

Typography and Fonts

Session 803

Antonio Cavedoni Type Designer

Agenda

Agenda

San Francisco

Agenda

San Francisco

Terminology

Agenda

San Francisco

Terminology

Concepts

Agenda

San Francisco

Terminology

Concepts

Tools

Agenda

San Francisco

Terminology

Concepts

Tools

Details

San Francisco

San Francisco

ABCDEFGHIJKLMN

OPQRSTUVWXYZ

abcdefghijklmn

opqrstuvwxyz

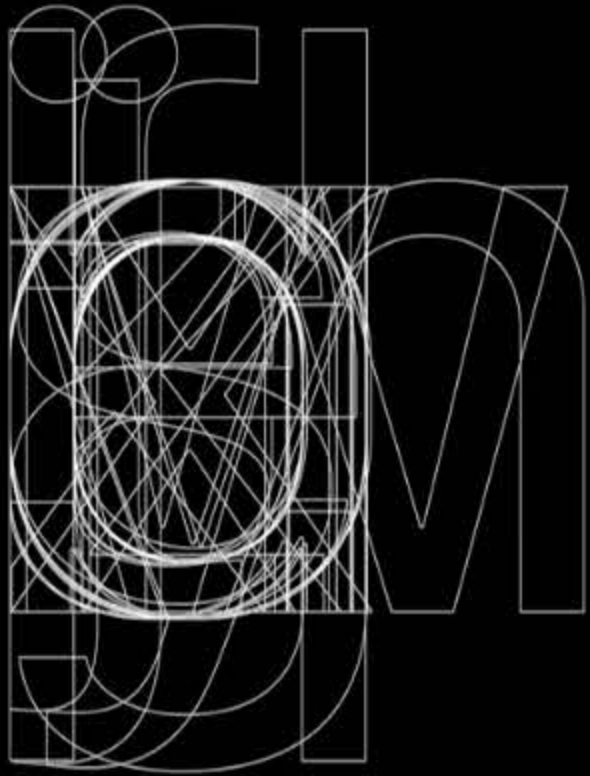
123456789&0

developer.apple.com

Developer Platforms Resources Program Support Account

< More Videos

San Francisco



02:07 -30:18

Overview Resources Transcript

Introducing the New System Fonts

Fonts lay at the intersection of design and engineering. Get introduced to typographic principles and how they apply to the San Francisco fonts. Hear what makes this family of fonts unique and how to effectively take advantage of their advanced features. Learn best practices when designing and implementing interfaces with text.

WWDC 2015 - Session 804 - iOS, OS X



Remotes and Devices



REMOTE

Touch Surface Tracking Medium

OTHER DEVICES

Bluetooth >

Remote App >

Learn Remote >

HOME THEATER CONTROL

Turn On Your TV with Your Remote On

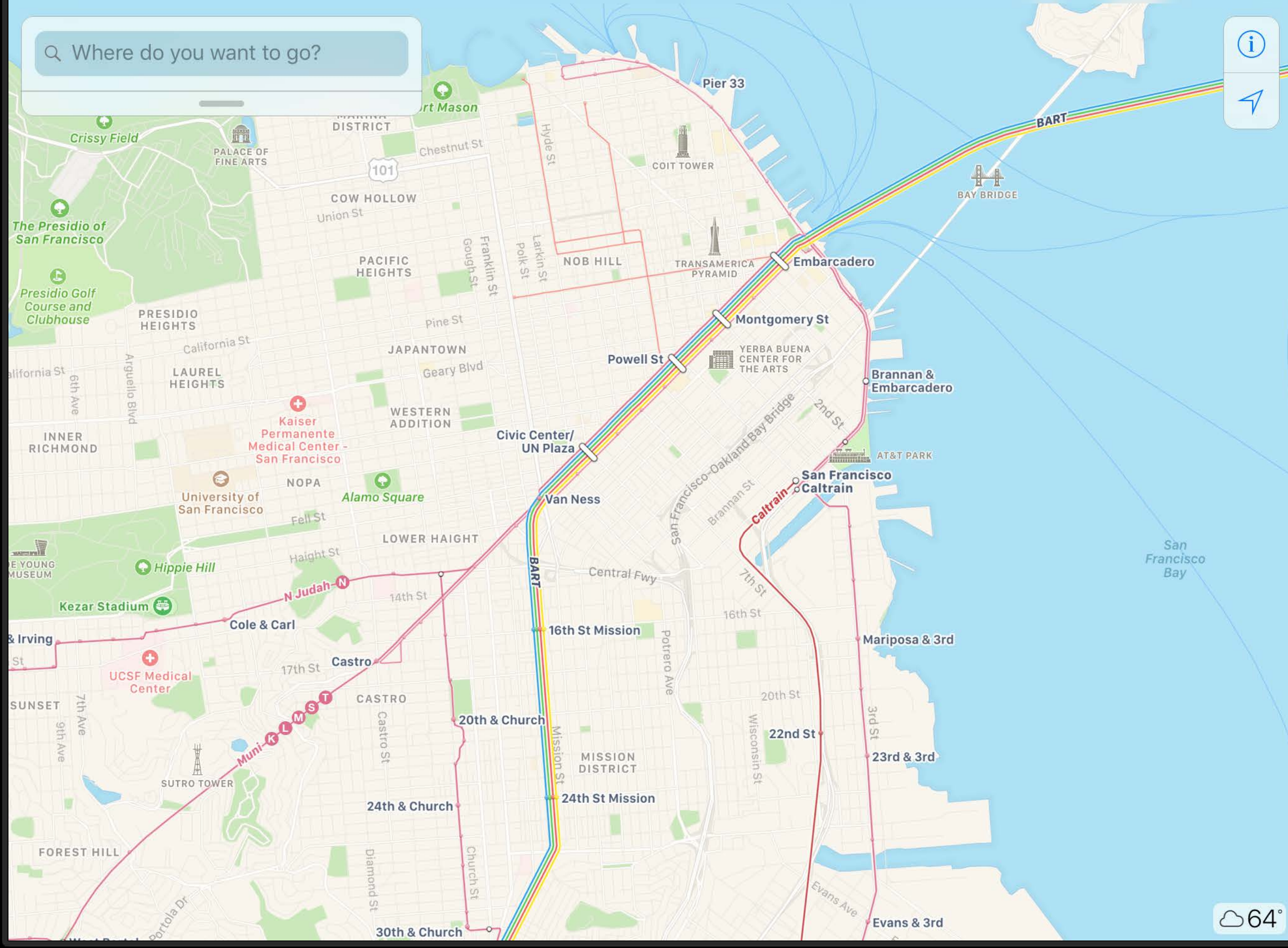
Volume Control Auto via IR (TV)

iPad

9:41 AM

100%

Where do you want to go?



MONDAY, JUNE 13

For You



Discovery Mix

Updated Monday

Recently Played

[See All](#)



In Our Bones

Against The Current



Future Present Past EP

The Strokes



Library



For You



Browse



Radio



Search

heart but weren't accepted to medical school to ask. Hello rain, rain, don't go away, you're so soothing to listen to. Hello MV to QuickTime quickly. Hello my friends, hello my fans. Hello rockelele god. Hello what are harp strings actually made of? Hello Poppins. Hello end of terrace in the good bit of Peckham with a garden big enough to have a dog finally. Hello math lab. Hello goats, double rainbows, dramatic chipmunks, ninja cats, and bitten fingers. Hello we never had this text conversation. Hello me. Hello German matchmaker. Hello blemish-free skin and perfect hairline. Hello final boss battle: Rush Hour. Hello two-faced shortly. Hello making yourself at home in someone else's. Hello improving my handles. Hello dojo at home. Hello perfect 501 half an hour to figure it out. Hello house, please be exactly 71 degrees when I get home. Hello Rune collection. Hello spring, and legendary cars. Hello mind the gap, ride the gap, barrel roll the gap. Hello dot dot d'oh! Hello guided walking tour of "toy" to all the ships at sea. Hello all the ways from A to B. Hello clothes-washing icons deciphered. Hello memorizing anything. Hello experimentation that won't blow up the lab. Hello RU OK? Hello protection against overdraft protection. Hello mindfulness. Hello mate. Hello distraction-free writing. Hello Sir David Attenborough, may I join you at the Natural History Museum? Hello triple vicinity I haven't met yet. Hello Pokota. Hello fellow lovers of searingly hot curry, we should meet. Hello seat 58B, I know! Hello Playman. Hello American muscle cars. Hello pig farmers. Hello backyard BBQ mastery. Hello beans and greens. Hello or a small fee. Hello honey, if you're home, I see the dog's on the sofa again. Hello hook, line, and toaster. Hello horse thump, knock. Hello ladies and gentlemen, we are live. Hello let me repeat your order. Hello learning from each other. Hello minutes, I hope you will be mine. Hello simple, pleasant to-do list. Hello midnight milkshake delivery in under an hour. Hello once. Hello no filter. Hello playing tennis without any limbs. Hello one-man band. Hello one-legged pigeon pose. Hello organize everything you read on the Internet, do you? Hello handheld recording studio. Hello RIP sites. Hello fake phone call shopping. Hello customer service so you don't have to. Hello millions of songs, all in one place. Hello species, let's get you 2, 1... Hello thousand-year-long song. Hello ancient principle of "time out." Hello Admiral Snuggles, I'll be home soon! Hello workout, goodbye spare tire. Hello to my own perfect radio station. Hello dónde está el baño in a one-mile radius. Hello iPhone DJs. Hello red tennis ball. Hello free space in my brain that no longer has to remember passwords. Hello Jumpman, Jump on my hands. Hello night sky. Hello wine filing. Hello winning at the game of life. Hello floating bakeries. Hello 50,000 trails. Hello town planning with occasional farmyard animals. Hello Craftsman, we meet again. Hello chores FTW. Hello surfing hoverboard hurdles, pole vault, and javelin throw. Hello to the future of trading. Hello style tribes. Hello me, only cleaned up and better and coffee. Hello copycat. Hello pal, and thanks, I just received the money. Hello 720. Hello here's my share. Hello Tuesday this summer. Hello nanny and then hello date night. Hello remembering everything. Hello entertainment on a weekly basis. Hello hello do you really need 30 duplicates of the same image? Hello 10 more ways to hit the snooze button. Hello file.jpg, good artist, let's do this. Hello name that tune. Hello jam session. Hello thanks for the gold. Hello balanced checkbook. Hello one flowchart heaven. Hello remotely troubleshooting Mom's computer. Hello 45,474 page views in the last hour. Hello wait, some thing. Hello recruiters who keep inviting me to connect. Hello however cold it is back East. Hello tickets I forgot to print for roommates. Hello light reading for the plane. Hello this will only take six seconds. Hello cutting film for the cutting-room floor. Hello nest egg. Hello directorial debut. Hello embracing your inner dark side. Hello verified potential soul mate. Hello

SF Mono

NEW

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m

n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 & 0

SF Mono Light

Designed by Apple
in California

SF Mono Regular

Designed by Apple
in California

SF Mono Medium

Designed by Apple
in California

SF Mono Semibold

**Designed by Apple
in California**

SF Mono Bold

**Designed by Apple
in California**

SF Mono Heavy

**Designed by Apple
in California**

SF Mono Heavy Italic

***Designed by Apple
in California***

Latin

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
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ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz

Cyrillic

АБВГДЕЖЗИЙКЛМНОПРСТУФХЦЧШЩЬЮЯ абвгдежзийклмнопрстуфхцчшщьюя
АБВГДЕЖЗИЙКЛМНОПРСТУФХЦЧШЩЬЮЯ абвгдежзийклмнопрстуфхцчшщьюя
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Greek

ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ αβγδεζηθικλμνξοπρσςτυφχψω

ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ αβγδεζηθικλμνξοπρσςτυφχψω

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ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ αβγδεζηθικλμνξοπρσςτυφχψω

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ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ αβγδεζηθικλμνξοπρσςτυφχψω

Monospaced

monospaced

monospaced

Same Widths Across Weights

monospaced

monospaced

Same Widths Across Weights

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Coding and Small Sizes

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Coding and Small Sizes

SF

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SF Mono

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< Create >



```
// 1. Create a circle
let circle = Circle(radius: 3)
circle.center.y += 28

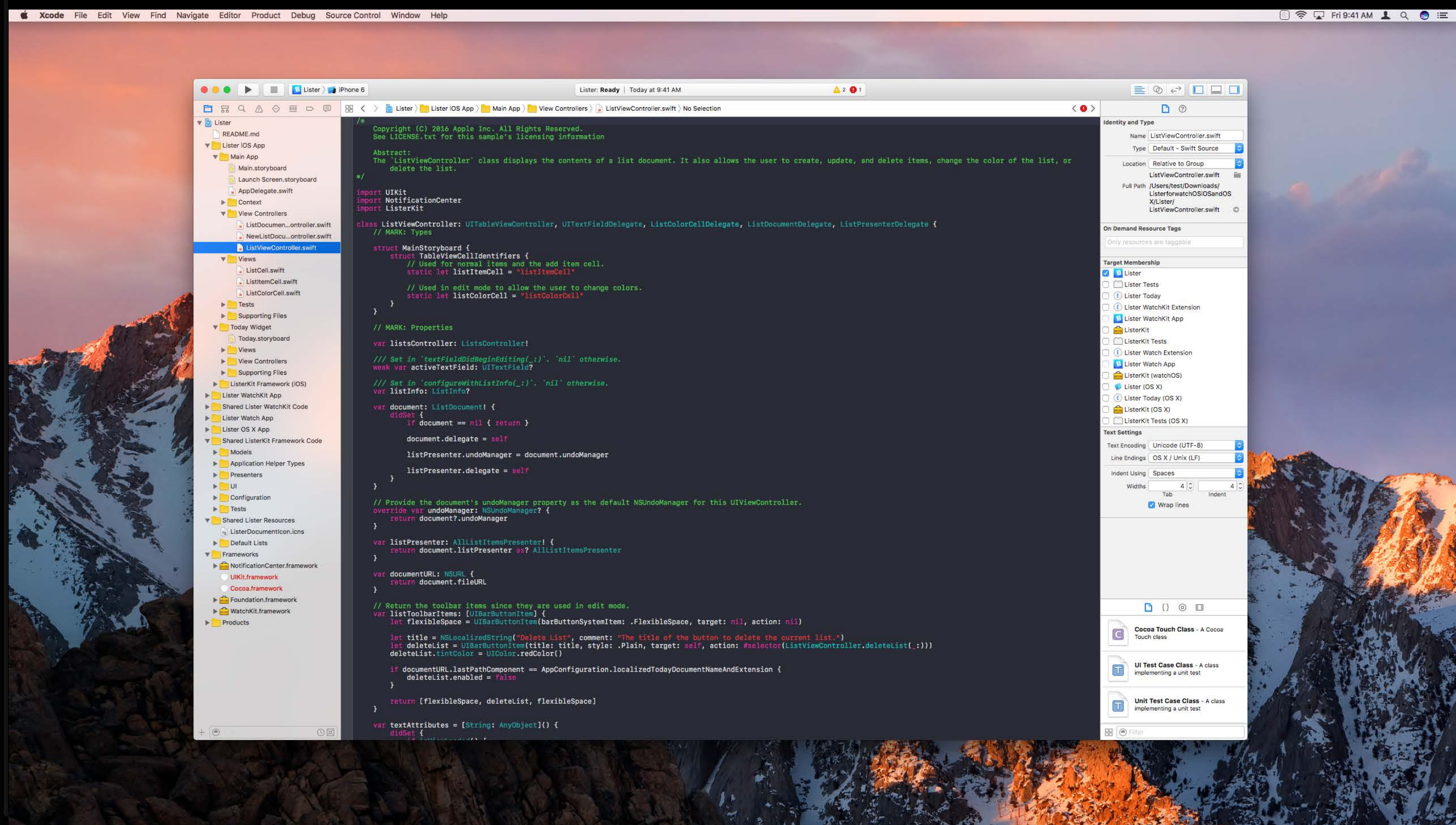
// 2. Create a rectangle
let rectangle = Rectangle(width: 10, height: 5, cornerRadius: 0.75)
rectangle.color = .purple
rectangle.center.y += 18

// 3. Create a line
let line = Line(start: Point(x: -10, y: 9), end: Point(x: 10, y: 9), thickness: 0.5)
line.center.y -= 2
line.rotation = 170 * (3.14159/180)
line.color = .yellow

// 4. Create text
let text = Text(string: "Hello world!", fontSize: 32.0, fontName: "Futura", color: .red)
text.center.y -= 2

// 5. Create an image
let image = Image(name: "SwiftBird", tint: .green)
image.size.width *= 0.5
image.size.height *= 0.5
```

 Run My Code



Xcode File Edit View Find Navigate Editor Product Debug Source Control Window Help

Fri 9:41 AM

Project Explorer showing a file tree for 'Lister'. The tree includes folders like 'Main App', 'View Controllers', and 'Views'. The file 'ListViewController.swift' is selected and highlighted in blue.

```
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See LICENSE.txt for this sample's licensing information.

Abstract:
The 'ListViewController' class displays the contents of a list document. It also allows the user to create, update, and delete items, change the color of the list, or
delete the list.

import UIKit
import NotificationCenter
import ListerKit

class ListViewController: UITableViewController, UITextFieldDelegate, ListColorCellDelegate, ListDocumentDelegate, ListPresenterDelegate {
    // MARK: Types

    struct MainStoryboard {
        static TableViewCellIdentifiers {
            // Used for normal items and the add item cell.
            static let listItemCell = "ListItemCell"
        }
        // Used in edit mode to allow the user to change colors.
        static let listColorCell = "ListColorCell"
    }

    // MARK: Properties
    var listsController: ListsController!
    // Set in 'textFieldDidBeginEditing(_): nil' otherwise.
    weak var activeTextField: UITextField?
    // Set in 'configureWithListInfo(_): nil' otherwise.
    var listInfo: ListInfo?

    var document: ListDocument! {
        didSet {
            if document == nil { return }
            document.delegate = self
            listPresenter.undoManager = document.undoManager
            listPresenter.delegate = self
        }
    }

    // Provide the document's undoManager property as the default NSUndoManager for this UIViewController.
    override var undoManager: NSUndoManager? {
        return document?.undoManager
    }

    var listPresenter: AllListItemPresenter! {
        return document.listPresenter as? AllListItemPresenter
    }

    var documentURL: NSURL {
        return document.fileURL
    }

    // Return the toolbar items since they are used in edit mode.
    var listToolbarItems: [UIBarButtonItem] {
        let flexibleSpace = UIBarButtonItem(barButtonSystemItem: .FlexibleSpace, target: nil, action: nil)
        let title = NSLocalizedString("Delete List", comment: "The title of the button to delete the current list.")
        let deleteList = UIBarButtonItem(title: title, style: .Plain, target: self, action: #selector(ListViewController.deleteList(_:)))
        deleteList.tintColor = UIColor.redColor()

        if documentURL.lastPathComponent == AppConfiguraton.localizedTodayDocumentNameAndExtension {
            deleteList.enabled = false
        }

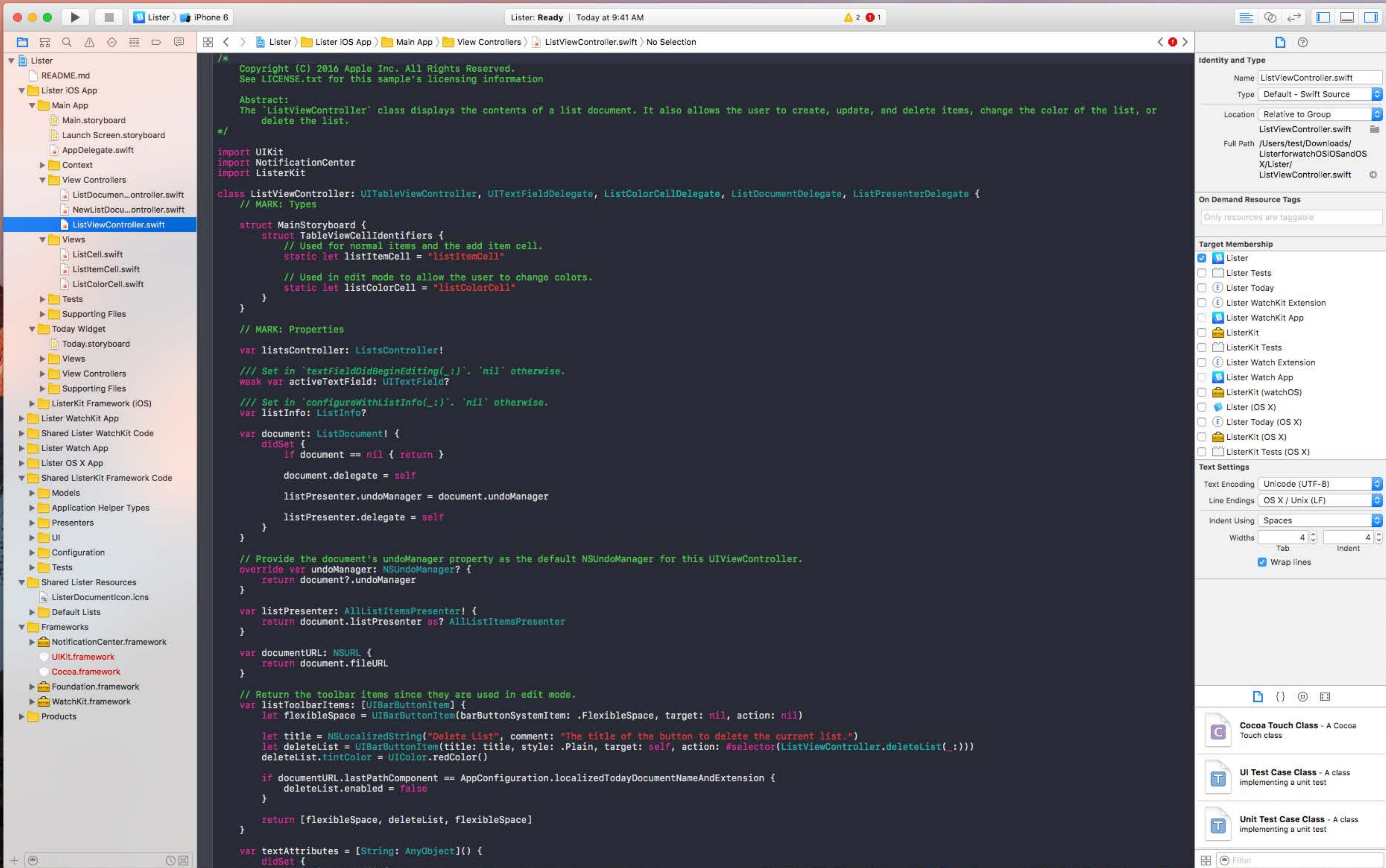
        return [flexibleSpace, deleteList, flexibleSpace]
    }

    var textAttributes = [String: AnyObject]() {
        didSet {

```

Identity and Type panel for 'ListViewController.swift'. It shows the file name, type (Default - Swift Source), location (Relative to Group), and full path. Below this is the 'Target Membership' section with a list of target applications and frameworks, including 'Lister', 'Lister Tests', 'Lister WatchKit Extension', 'Lister WatchKit App', 'ListerKit', 'ListerKit Tests', 'Lister Watch Extension', 'Lister Watch App', 'ListerKit (watchOS)', 'ListerKit (iOS X)', 'Lister Today (iOS X)', and 'ListerKit (iOS X)'. The 'Text Settings' section is also visible, showing options for text encoding (Unicode (UTF-8)), line endings (OS X / Unix (LF)), indenting (Spaces), width (4), and wrap lines (checked).





```
/*
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 Abstract:
 The 'ListViewController' class displays the contents of a list document. It also allows the user to create, update, and delete items, change the color of the list, or
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    var listsController: ListsController!

    /// Set in 'textFieldDidBeginEditing(_):'. 'nil' otherwise.
    weak var activeTextField: UITextField?

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    var listInfo: ListInfo?

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        let deleteList = UIBarButtonItem(title: title, style: .Plain, target: self, action: #selector(ListViewController.deleteList(_)))
        deleteList.tintColor = UIColor.redColor()

        if documentURL.lastPathComponent == AppConfigurion.localizedTodayDocumentNameAndExtension {
            deleteList.enabled = false
        }

        return [flexibleSpace, deleteList, flexibleSpace]
    }

    var textAttributes = [String: AnyObject]() {
        didSet {

```

Identity and Type

Name: ListViewController.swift
Type: Default - Swift Source
Location: Relative to Group
Full Path: /Users/test/Downloads/ListerforwatchOSiOSandOSX/Lister/ListViewController.swift

On Demand Resource Tags

Only resources are taggable

Target Membership

- Lister
- Lister Tests
- Lister Today
- Lister WatchKit Extension
- Lister WatchKit App
- ListerKit
- ListerKit Tests
- Lister Watch Extension
- Lister Watch App
- ListerKit (watchOS)
- Lister (OS X)
- Lister Today (OS X)
- ListerKit (OS X)
- ListerKit Tests (OS X)

Text Settings

Text Encoding: Unicode (UTF-8)
Line Endings: OS X / Unix (LF)
Indent Using: Spaces
Widths: Tab: 4, Indent: 4
 Wrap lines

Cocoa Touch Class - A Cocoa Touch class

UI Test Case Class - A class implementing a unit test

Unit Test Case Class - A class implementing a unit test

San Francisco

Applied to all our platforms

New SF Mono family

Terminology

Premise

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Pacific Heights

Tuesday 10:00AM

Internationalization Best Practices

Mission

Tuesday 9:00AM

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Text

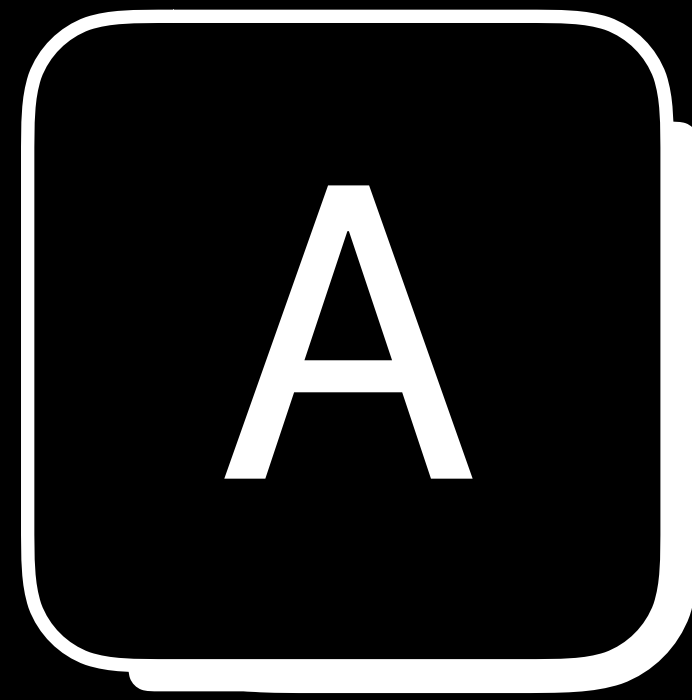
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Text

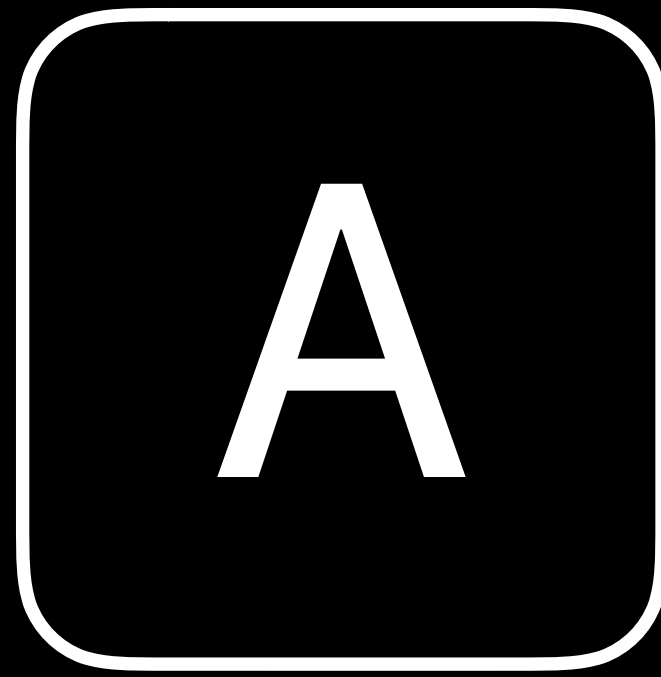
A



Character

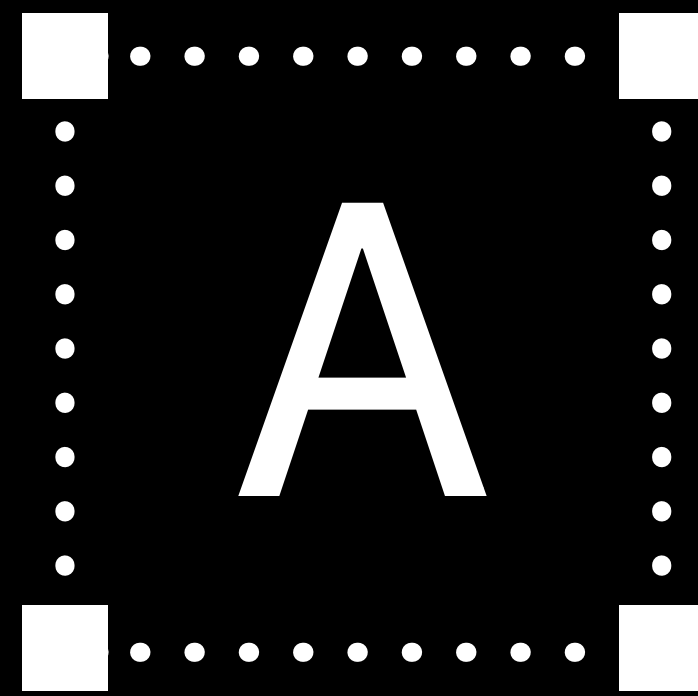


Character

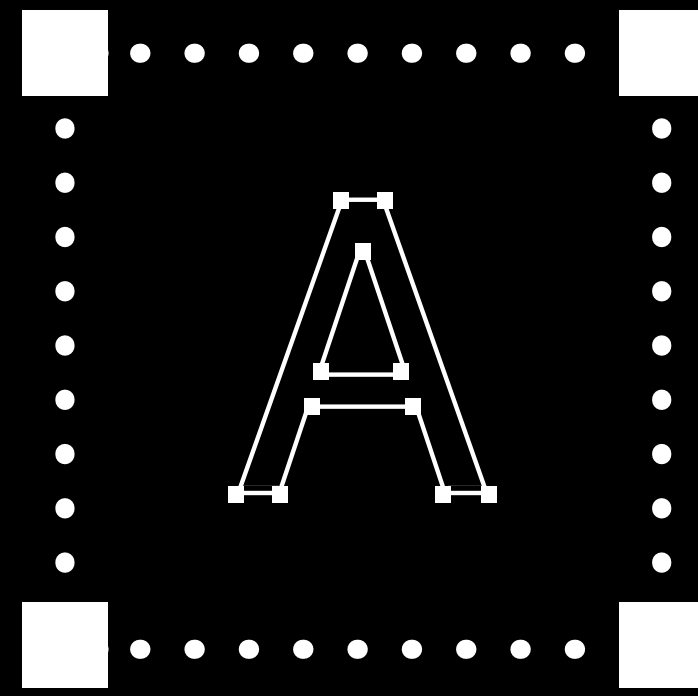


U+0041

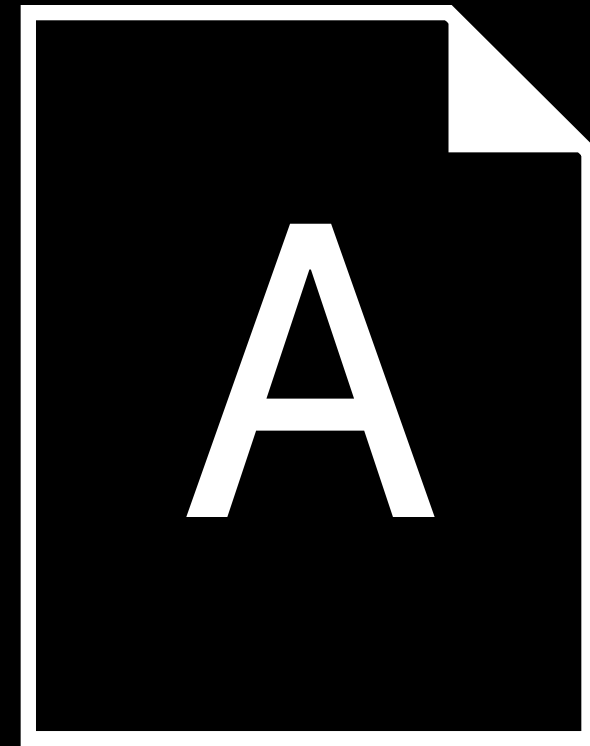
Glyph



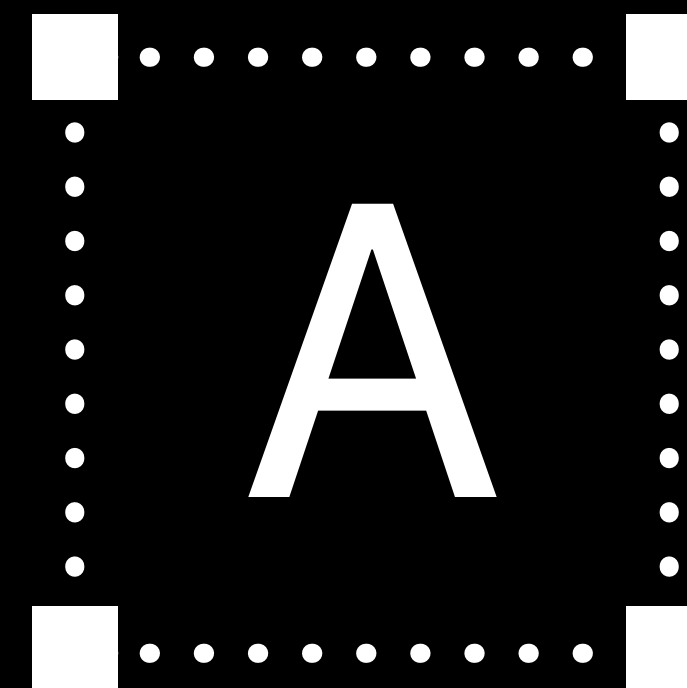
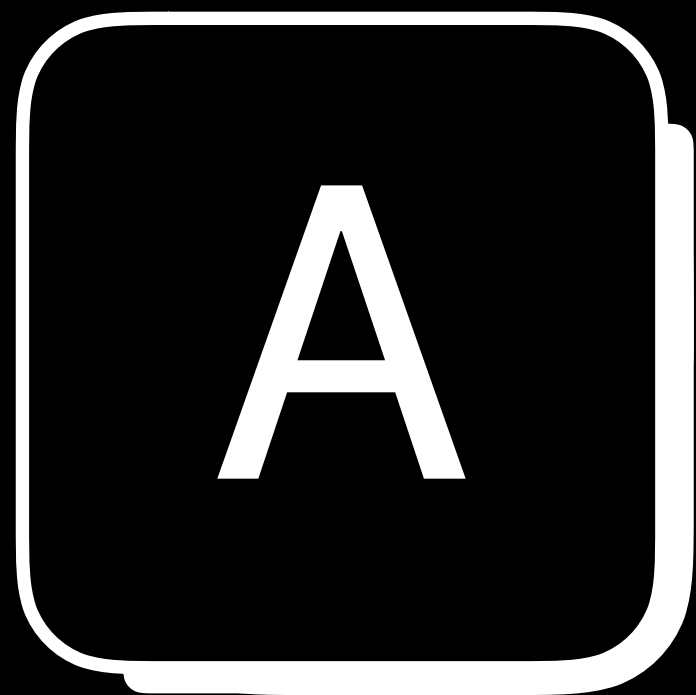
Glyph



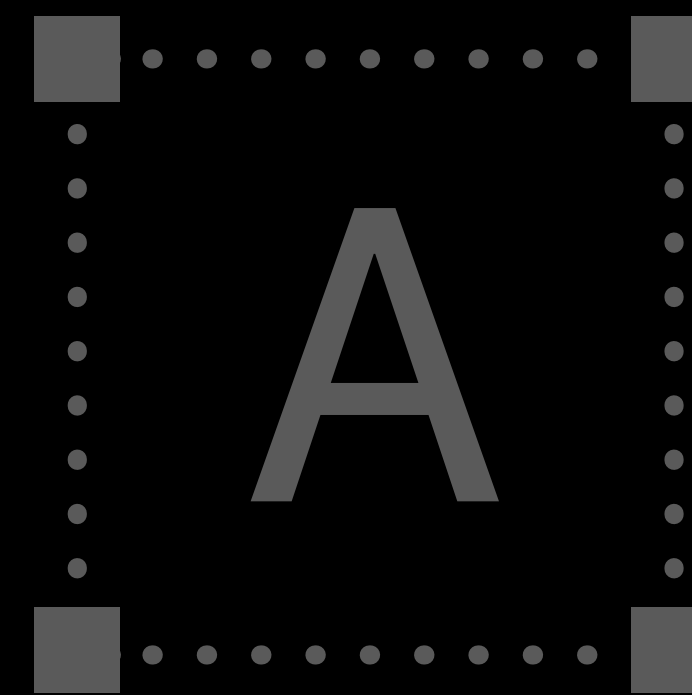
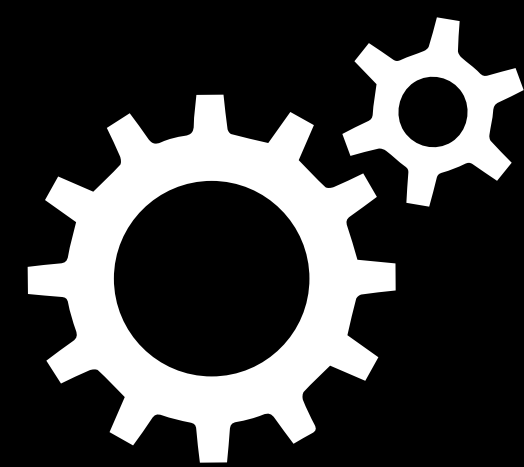
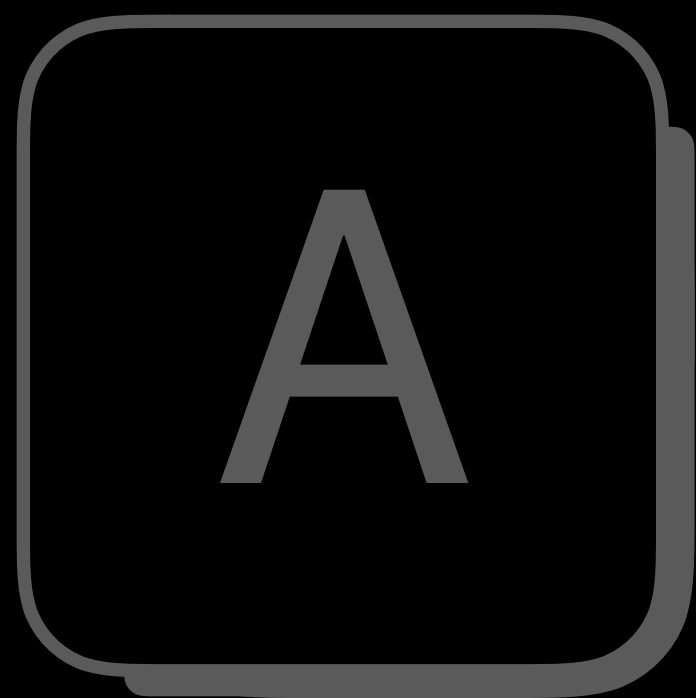
Font



Feature

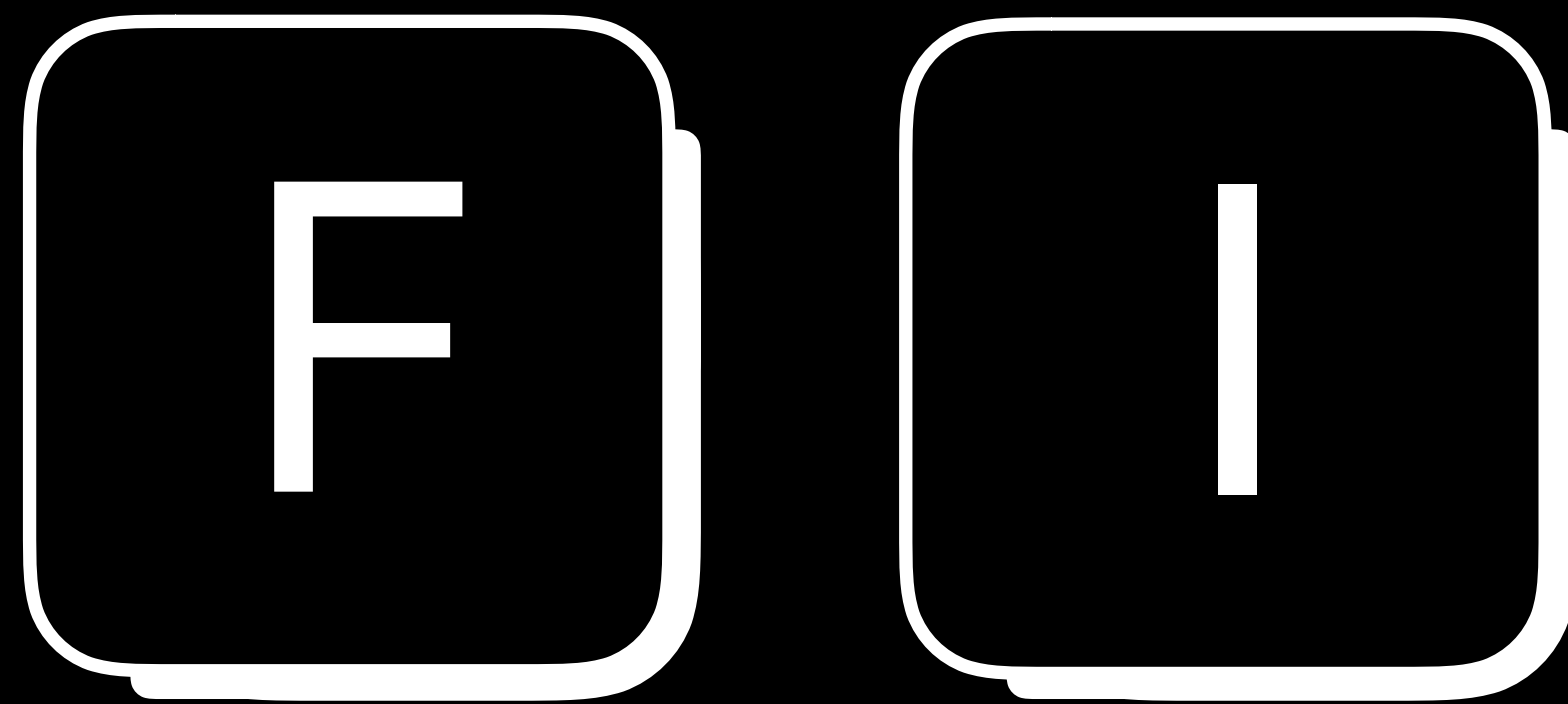


Feature



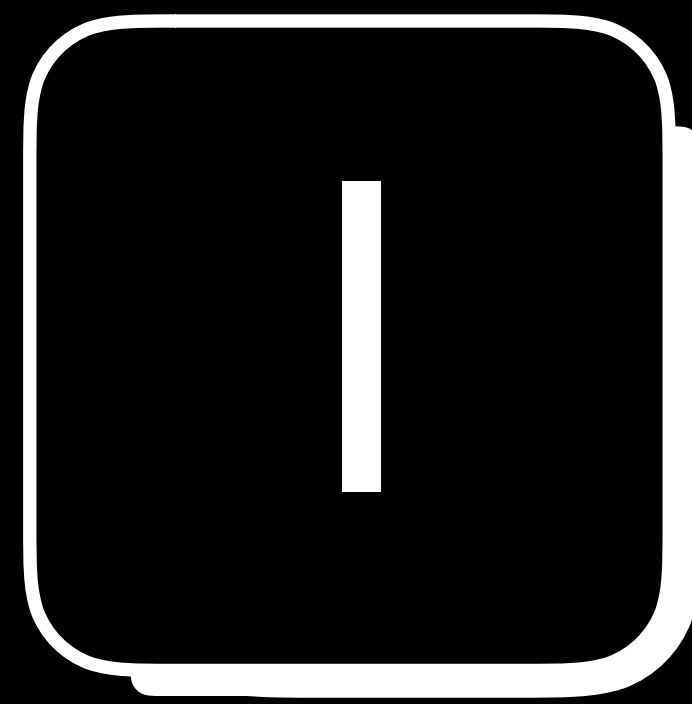
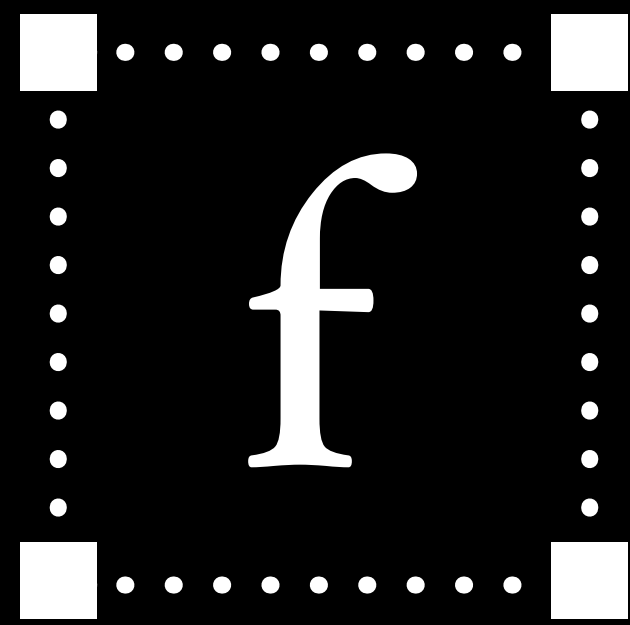
Feature

Automatic



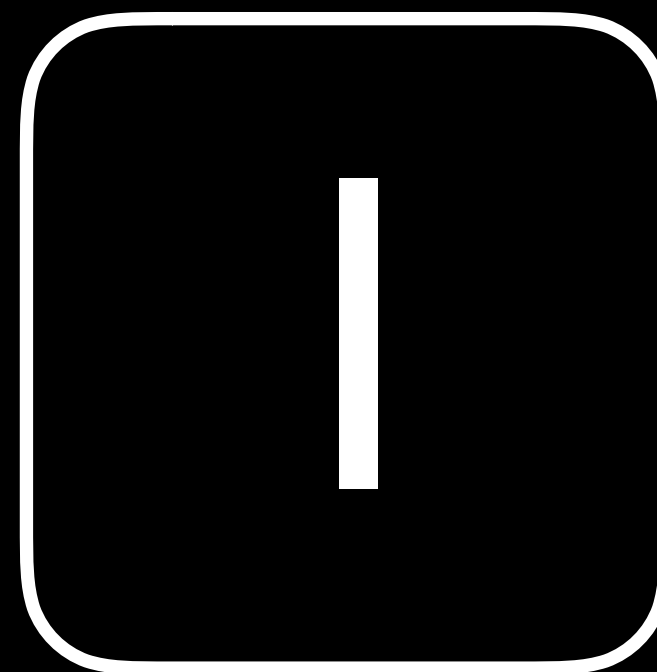
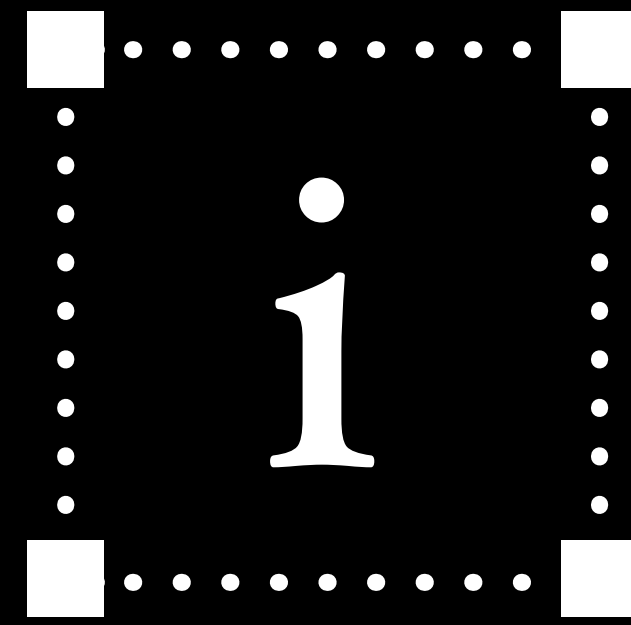
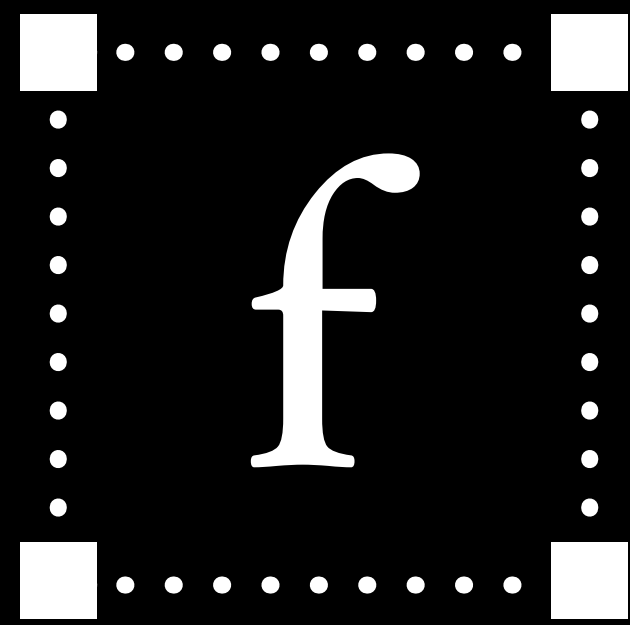
Feature

Automatic



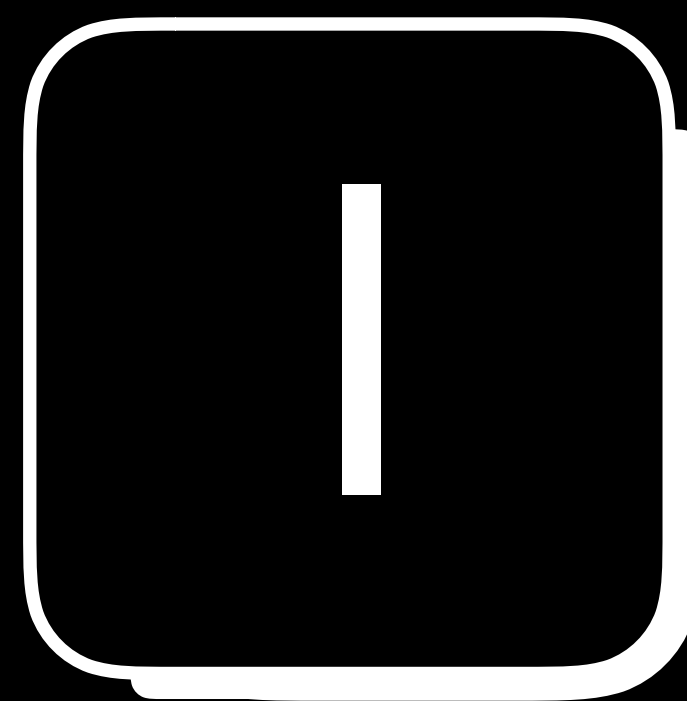
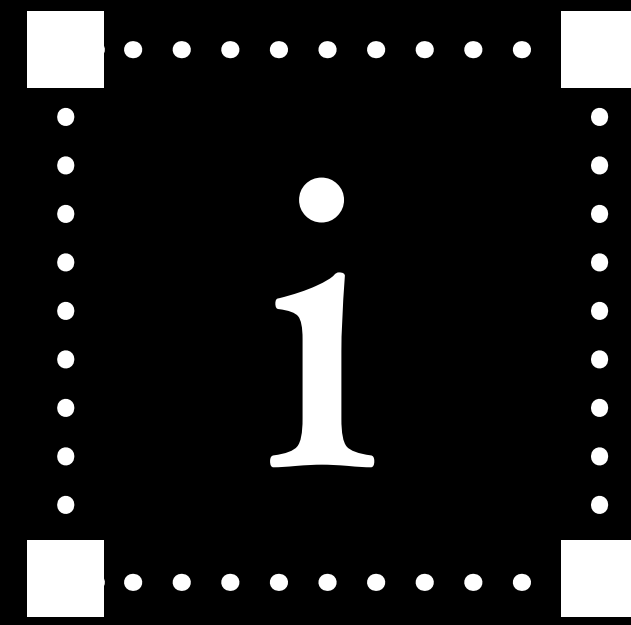
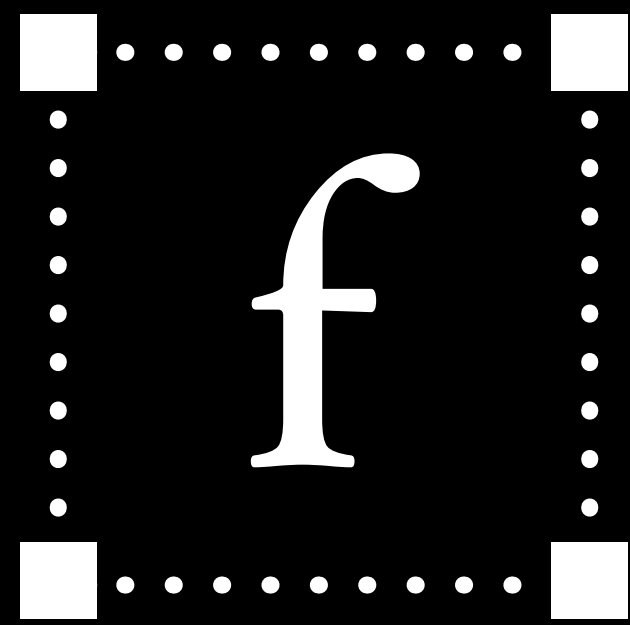
Feature

Automatic



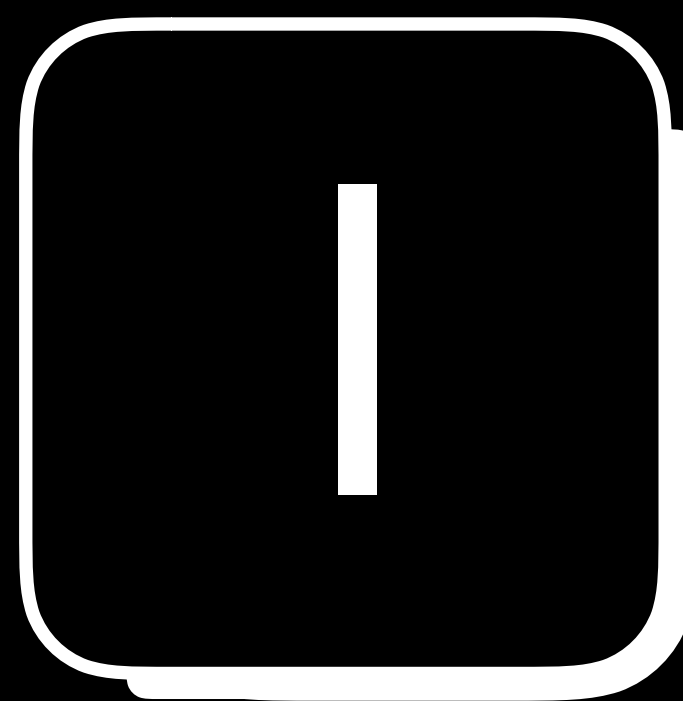
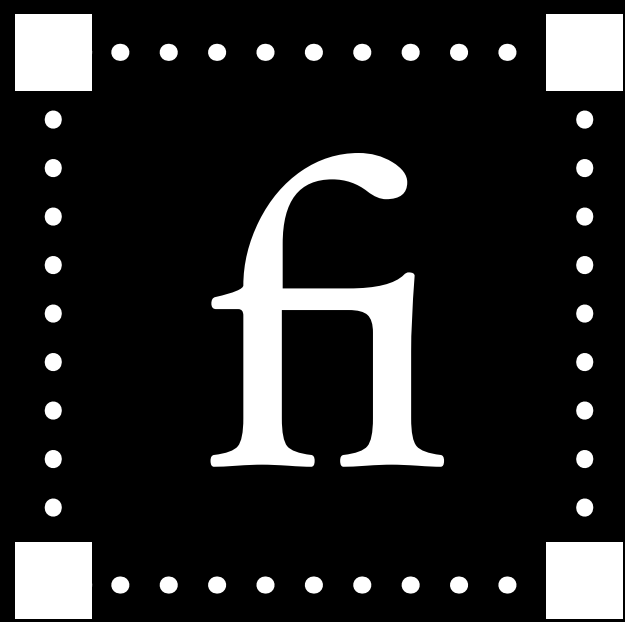
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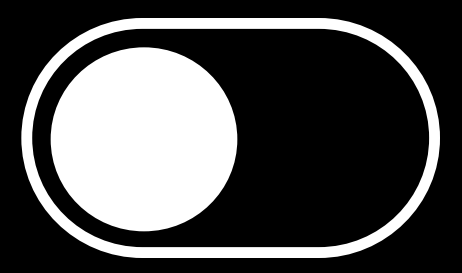
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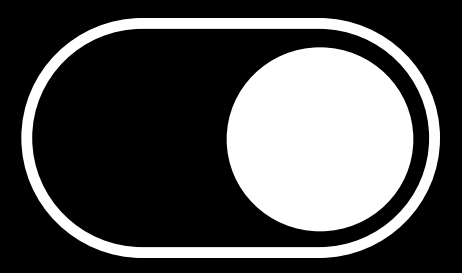
Feature

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Feature

Optional



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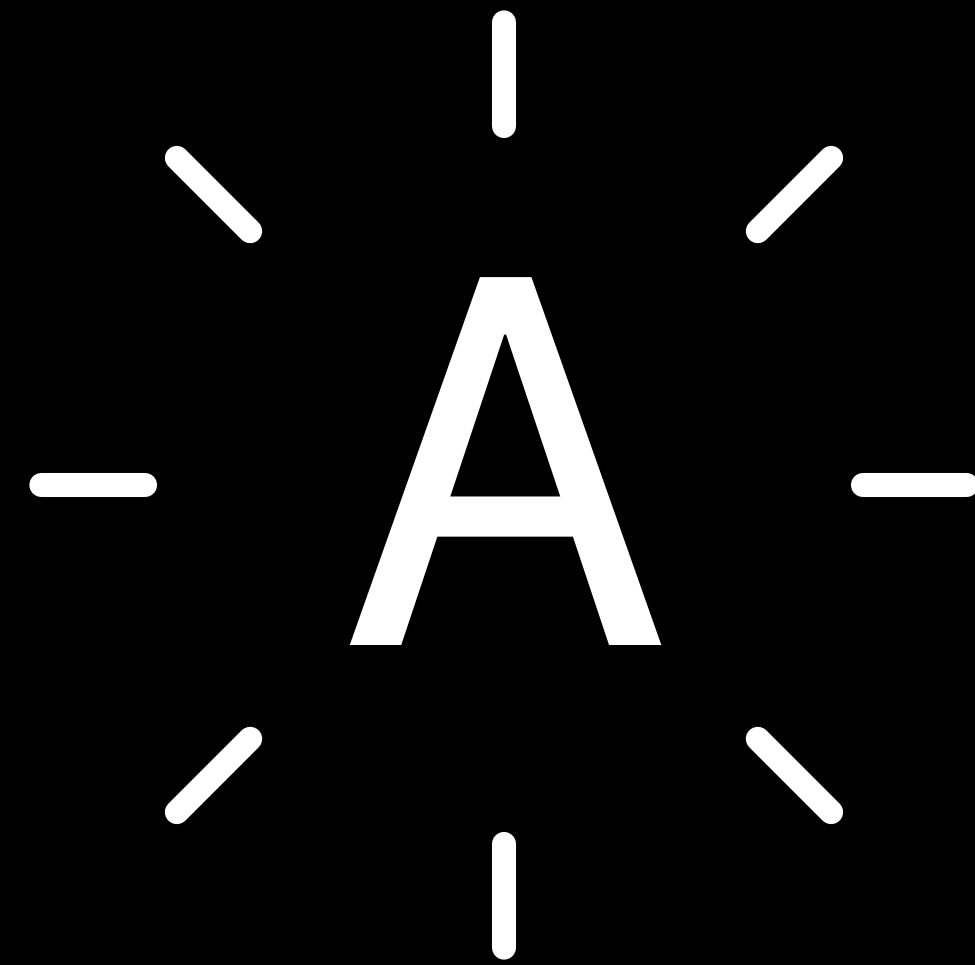
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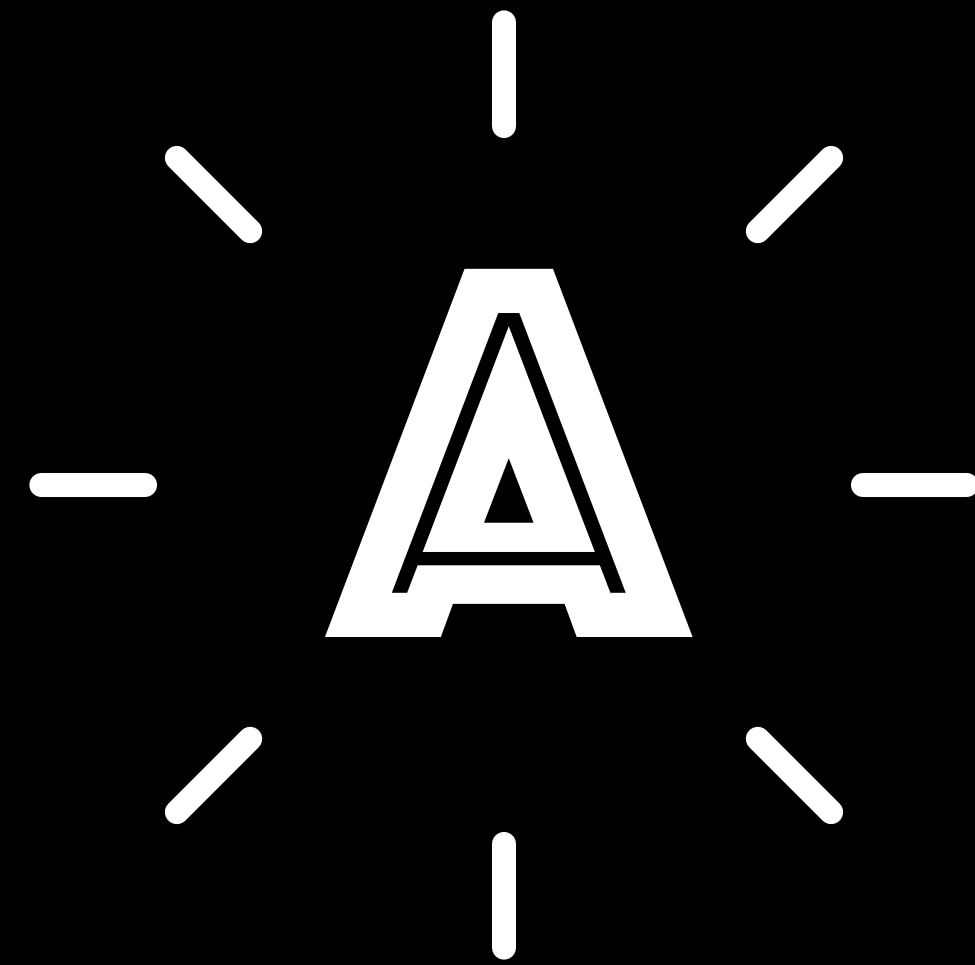
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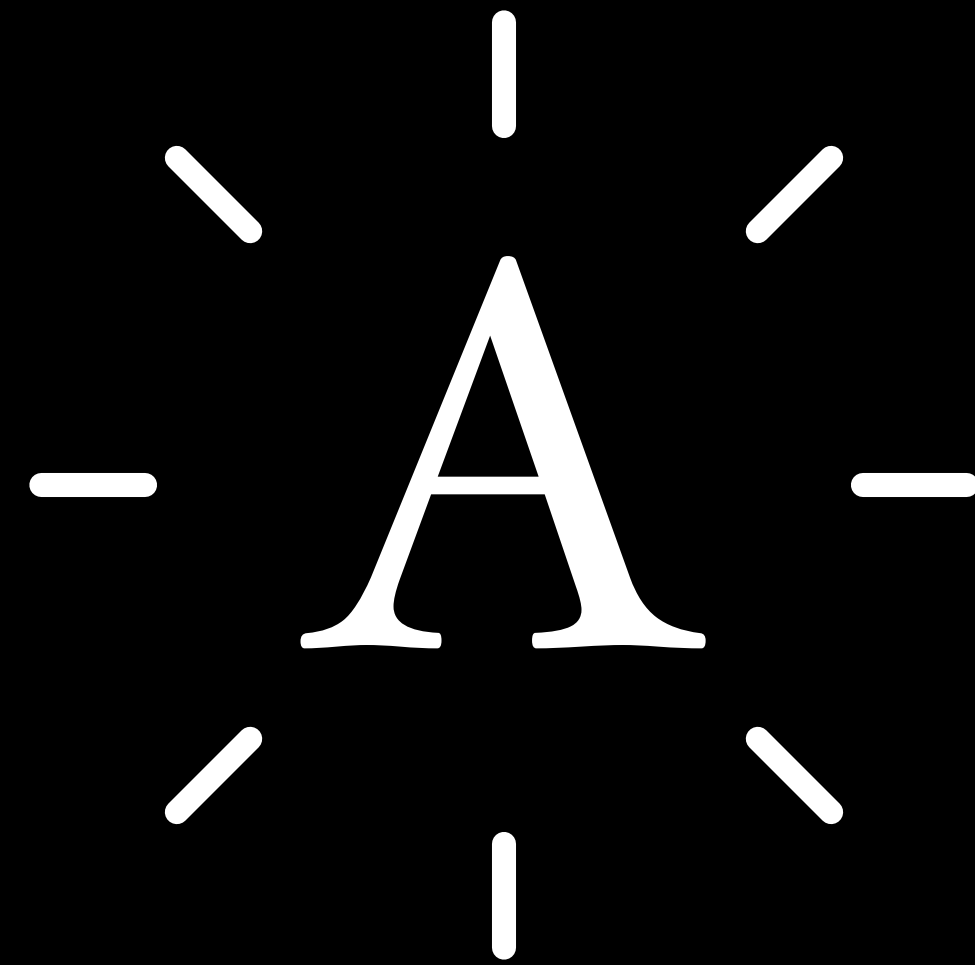
Typeface



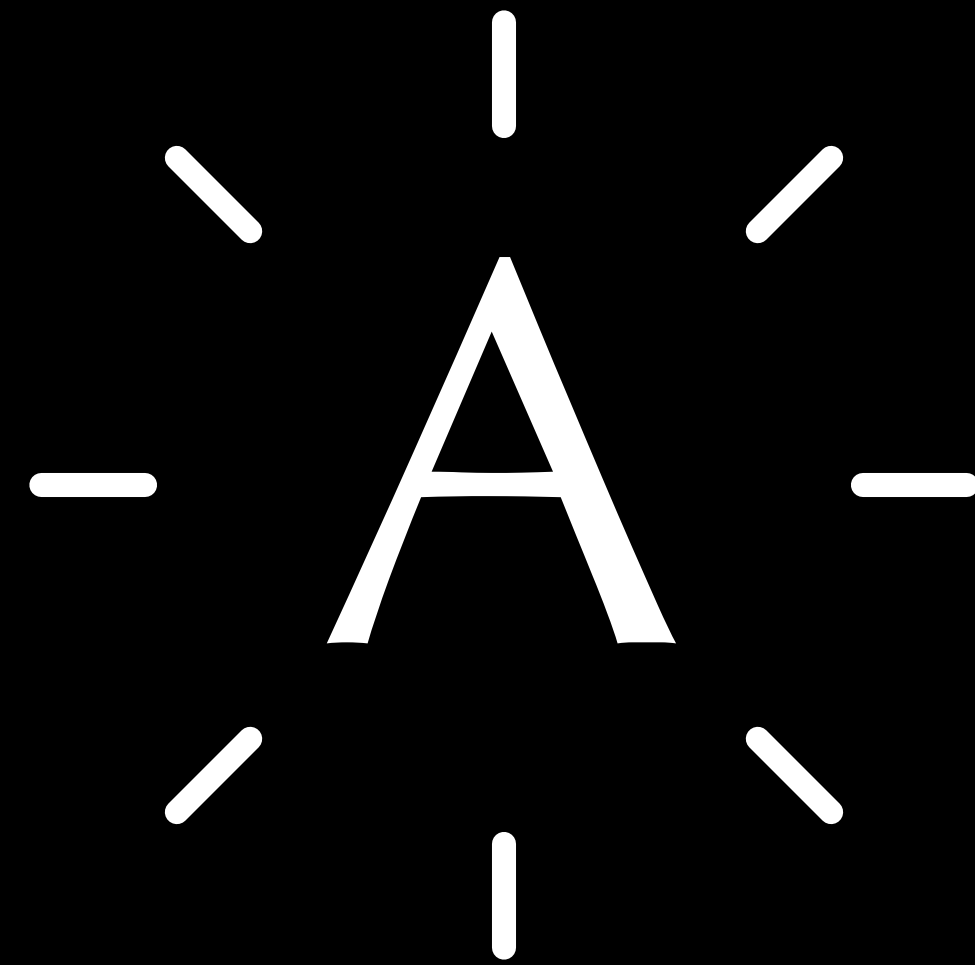
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Typeface



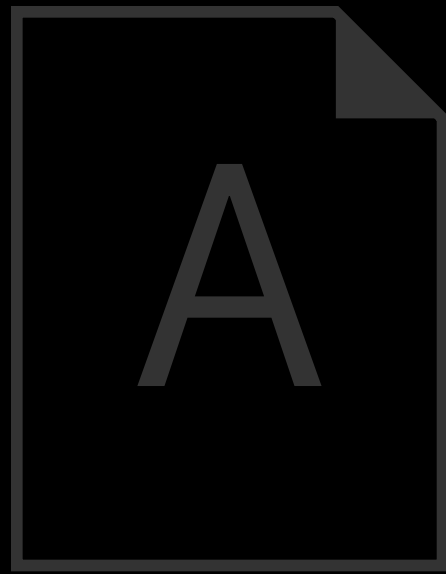
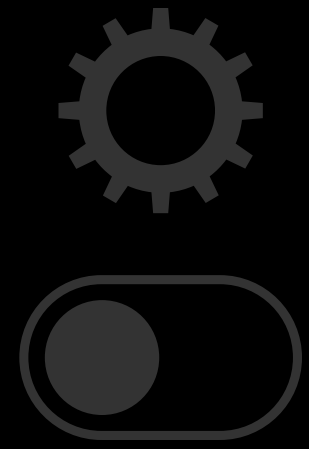
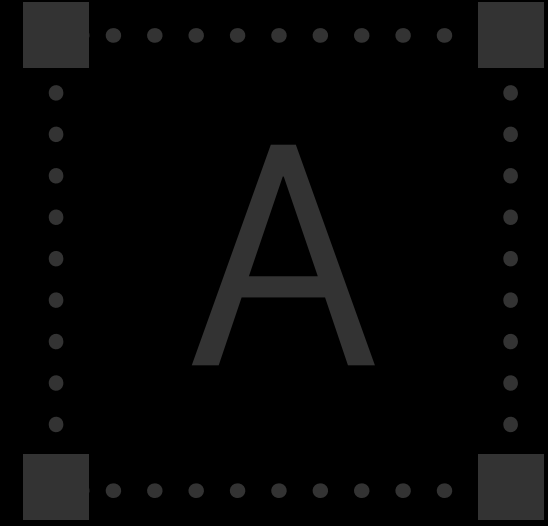
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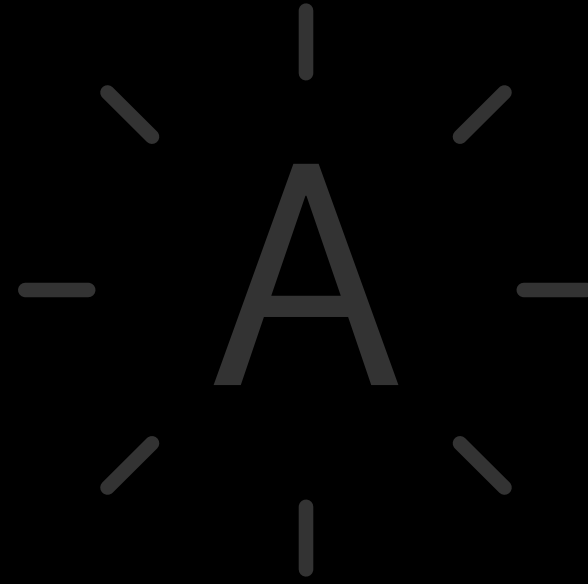
Typography



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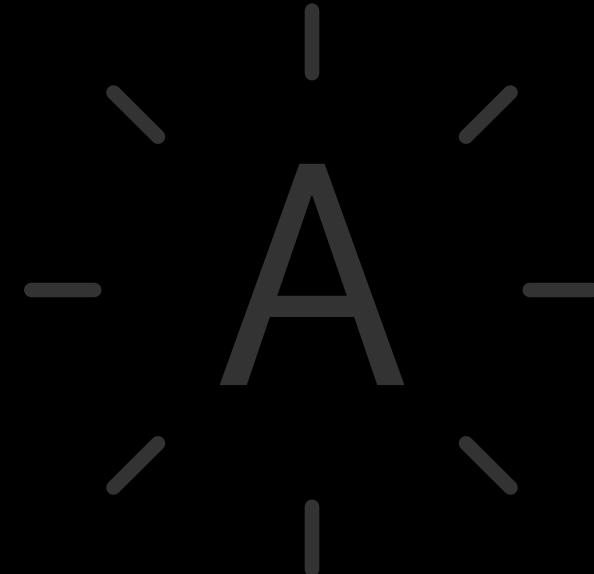
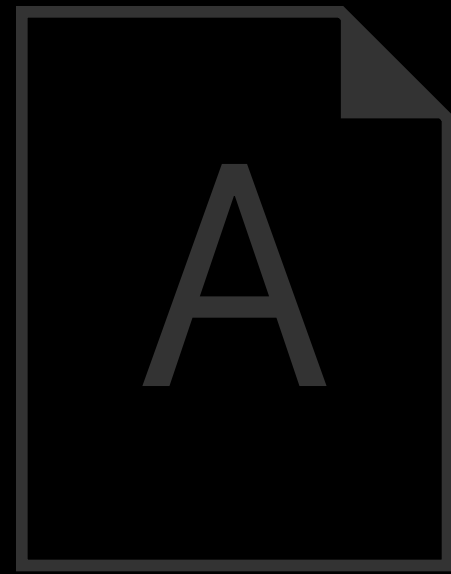
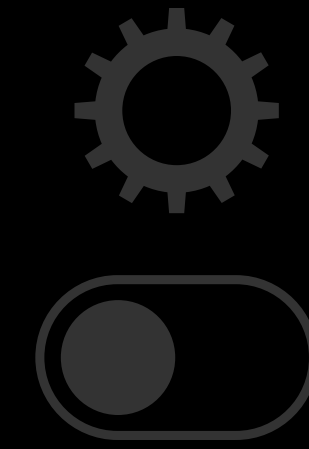
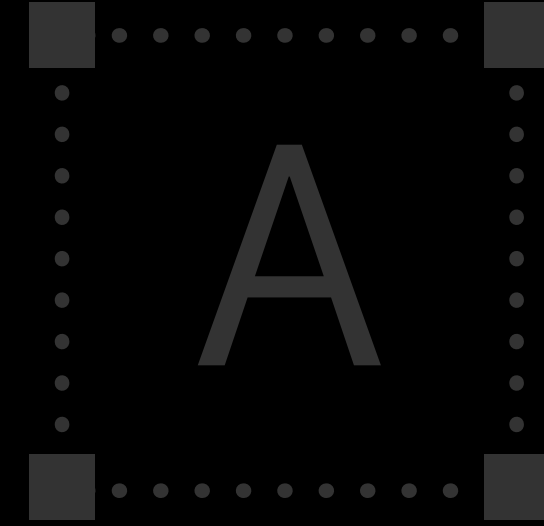
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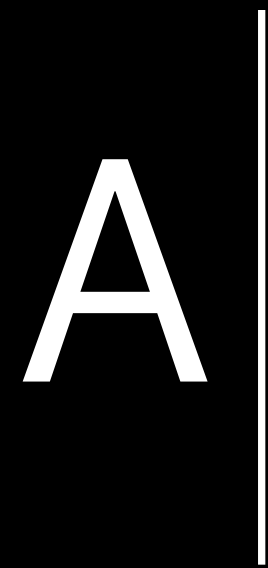


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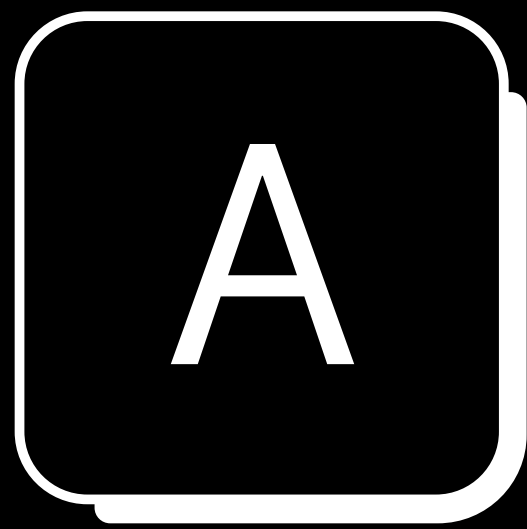
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Text

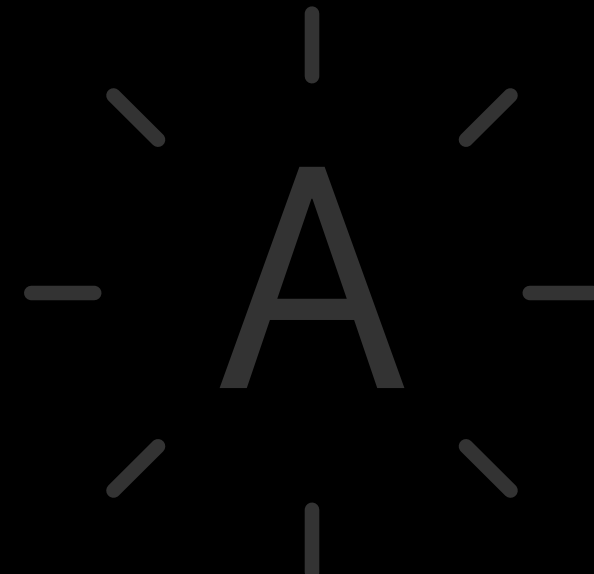
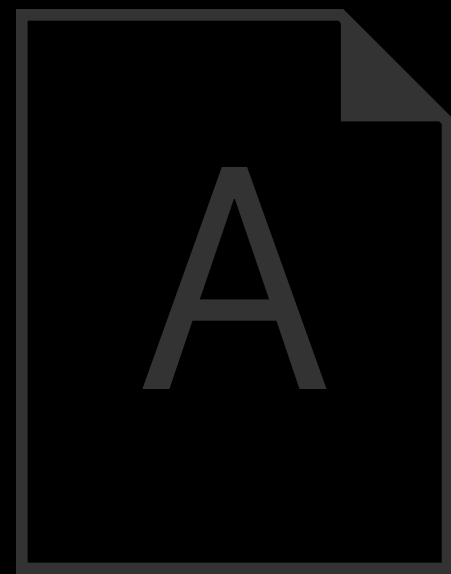
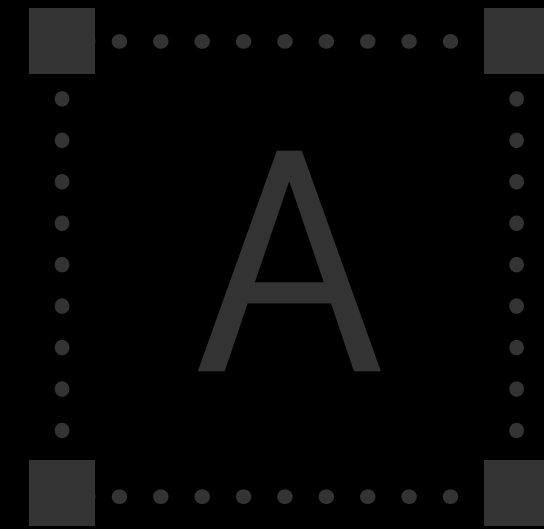


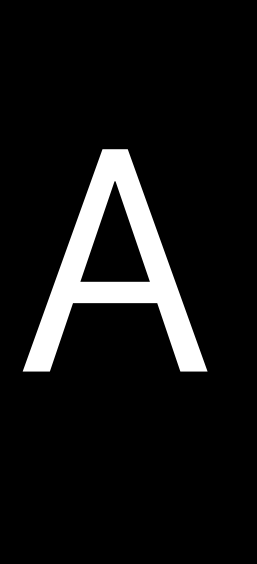


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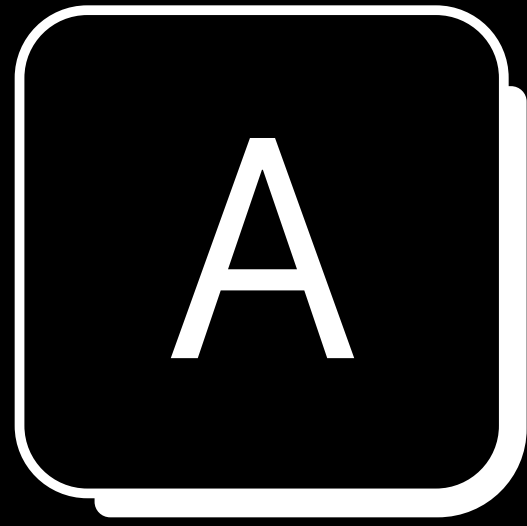


Character

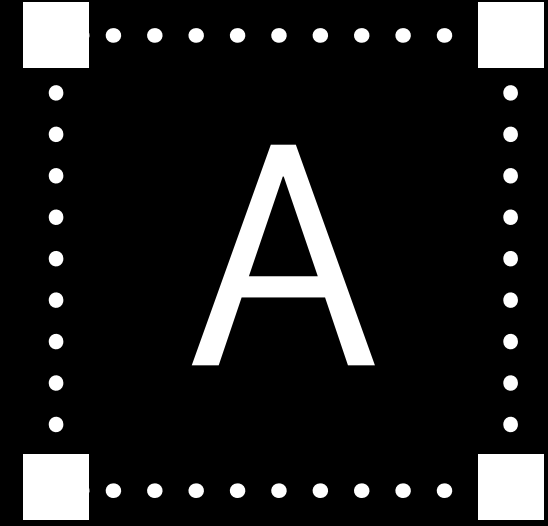




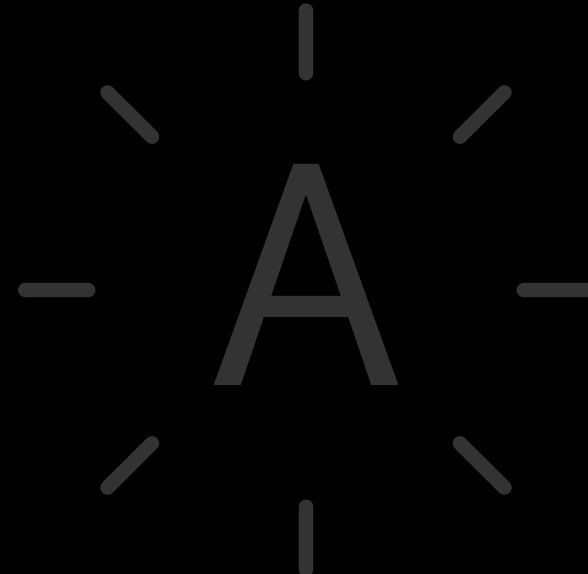
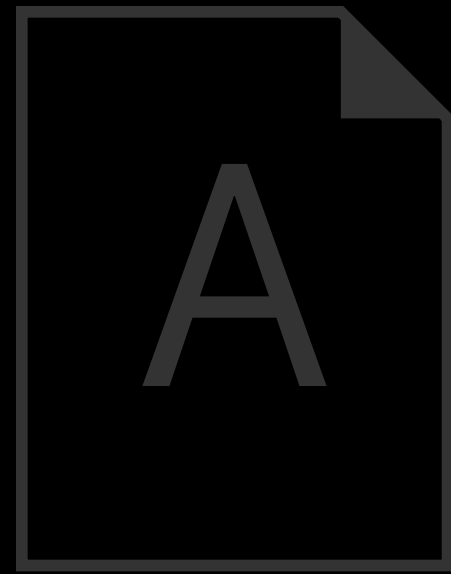
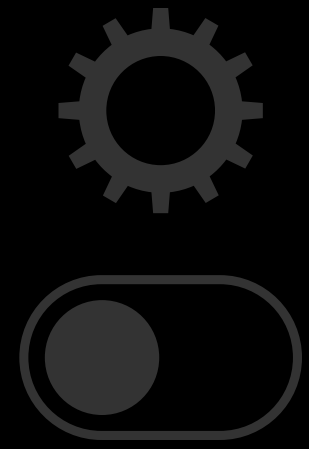
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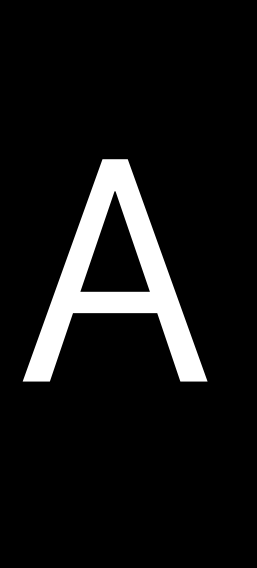


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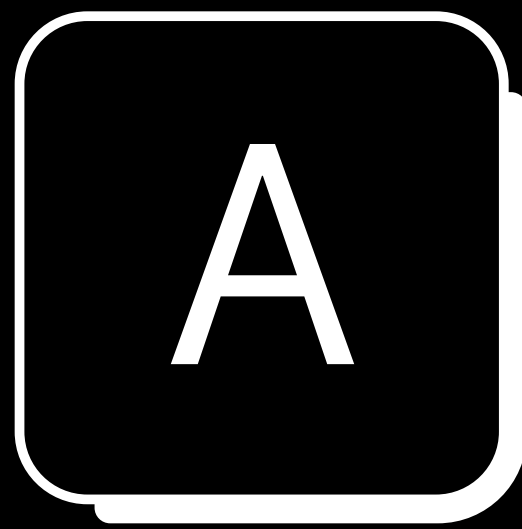


Glyph

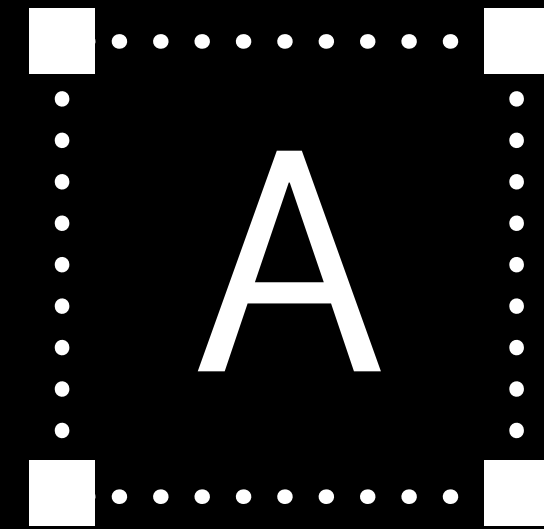




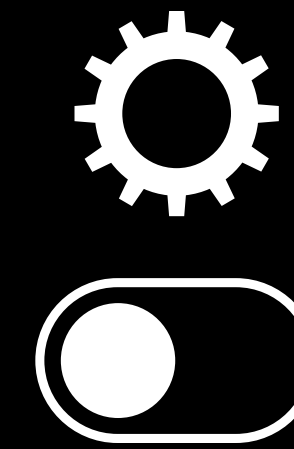
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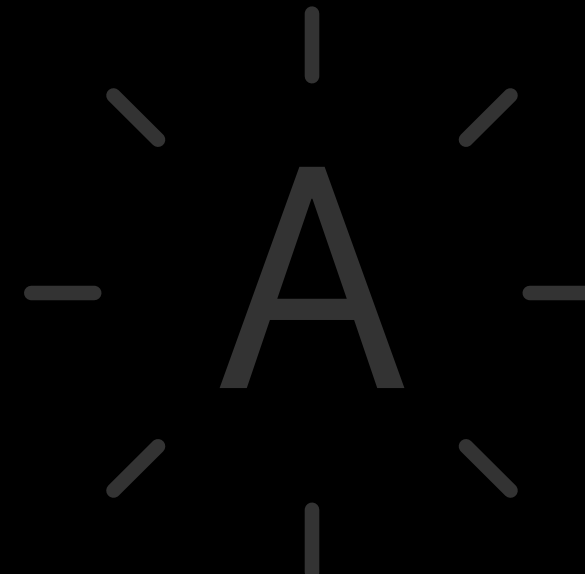
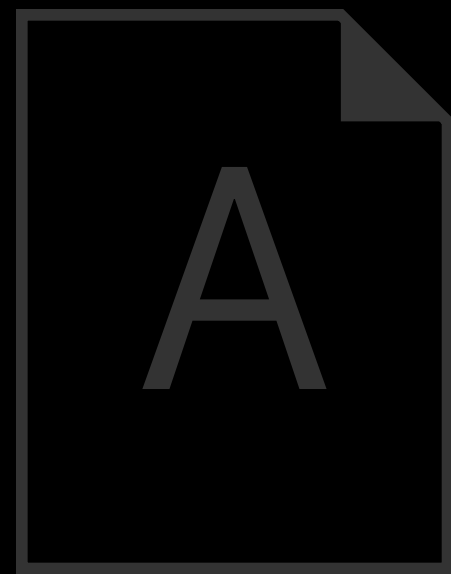
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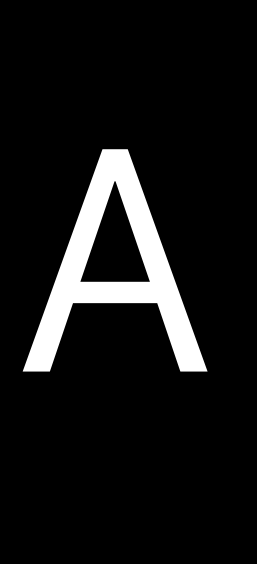


Glyph

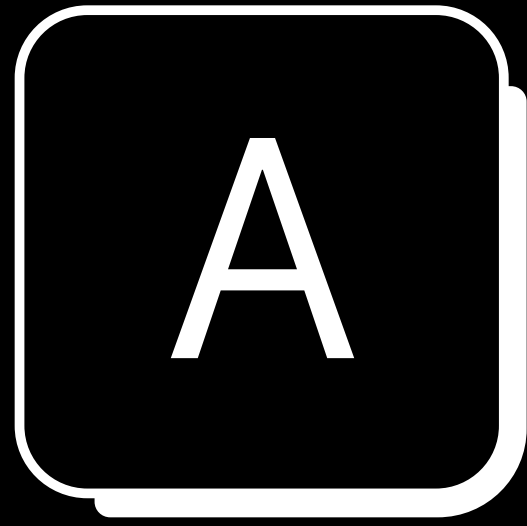


Feature

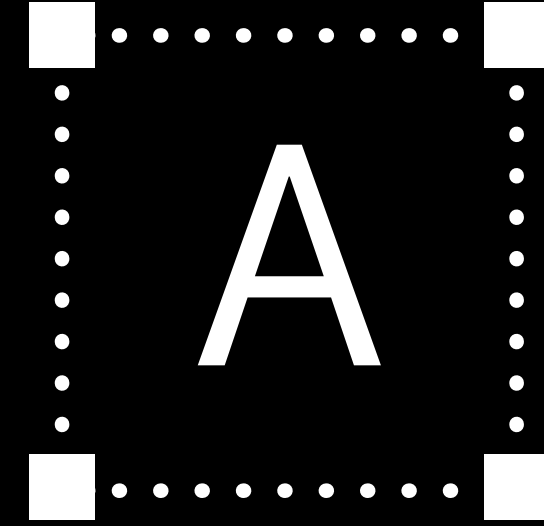




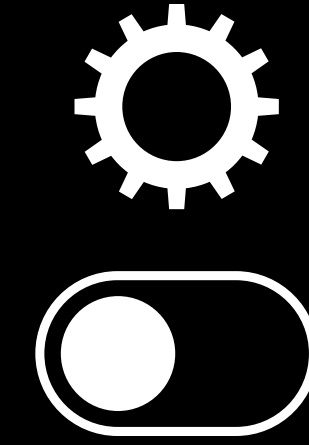
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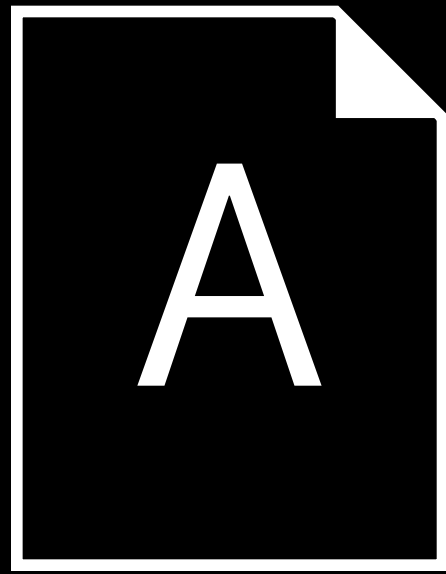
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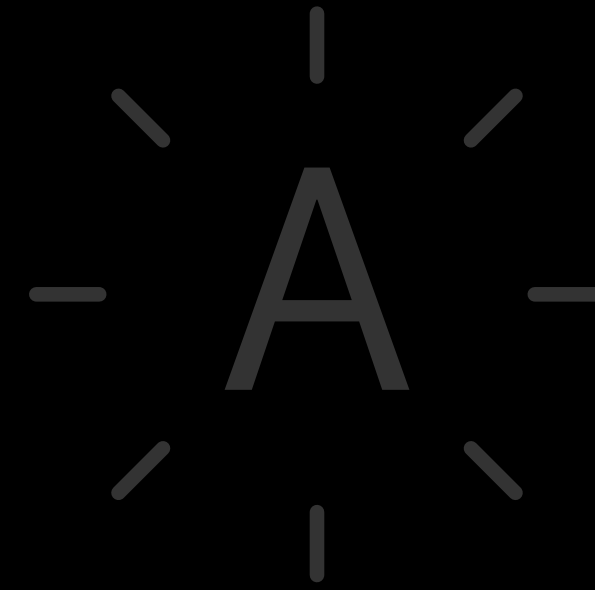
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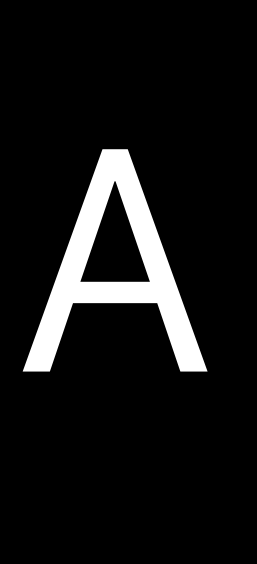


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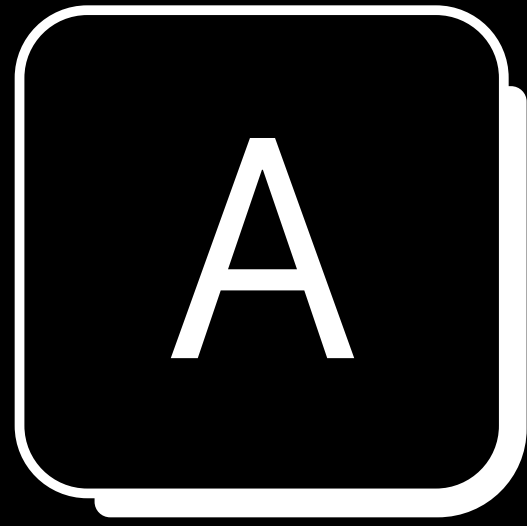


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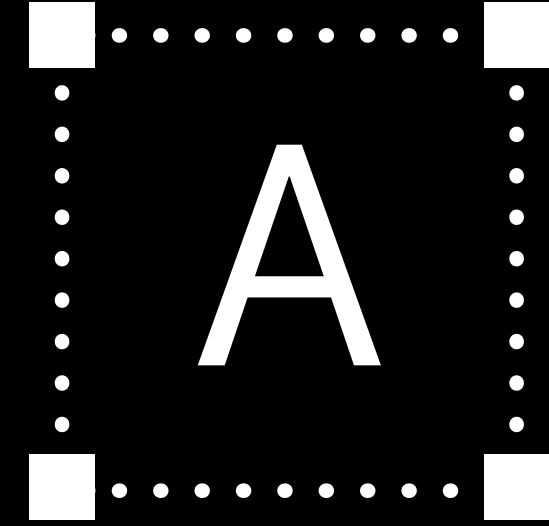




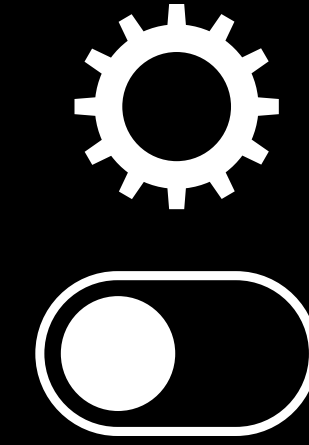
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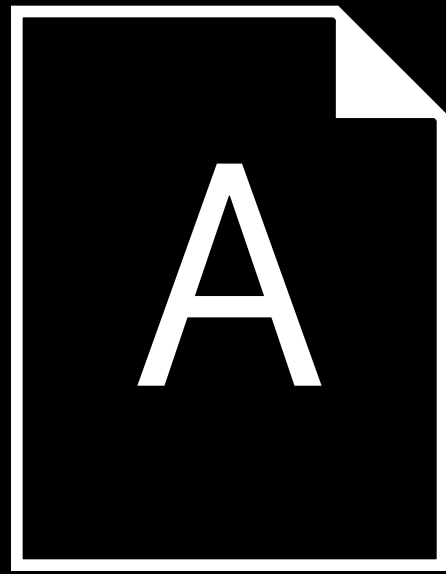
Character



Glyph



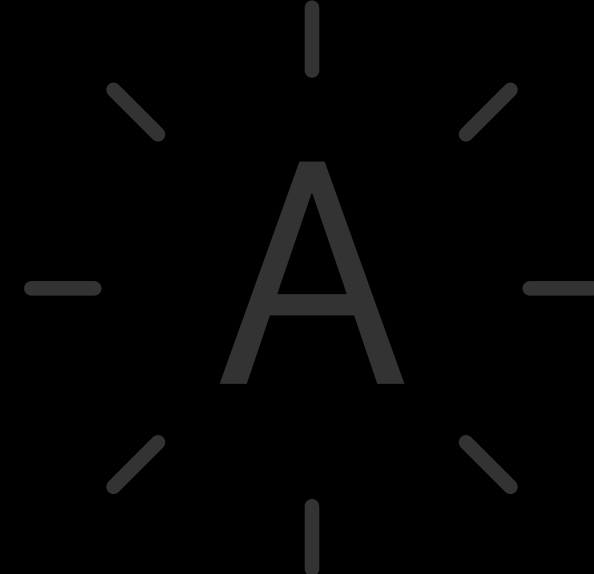
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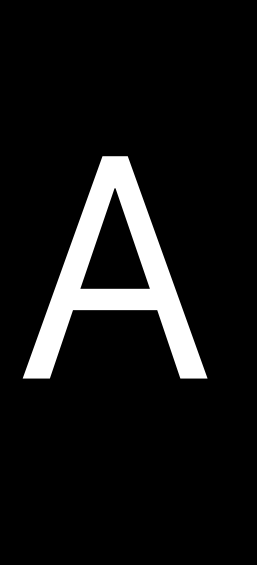


Font



Style

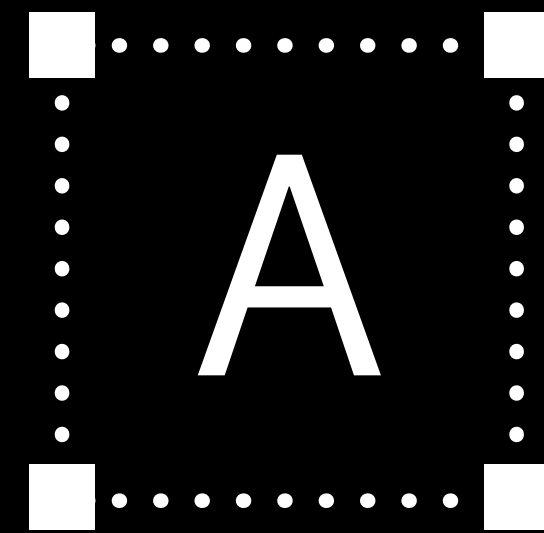




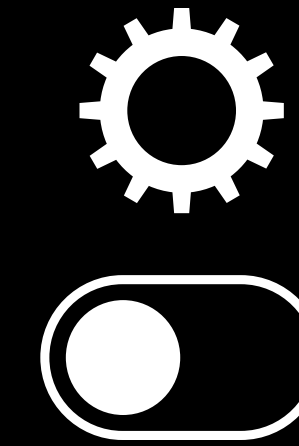
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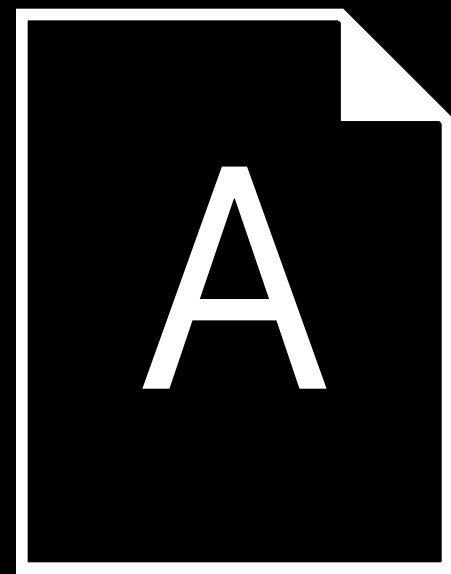
Character



Glyph



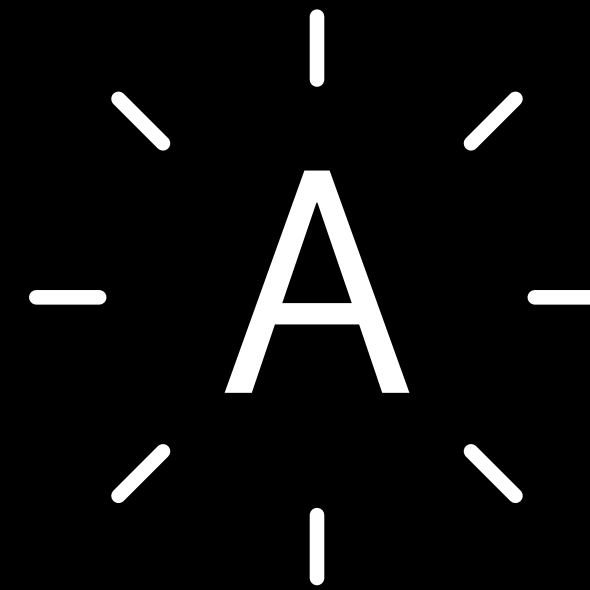
Feature



Font

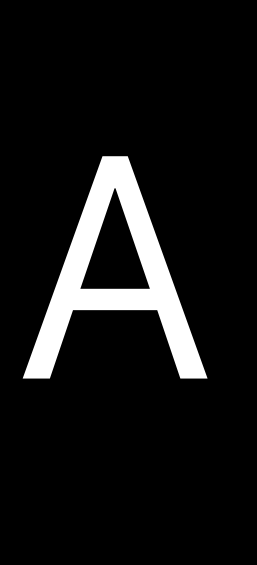


Style



Typeface

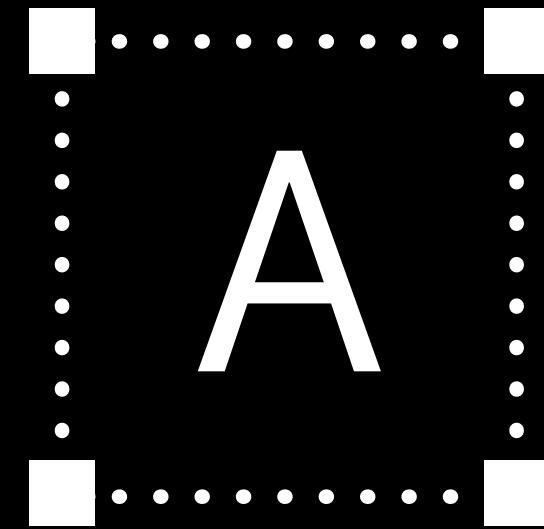




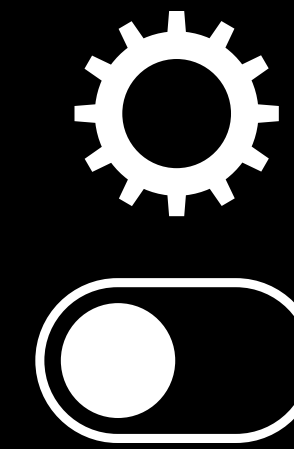
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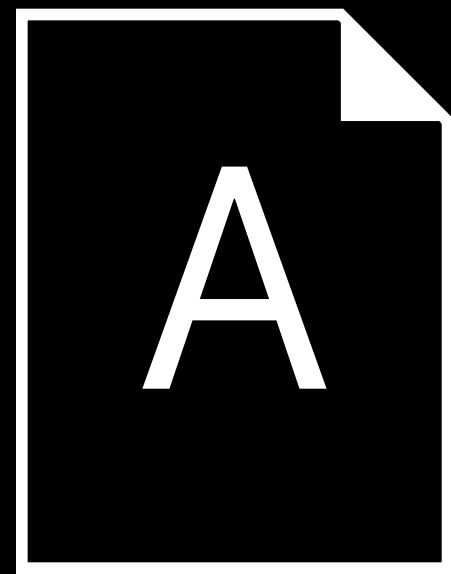
Character



Glyph



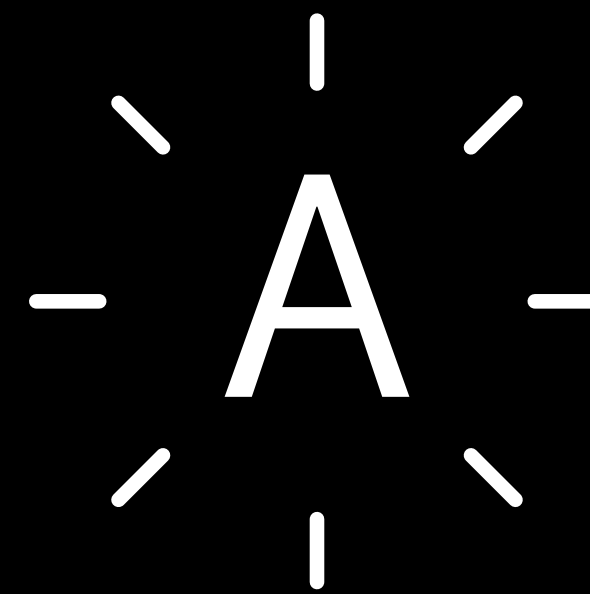
Feature



Font



Style



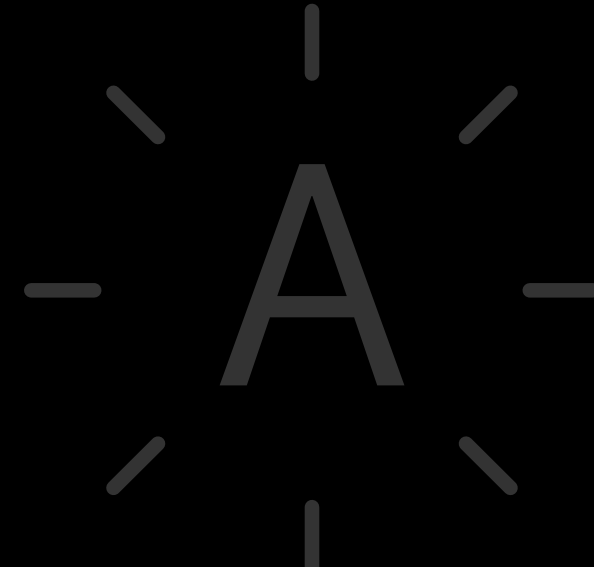
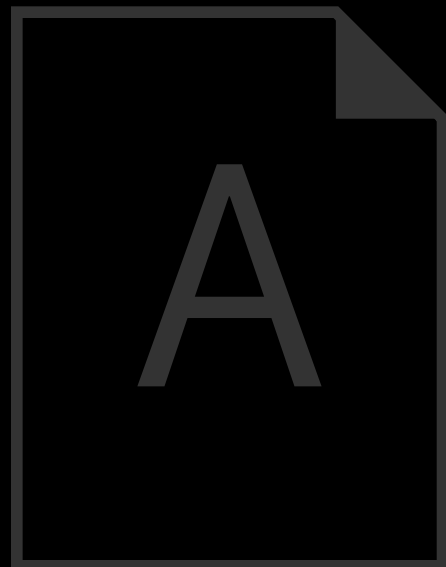
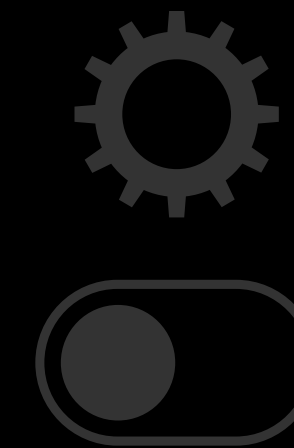
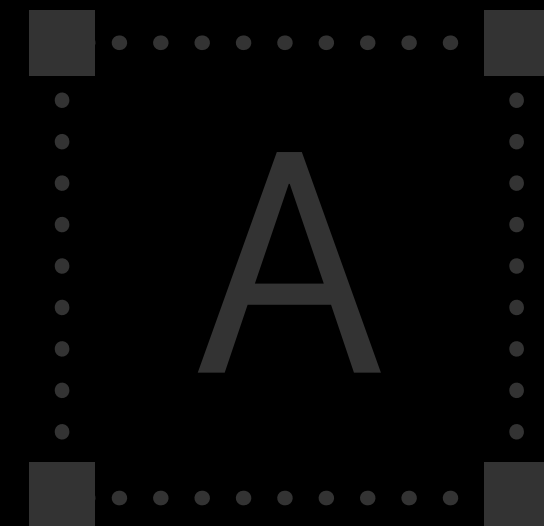
Typeface



Typography

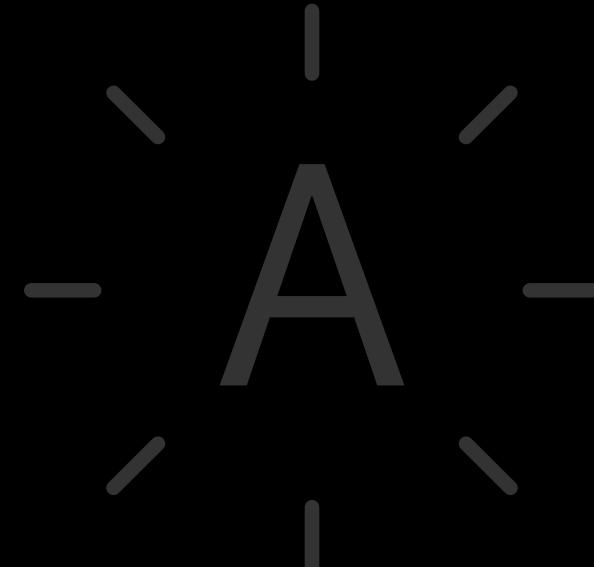
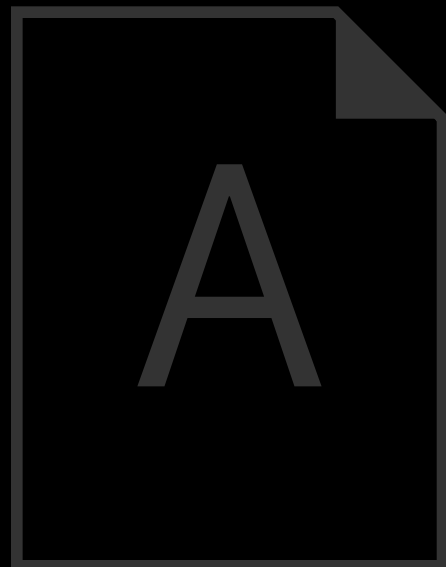
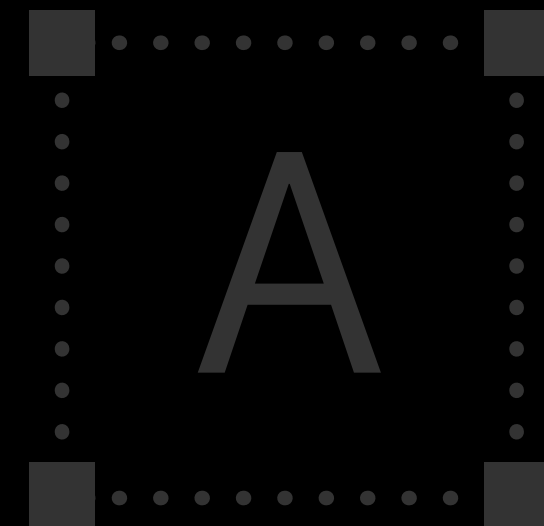
Writers, Editors

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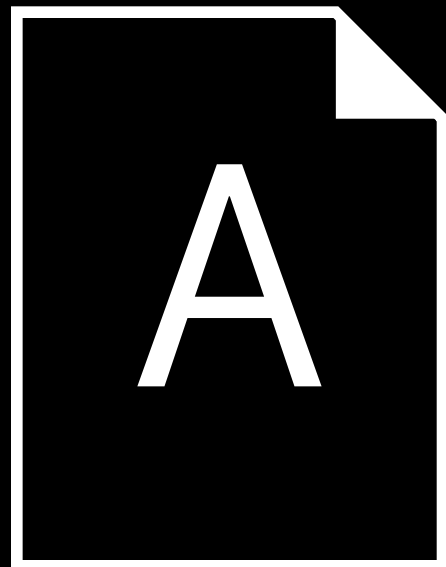
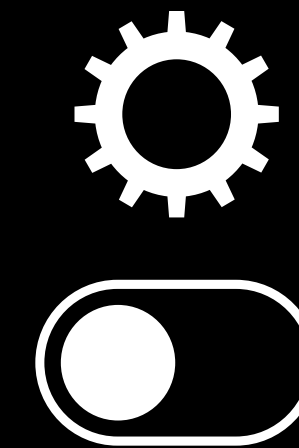
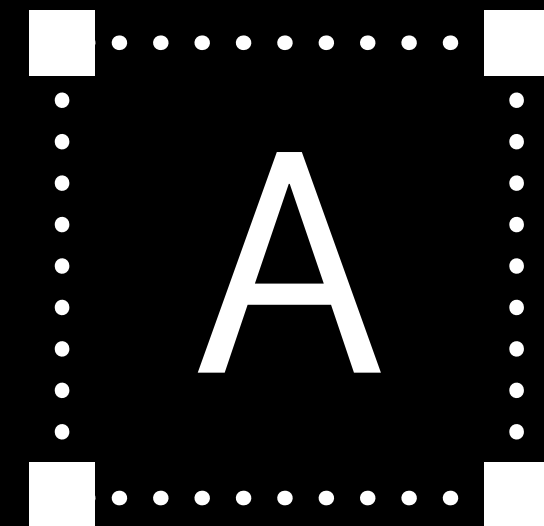
Unicode

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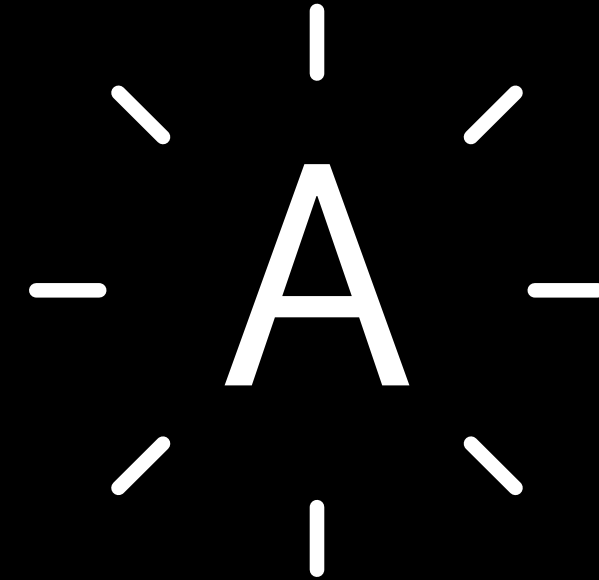


Type Designers, Font Manufacturers

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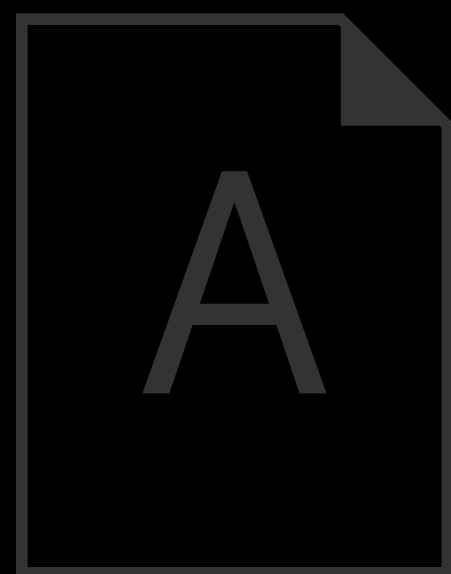
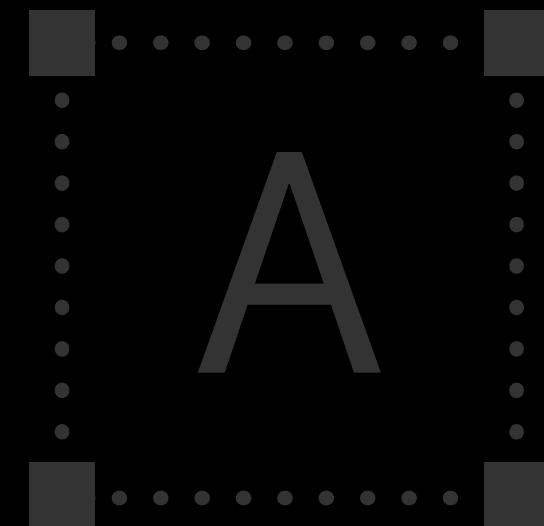
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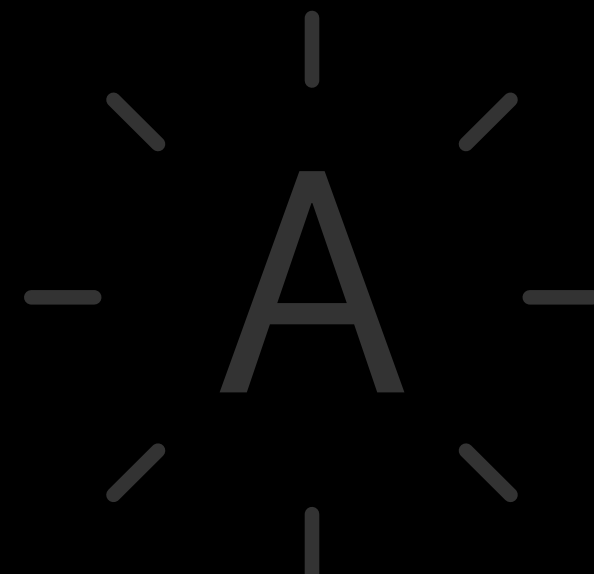
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Typographers

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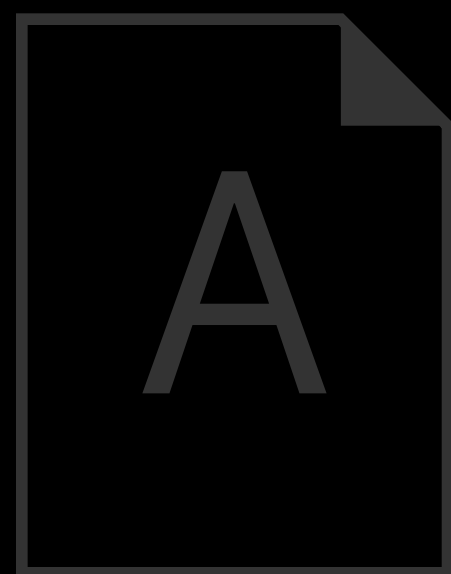
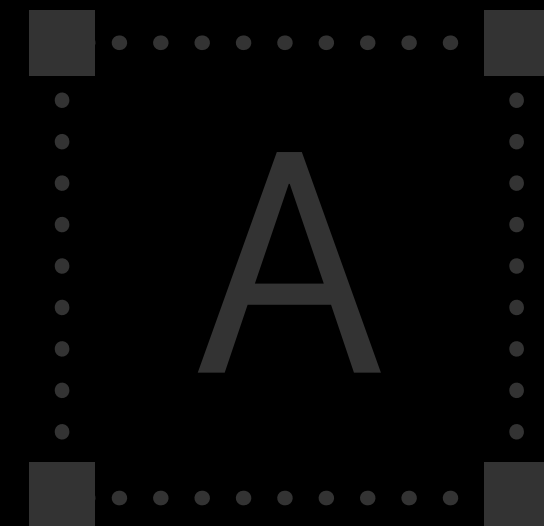


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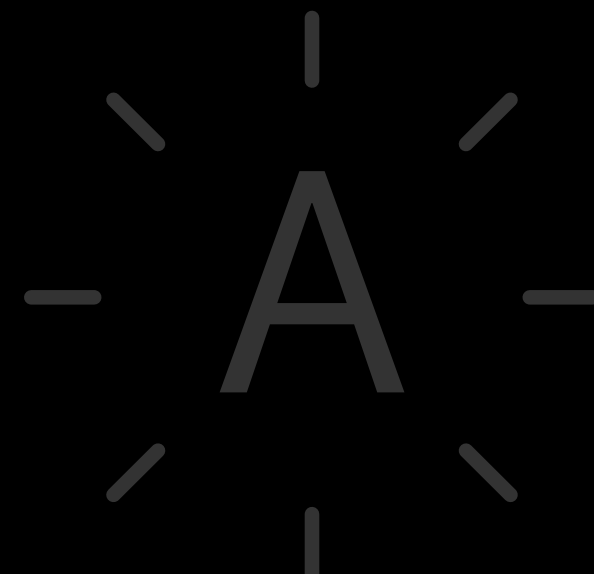
Typographers = You

Typographers

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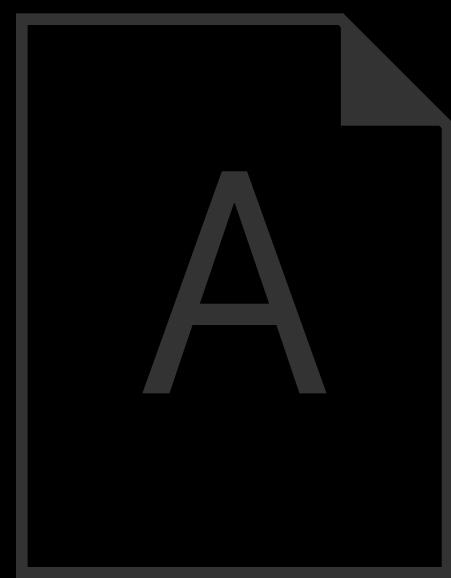
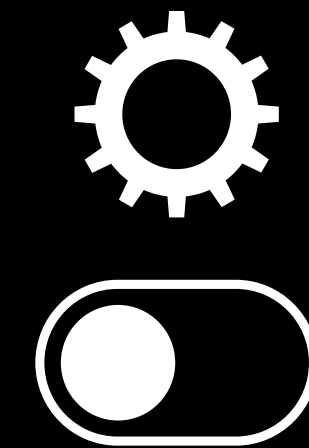
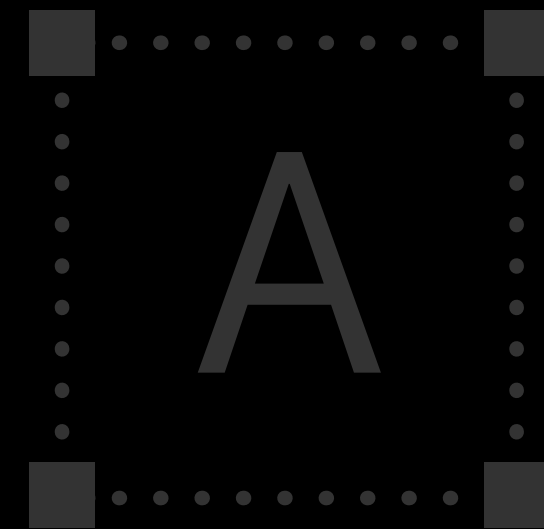
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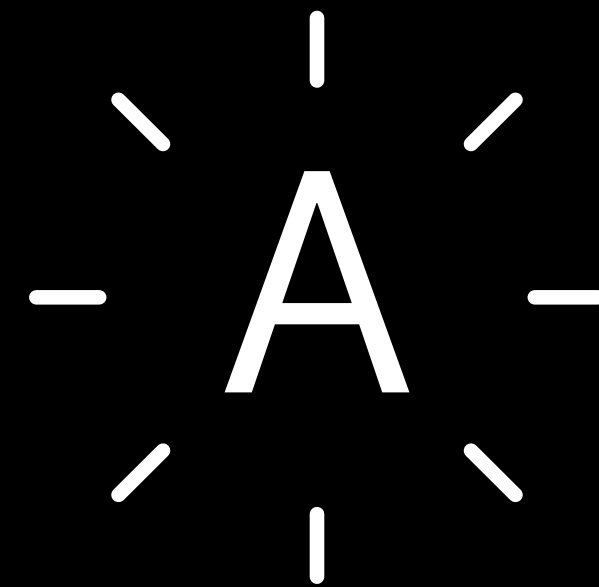
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Typographers

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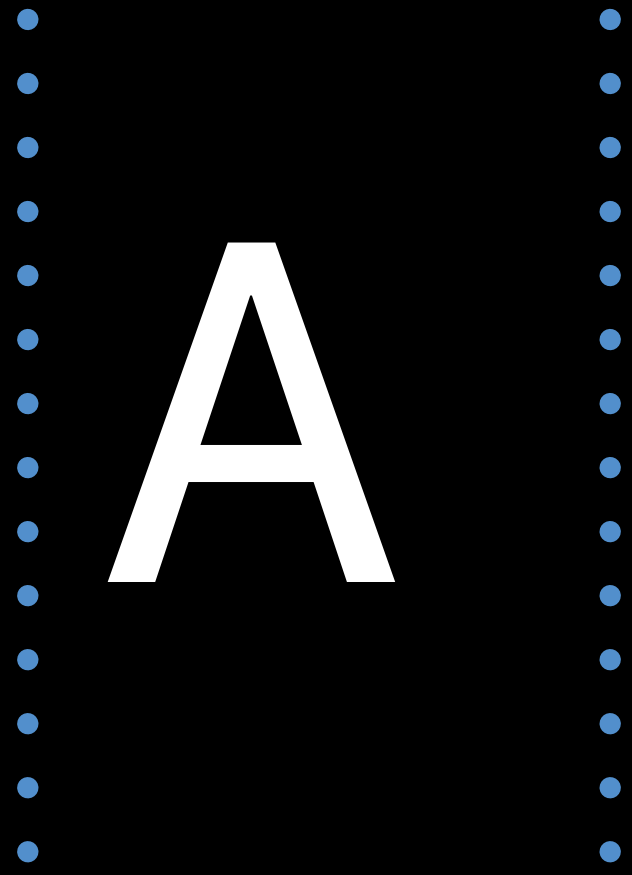


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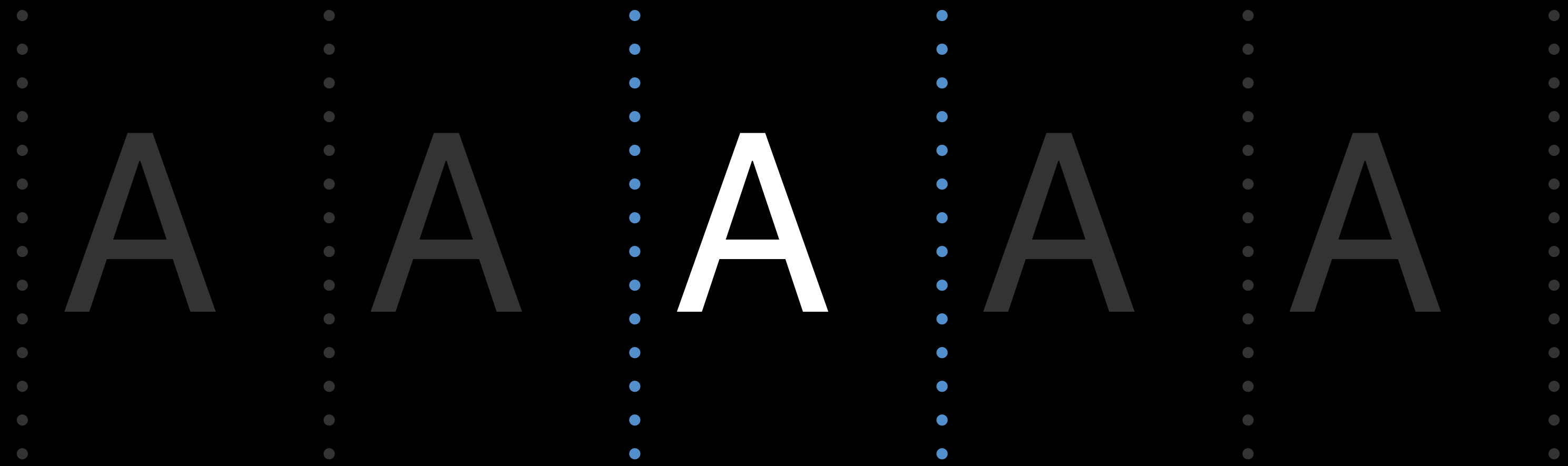


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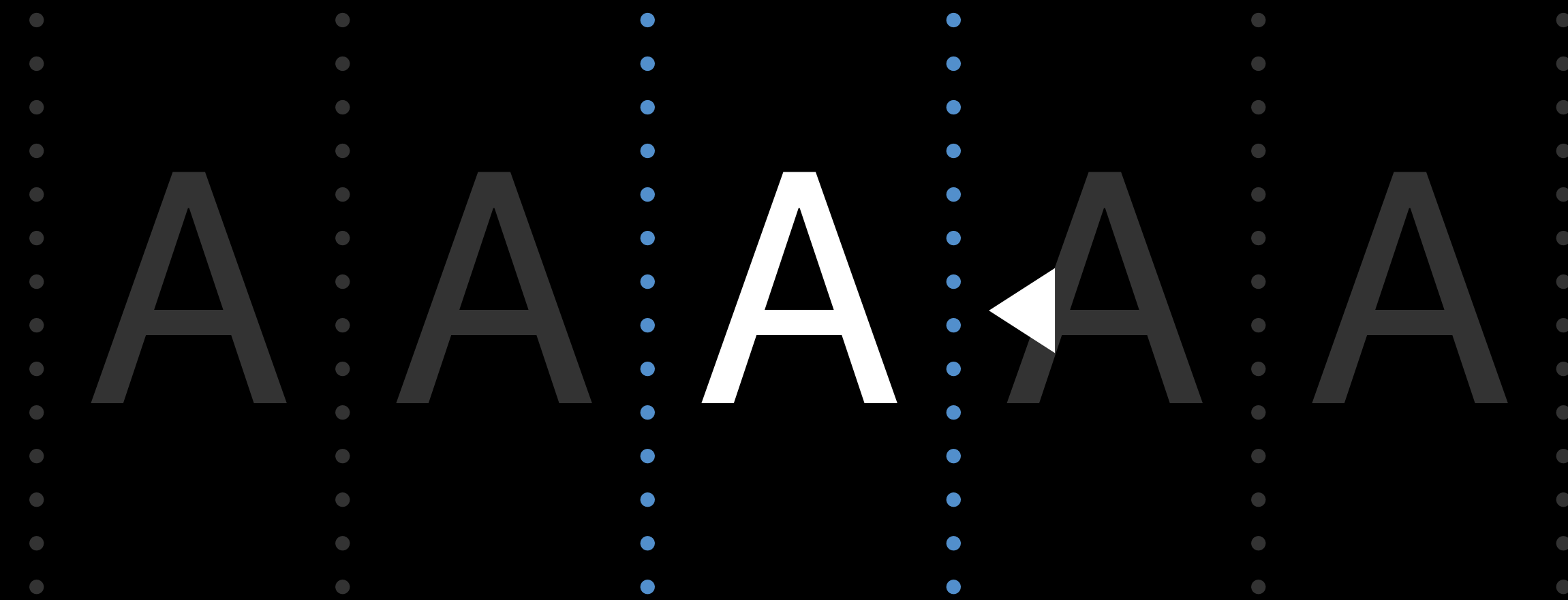
Spacing



Spacing



Spacing



Tracking

A|B|C

Tracking

∅

A B C

Tracking

-5



Tracking

∅

A B C

Tracking

+20



Kerning

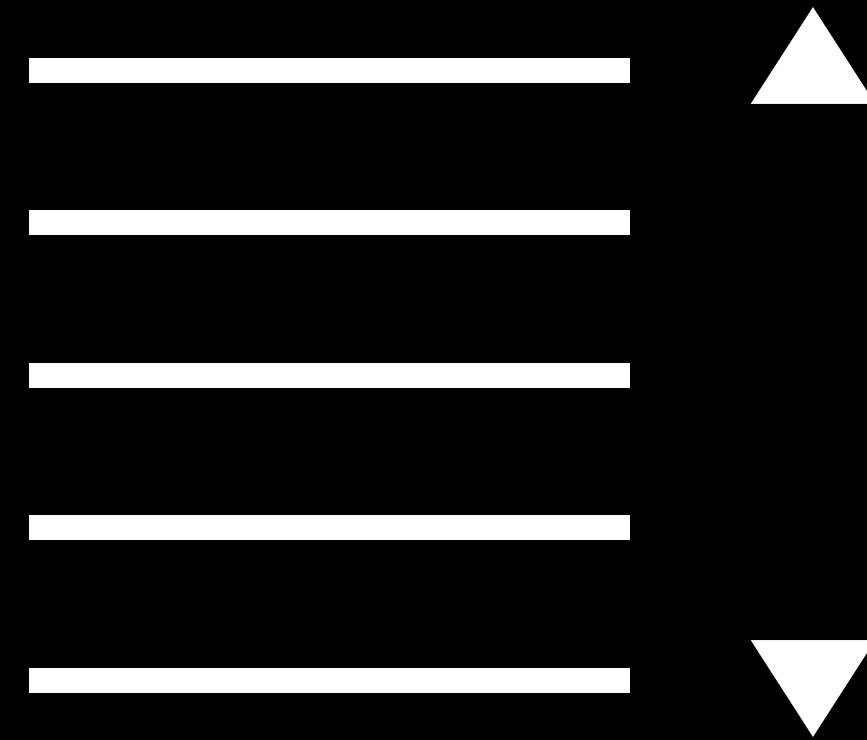
ALTA VILLA

Kerning

ALTAVILLA

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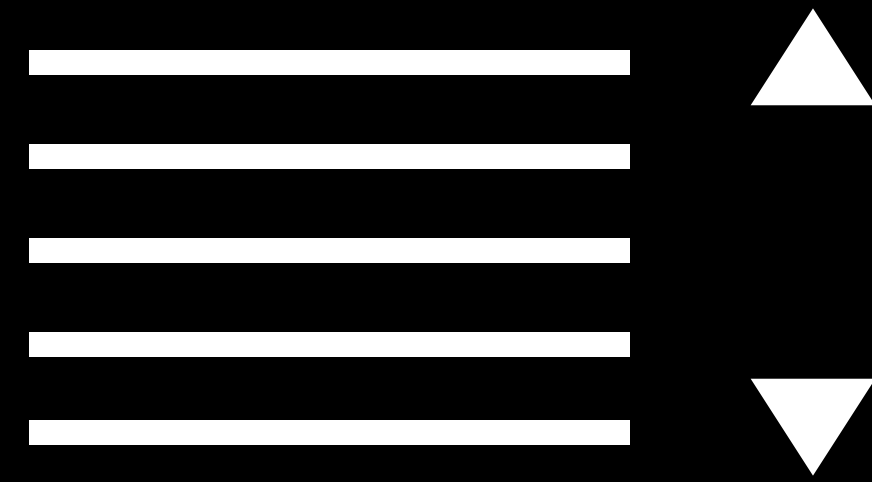
Leading



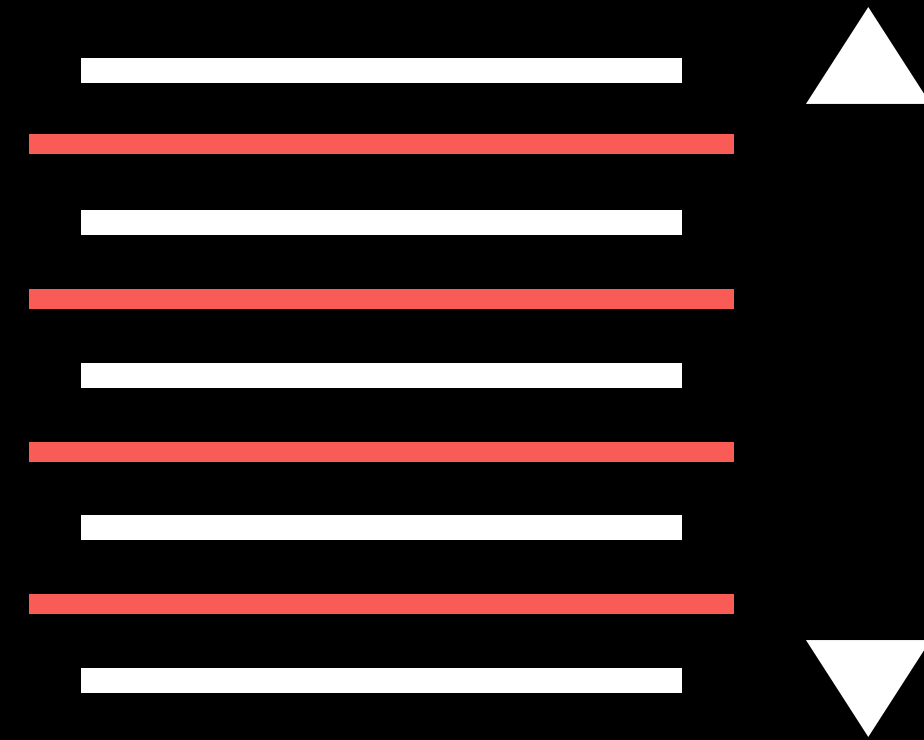
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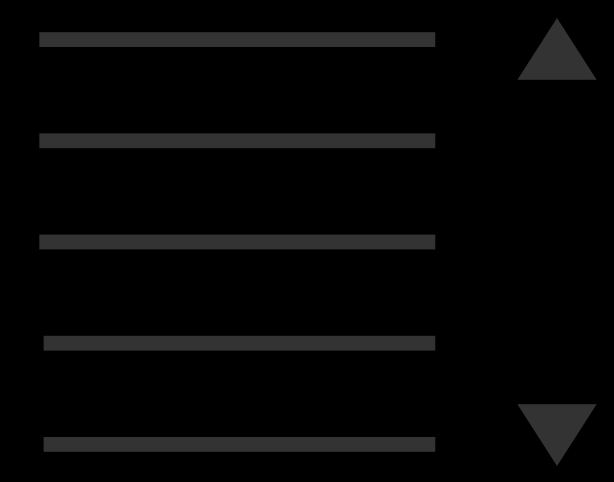
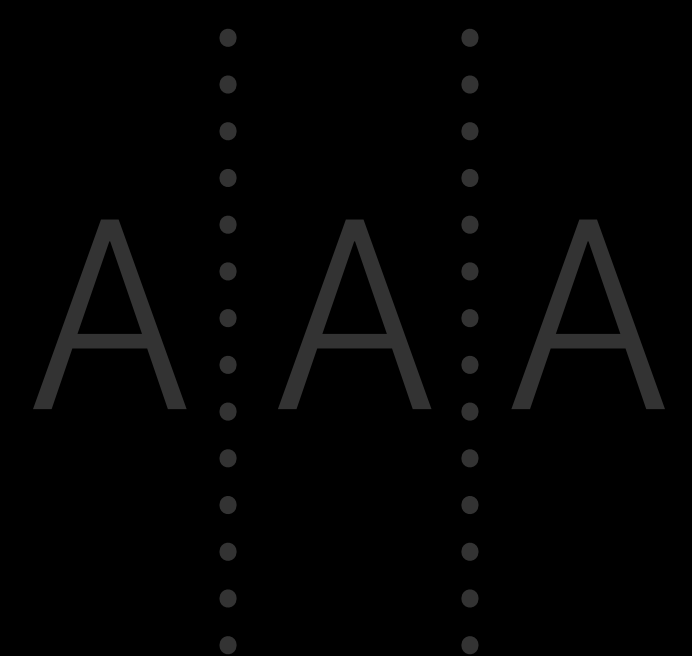
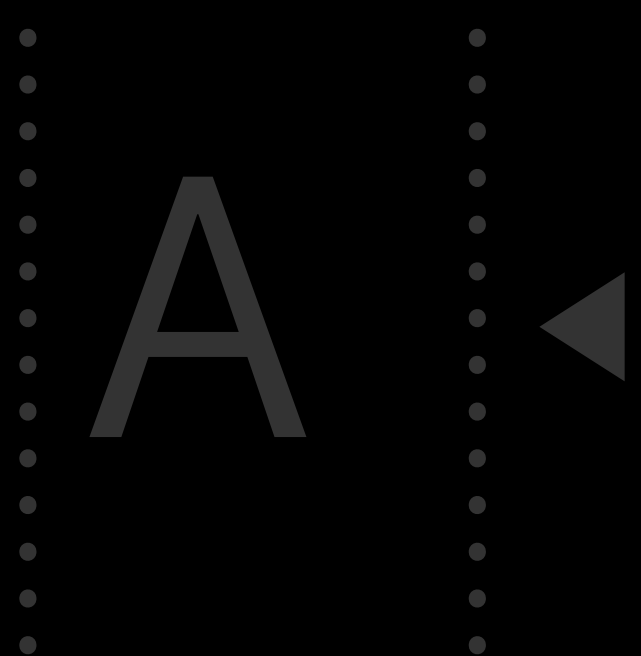


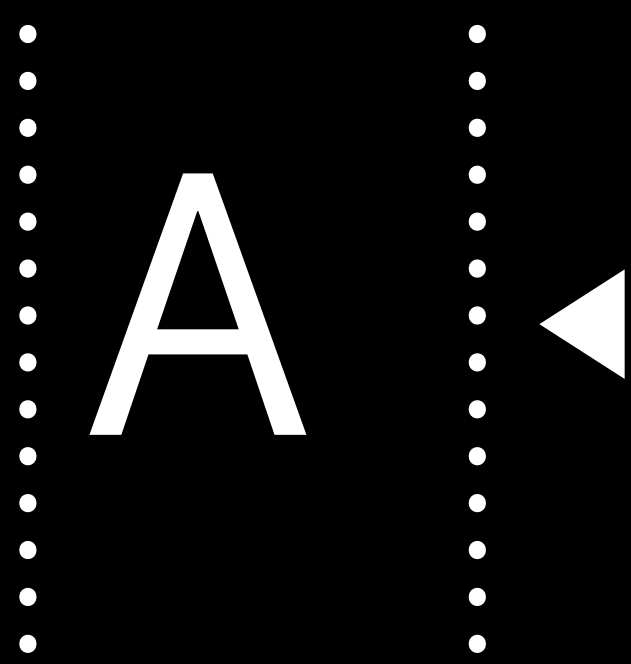
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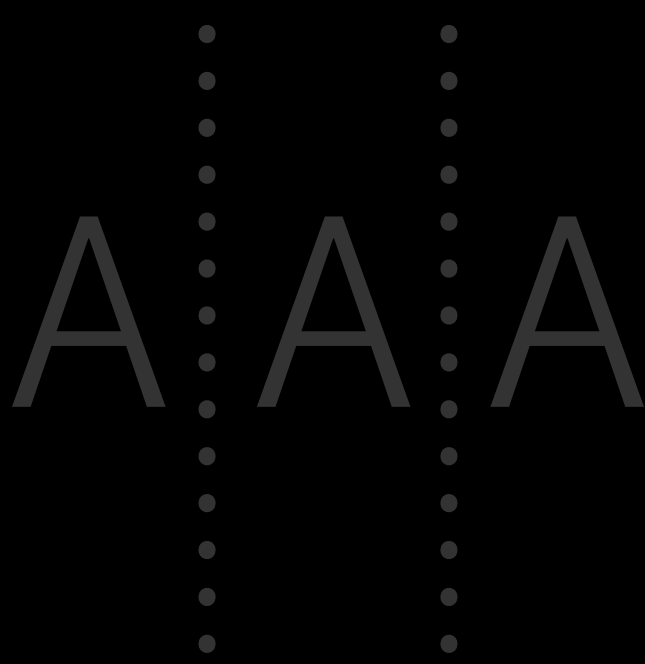
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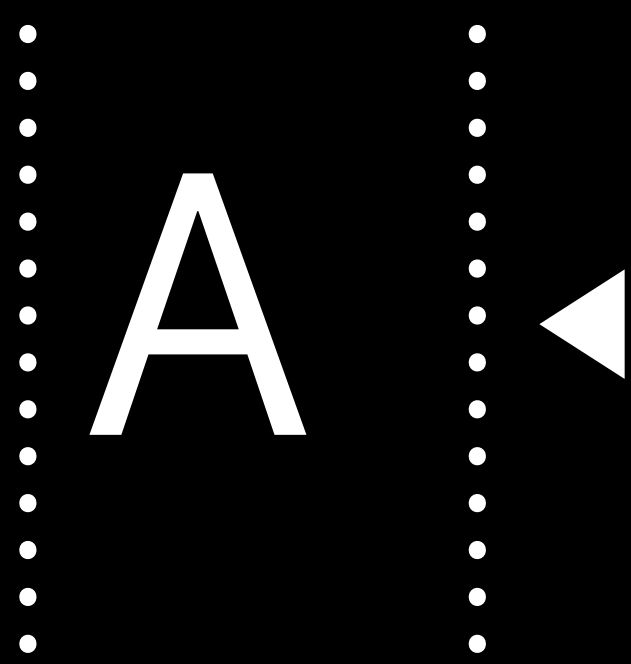




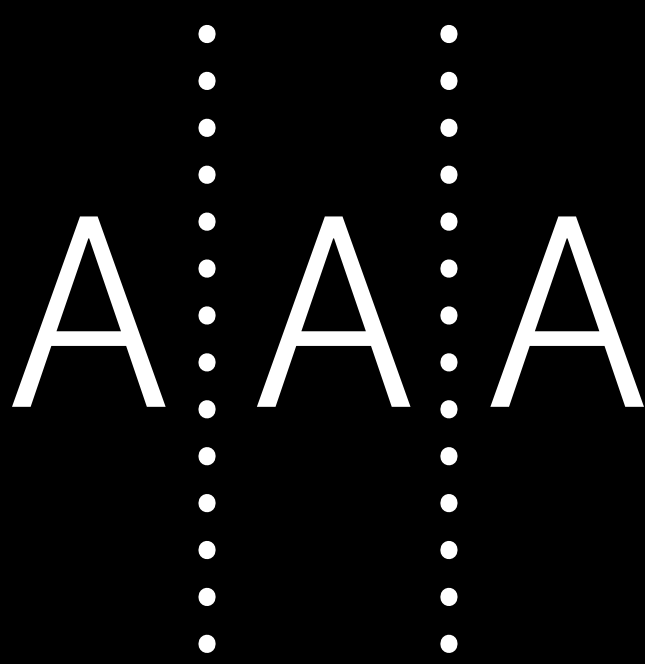


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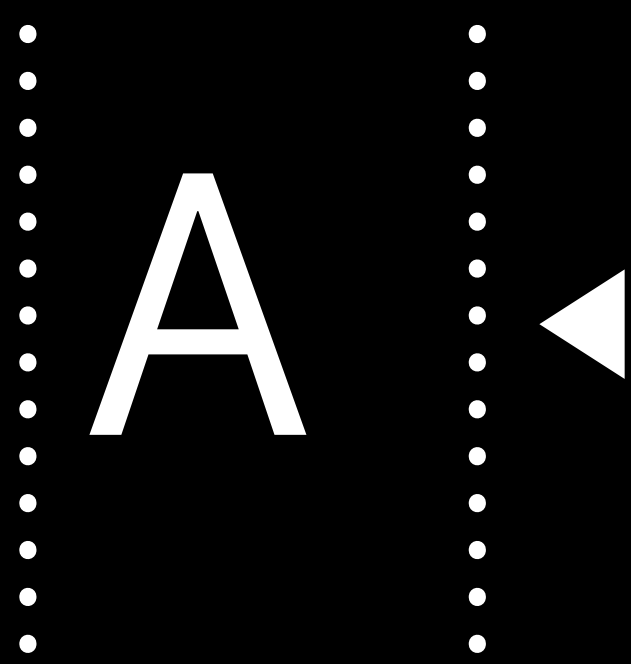


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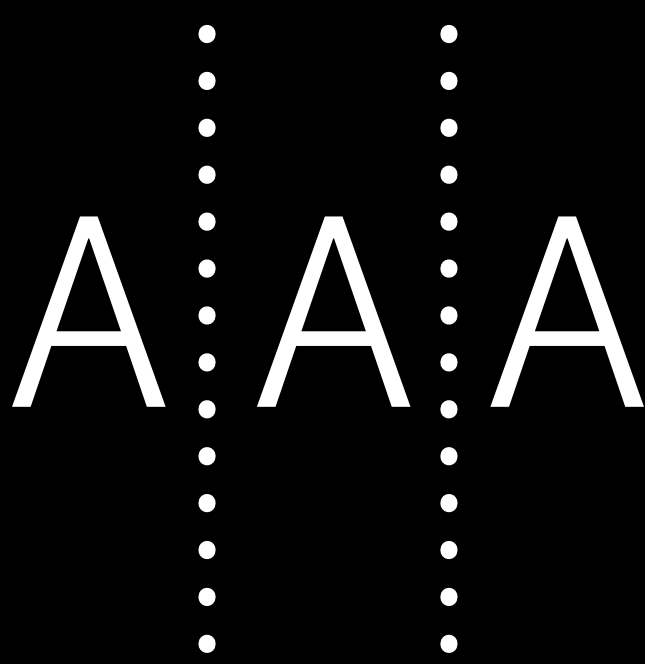


Tracking





Spacing

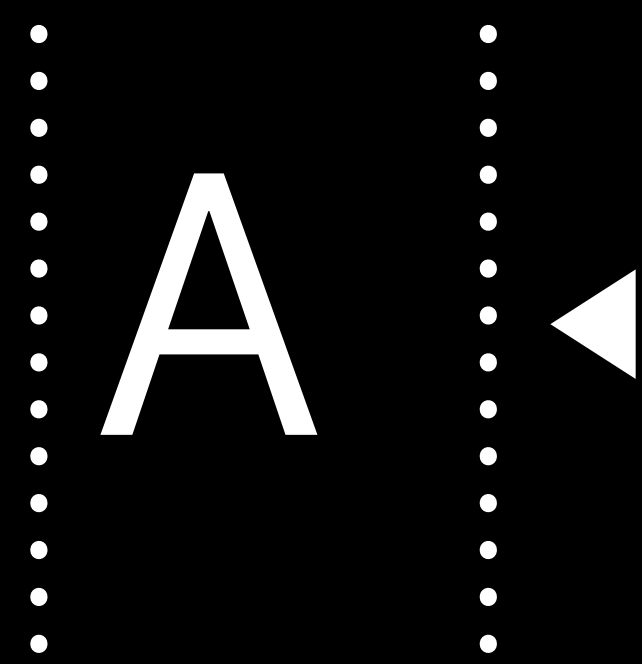


Tracking

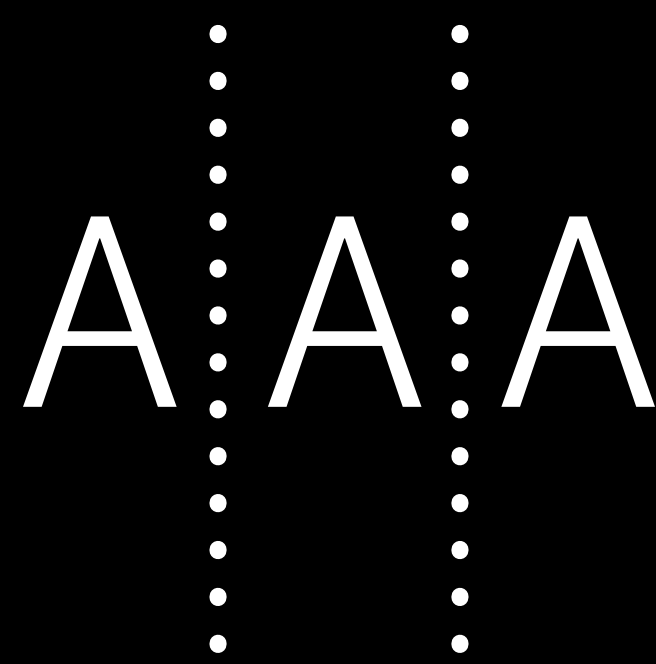


Kerning





Spacing



Tracking



Kerning

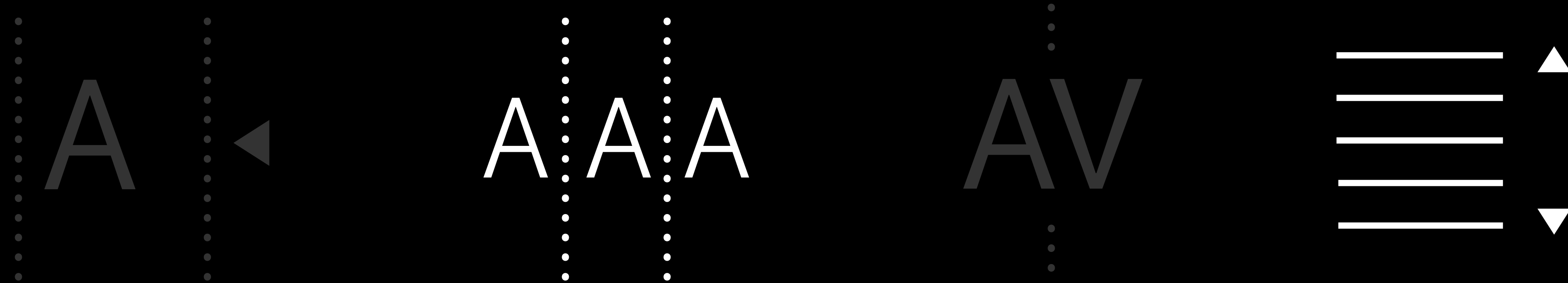


Leading

Embedded in the Font



Adjustable



Concepts

Legibility

Legibility

Designed by Apple in California

Legibility

Designed by Apple in California

Scale in Legibility

Designed by Apple in California

Scale

Designed by Apple in California

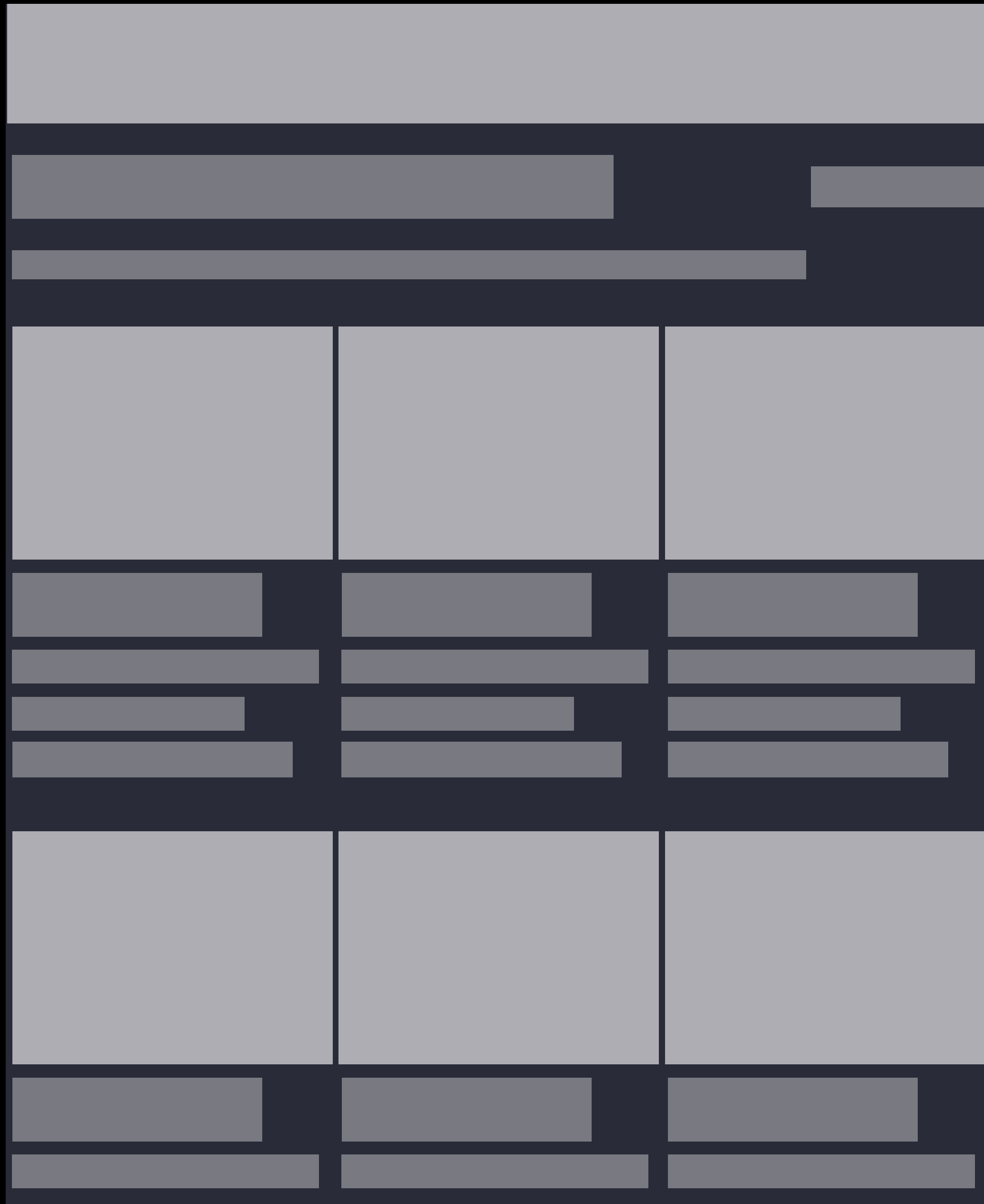
Scale

Designed by Apple in California

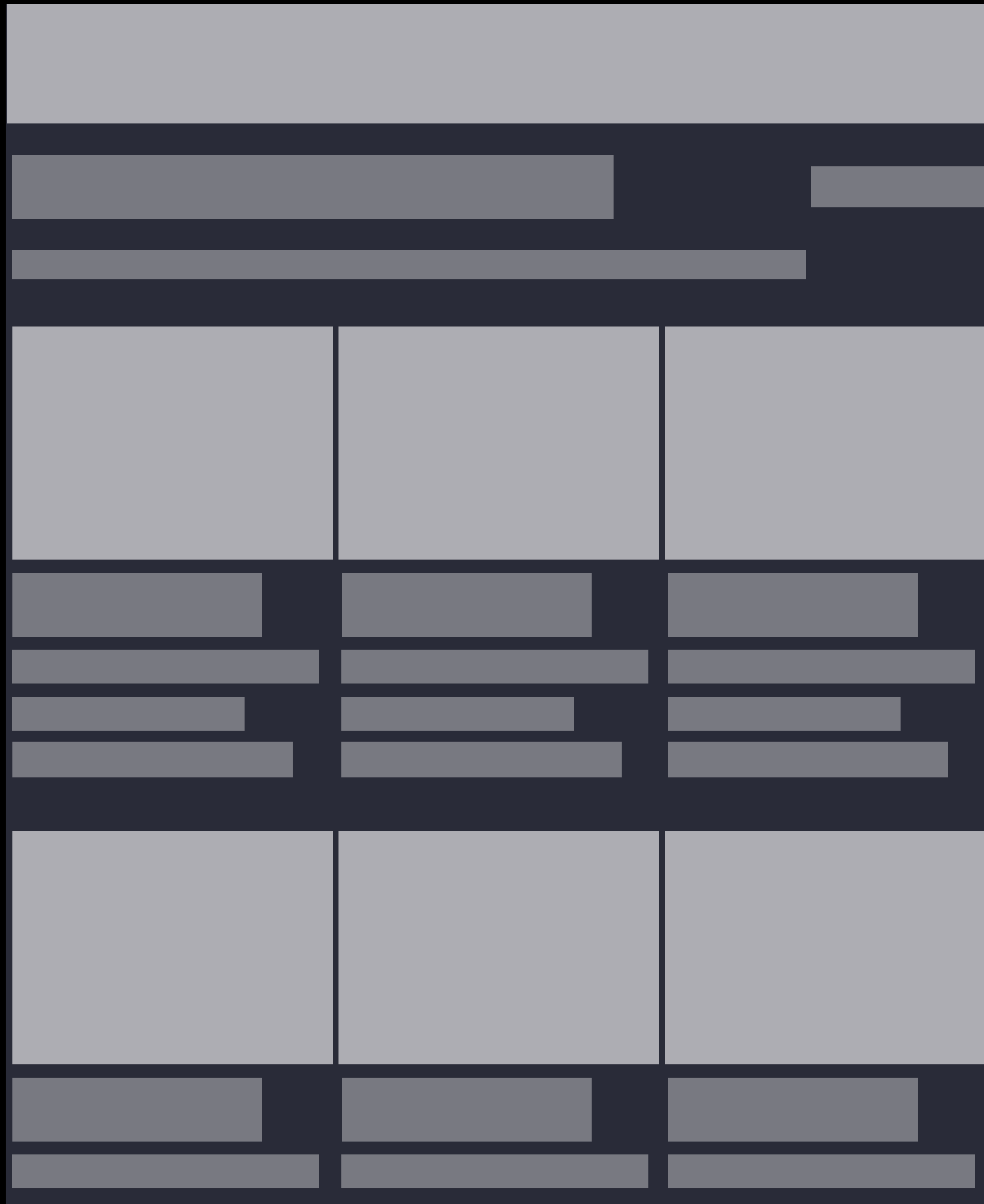
Scale

Designed by Apple in California

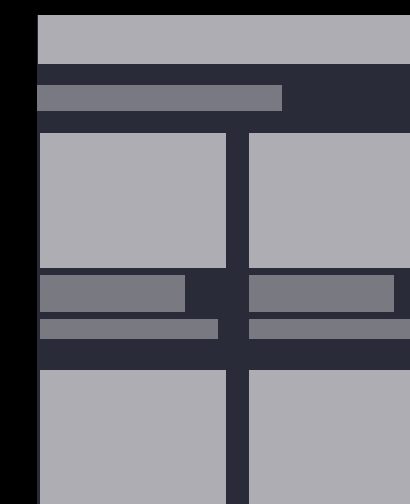
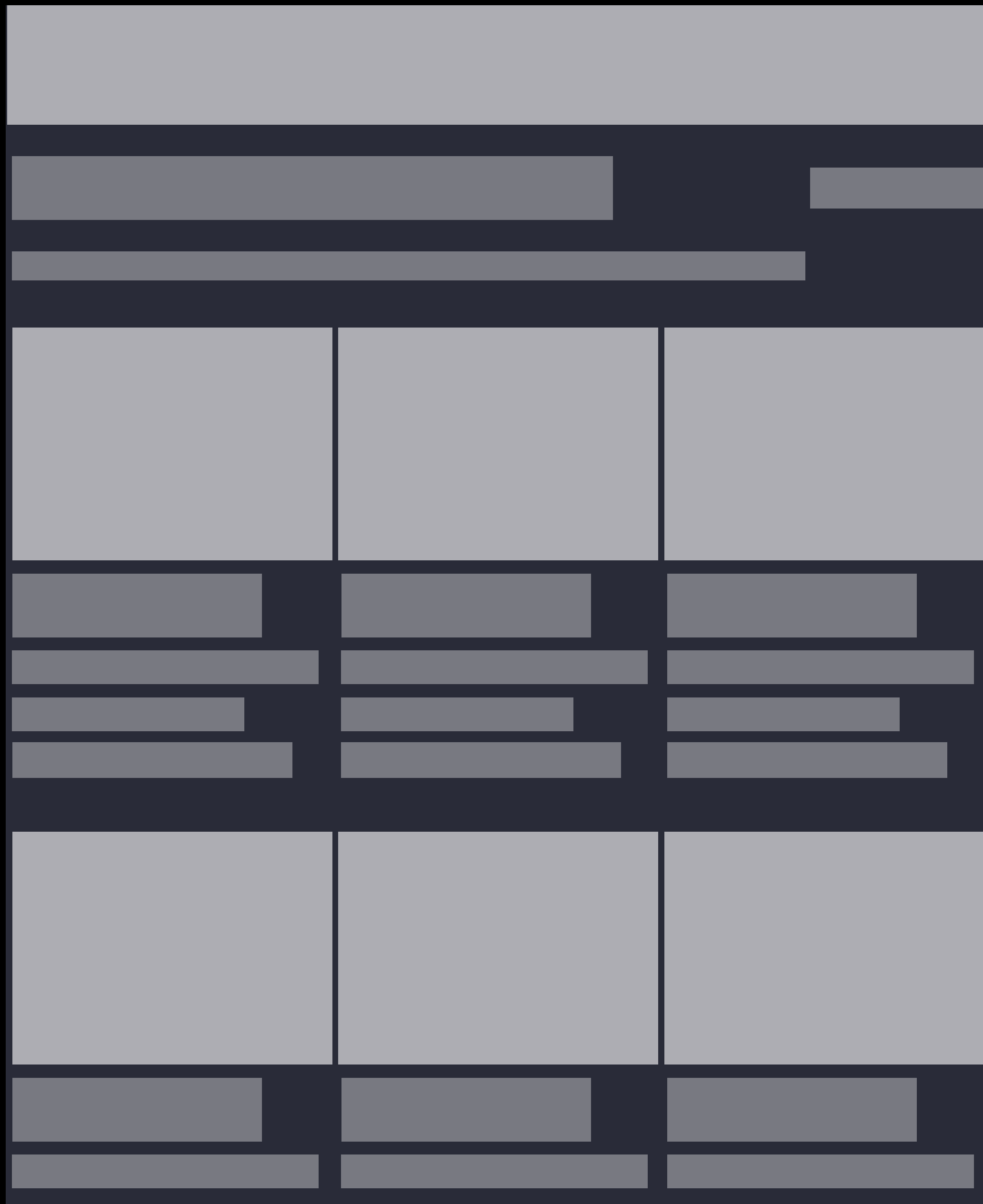
Legibility in Layout



Legibility in Layout



Density



Layout

Scale and Density in Glyph Design

@

a b @ c d

a b @ c d

@ @

@

@

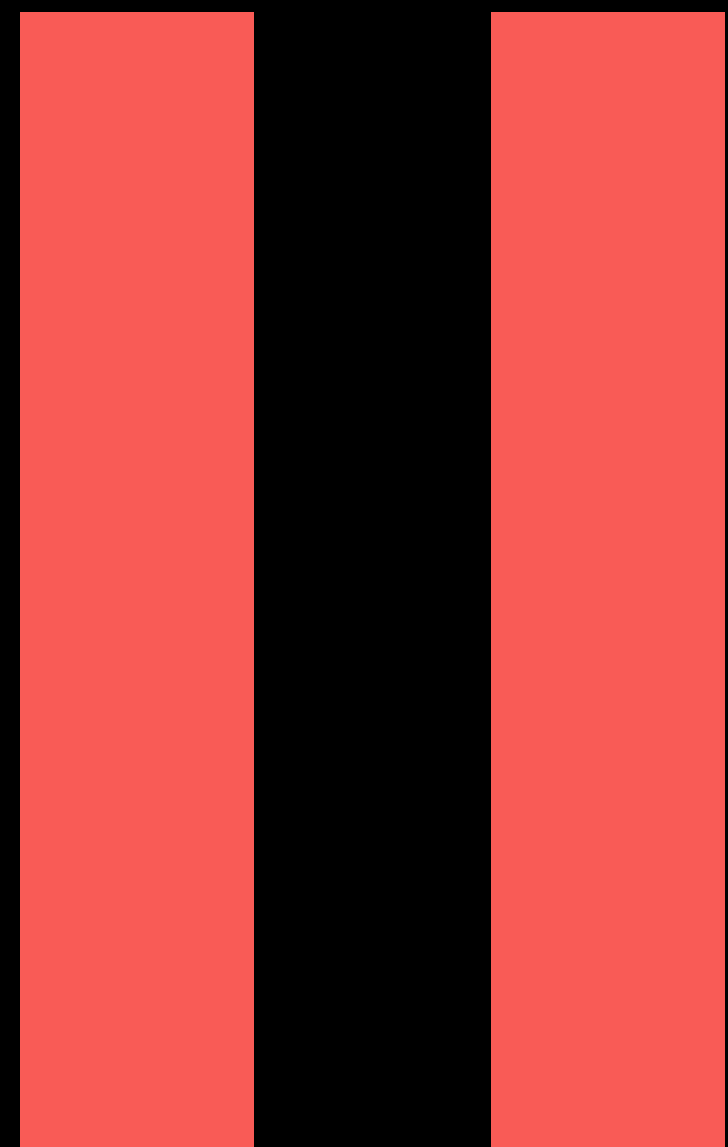
a

e

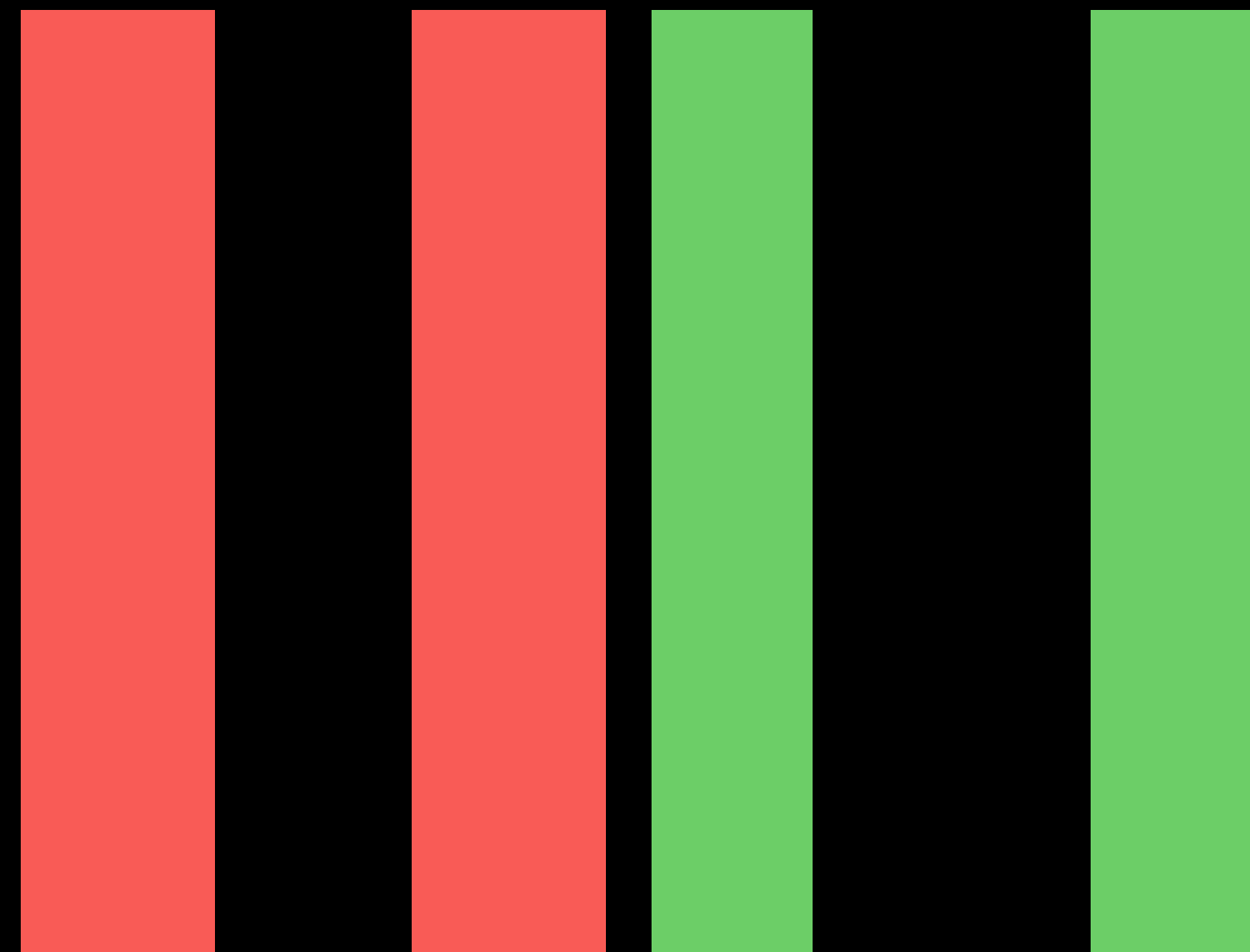
HMIN

HMMN

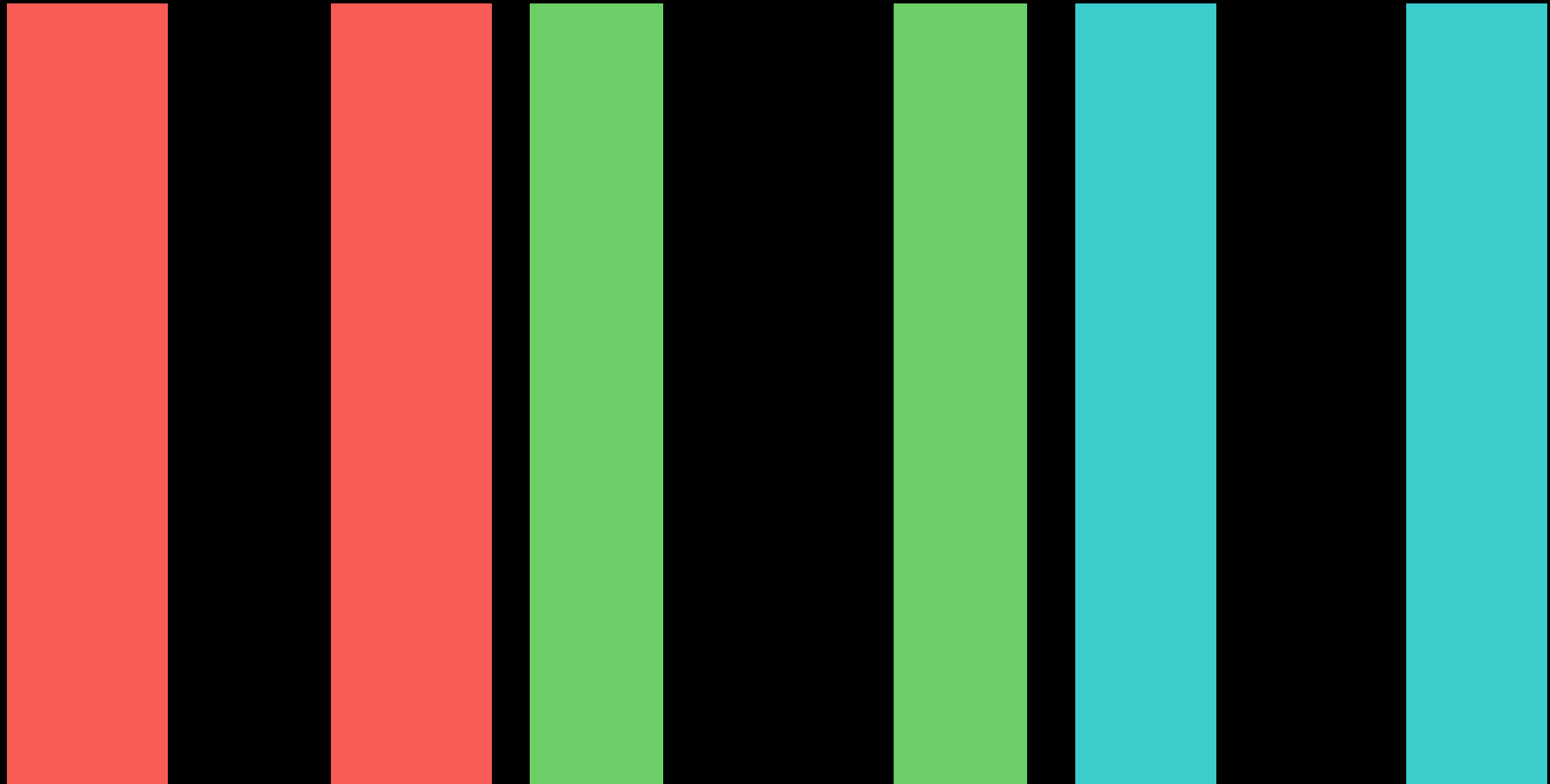
HMMN



HMMN



HMMN



**Greenpoint Av
Station**

G To Church Av

Voice

Helvetica

**Greenpoint Av
Station**
G To Church Av

Voice

Helvetica Neue
Bold

**Greenpoint Av
Station**
G To Church Av

Voice

Helvetica Neue
Thin

Greenpoint Av
Station
G To Church Av

Voice

Helvetica Neue
Regular

Greenpoint Av
Station
G To Church Av

Voice

Helvetica Neue
Condensed
Extrabold

**Greenpoint Av
Station**

G To Church Av

Voice

Noteworthy

Greenpoint Av
Station

 To Church Av

Voice

Bodoni

**Greenpoint Av
Station**

G To Church Av

Concepts

Legibility

Scale

Density

Voice

Tools

Available Tools

System Font

Dynamic Type

Custom Fonts

System Font

Native to the platform

System Font APIs

```
NSFont.systemFont(ofSize: 14)
```

```
UIFont.systemFont(ofSize: 14)
```

```
NSFont.systemFont(ofSize: 19, weight: NSFontWeightSemibold)
```

```
UIFont.systemFont(ofSize: 34, weight: UIFontWeightBlack)
```

Weights

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789

Size-Specific Tracking

40pt	10T	abcdefghijklmnopqrstuvw
30pt	11T	abcdefghijklmnopqrstvwxyz
20pt	19T	abcdefghijklmnopqrstvwxyz
19pt	-25T	abcdefghijklmnopqrstvwxyz
18pt	-24T	abcdefghijklmnopqrstvwxyz
17pt	-24T	abcdefghijklmnopqrstvwxyz
16pt	-20T	abcdefghijklmnopqrstvwxyz

Size-Specific Outlines



Bold Text Switch



9:41 AM

100%

[Settings](#) Display & Brightness

BRIGHTNESS



Auto-Brightness



Night Shift

Off >

Text Size >

Bold Text



DISPLAY ZOOM

View

Standard >

Choose a view for iPhone. Zoomed shows larger controls. Standard shows more content.



9:41 AM

100%

[Settings](#) Display & Brightness

BRIGHTNESS



Auto-Brightness



Night Shift

Off >

Text Size >

Bold Text



DISPLAY ZOOM

View

Standard >

Choose a view for iPhone. Zoomed shows larger controls. Standard shows more content.



9:41 AM

100%

Settings Display & Brightness

BRIGHTNESS



Auto-Brightness



Night Shift

Off >

Text Size >

Bold Text



DISPLAY ZOOM

View

Standard >

Choose a view for iPhone. Zoomed shows larger controls. Standard shows more content.

Dynamic Type

iOS

watchOS

Dynamic Type

Text Styles: `UIFont.preferredFont(forTextStyle:)`

Content Size Categories



9:41 AM

100%

[← Display & Brightness](#) **Text Size**

Apps that support Dynamic Type will adjust to your preferred reading size below.

Drag the slider below





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100%

[← Display & Brightness](#) **Text Size**

Apps that support Dynamic Type will adjust to your preferred reading size below.

Drag the slider below





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100%

[← Display & Brightness](#) **Text Size**

Apps that support Dynamic Type will adjust to your preferred reading size below.

Drag the slider below





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[← Display & Brightness](#) **Text Size**

Apps that support Dynamic Type will adjust to your preferred reading size below.

Drag the slider below





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100%

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100%

[← Display & Brightness](#) Text Size

Apps that support Dynamic Type will adjust to your preferred reading size below.

Drag the slider below





9:41 AM

100%

[← Display & Brightness](#) Text Size

Apps that support Dynamic Type
will adjust to your preferred
reading size below.

Drag the slider below



Dynamic Type

With Text Styles APIs, Dynamic Type support is automatic

Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override `traitCollectionDidChange`
4. Update your fonts and paragraph style
5. Relayout

Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override `traitCollectionDidChange`
4. Update your fonts and paragraph style
5. Relayout

DynamicCustomFont | Build **Succeeded**

DynamicCustomFont > DynamicCustomFont > Info.plist > No Selection

Key	Type	Value
▼ Information Property List (16 items)		
Localization native development re...	String	en
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	APPL
Bundle versions string, short	String	1.0
Bundle creator OS Type code	String	????
Bundle version	String	1
Application requires iPhone enviro...	Boolean	YES
Launch screen interface file base...	String	LaunchScreen
Main storyboard file base name	String	Main
▶ Required device capabilities	Array	(1 item)
▶ Supported interface orientations	Array	(3 items)
▶ Supported interface orientations (i...	Array	(4 items)
▼ Fonts provided by application	Array	(2 items)
Item 0	String	MyCustomFont1.otf
Item 1	String	MyCustomFont2.otf

Filter

DynamicCustomFont | Build **Succeeded**

DynamicCustomFont > DynamicCustomFont > Info.plist > No Selection

Key	Type	Value
▼ Information Property List (16 items)		
Localization native development re...	String	en
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	APPL
Bundle versions string, short	String	1.0
Bundle creator OS Type code	String	????
Bundle version	String	1
Application requires iPhone enviro...	Boolean	YES
Launch screen interface file base...	String	LaunchScreen
Main storyboard file base name	String	Main
▶ Required device capabilities	Array	(1 item)
▶ Supported interface orientations	Array	(3 items)
▶ Supported interface orientations (i...	Array	(4 items)
▼ Fonts provided by application	Array	(2 items)
Item 0	String	MyCustomFont1.otf
Item 1	String	MyCustomFont2.otf

Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override `traitCollectionDidChange`
4. Update your fonts and paragraph style
5. Relayout

```
let customDynamicType: [String: (pointSize: CGFloat, styleName: String,  
                                leading: CGFloat, tracking: CGFloat)] = [  
  UIContentSizeCategoryExtraSmall: (10.0, "Heavy", 3.0, 0.6),  
  UIContentSizeCategorySmall: (12.0, "Heavy", 2.0, 0.4),  
  UIContentSizeCategoryMedium: (14.0, "Roman", 1.0, 0.2),  
  UIContentSizeCategoryLarge: (16.0, "Roman", 0.0, 0.0),  
  UIContentSizeCategoryUnspecified: (16.0, "Roman", 0.0, 0.0),  
  UIContentSizeCategoryExtraLarge: (17.0, "Roman", 0.0, 0.0),  
  UIContentSizeCategoryExtraExtraLarge: (18.0, "Light", -1.0, 0.0),  
  UIContentSizeCategoryExtraExtraExtraLarge: (19.0, "Light", -2.0, -0.1),  
  UIContentSizeCategoryAccessibilityMedium: (20.0, "Light", -3.0, -0.2),  
  UIContentSizeCategoryAccessibilityLarge: (21.0, "Light", -4.0, -0.2),  
  UIContentSizeCategoryAccessibilityExtraLarge: (22.0, "Light", -4.0, -0.2),  
  UIContentSizeCategoryAccessibilityExtraExtraLarge: (23.0, "Light", -4.0, -0.2),  
  UIContentSizeCategoryAccessibilityExtraExtraExtraLarge: (24.0, "Light", -4.0, -0.2),  
]
```

Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override **traitCollectionDidChange**
4. Update your fonts and paragraph style
5. Relayout

```
override func traitCollectionDidChange(_ previousTraitCollection: UITraitCollection?) {  
    self.adjustFont(usedBy: self.label)  
}
```


Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override `traitCollectionDidChange`
4. Update your fonts and paragraph style
5. Relayout

```
func adjustFont(usedBy: UILabel) {  
    let sizeCategory = self.traitCollection.preferredContentSizeCategory  
    if let customFontForSizeCategory = self.customDynamicType[sizeCategory] {  
        // ... actually adjust the fonts here ...  
    }  
}
```

```
func adjustFont(usedBy: UILabel) {  
    let sizeCategory = self.traitCollection.preferredContentSizeCategory  
    if let customFontForSizeCategory = self.customDynamicType[sizeCategory] {  
        // ... actually adjust the fonts here ...  
    }  
}
```

Custom Fonts

How to make them work with Dynamic Type

1. Pick or bundle a font
2. Lookup table for the Content Size Categories
3. Override `traitCollectionDidChange`
4. Update your fonts and paragraph style
5. Relayout

[Auditing Your Apps for Accessibility](#)

Nob Hill

Wednesday 10:00AM

[Making Apps Adaptive, Part 2](#)

Presidio

Friday 9:00AM

Font Selection

Easier sticking with one typeface at a time

Understanding design intention helps in usage

Consider defaults and knobs you can turn

Tools

System Font

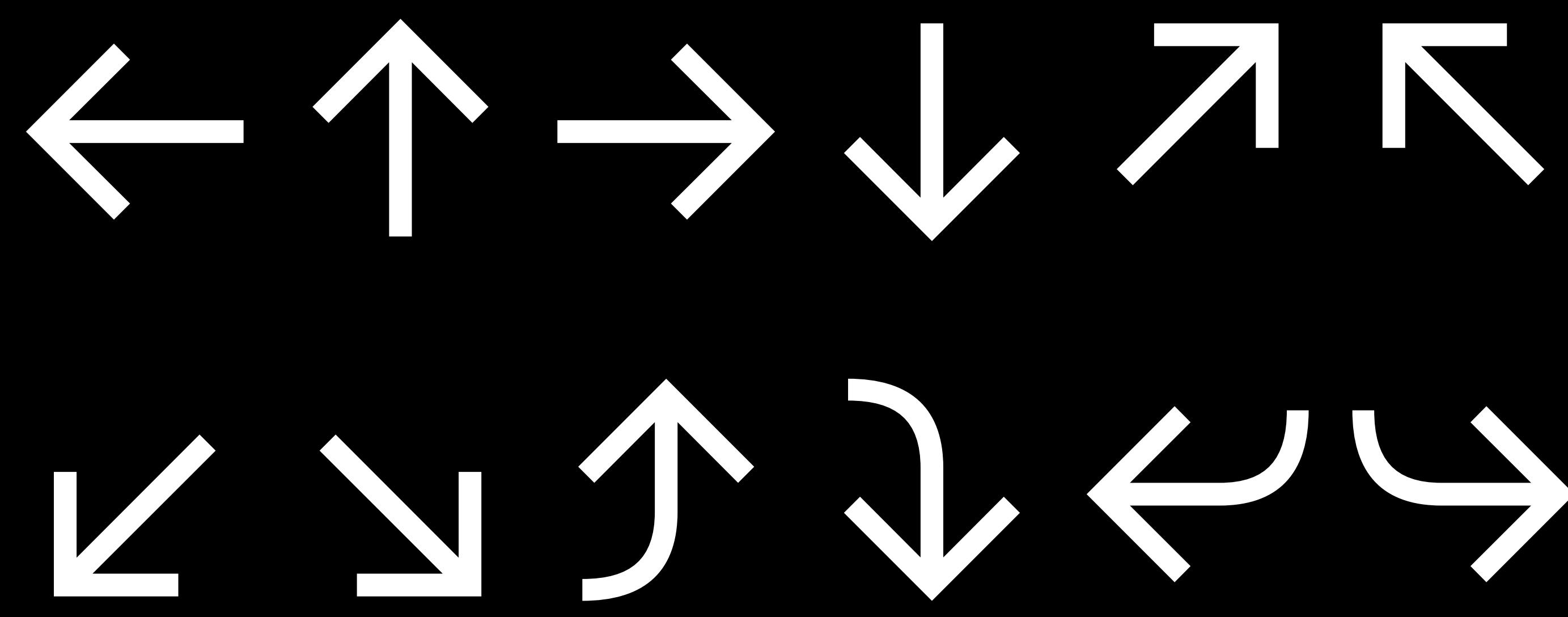
Dynamic Type

Custom Fonts

Details

Arrows

NEW





MON
13 10:09

↗ Trending
#WWDC2016
June 13-17

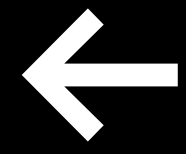
♥ 🎯 76°



MON 13 10:09

↗ Trending
#WWDC2016
June 13-17

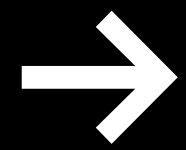
♥ 🎯 76°



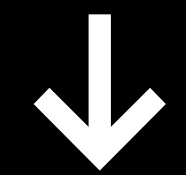
U+2190



U+2191



U+2192



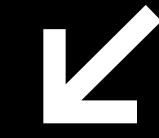
U+2193



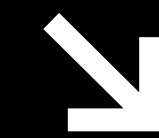
U+2197



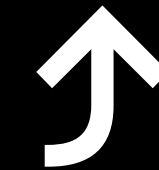
U+2198



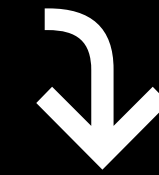
U+2199



U+2198



U+2934



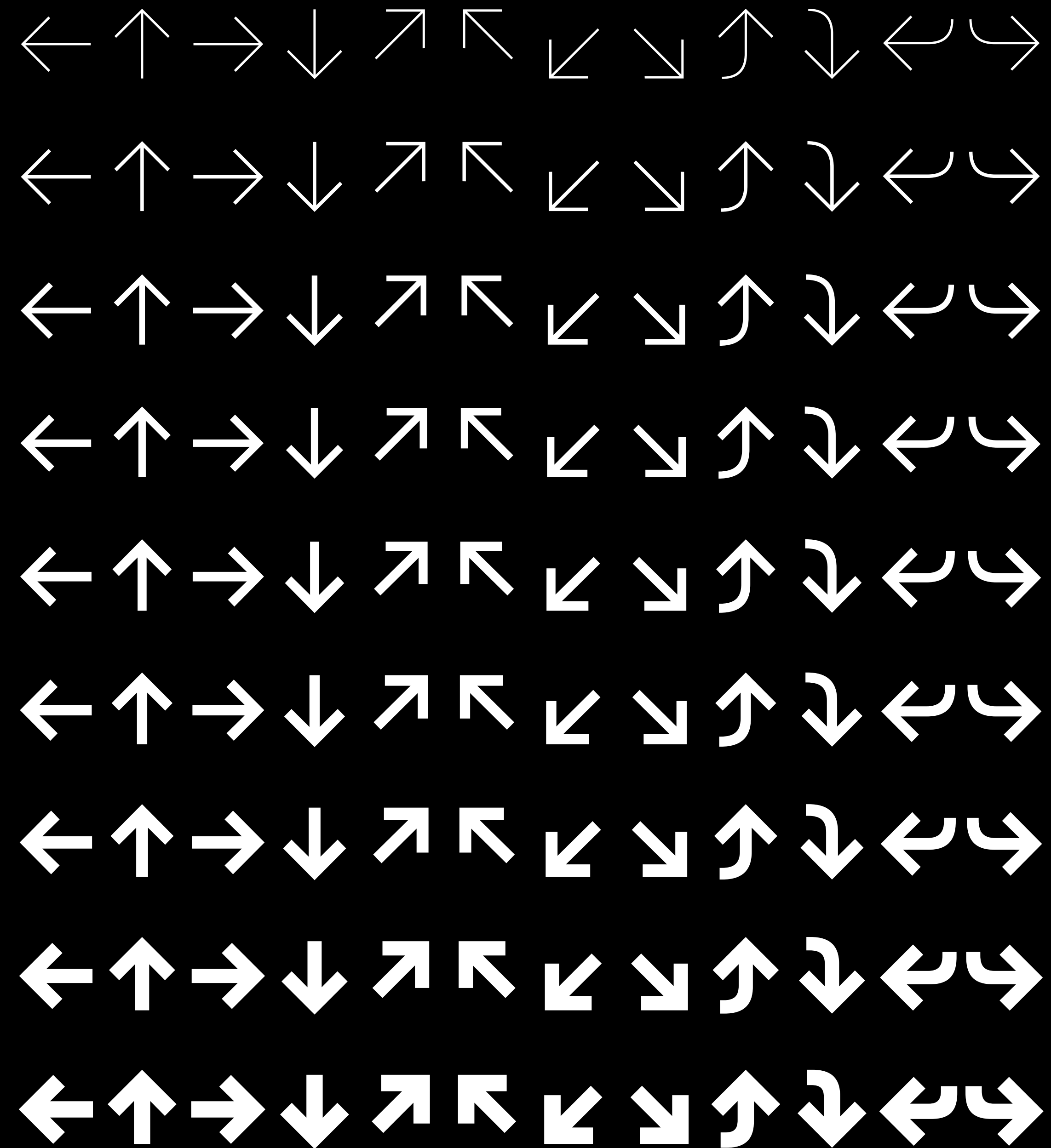
U+2935



U+2936



U+2937



High-Legibility Alternates

NEW

High-Legibility Alternates

m11li0nalre68

High-Legibility Alternates

m1lll0nalre68

--

m1IIII

--

High-Legibility Alternates

m1lll*0*nalre68

m1lll*0*

High-Legibility Alternates

m1lll0nalre68

m1llli0nal

High-Legibility Alternates

m1lll0nalre68

m1lll0nalre6

High-Legibility Alternates

m1lll0nalre68

m1IIi0nalre68

```
let pointSize: CGFloat = 60.0
let systemFontDesc = UIFont.systemFont(
    ofSize: pointSize, weight: UIFontWeightLight).fontDescriptor()
let highLegibilityFontDesc = systemFontDesc.addingAttributes(
    [
        UIFontDescriptorFeatureSettingsAttribute:
        [
            [
                UIFontFeatureTypeIdentifierKey: kStylisticAlternativesType,
                UIFontFeatureSelectorIdentifierKey: kStylisticAltSixOnSelector,
            ],
        ]
    ]
)

label.font = UIFont(descriptor: highLegibilityFontDesc, size: pointSize)
```

```
let pointSize: CGFloat = 60.0
let systemFontDesc = UIFont.systemFont(
    ofSize: pointSize, weight: UIFontWeightLight).fontDescriptor()
let highLegibilityFontDesc = systemFontDesc.addingAttributes(
    [
        UIFontDescriptorFeatureSettingsAttribute:
        [
            [
                UIFontFeatureTypeIdentifierKey: kStylisticAlternativesType,
                UIFontFeatureSelectorIdentifierKey: kStylisticAltSixOnSelector,
            ],
        ],
    ],
)

label.font = UIFont(descriptor: highLegibilityFontDesc, size: pointSize)
```

Small Caps

Small Caps

ABC

Small Caps

ABC

abc

Small Caps

ABC

ABC

abc

Small Caps

ABC

ABC

abc

Small Caps

This HTML page

Small Caps

This HTML page



This HTML page

Small Caps

This HTML page



This HTML page

12AM

Small Caps

This HTML page



This HTML page

12AM



12AM

Shaun the Sheep Movie

DIRECTOR

Mark Burton
Richard Starzak

STARRING

Justin Fletcher
John Sparkes
Omid Djalili
Richard Webber
Kate Harbour
Tim Hands

99% 5+ 1 hr 26 min Comedy 2015 PG CC HD

When Shaun decides to take a day off and have some fun, he gets a little more than he bargained for! Shaun's mischief inadvertently leads to The Farmer being taken away from the farm, to the Big City... Join Shaun, Bitzer, and The Flock on their hilarious, action-packed, big-screen adventure... [MORE](#)



Preview

\$14.99

Buy
With iTunes Extras



Wish List

11/24

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Viewers Also Watched



Shaun the Sheep Movie

DIRECTOR

Mark Burton
Richard Starzak

STARRING

Justin Fletcher
John Sparkes
Omid Djalili
Richard Webber
Kate Harbour
Tim Hands

99% 5+ 1 hr 26 min Comedy 2015 PG CC HD

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Preview

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John Sparkes

Omid Djalili

Richard Webber

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John Sparkes

Omid Djalili

Richard Webber

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STARRING

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Small Caps from Uppercase

SAN FRANCISCO

San Francisco

san francisco

Small Caps from Uppercase

SAN FRANCISCO

SAN FRANCISCO

San Francisco

san francisco

Small Caps from Uppercase

SAN FRANCISCO

SAN FRANCISCO



San Francisco

san francisco

Small Caps from Uppercase

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San Francisco

san Francisco



san francisco

Small Caps from Uppercase

SAN FRANCISCO

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San Francisco

san Francisco



san francisco

san francisco

Small Caps from Uppercase

SAN FRANCISCO

SAN FRANCISCO



San Francisco

san Francisco



san francisco

san francisco



```
let pointSize: CGFloat = 60.0
let systemFontDesc = UIFont.systemFont(
    ofSize: pointSize, weight: UIFontWeightLight).fontDescriptor()
let smallCapsFontDesc = systemFontDesc.addingAttributes(
    [
        UIFontDescriptorFeatureSettingsAttribute:
        [
            [
                UIFontFeatureTypeIdentifierKey: kUpperCaseType,
                UIFontFeatureSelectorIdentifierKey: kUpperCaseSmallCapsSelector,
            ],
        ]
    ]
)

label.font = UIFont(descriptor: smallCapsFontDesc, size: pointSize)
```


Small Caps from Lowercase

SAN FRANCISCO

San Francisco

san francisco

Small Caps from Lowercase

SAN FRANCISCO

SAN FRANCISCO

San Francisco

san francisco

Small Caps from Lowercase

SAN FRANCISCO

SAN FRANCISCO



San Francisco

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Small Caps from Lowercase

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Small Caps from Lowercase

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SAN FRANCISCO

Small Caps from Lowercase

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SAN FRANCISCO



San Francisco

SAN FRANCISCO



san francisco

SAN FRANCISCO



```
let pointSize: CGFloat = 60.0
let systemFontDesc = UIFont.systemFont(
    ofSize: pointSize, weight: UIFontWeightLight).fontDescriptor()
let smallCapsFontDesc = systemFontDesc.addingAttributes(
    [
        UIFontDescriptorFeatureSettingsAttribute:
        [
            [
                UIFontFeatureTypeIdentifierKey: kLowerCaseType,
                UIFontFeatureSelectorIdentifierKey: kLowerCaseSmallCapsSelector,
            ],
        ]
    ]
)

label.font = UIFont(descriptor: smallCapsFontDesc, size: pointSize)
```



```
let pointSize: CGFloat = 60.0
let systemFontDesc = UIFont.systemFont(
    ofSize: pointSize, weight: UIFontWeightLight).fontDescriptor()
let smallCapsFontDesc = systemFontDesc.addingAttributes(
    [
        UIFontDescriptorFeatureSettingsAttribute:
        [
            [
                UIFontFeatureTypeIdentifierKey: kLowerCaseType,
                UIFontFeatureSelectorIdentifierKey: kLowerCaseSmallCapsSelector,
            ],
            [
                UIFontFeatureTypeIdentifierKey: kUpperCaseType,
                UIFontFeatureSelectorIdentifierKey: kUpperCaseSmallCapsSelector,
            ],
        ]
    ]
)
```

```
label.font = UIFont(descriptor: smallCapsFontDesc, size: pointSize)
```

Small Caps Numbers and Punctuation

01234567890

Small Caps Numbers and Punctuation

01234567890



01234567890

Small Caps Numbers and Punctuation

01234567890



01234567890

HAPPY 2016!

Small Caps Numbers and Punctuation

01234567890



01234567890

HAPPY 2016!



HAPPY 2016!

Details

Arrows

High-legibility alternates

Small caps

Summary

Summary

San Francisco

Terminology

Concepts

Tools

Details

More Information

<https://developer.apple.com/wwdc16/803>

Related Sessions

[Auditing Your Apps for Accessibility](#)

Nob Hill

Wednesday 10:00AM

[Making Apps Adaptive, Part 1](#)

Presidio

Thursday 11:00AM

[Making Apps Adaptive, Part 2](#)

Presidio

Friday 9:00AM

[Iterative UI Design](#)

Presidio

Friday 10:00AM

[What's New in Auto Layout](#)

Presidio

Friday 3:00PM

Related Sessions

Internationalization Best Practices

Mission

Tuesday 9:00AM

Inclusive App Design

Pacific Heights

Tuesday 10:00AM

Labs

Text and Fonts Lab

Frameworks
Lab B

Thursday 2:00PM

Interface Builder and Auto Layout Lab

Developer Tools
Lab B

Thursday 3:00PM

Interface Builder and Auto Layout Lab

Developer Tools
Lab C

Friday 9:00AM

Internationalization Lab

Frameworks
Lab C

Friday 2:00PM



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