Intro to Python for Type Design!

Type@Cooper

2025

Why RoboFont?


UFO

Unified Font Object

UFO 3

- metainfo.plist
- fontinfo.plist
- groups.plist
- kerning.plist
- features.fea
- lib.plist
- layercontents.plist
- glyphs
  - contents.plist
  - layerinfo.plist
  - glif
- images
- data
- conventions

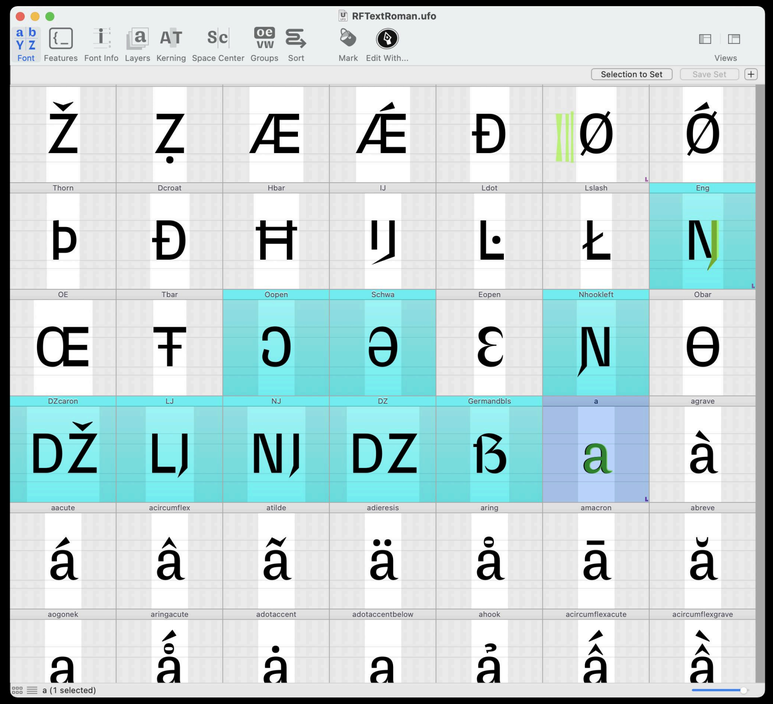
Open-source & editor-agnostic

UFO 3

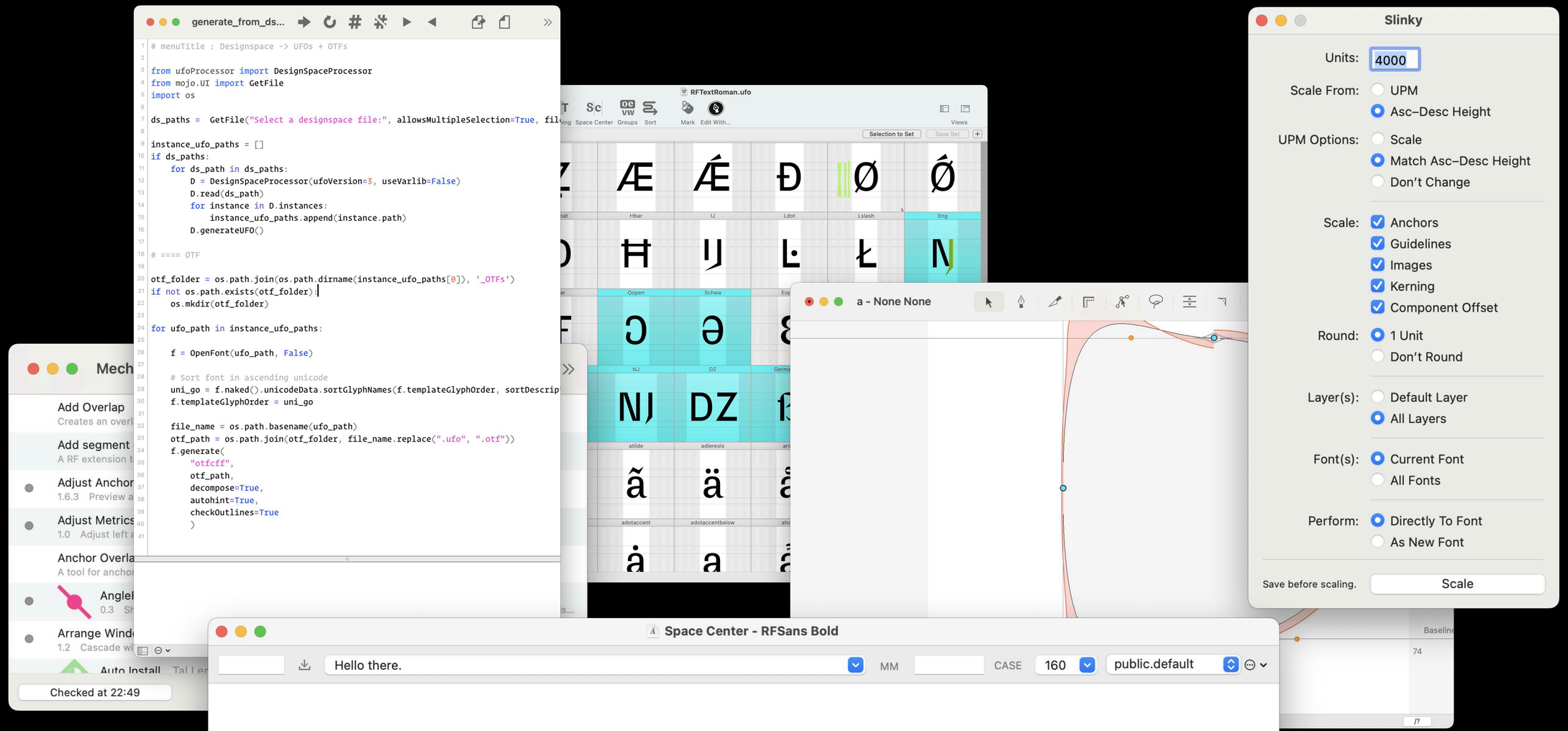
- metainfo.plist
- fontinfo.plist
- groups.plist
- kerning.plist
- features.fea
- lib.plist
- layercontents.plist
- glyphs
  - contents.plist
  - layerinfo.plist
  - glif
- images
- data
- conventions

RoboFont is a
simple UFO editor.

Built from scratch, in Python.



With flexibility in mind.



Preferences

Window layouts

Extensions

Scripts

Settings

“Why is the steering wheel shaped this way?”

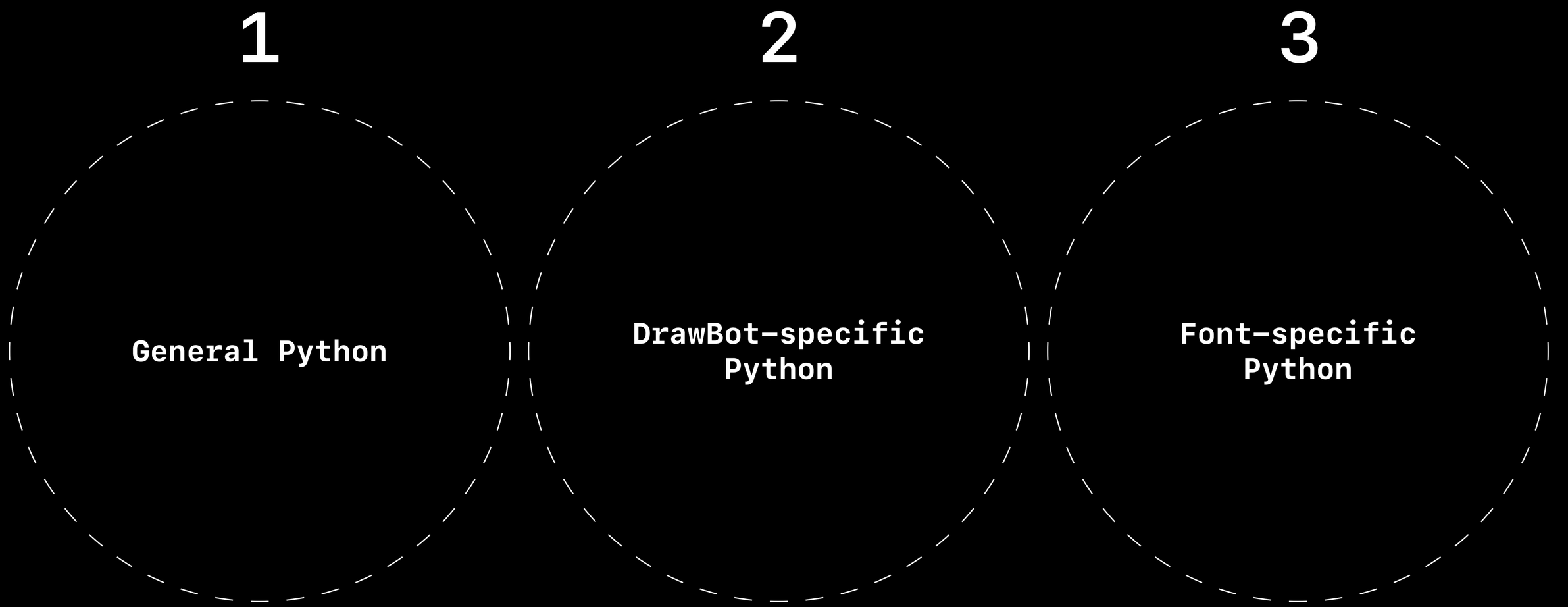
“There is only one cupholder and it’s too small.”

“I don’t need a built-in water dispenser”

“The seat doesn’t go high enough.”

Let’s use this
as a playground.

Font time!


1
General Python
2
DrawBot-specific Python
3
Font-specific Python

Done

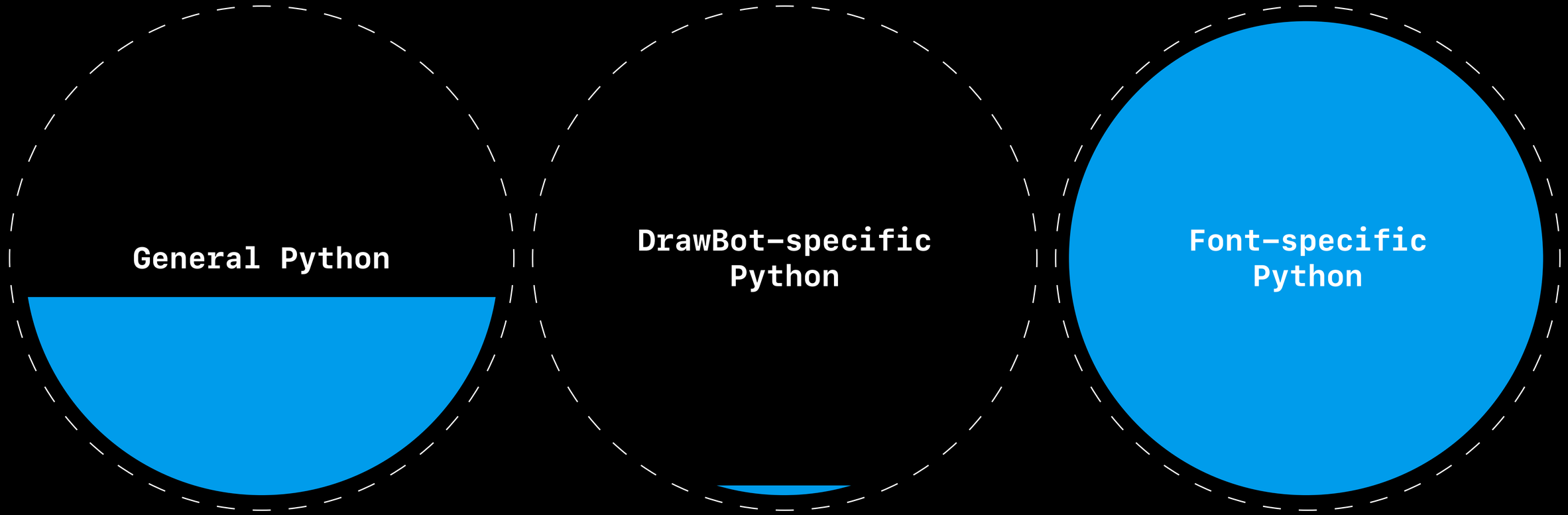
General Python

Done

DrawBot-specific Python

Font-specific Python

Coding in RoboFont



From DrawBot API to FontParts!

DrawBot

DrawBot 3.130 Forum Download Index

search

Shapes
- Primitives
- Drawing Paths
- Path Properties
- BezierPath

Colors
Canvas
Text
Images
Variables
Quick Reference

DrawBot App
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DrawBot Icon

Courseware
History
Credits

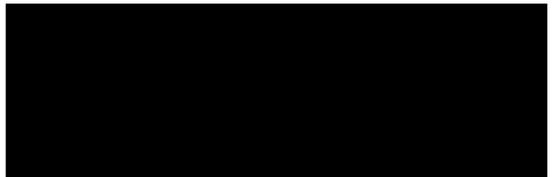
Primitives

rect(x, y, w, h)

Draw a rectangle from position x, y with the given width and height.

```
# draw a rectangle
#    x    y    w    h
rect(100, 100, 800, 800)
```

Open in DrawBot: rect.py
Download: rect.py



fontParts.base.BaseFont.copy

TYPE DESIGNERS
- **Getting Started**
- **Object Reference**
  - Objects
    - Font
    - Info
    - Groups
    - Kerning
    - Features
    - Lib
    - Layer
    - Glyph
    - Contour
    - Segment
    - bPoint
    - Point
    - Component
    - Anchor
    - Image
    - Guideline
  - Common Value Types
  - fontParts.world

SOFTWARE DEVELOPERS
- **Implementing FontParts**
- **Developing FontParts**

Overview

Copy

BaseFont.copy	Copy the font into a new font.

File Operations

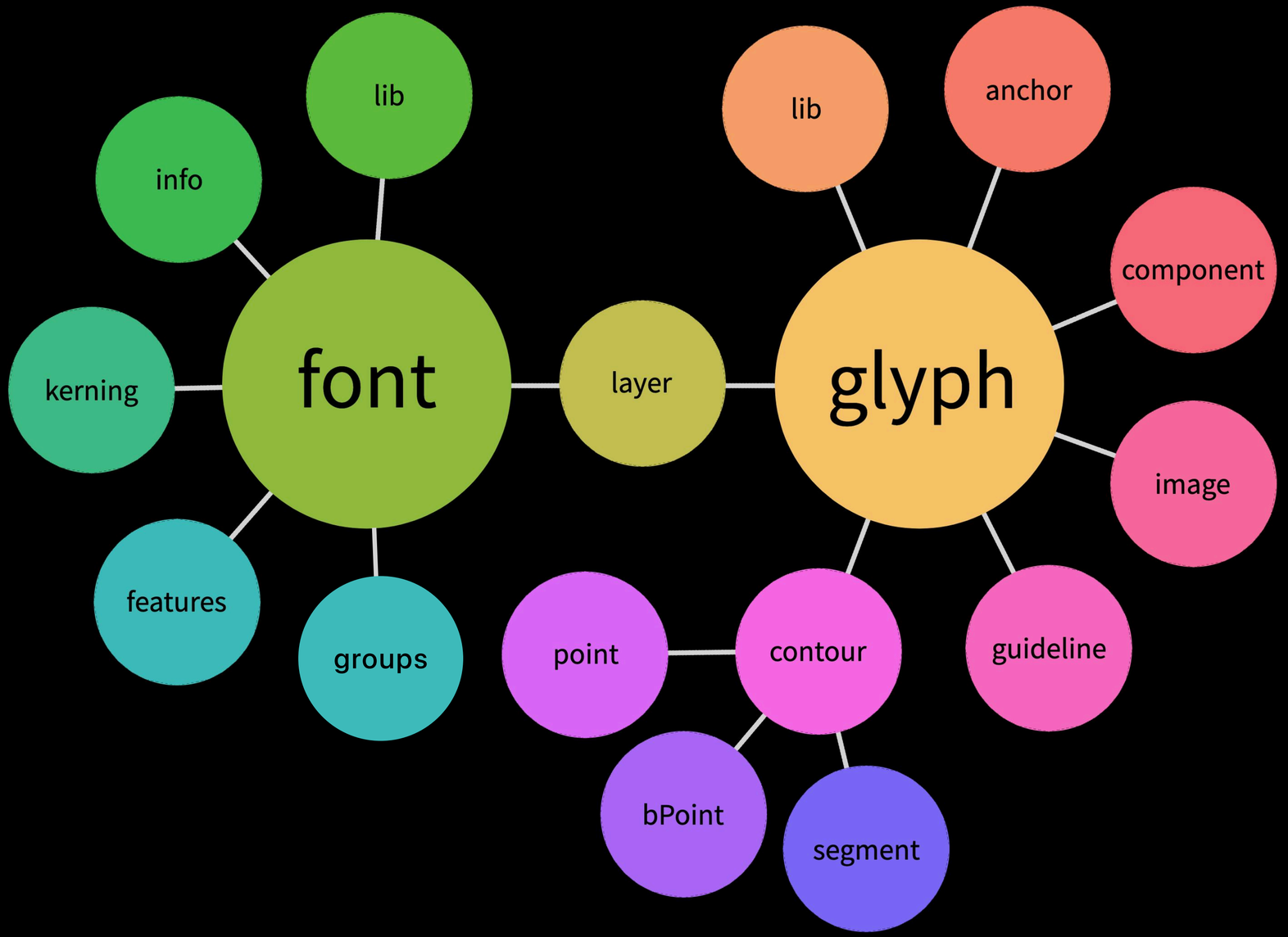
BaseFont.path	The path to the file this object represents.
BaseFont.save	Save the font to **path**.
BaseFont.generate	Generate the font to another format.

Sub-Objects

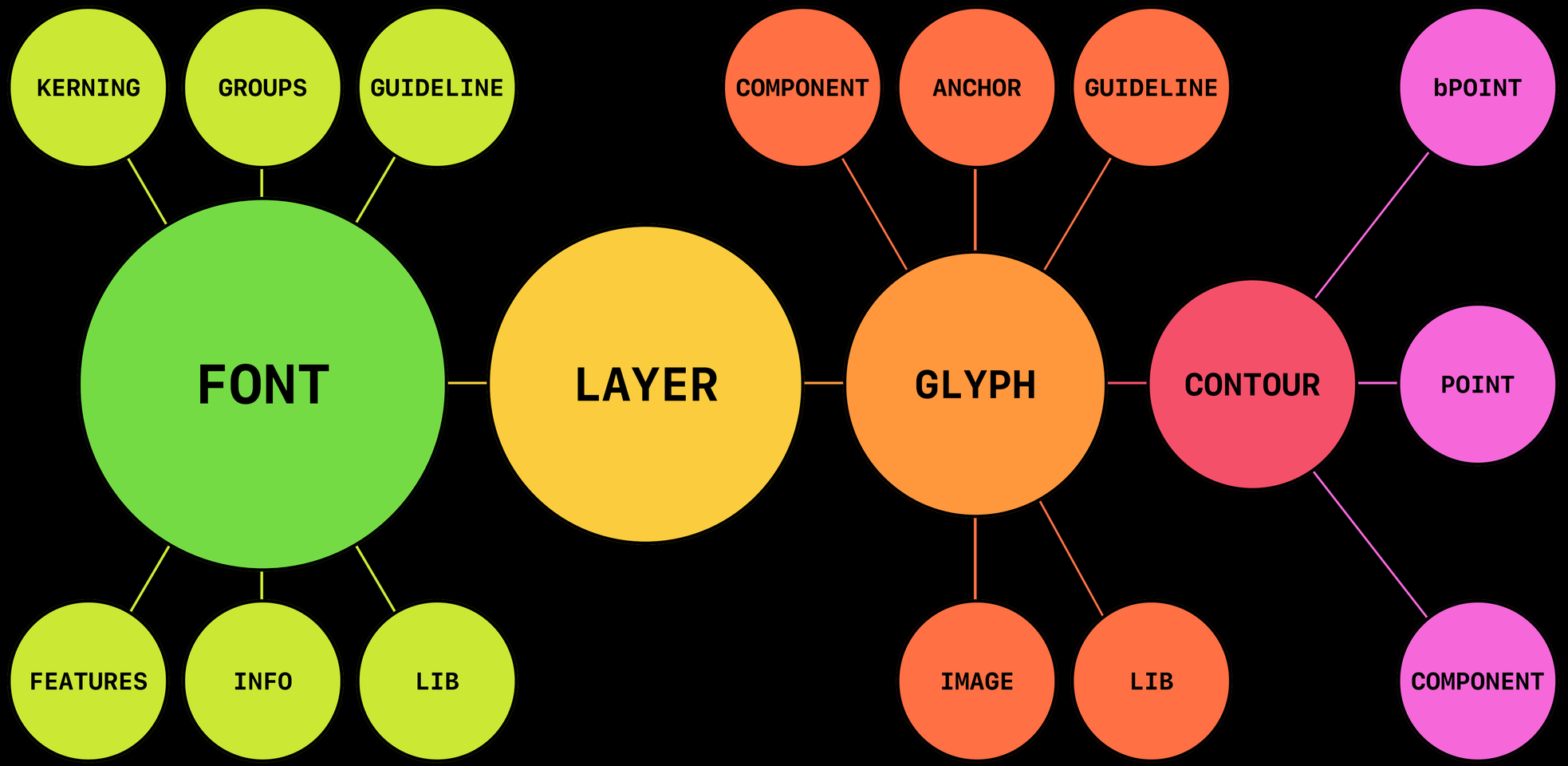
BaseFont.info	The font's BaseInfo object.
BaseFont.groups	The font's BaseGroups object.
BaseFont.kerning	The font's BaseKerning object.
BaseFont.features	The font's BaseFeatures object.
BaseFont.lib	The font's BaseLib object.
BaseFont.tempLib	The font's BaseLib object.

fontparts.robotools.dev

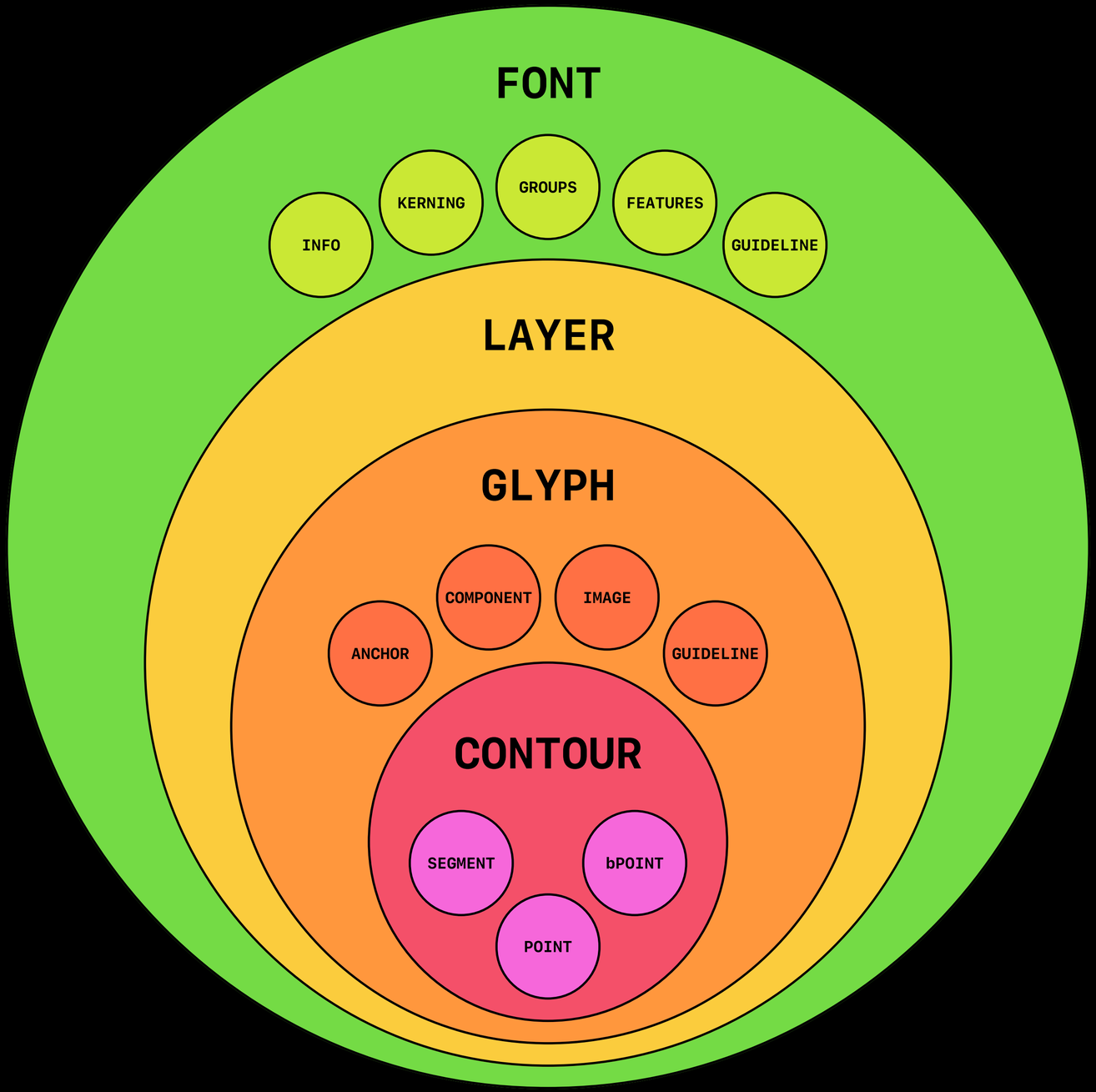
FontParts map



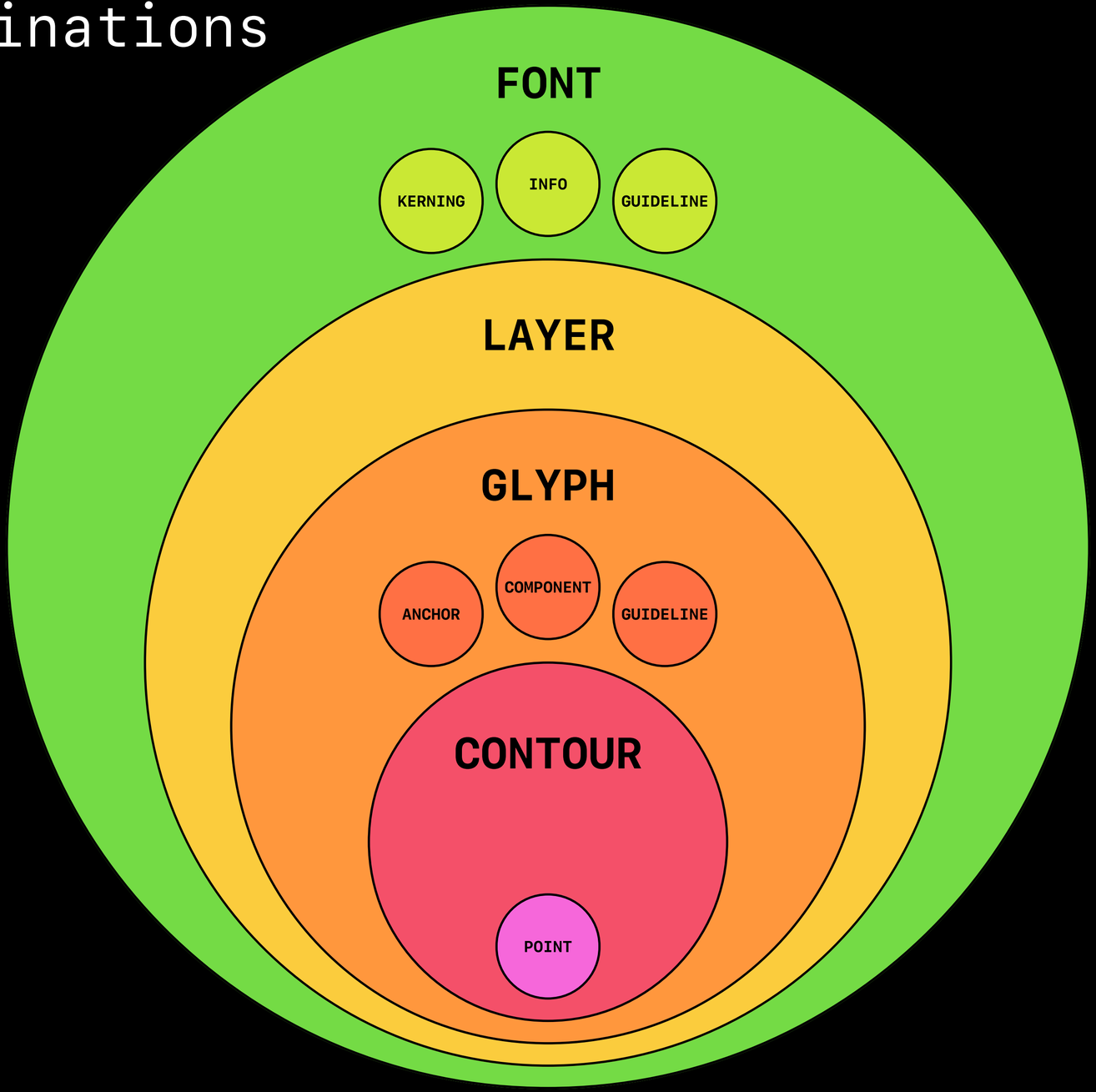
The map


KERNING
GROUPS
GUIDELINE
FONT
FEATURES
INFO
LIB
LAYER
COMPONENT
ANCHOR
GUIDELINE
GLYPH
IMAGE
LIB
bPOINT
CONTOUR
POINT
COMPONENT

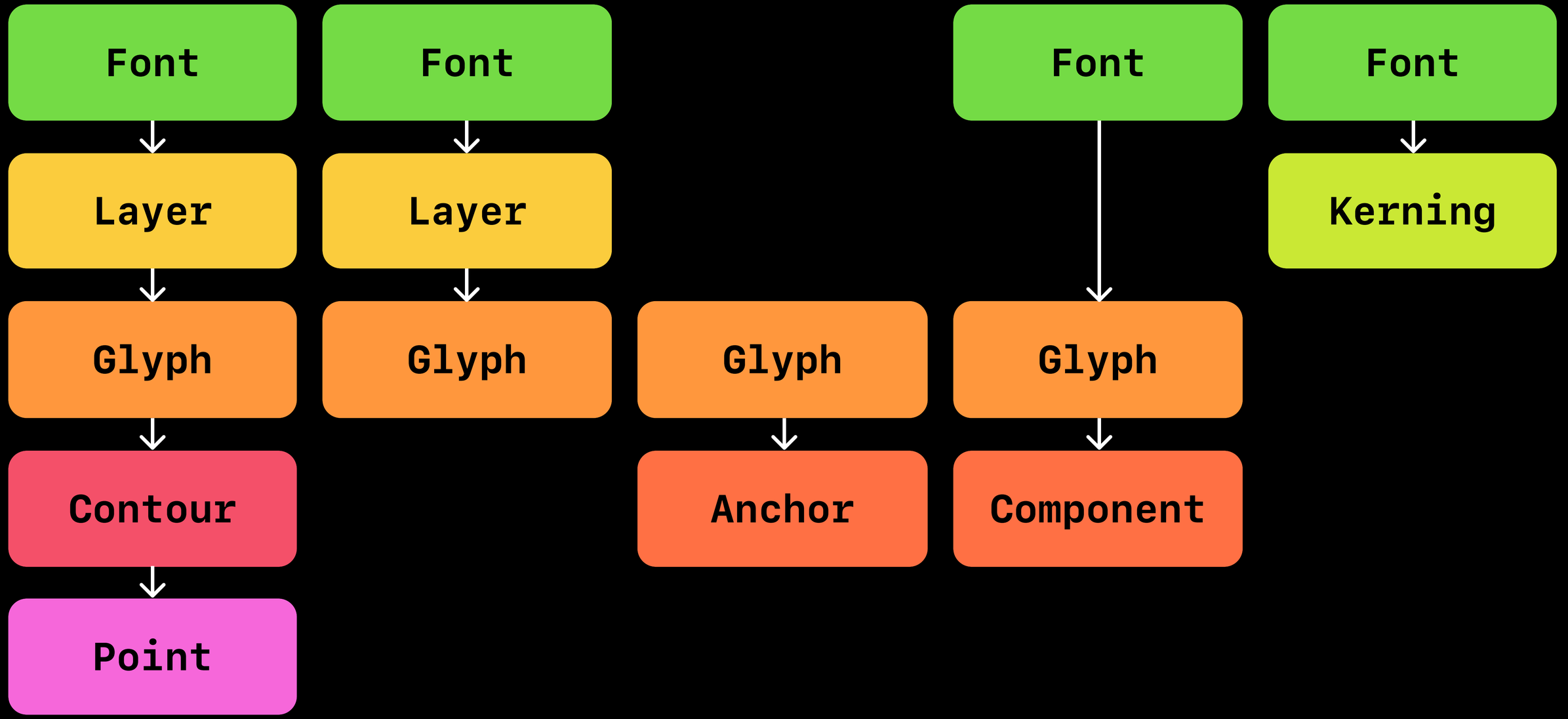
The hierarchy

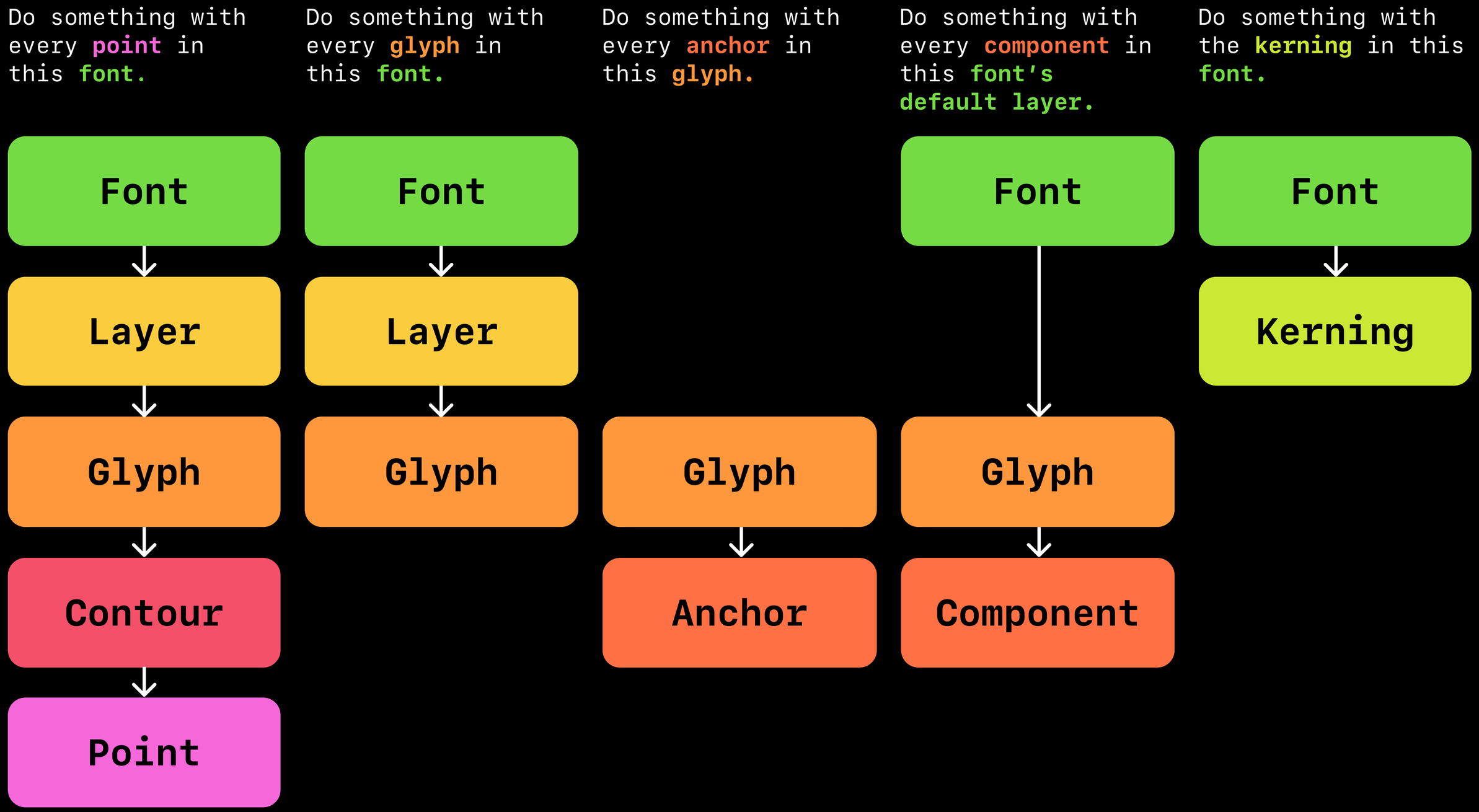


Our main destinations

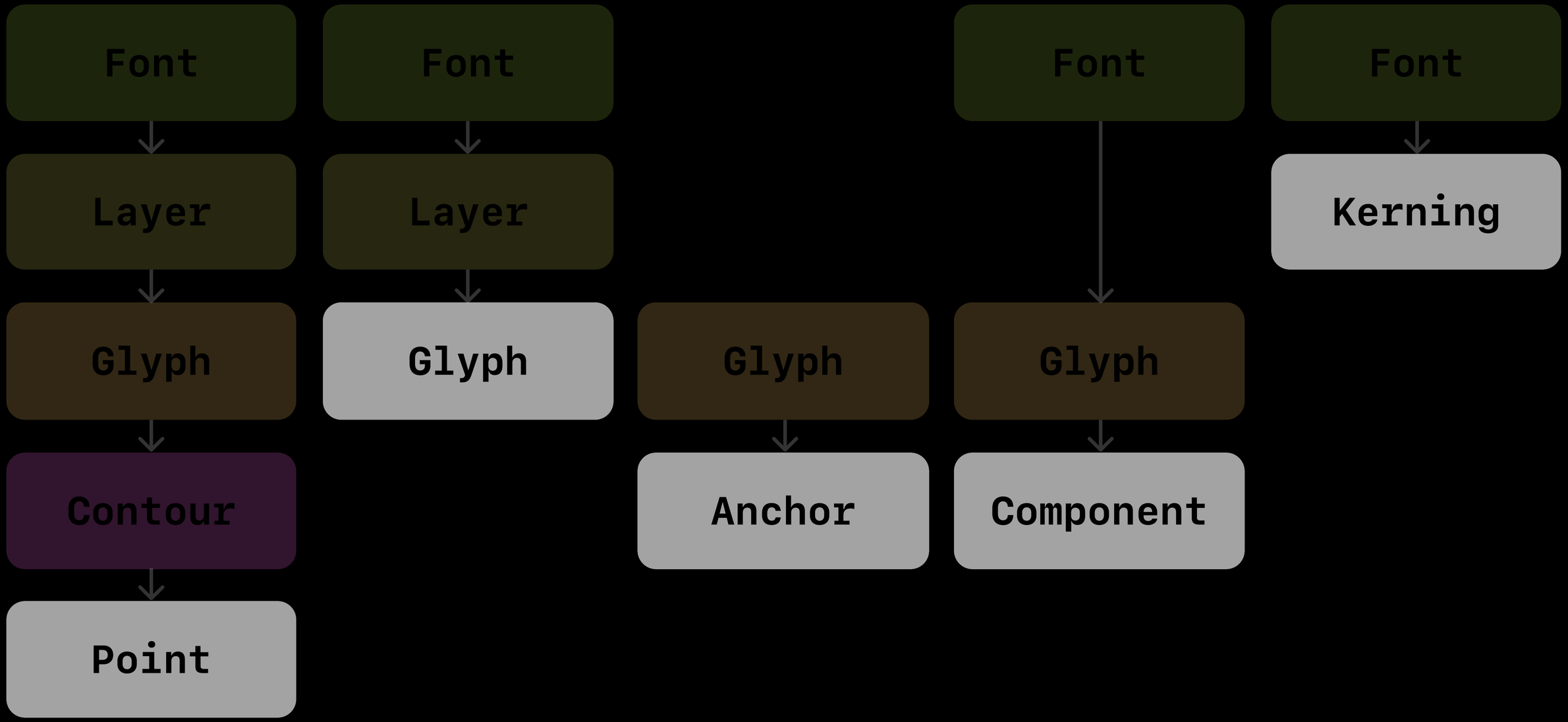


Some examples of looping with FontParts

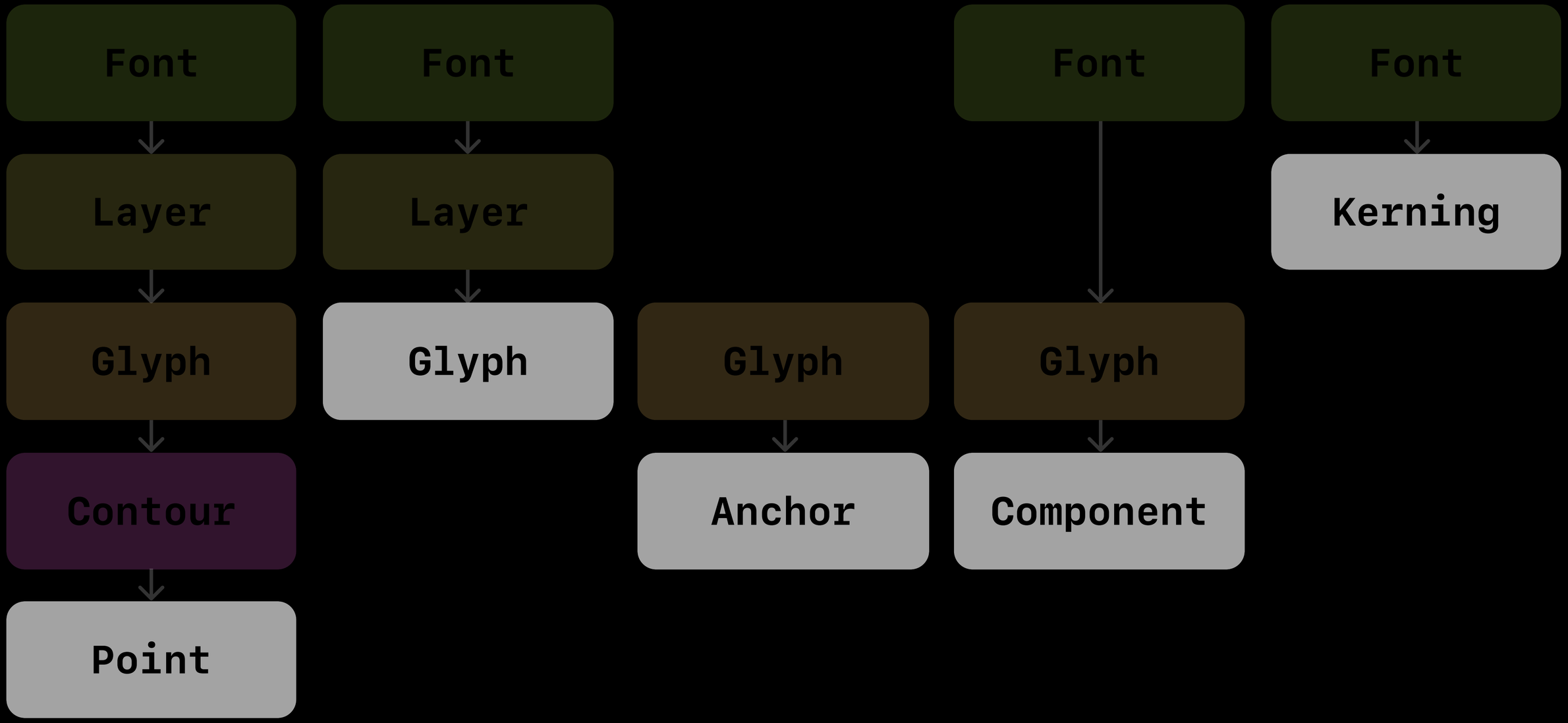



Do something with every point in this font.
Font
Layer
Glyph
Contour
Point
Do something with every glyph in this font.
Font
Layer
Glyph
Do something with every anchor in this glyph.
Glyph
Anchor
Do something with every component in this font's default layer.
Font
Glyph
Component
Do something with the kerning in this font.
Font
Kerning

What do we do here?



Do stuff or get stuff.



Methods / Functions

Attributes

Method / Function

Perform an action.

Attribute

Get or
set information.

Method / Function

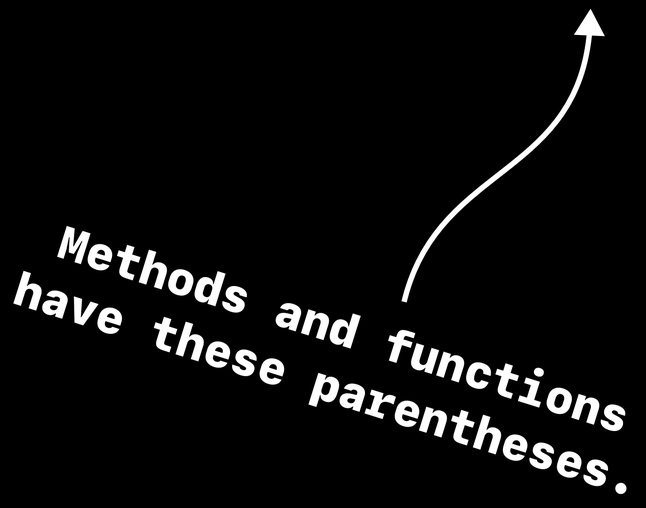
```
glyph.appendContour()
```

Attribute

```
glyph.contours
```

Method / Function

```
glyph.appendContour()
```



Attribute

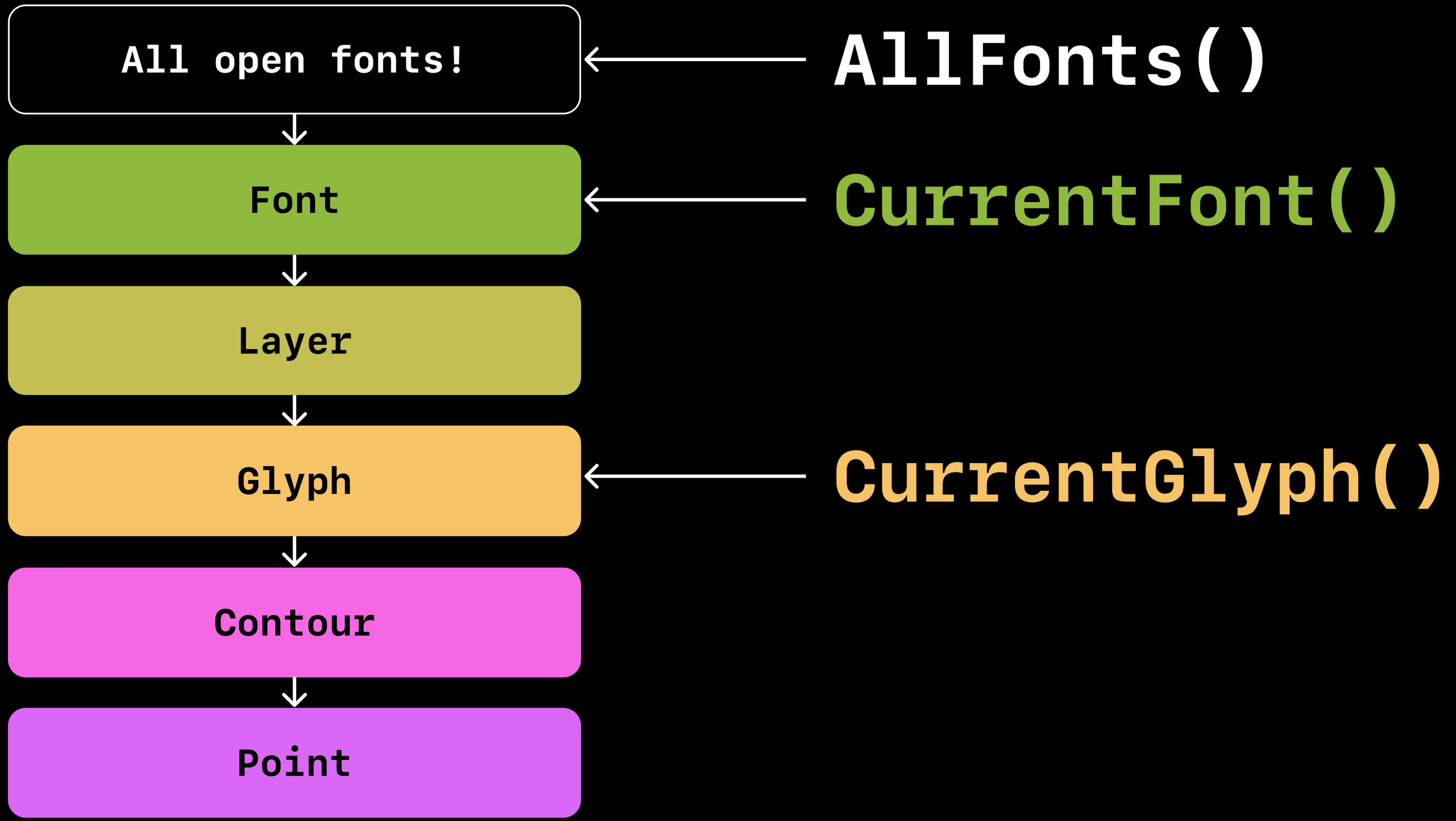
```
glyph.contours
```

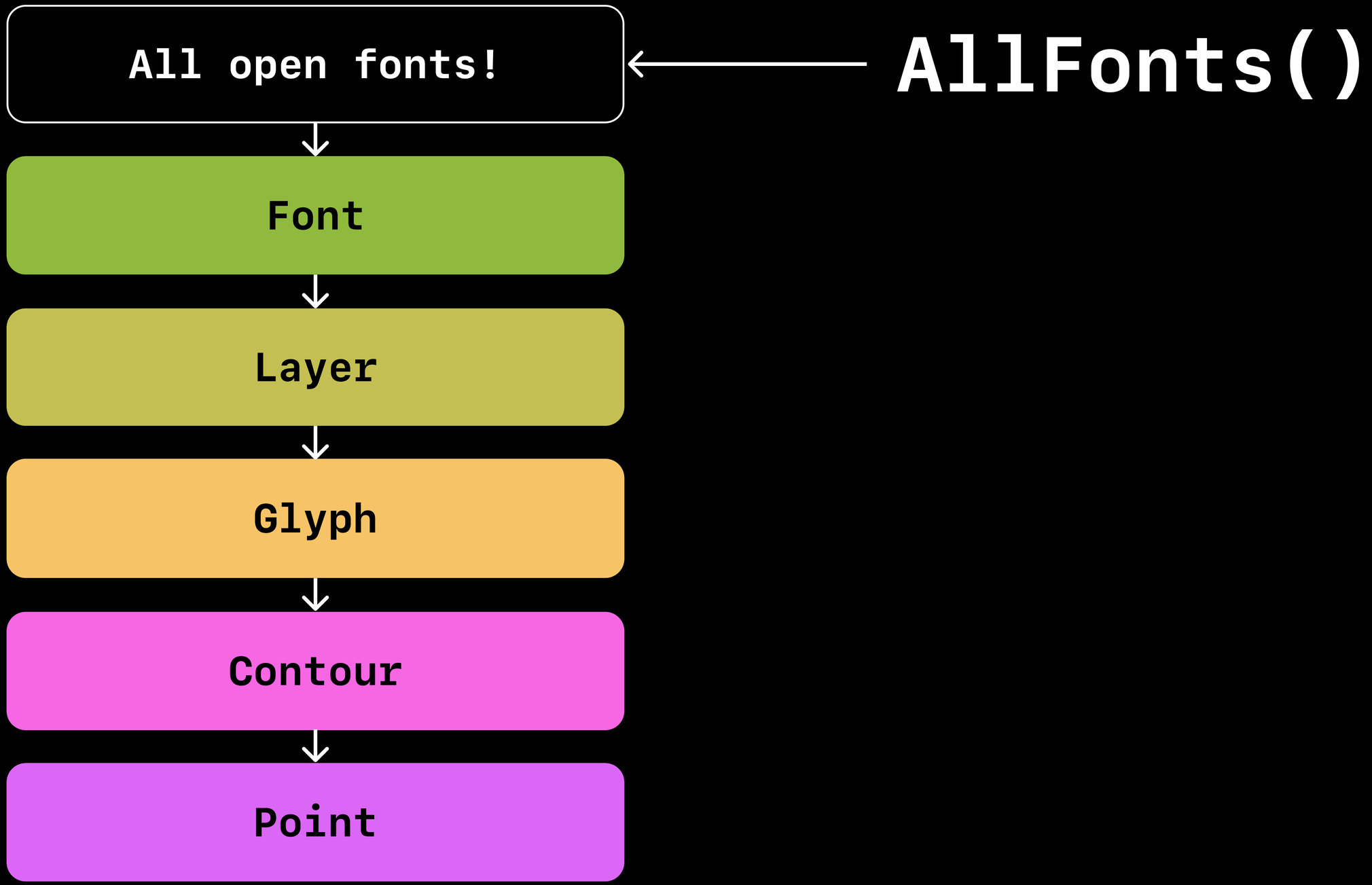
Where do we start?

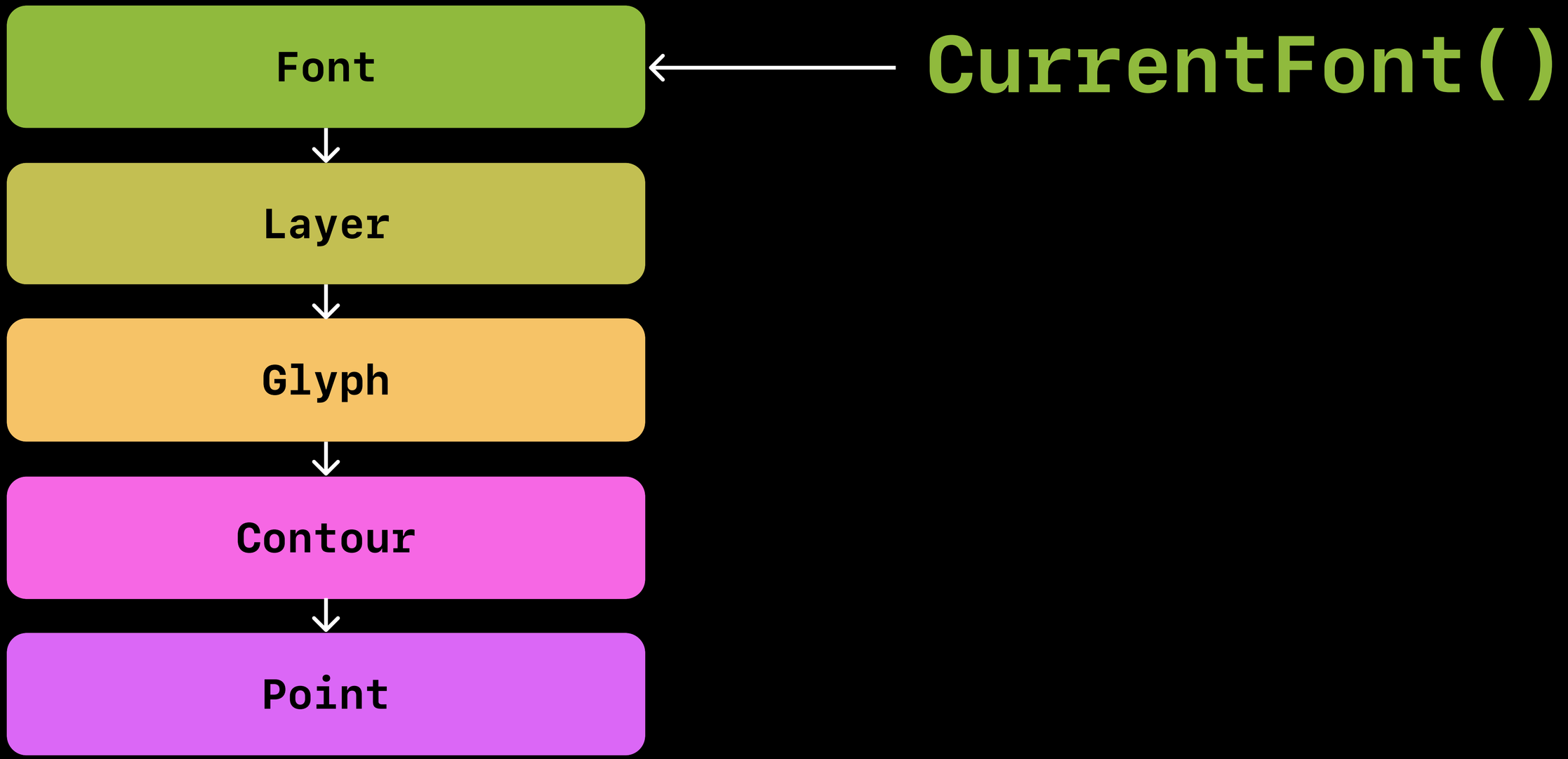
AllFonts()

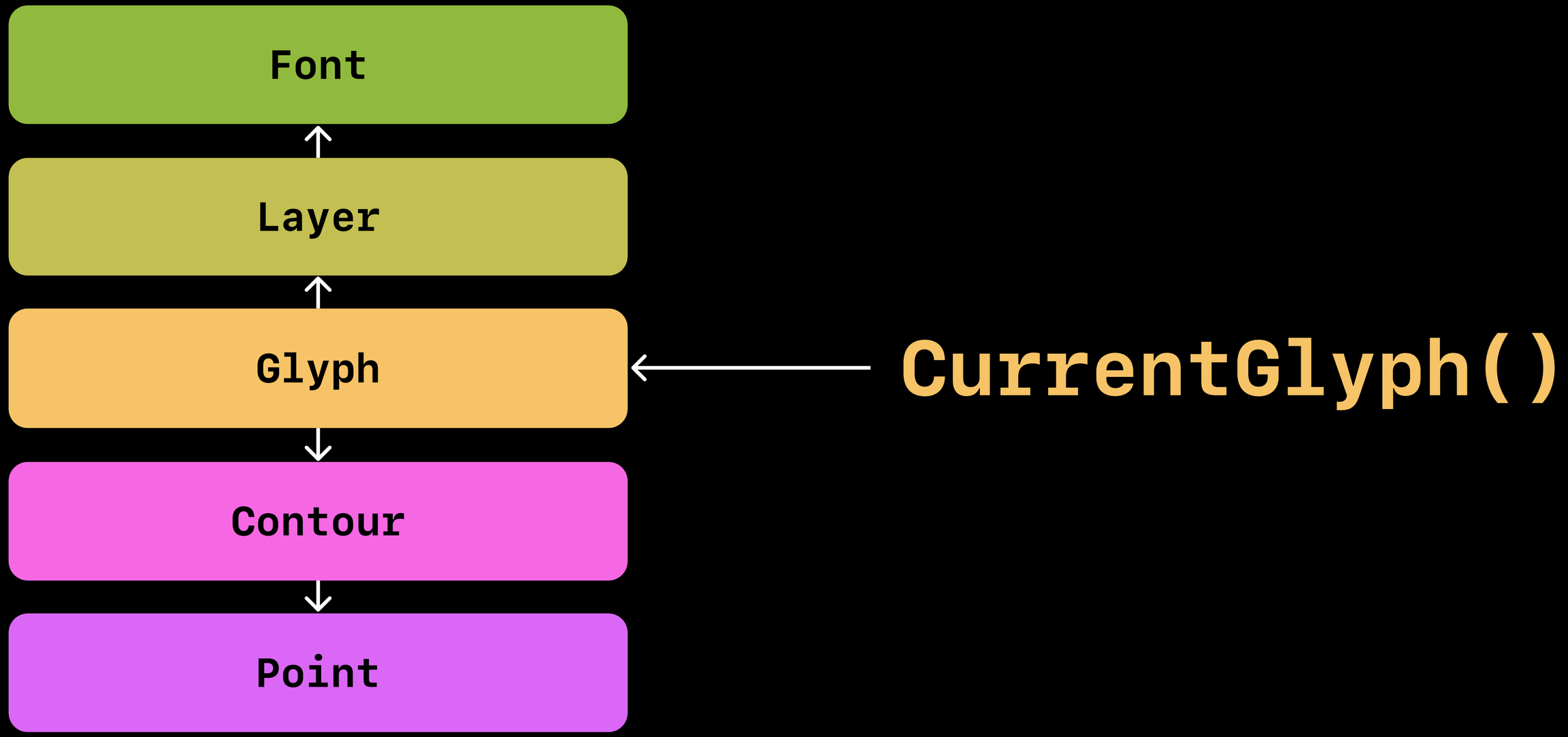
CurrentFont()

CurrentGlyph()


All open fonts!
Font
Layer
Glyph
Contour
Point
AllFonts()
CurrentFont()
CurrentGlyph()


All open fonts!
AllFonts()
Font
Layer
Glyph
Contour
Point


Font
Layer
Glyph
Contour
Point
CurrentFont()


Font
Layer
Glyph
Contour
Point
CurrentGlyph()

```
print('Let's go.')
```