editor prior to drawing icons.

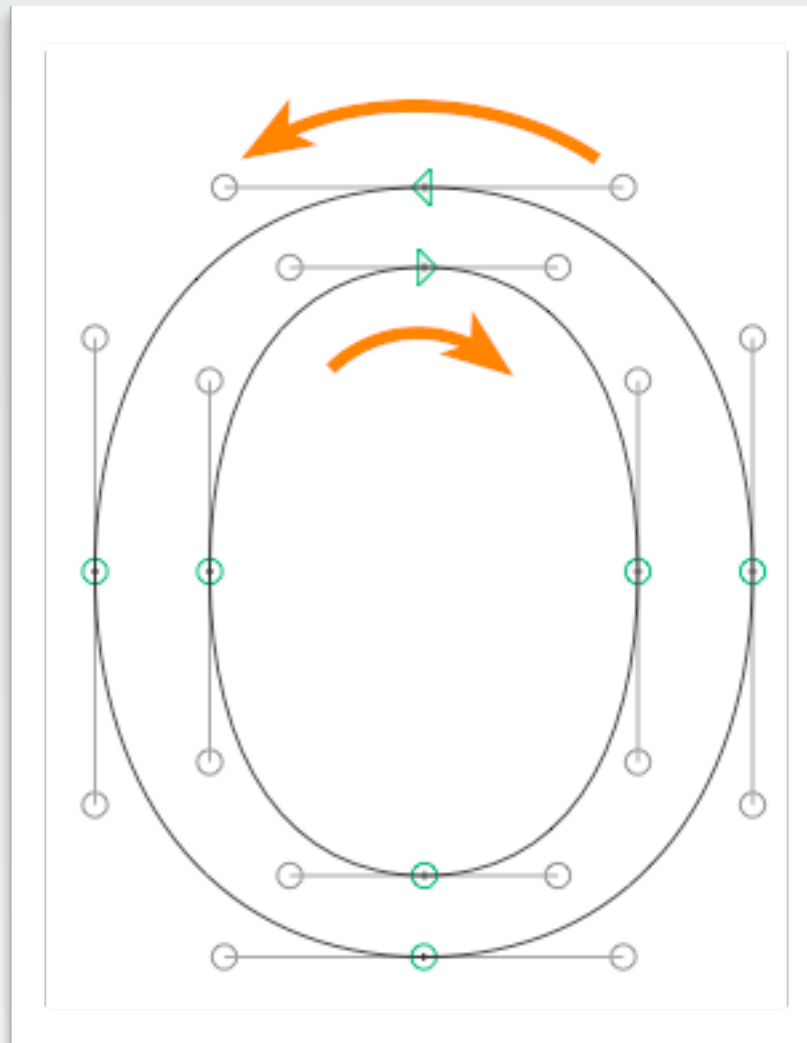


Draw using extremum points



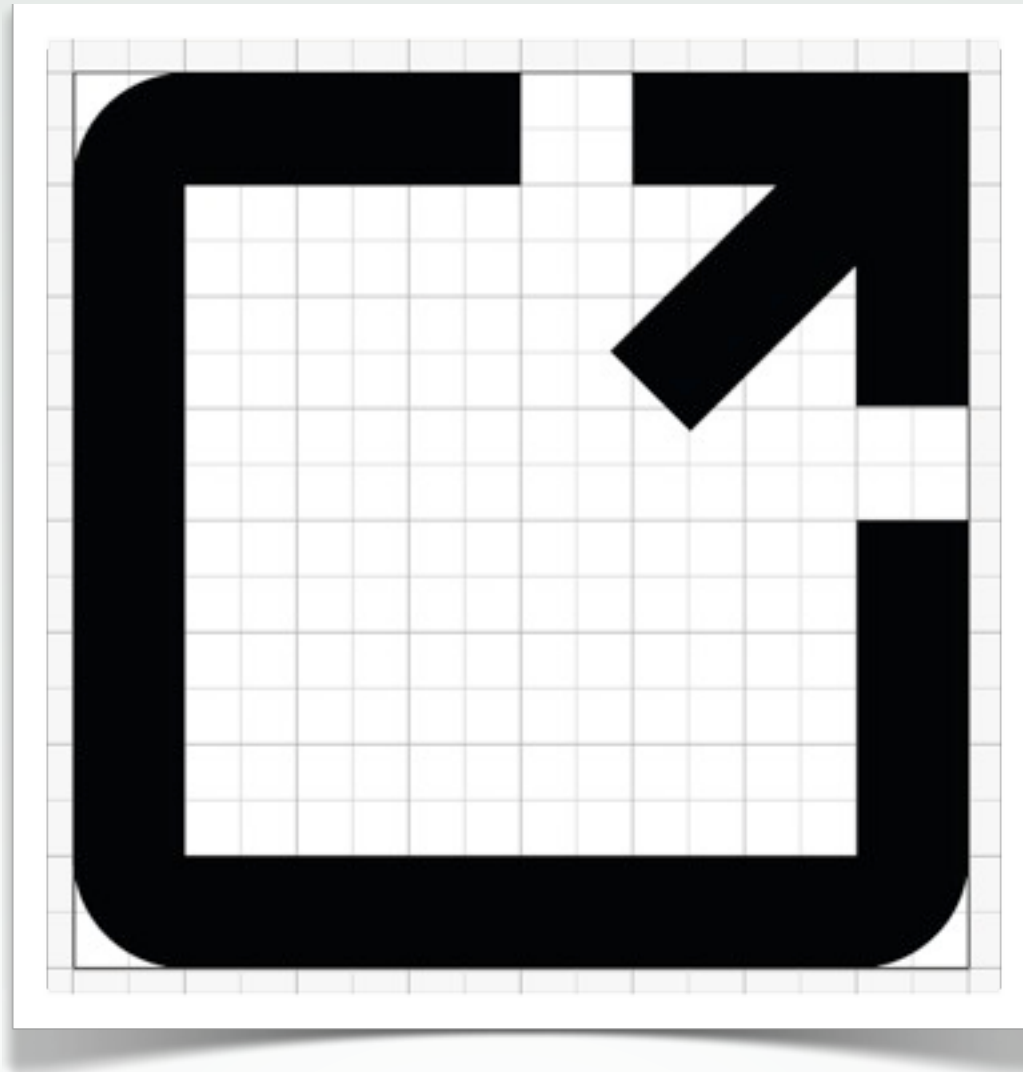
These points simplify shapes and are required by many font editors

Path direction matters



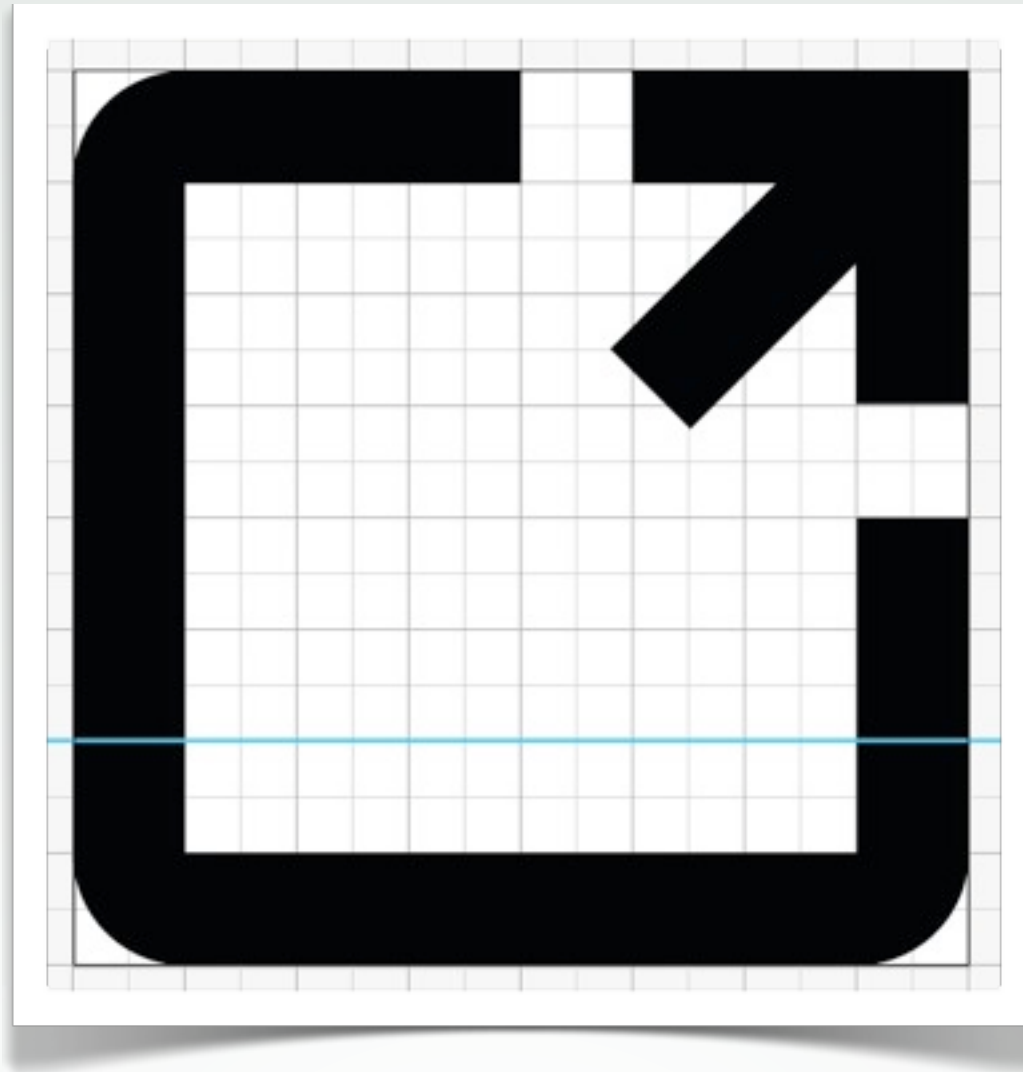
May be impossible to control depending upon your editor, but you'll need to be aware of it.

Design on a grid



The grid should be set up in multiples of your font's eventual UPM. Common UPM values are 1000, 1024, and 2048.

Draw relative to the baseline



Knowing where the baseline falls is critical to drawing successful icon glyphs

Drawing on grids

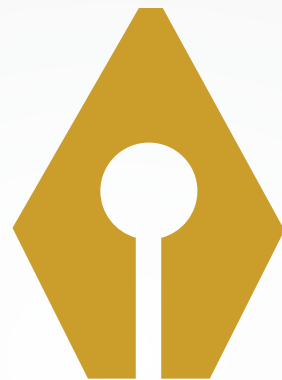
When drawing glyphs, set the artboard or document properties to match the desired grid

The grid should be set to the eventual UPM of the font

Adhering to these rules will deliver crisper fonts that need less rounding when exported and scaled

DESIGN CHALLENGE!

DRAWING GLYPHS



Creating fonts

“It requires a lot of expert knowledge to create professional typefaces and *it’s a tedious process.*”

-Ralf Herrmann

Options for creating icon fonts

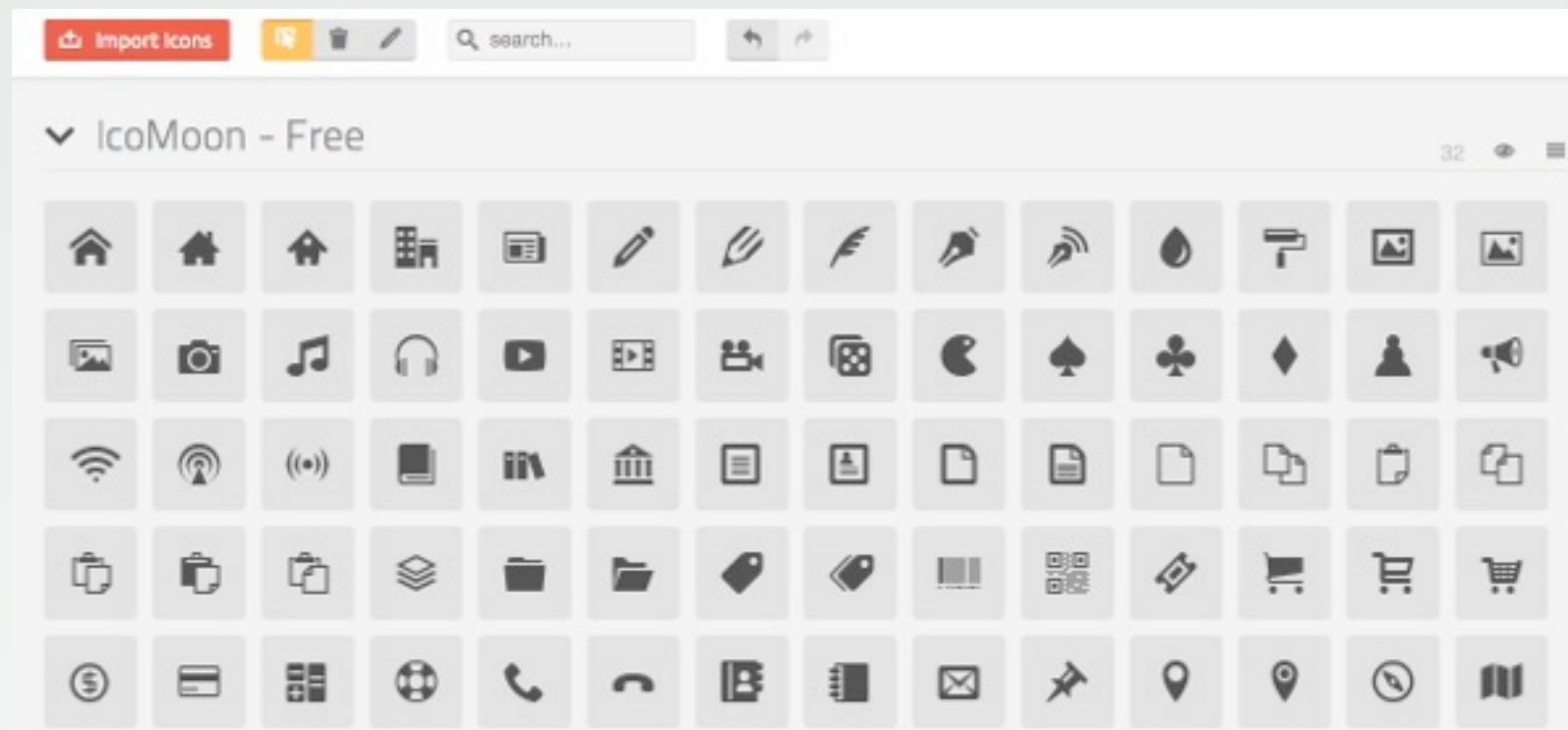
Use an online creation service like Icomoon

Build a source SVG font in Inkscape

Use a professional type design tool like Glyphs

Generate web fonts with services like Font Squirrel

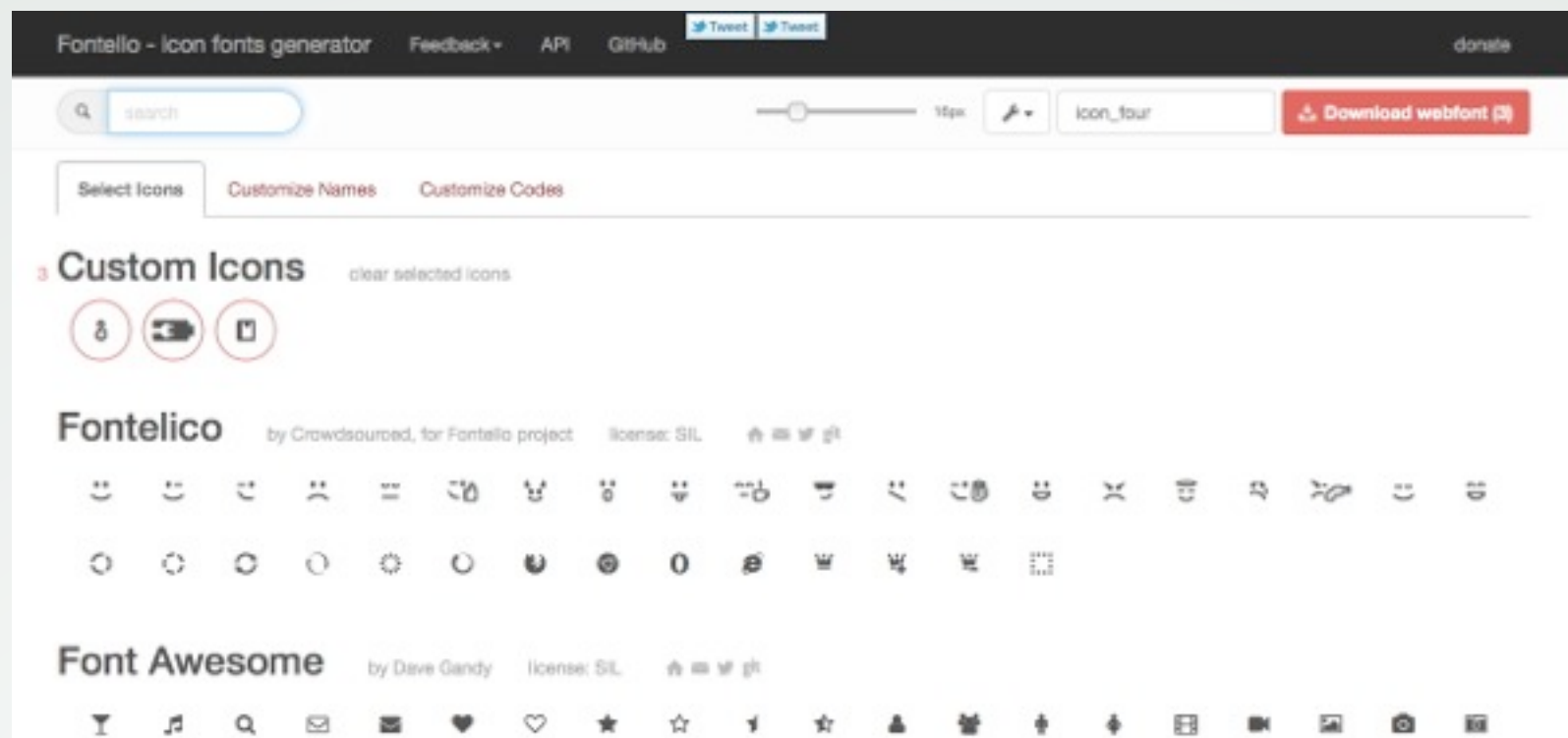
Sample online services



icomoon.io

Choose from existing icons, or upload your own glyphs

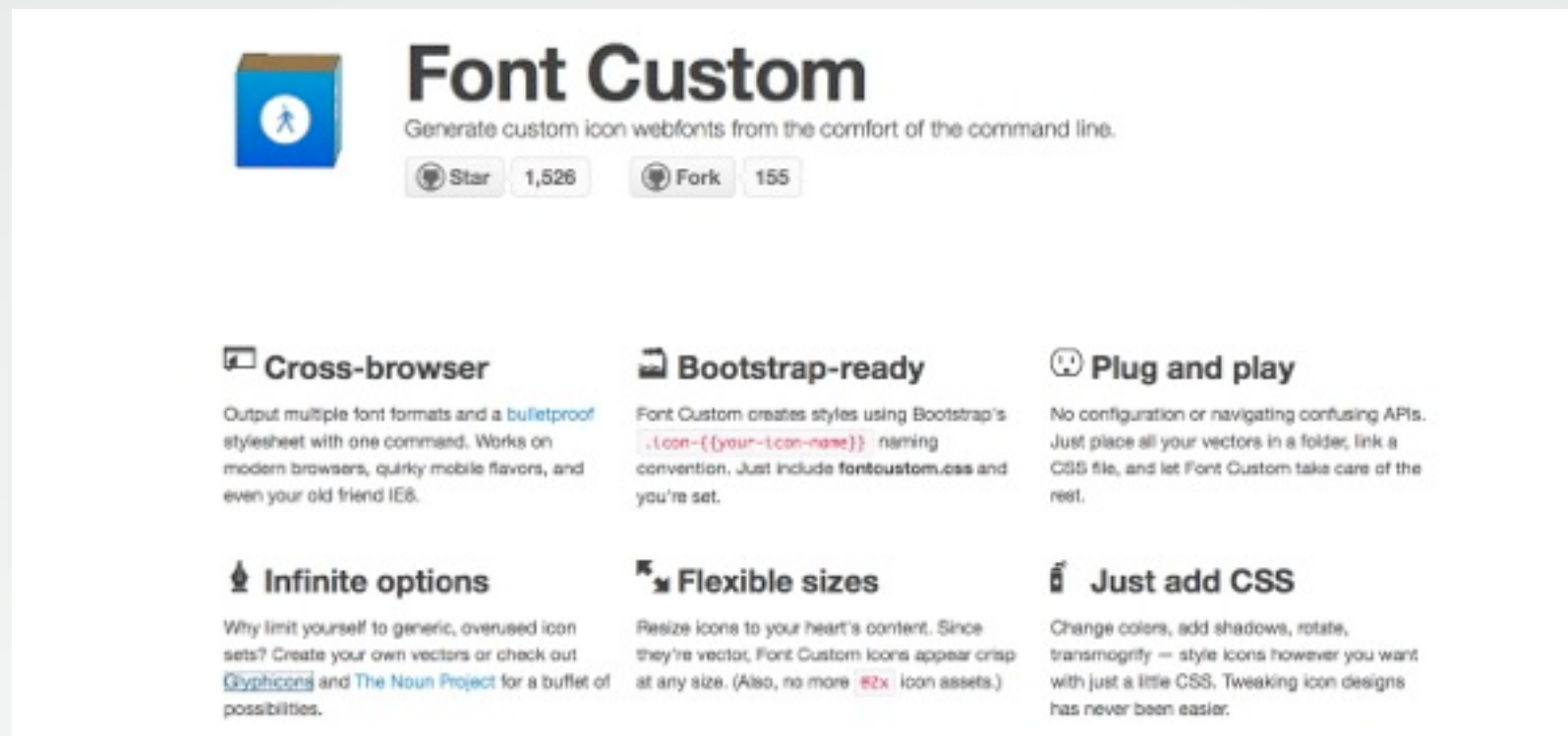
Sample online services



fontello.com

Choose from existing icons, or upload your own glyphs

Sample online services



fontcustom.com

Command line tool that uses your own glyphs or downloaded sets

Online services

Fast and easy way to create icon fonts

Most have a large library of existing icons

Many have the ability to upload your own glyphs

Lack fine grained control

DESIGN CHALLENGE!

BUILD A FONT ONLINE



Type design applications

Limited number of tools available

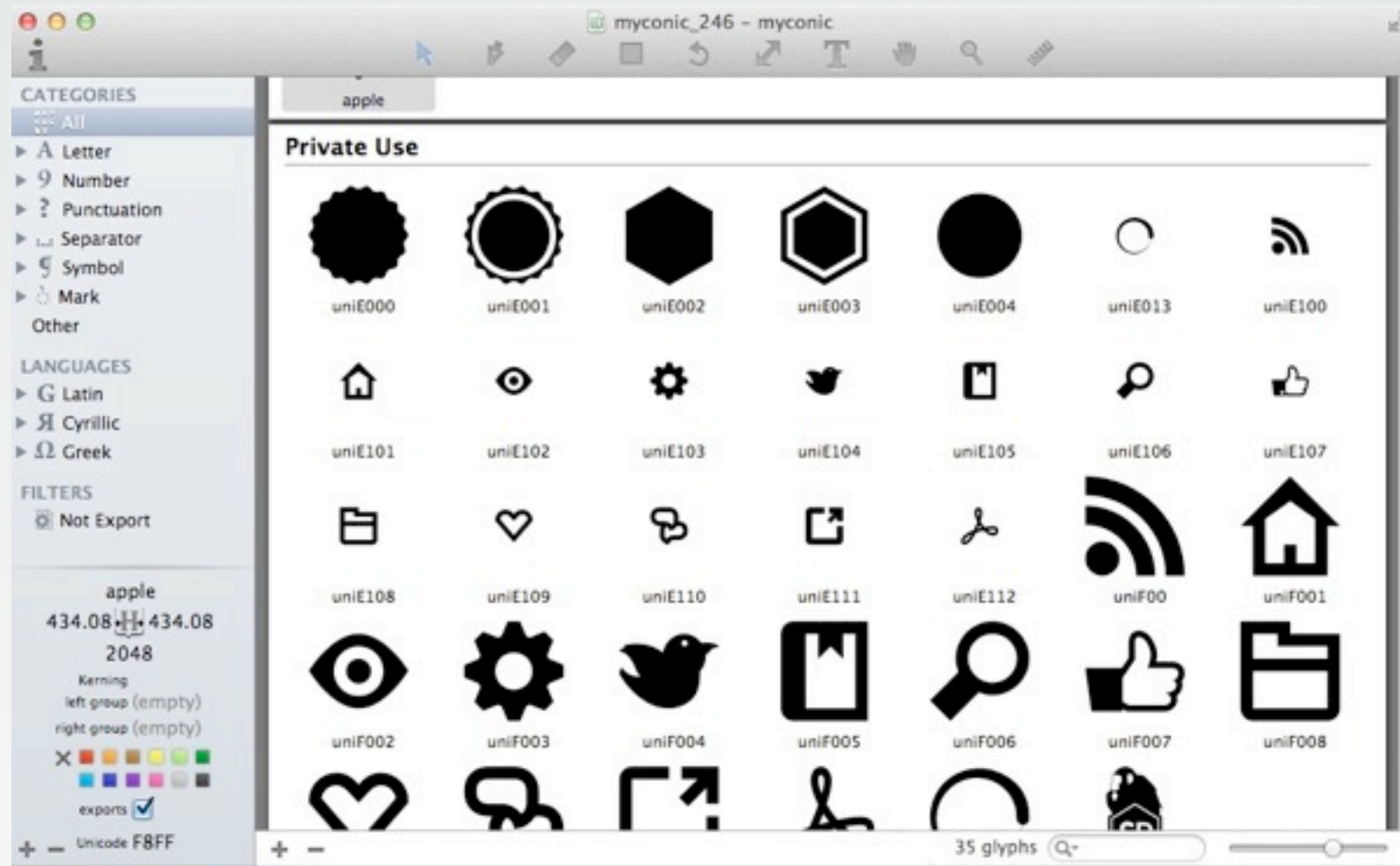
Steep learning curves

Icon fonts will not need/use most features

Most are prohibitively expensive for icon font creation

Open source solutions are uneven in execution

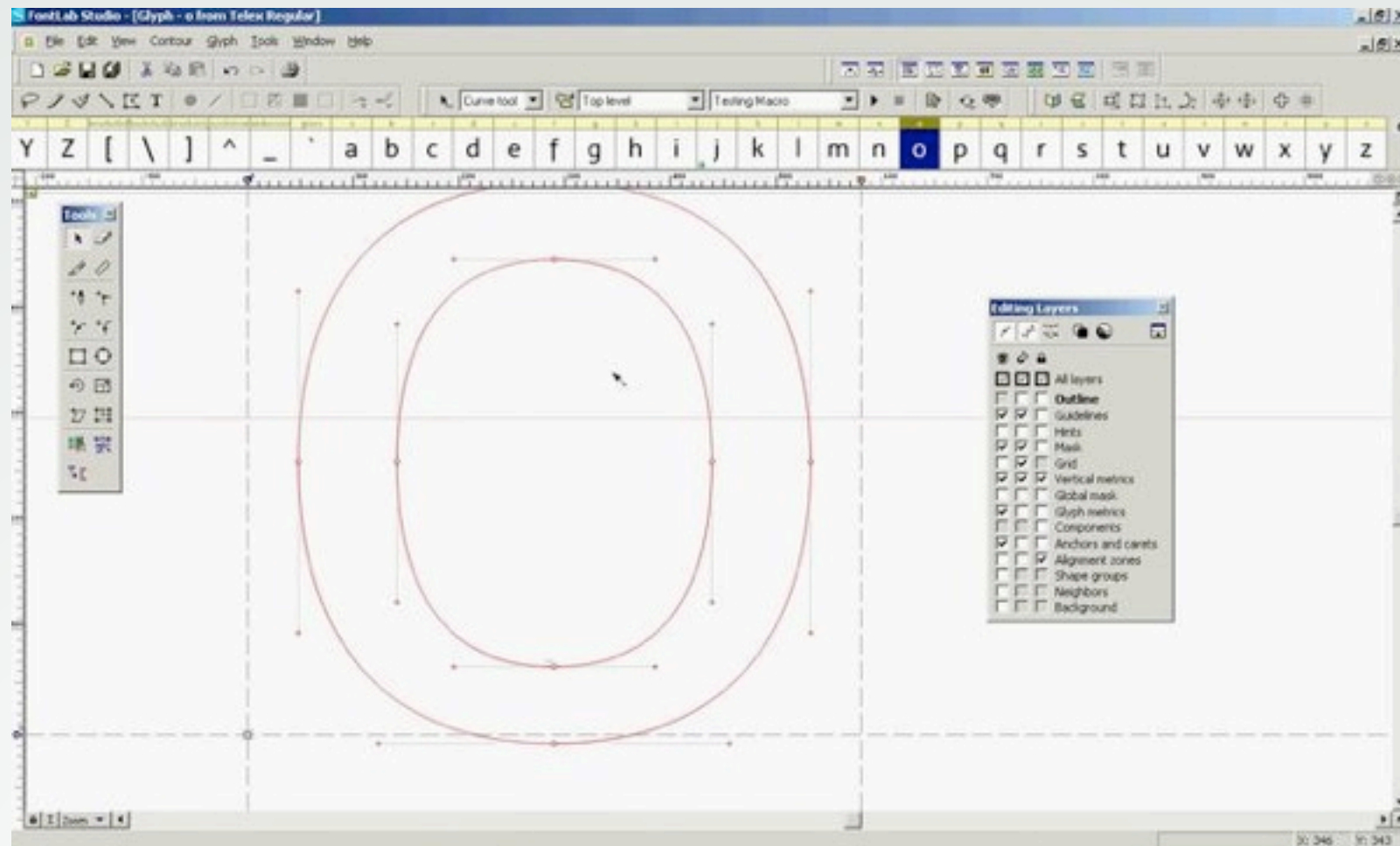
Sample type tools



Glyphs

Very powerful font creation tool. Mac only. Has a cheaper mini version available that is suited for icon font design, can paste vectors from Illustrator

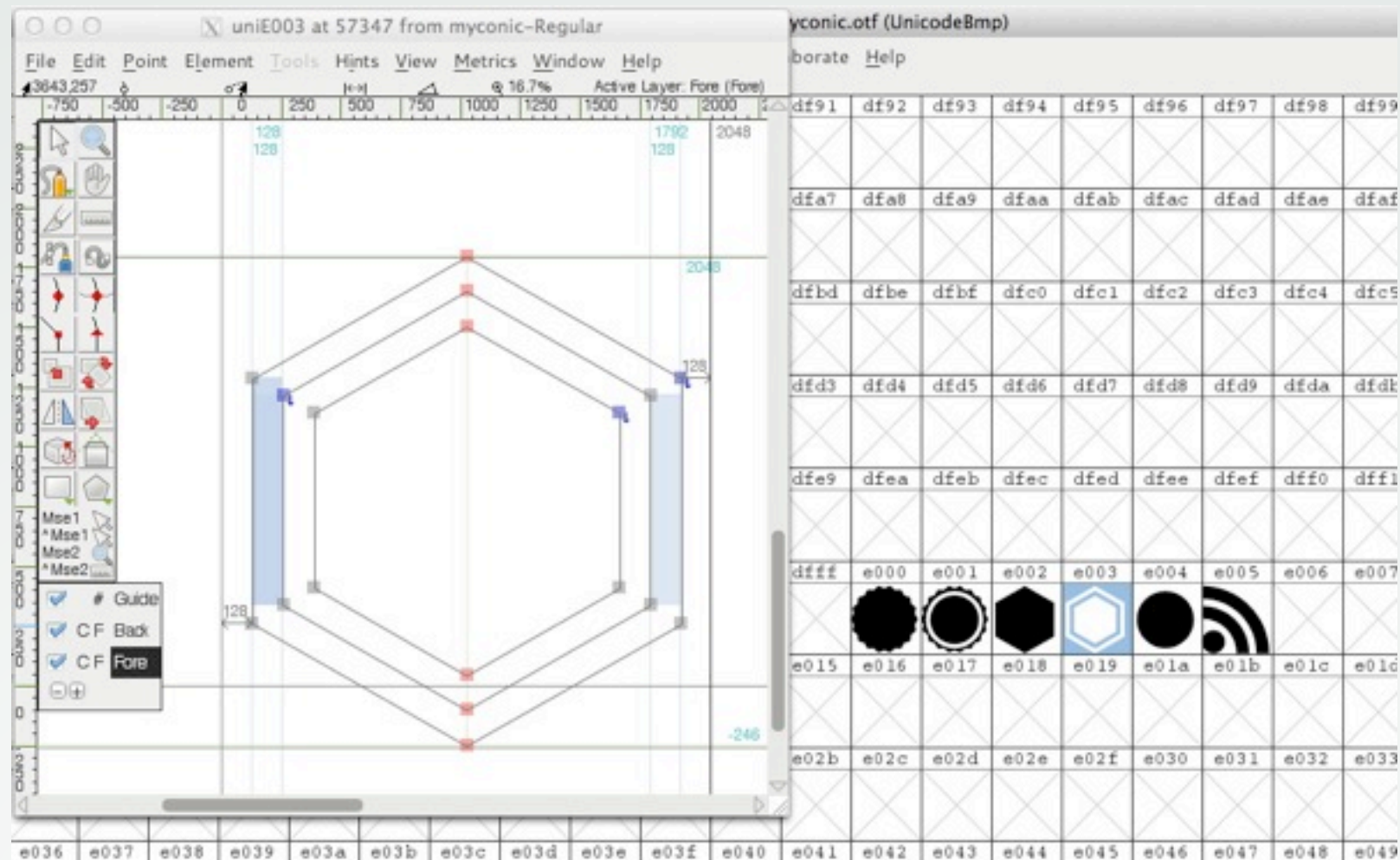
Sample type tools



Font Lab

*Multiple font editors for both Mac & Win. Various price ranges.
Comprehensive tools that can be overwhelming to non-font designers*

Sample type tools



Font Forge

Open Source, can be difficult to install. Powerful glyph editor, interface can be difficult to master. Require XQuartz to run on Macs.

Setting up fonts

Avoid special characters in font names

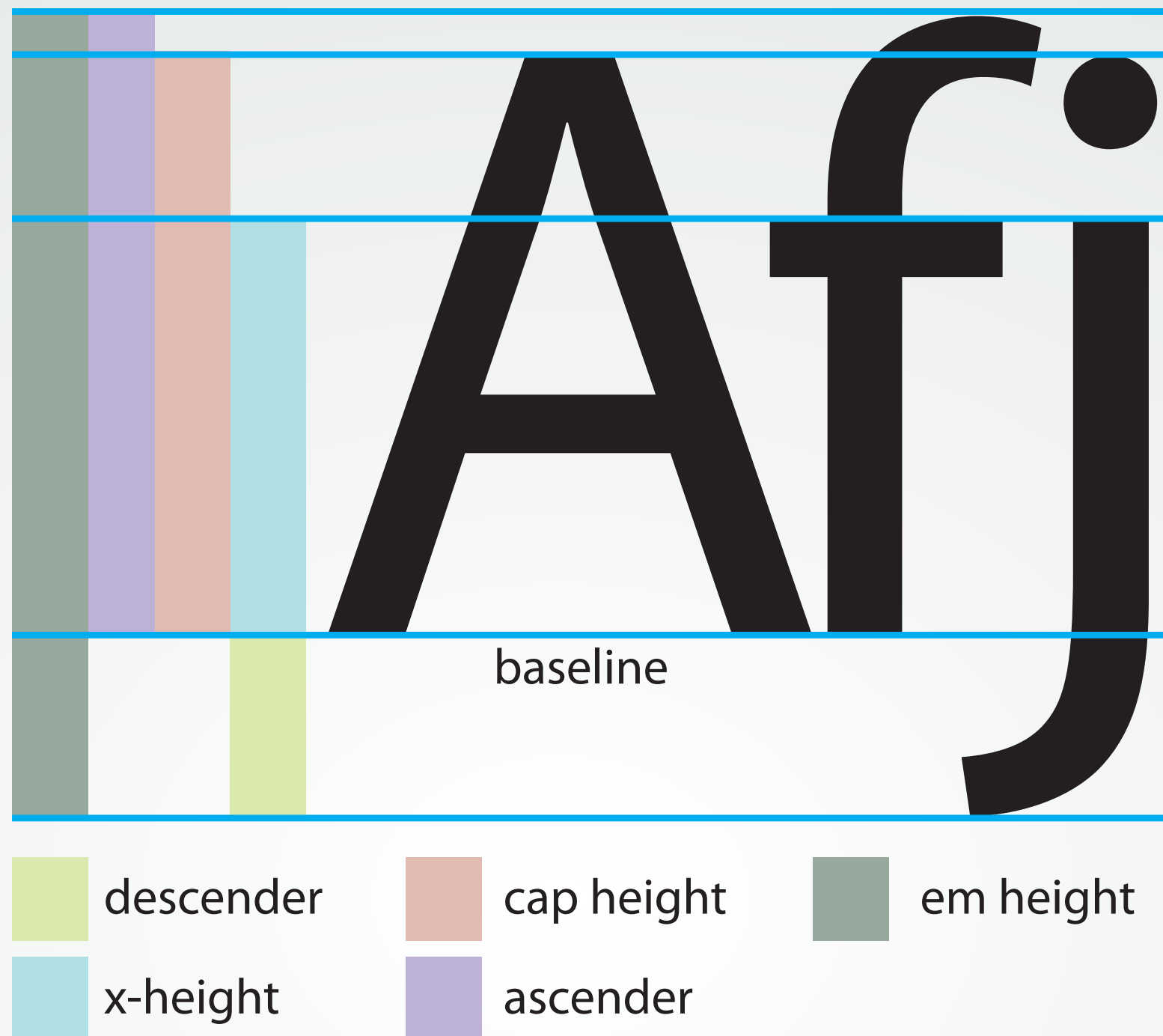
Set the UPM for the font. More on this in a moment.

If available, set meta data and license info

Version control fonts through your favorite method



Understanding font metrics



Units per em

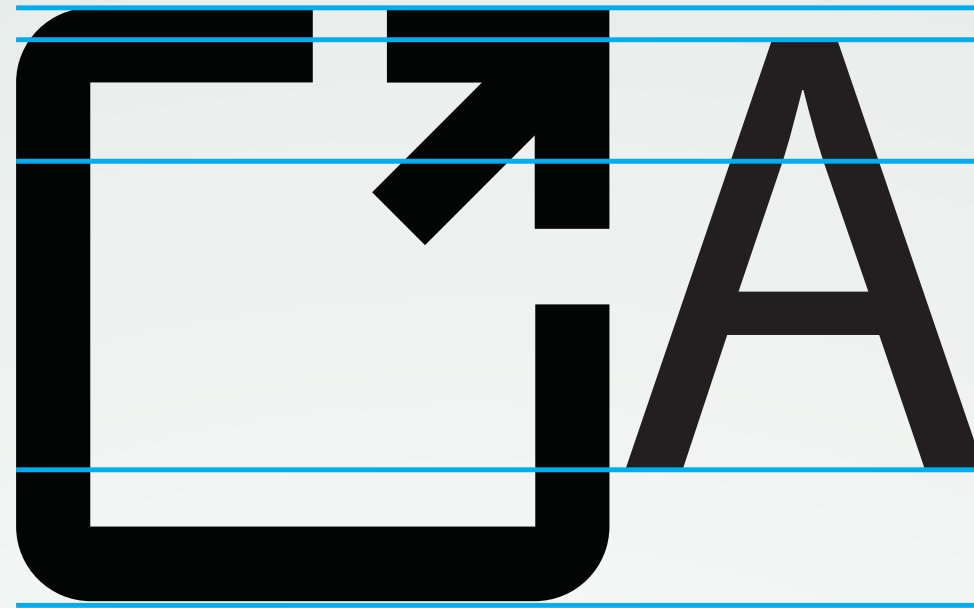
Units per em (UPM) is the grid used by the font creation software to render characters

The higher the value, the easier it is for the software to map glyph points

Higher UPM's create larger fonts

To maximize crispness, use a UPM that's a multiple of your targeted default font size

Where your icon fits matters



Tips for designing glyphs

Be aware of specific font-creation software issues

Monitor path direction and correct it if possible

Use as few points as possible

Clean up paths and add extrema if possible

Organize your glyphs as you encode

Plan for proper encoding

PUA encoded glyphs will fallback to an empty glyph if the font fails or if @font-face is not supported

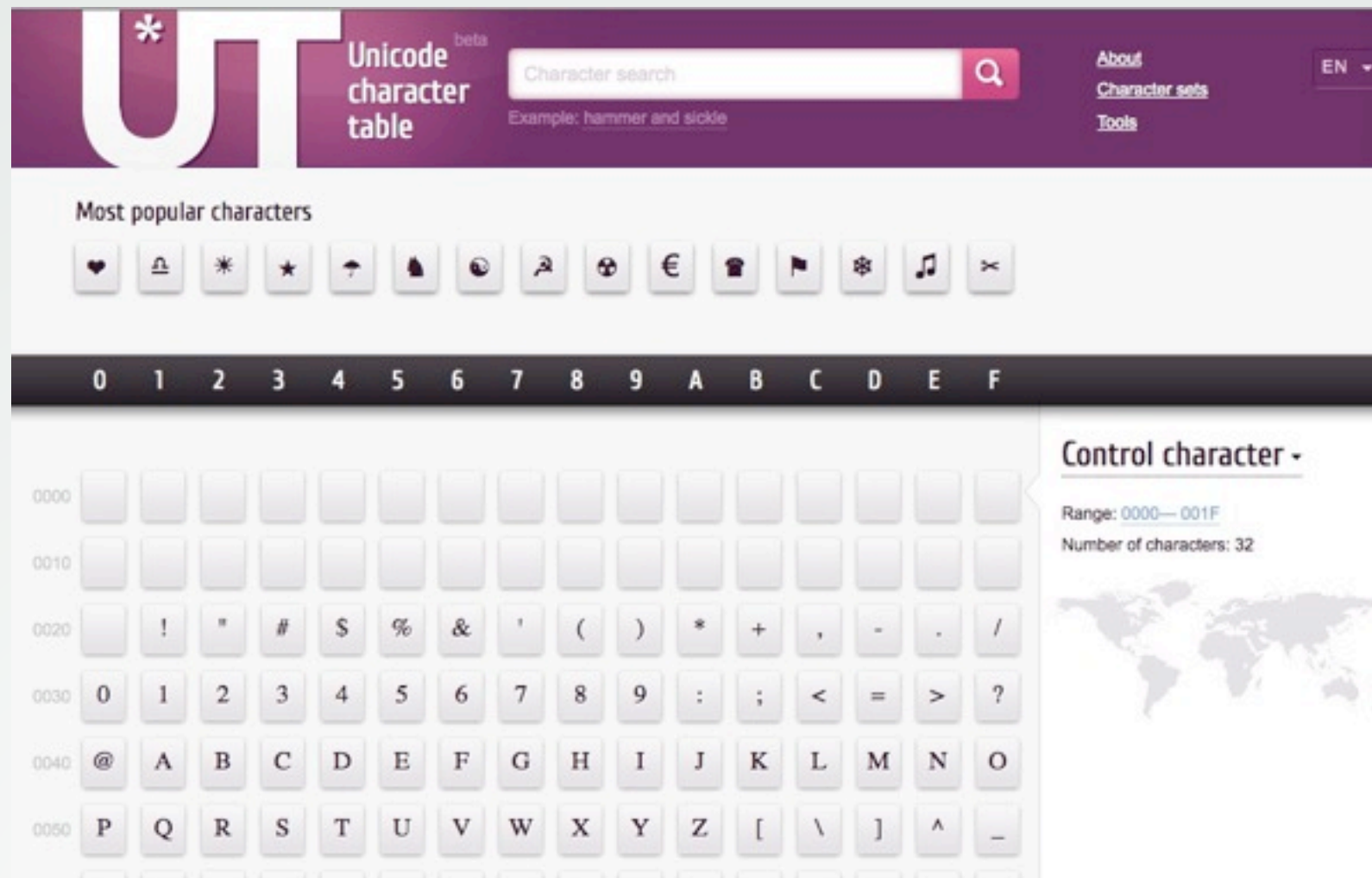
BMP encoding runs from E000 - F8FF

You can also use Unicode values that map to common symbols as a fallback

Use encoding ranges as a way to organize your glyphs



Sample type tools

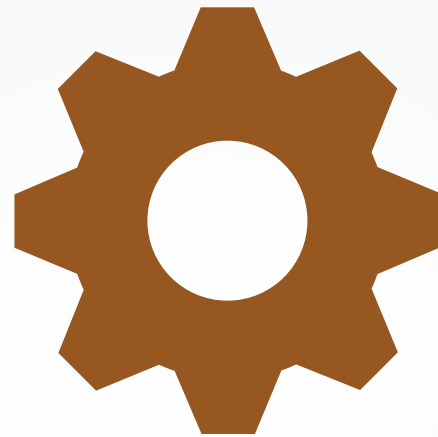


unicode-table.com

Interactive online tool to determine unicode encoding

DESIGN CHALLENGE!

BUILD AN ICON FONT



Now what?

Most font creation tools will create OTF or TTF fonts, but not all the formats you need for Web Fonts, or with the proper subsetting

Great. What now?

Font Squirrel generator

WEBFONT GENERATOR

Usage: Click the "Add Fonts" button, check the agreement and download your fonts. If you need more fine-grain control, choose the Expert option.

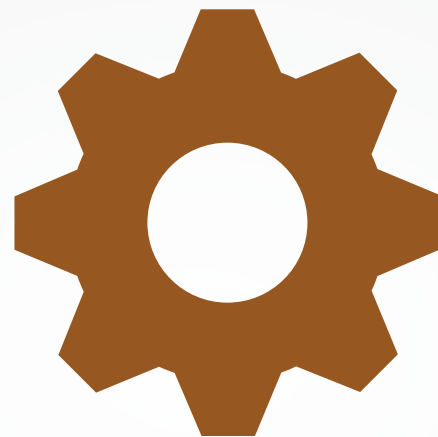
Add Fonts

myconic Regular	OTF	36 glyphs	12 KB	X
<div><div><input type="radio"/> BASIC Straight conversion with minimal processing.</div><div><input type="radio"/> OPTIMAL Recommended settings for performance and speed.</div><div><input checked="" type="radio"/> EXPERT... You decide how best to optimize your fonts.</div></div>				
Font Formats:	<input checked="" type="checkbox"/> TrueType <input checked="" type="checkbox"/> WOFF	<input type="checkbox"/> EOT Lite <input checked="" type="checkbox"/> EOT Compressed	<input checked="" type="checkbox"/> SVG	
Truetype Hinting:	<input type="radio"/> Font Squirrel <input checked="" type="radio"/> Keep Existing			
Rendering:	<input checked="" type="checkbox"/> Fix Vertical Metrics Normalize across browsers	<input checked="" type="checkbox"/> Fix GASP Table Better DirectWrite Rendering	<input checked="" type="checkbox"/> Remove Kerning Strip kerning data	
Fix Missing Glyphs:	<input checked="" type="checkbox"/> Spaces <input checked="" type="checkbox"/> Hyphens			
X-height Matching:	<div><input checked="" type="radio"/> None Resize to match the selected font's x-height.</div> <div><input type="radio"/> 100 %</div> <div><div><input type="radio"/> Arial <input type="radio"/> Verdana <input type="radio"/> Trebuchet</div><div><input type="radio"/> Georgia <input type="radio"/> Times New Roman <input type="radio"/> Courier</div></div>			

There are other options, but this is super-easy

DESIGN CHALLENGE!

GENERATE WEB FONTS



Using Icon Fonts

“Icon Fonts are awesome.”

- Chris Coyier

“Hell yeah they are.”

- me

Icons mapped to Basic Latin

HTML

```
<p><span class="icon">q</span> Brad Frost  
loves QR Codes!</p>
```

CSS*

```
.icon {  
  font-family: "Your Icon Font";  
}
```

Result:  Brad Frost loves QR Codes!

Unicode mapping & generated content

HTML

```
<p class="icon-heart">I love icons!</p>
```

CSS*

```
.icon-heart:before {  
  font-family: "Your Icon Font";  
  content: "\2661";  
  display: inline-block;  
}
```

Result:  I love icons!

Using the data-icon attribute

HTML

```
<p data-icon="&#x2661;">I love icons!</p>
```

CSS*

```
*[data-icon]:before {  
  font-family: "Your Icon Font";  
  content: attr(data-icon);  
  display: inline-block;  
}
```

Result:  I love icons!

Using the aria-hidden attribute

HTML

```
<p><span data-icon="&#xE001;" aria-hidden="true">  
</span>I love icons!</p>
```

CSS*

```
*[data-icon]:before {  
    font-family: "Your Icon Font";  
    content: attr(data-icon);  
    display: inline-block;  
    speak: none;  
}
```

Result: ♥ I love icons!

Tips for displaying icon fonts

Normalize them

font-weight, font-style, font-variant, text-transform...

Using **inline-block** gives you more control

also ensures 'click-ability'

Although scalable, not every size displays great

try to scale along the font's design grid

Base64 encode your fonts

avoids cross-domain Firefox issues



Tips for displaying icon fonts

Use **text-rendering: optimizeLegibility** for ligatures
also enables kerning pairs

Use **-webkit-font-smoothing: antialiased**
makes icons crisper in webkit-based browsers

Use **vertical-align** to control baselines on inline icons
not all icon fonts will align to the baseline the same



Multicolored glyphs

You can create multi colored icons using multiple glyphs

Glyphs can be overlapped using absolute positioning

You can also use zero-width characters

This requires the font to be produced with zero-width characters

Course Summaries

Creating multi-colored icons

HTML

```
<p class="new"><span aria-hidden="true" data-  
icon="&#xE101;" class="stack"></span>CSS Flexbox  
First Look</p>
```

Creating multi-colored icons

CSS*

```
.complete, .new {  
  font-size: 3em;  
  font-family: LatoLight;  
  position: relative;  
}  
.new span[data-icon]:before {  
  font-family: myconic;  
  content: "\E003";  
  position: relative;  
  speak: none;  
  font-weight: 400;  
  color: rgb(45,45,45);  
}
```

Creating multi-colored icons

CSS*

```
.complete span[data-icon]:after, .new  
span[data-icon]:after {  
  content: attr(data-icon);  
  font-family: myconic;  
  position: absolute;  
  top: 0;  
  left: 0;  
  color: rgb(255,102,0);  
}
```

Result:



CSS Flexbox First Look

Icon Font Resources

Chris Coyier's Big List of Icon Fonts

<http://css-tricks.com/flat-icons-icon-fonts/>

Interactive Unicode Table

<http://unicode-table.com>

The Noun Project

<http://thenounproject.com/>

Github: Building Octicons

<https://github.com/blog/1135-the-making-of-octicons>

Filament Group's Icon Font Compatibility Table

<https://docs.google.com/spreadsheet/cc?>

[key=0Ag5_yGvxpINRdHFYeUJPNnZMWUZKR2ItMEpRTXZPdUE#gid=0](https://docs.google.com/spreadsheet/cc?key=0Ag5_yGvxpINRdHFYeUJPNnZMWUZKR2ItMEpRTXZPdUE#gid=0)

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