

What's New in MapKit

Session 237

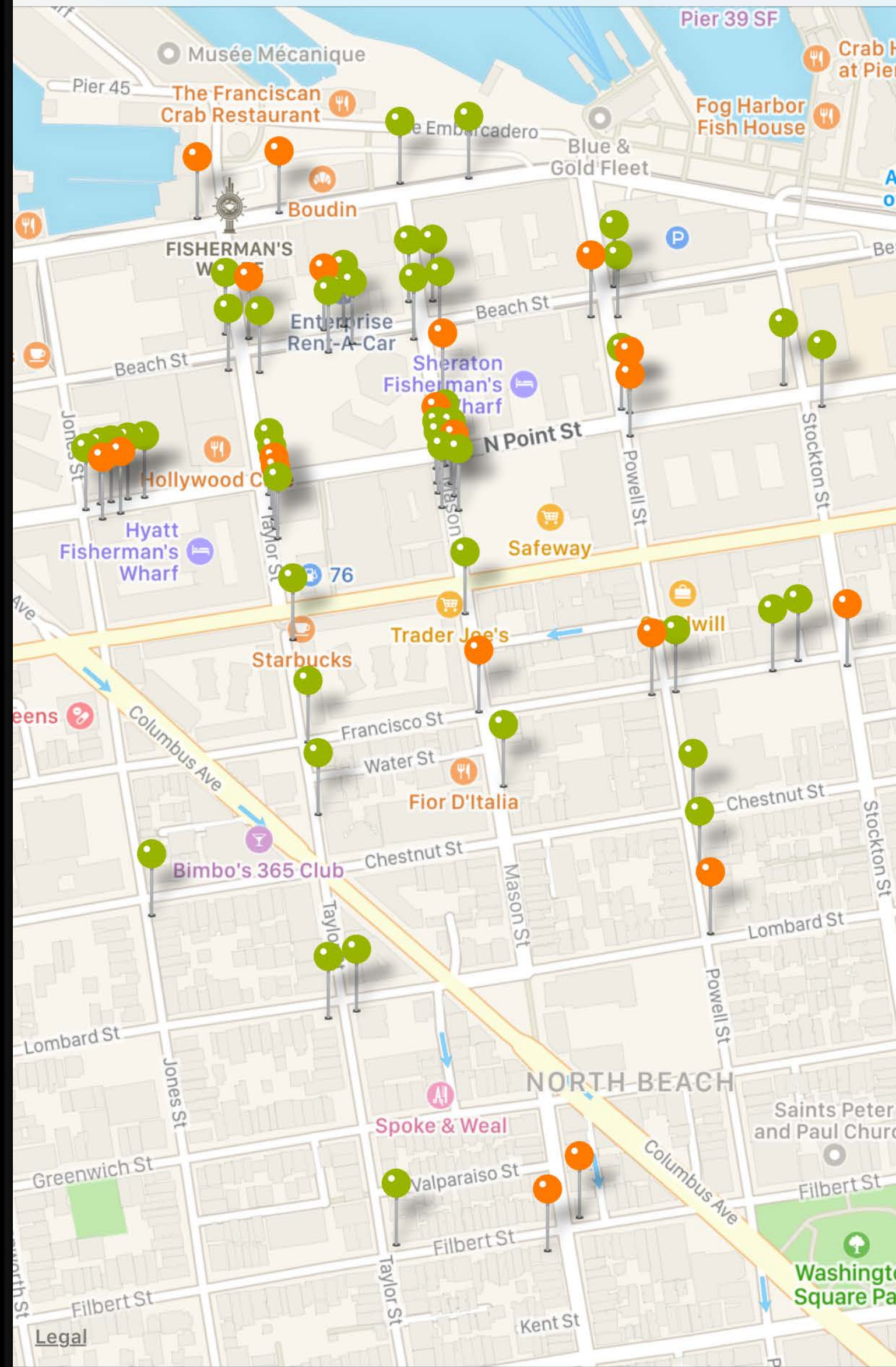
Fredrik Olsson

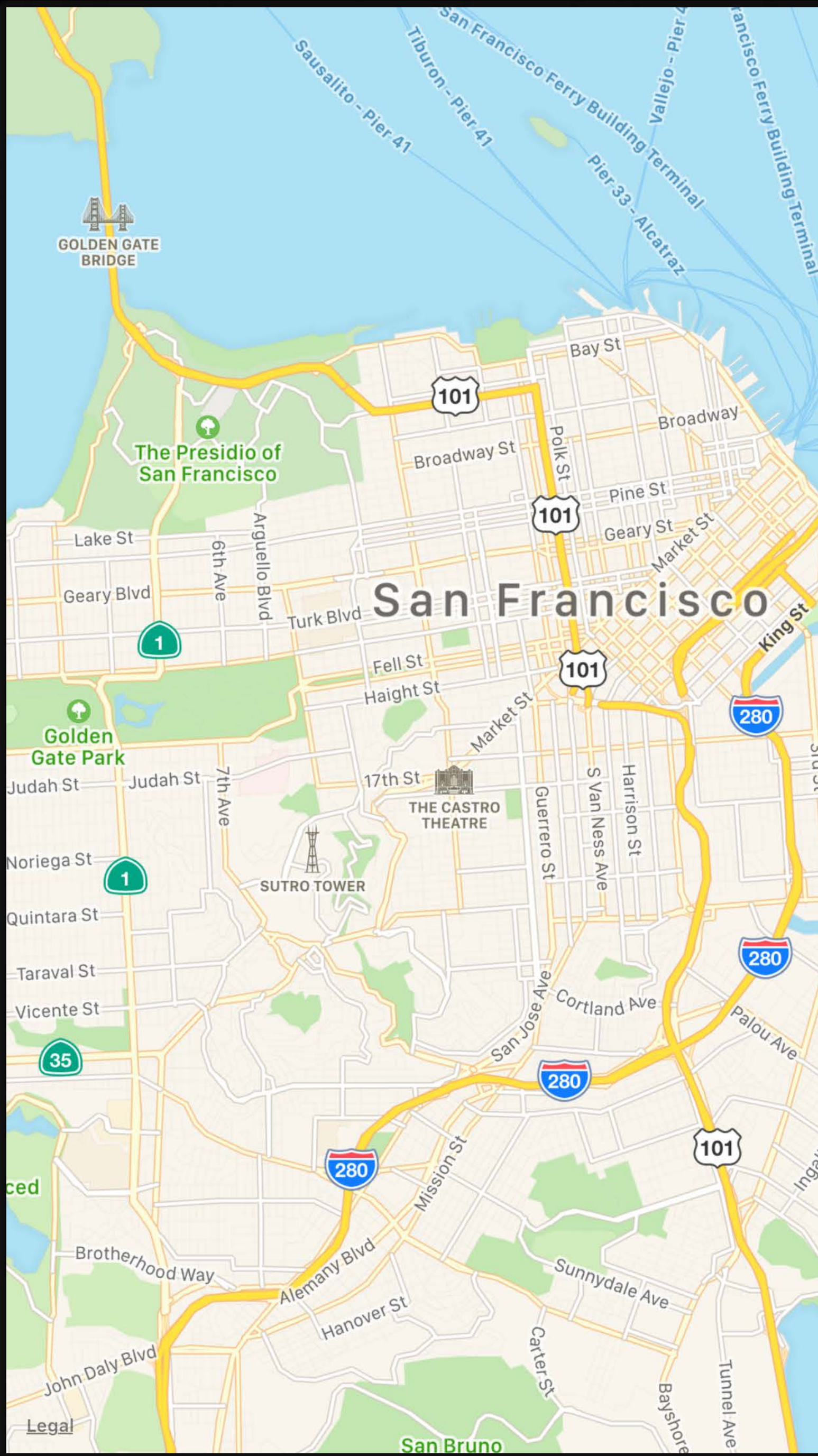


9:41 AM

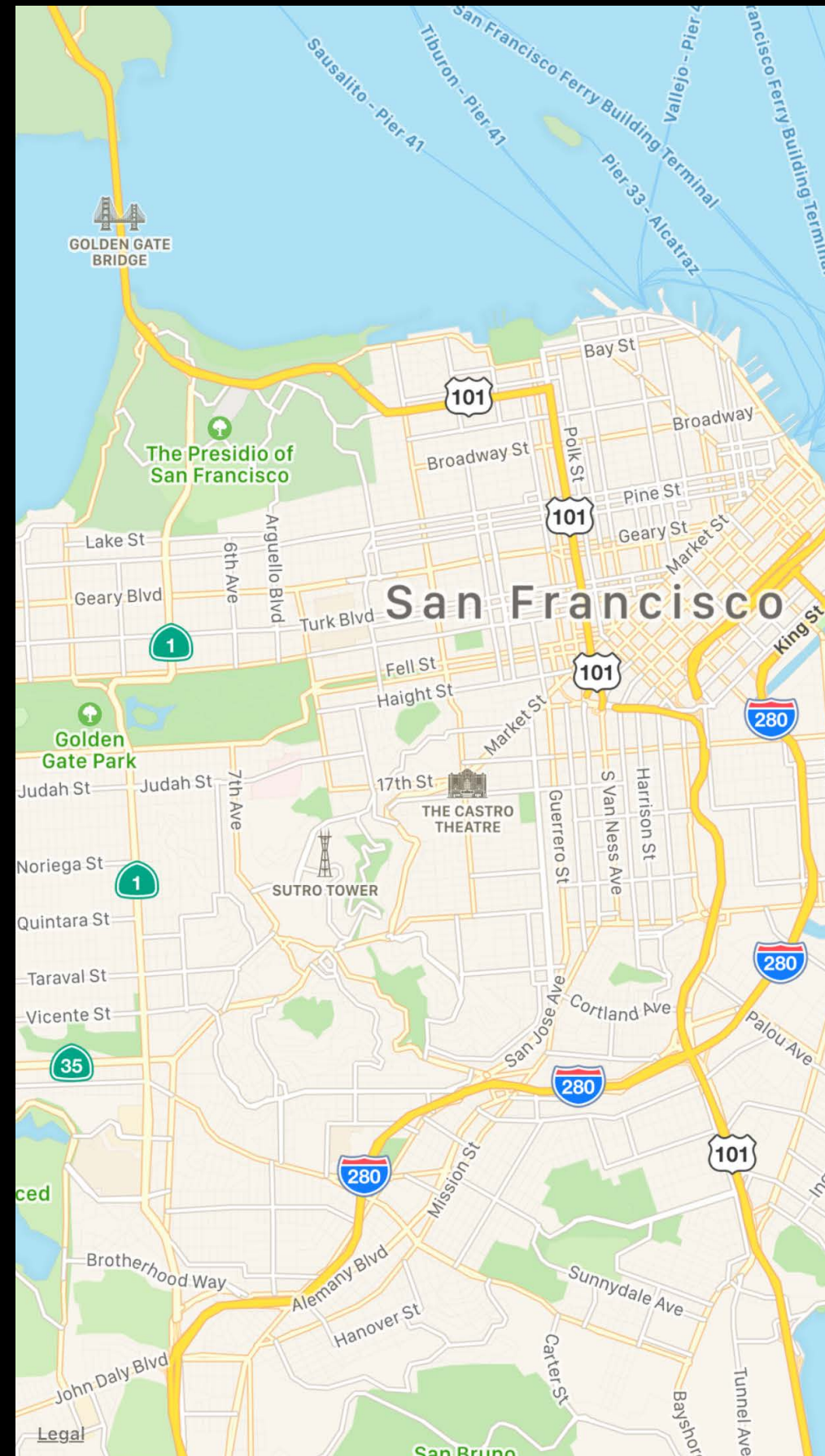


tandm



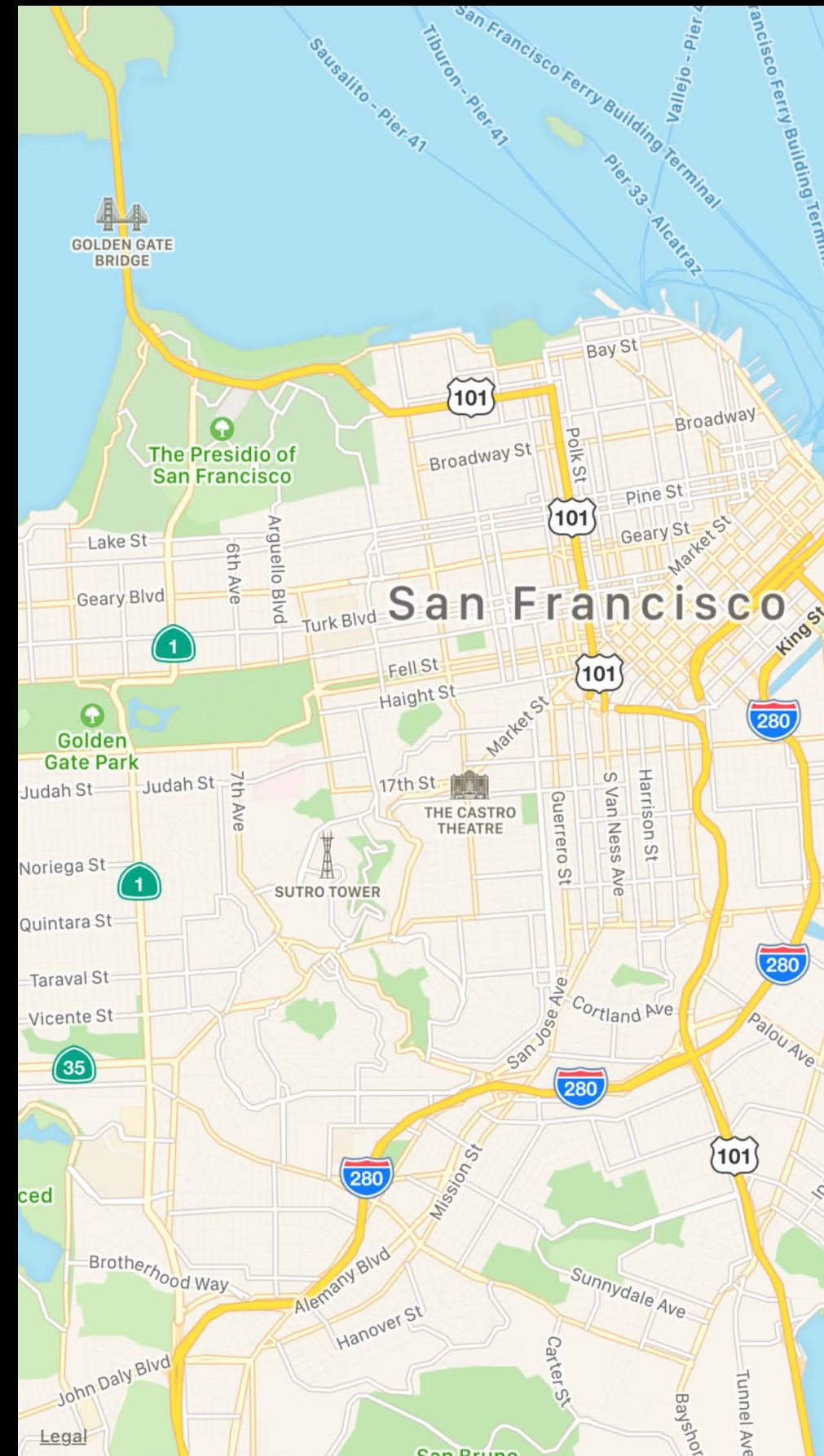


MKMapView.mapType

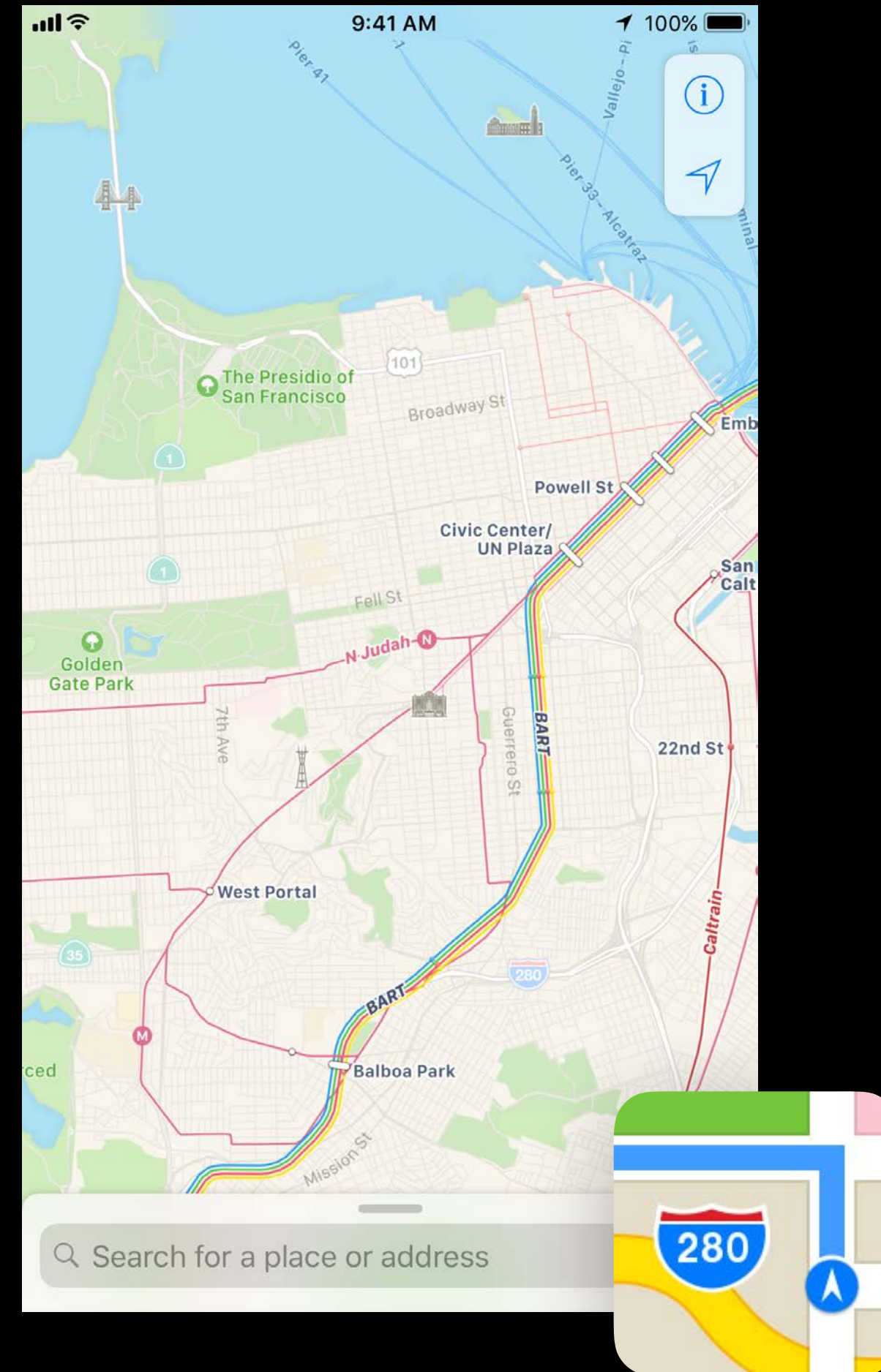


.standard

MKMapView.mapType

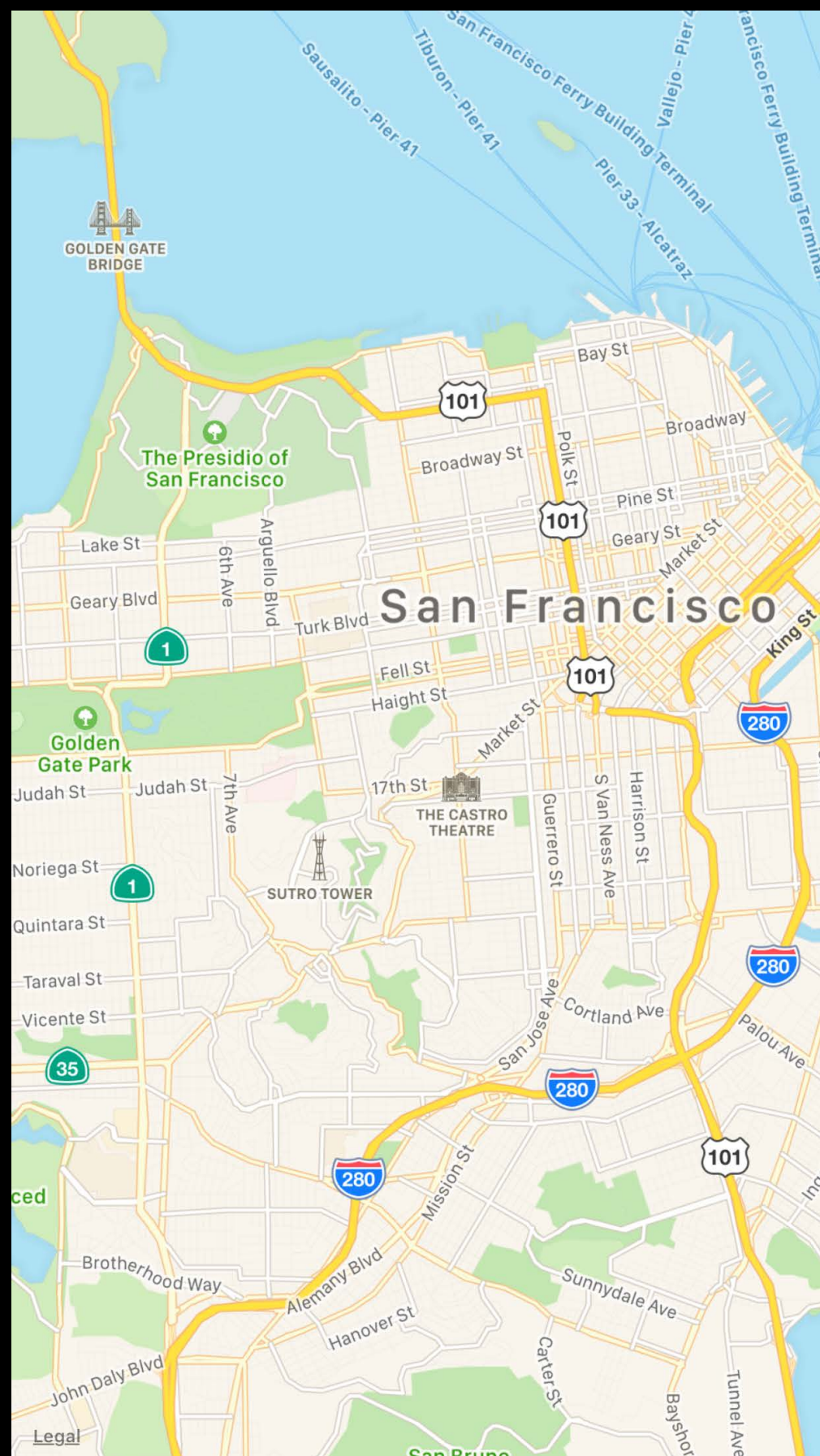


.standard

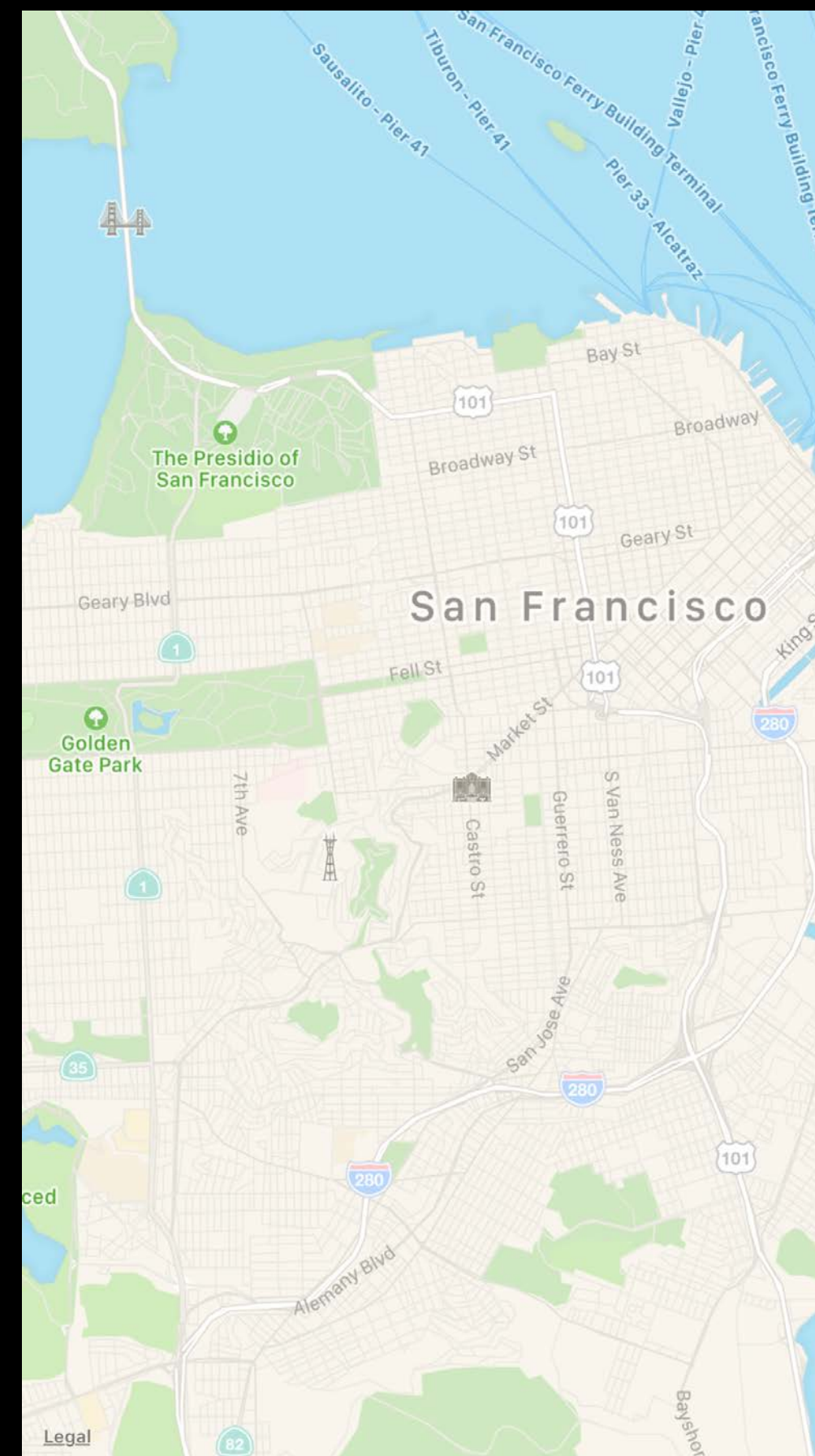
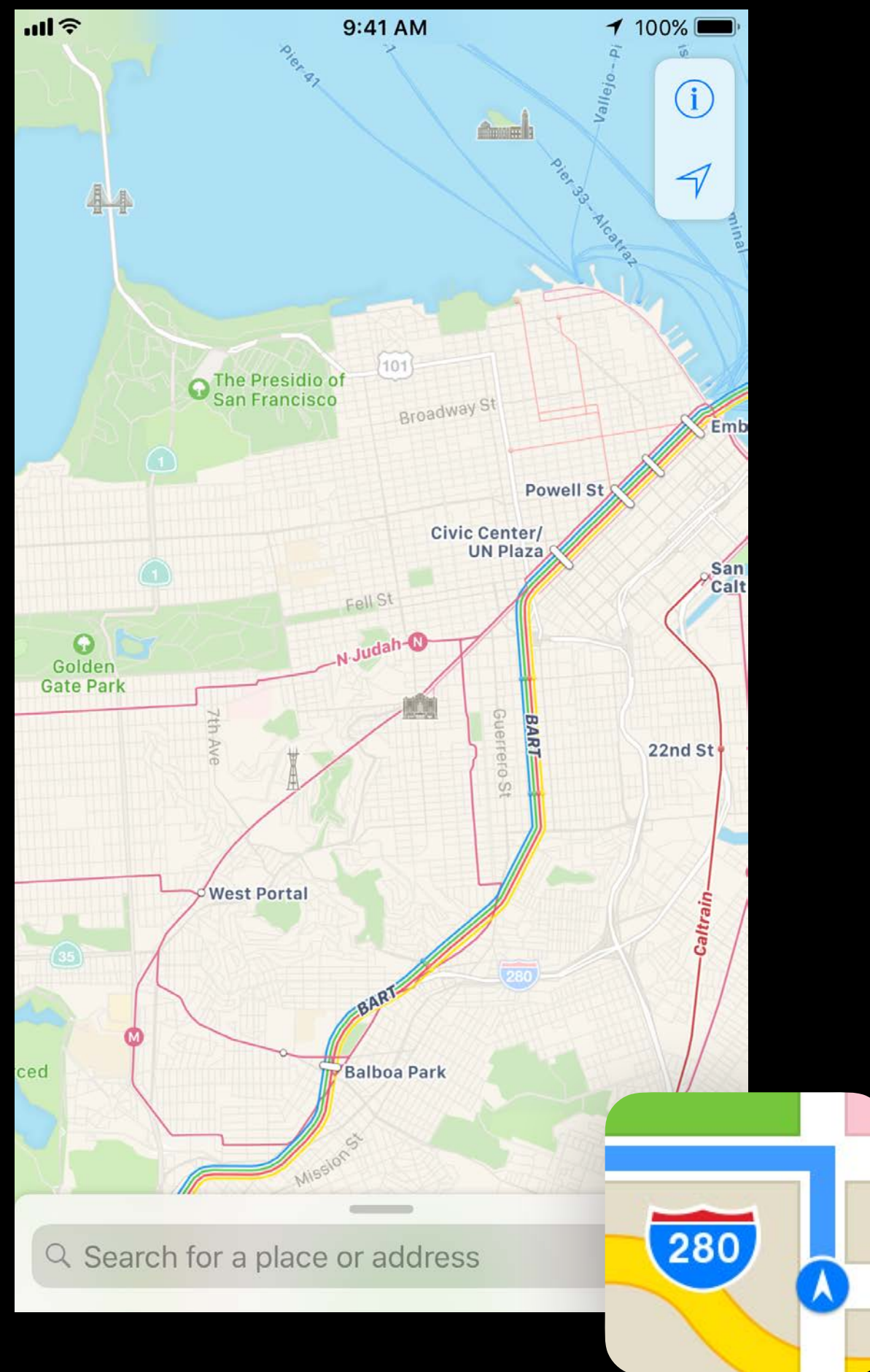


MKMapView.mapType

NEW



.standard



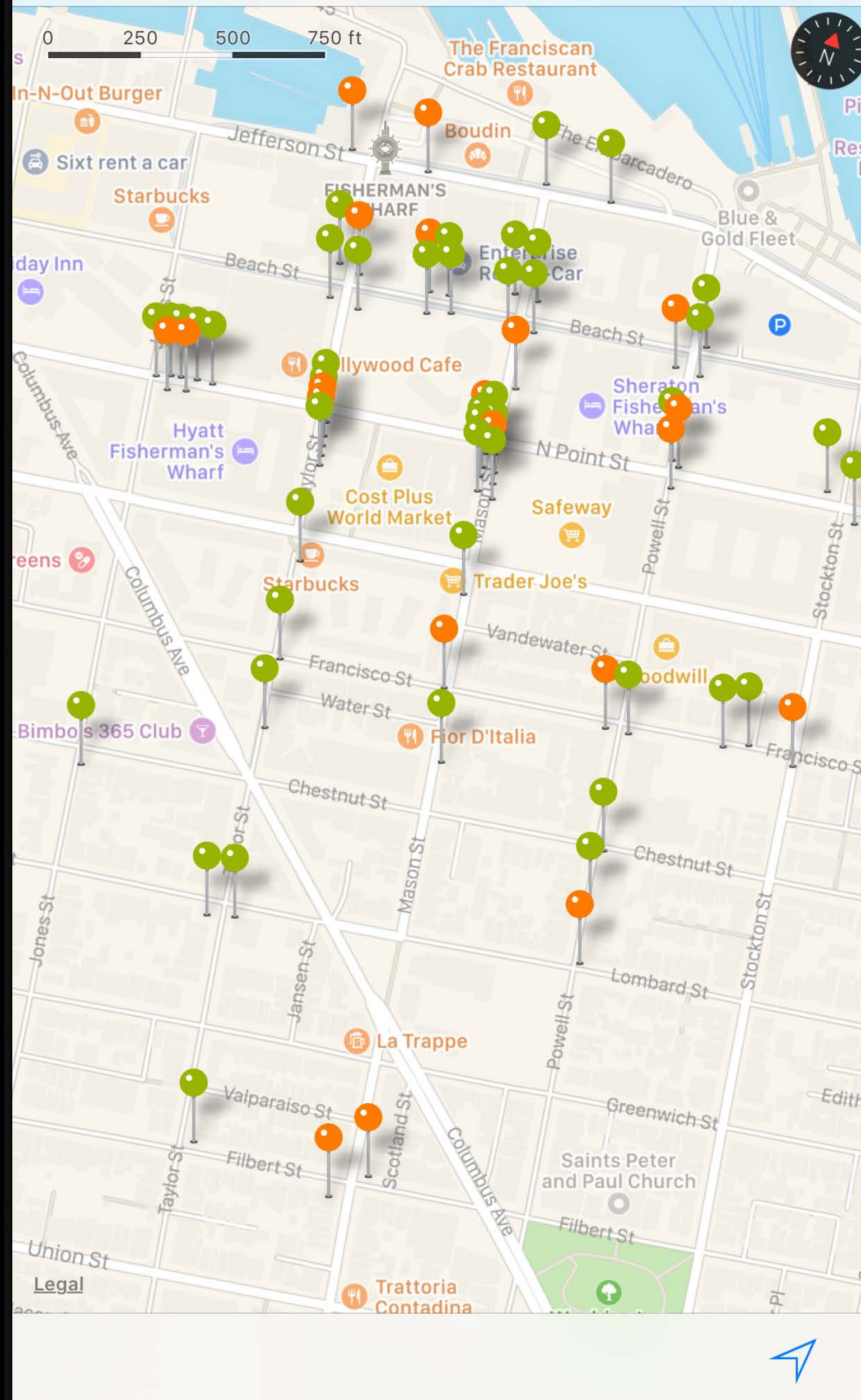
.mutedStandard



9:41 AM



tandm



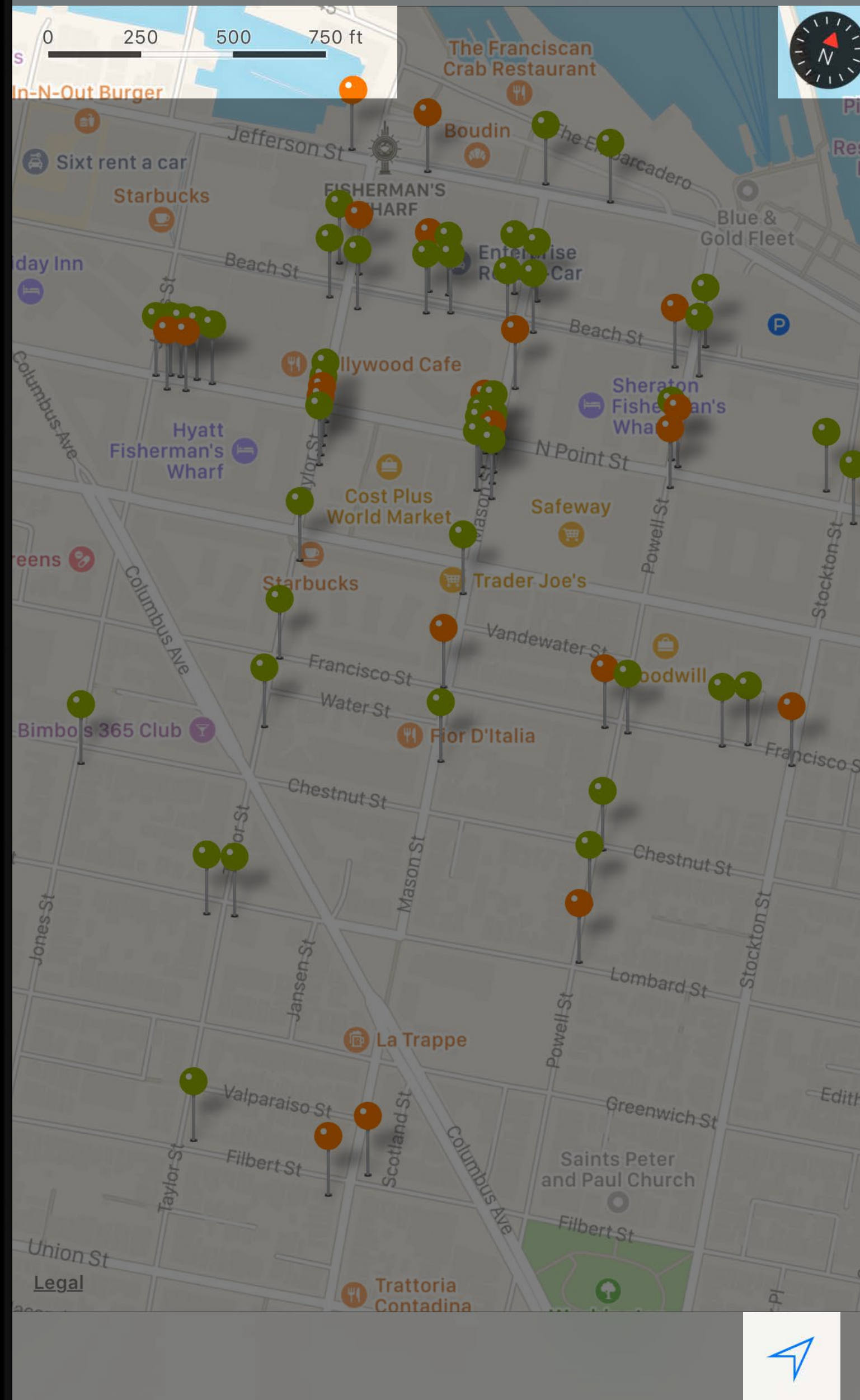


9:41 AM

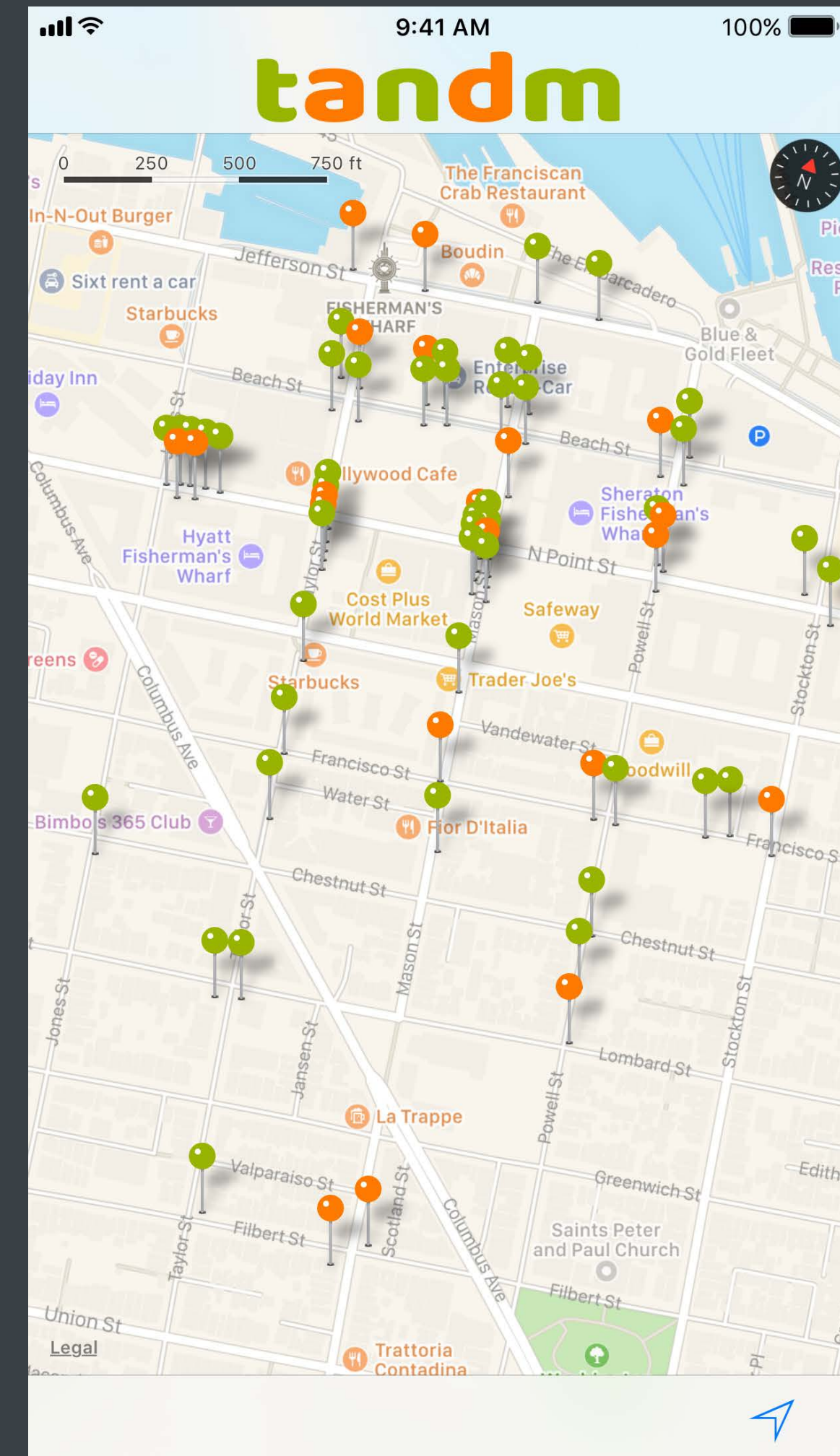


tandm

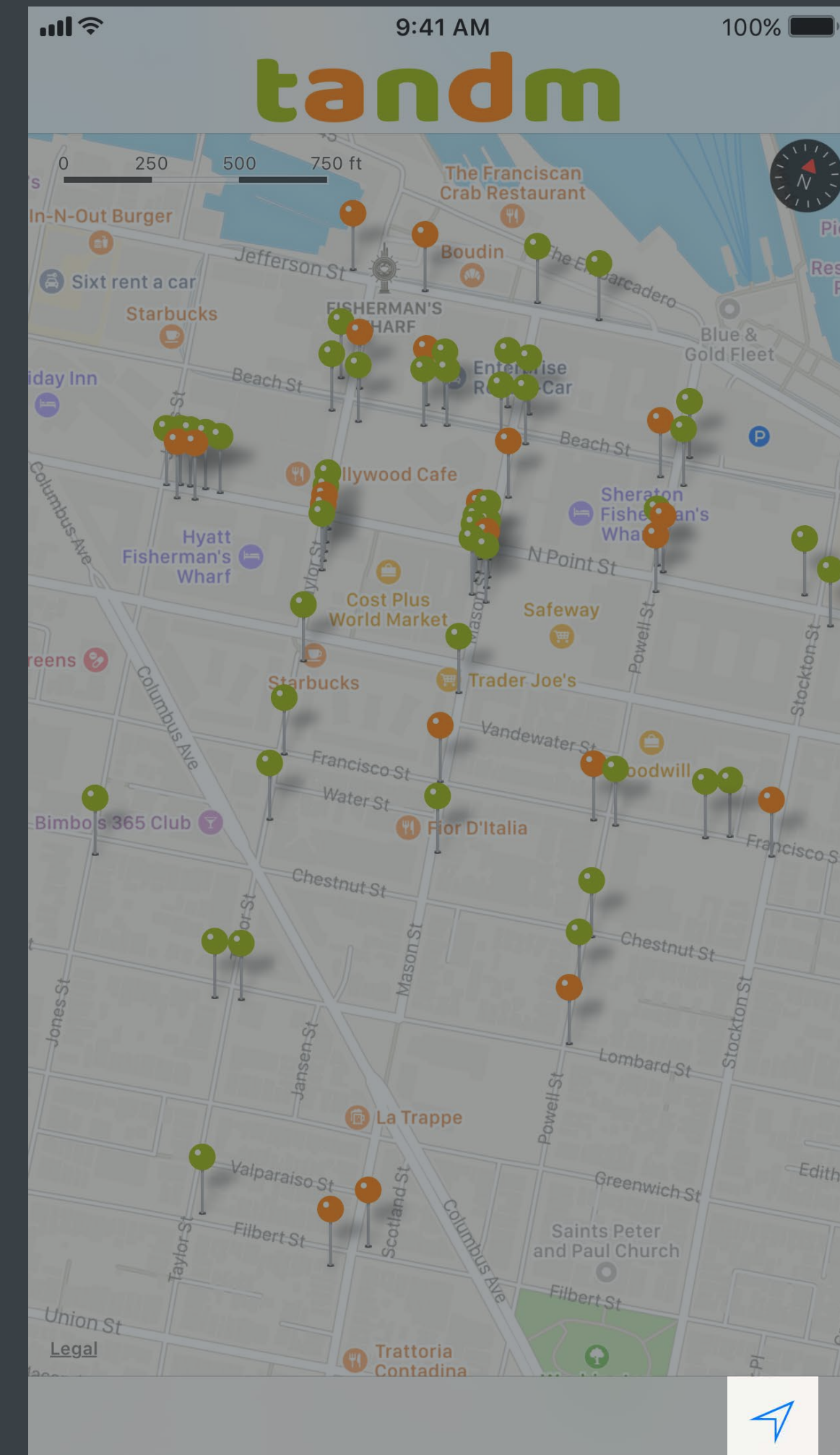
0 250 500 750 ft




```
open class MKUserTrackingBarButtonItem : UIBarButtonItem {  
    init(mapView: MKMapView)  
}
```

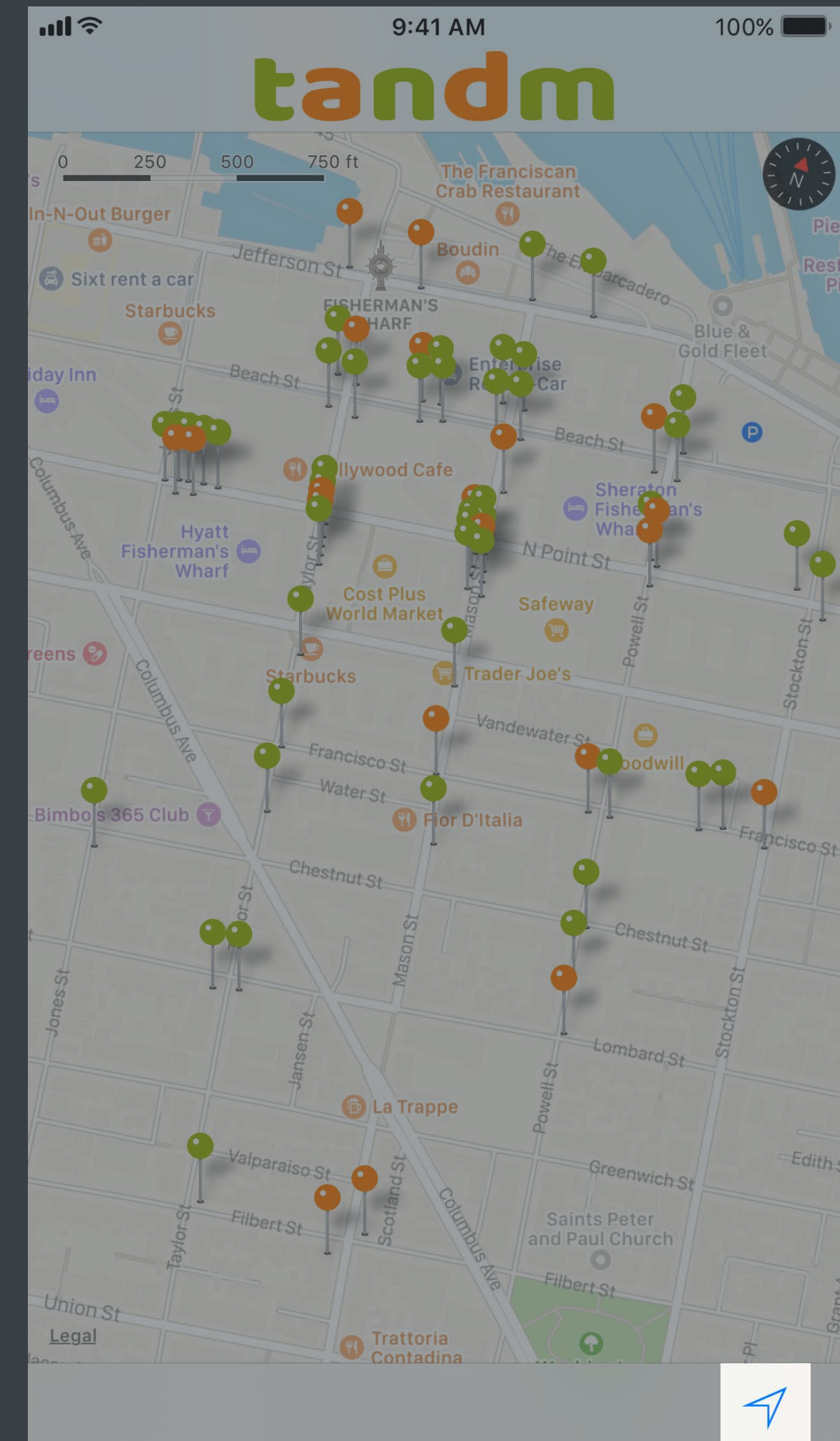


```
open class MKUserTrackingBarButtonItem : UIBarButtonItem {
    init(mapView: MKMapView)
}
```



```
open class MKUserTrackingButton : UIView {
    init(mapView: MKMapView)
}
```

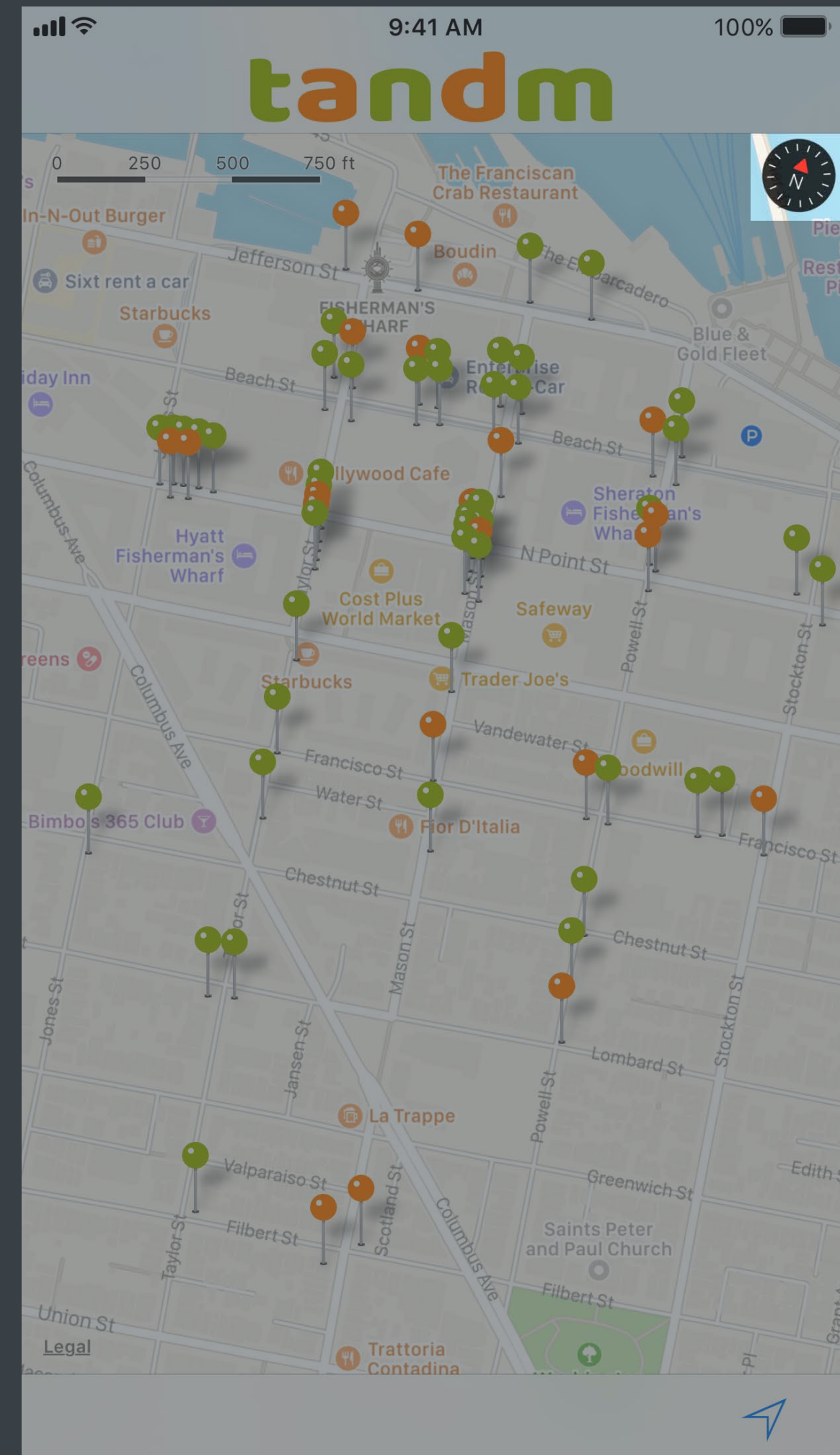
NEW



NEW

```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

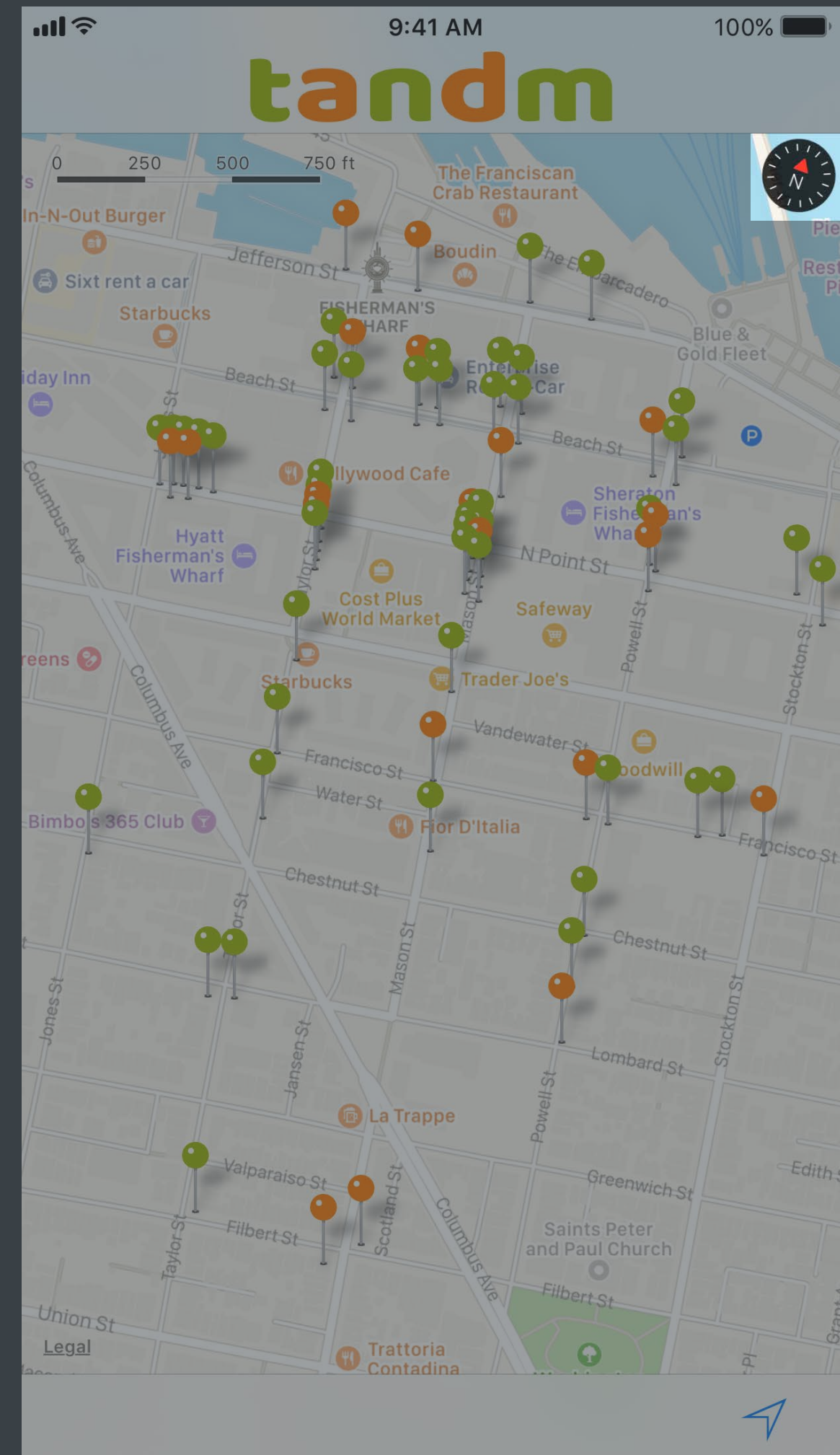
```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```



NEW

```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

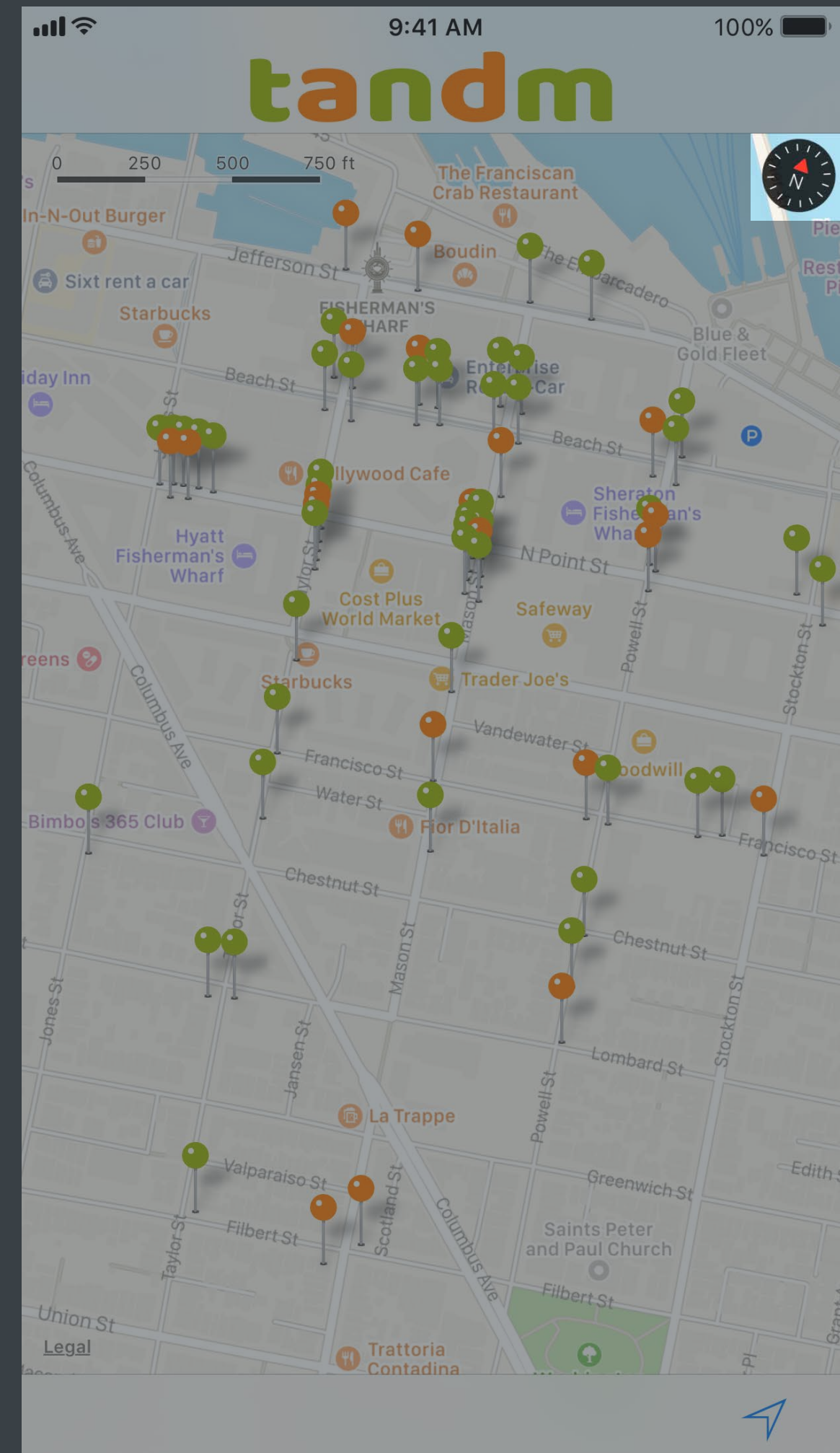


NEW

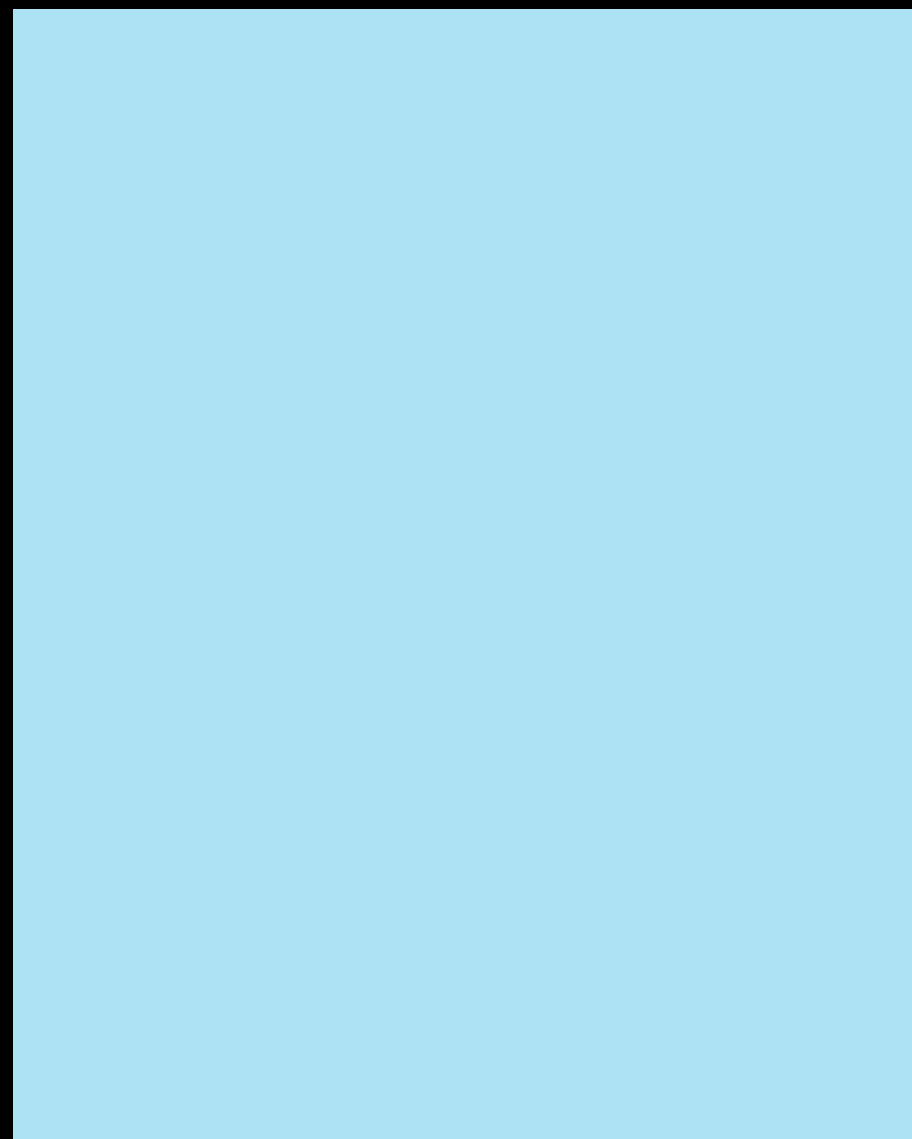
```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

```
public enum MKFeatureVisibility : Int {  
    case adaptive  
    case hidden  
    case visible  
}
```



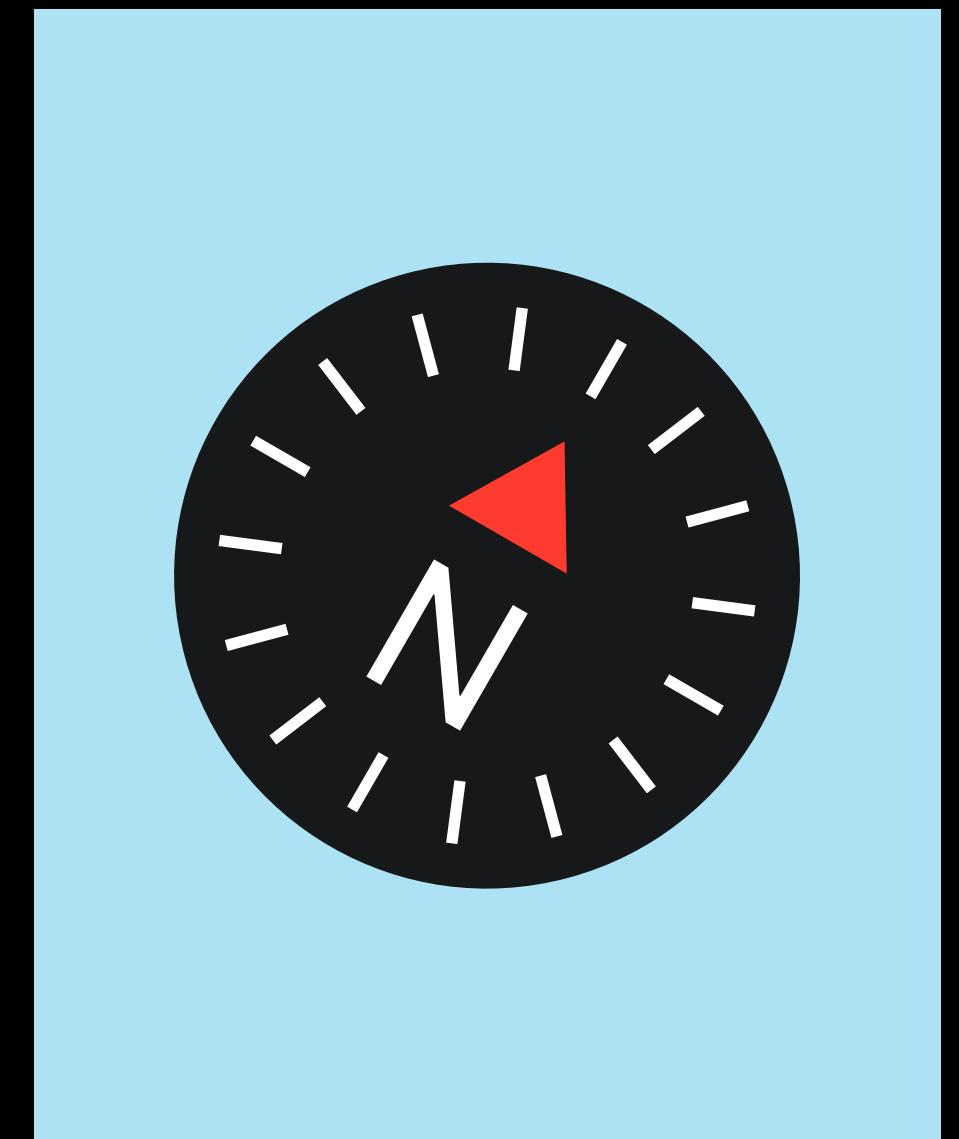
MKCompassButton.compassVisibility



`.hidden`

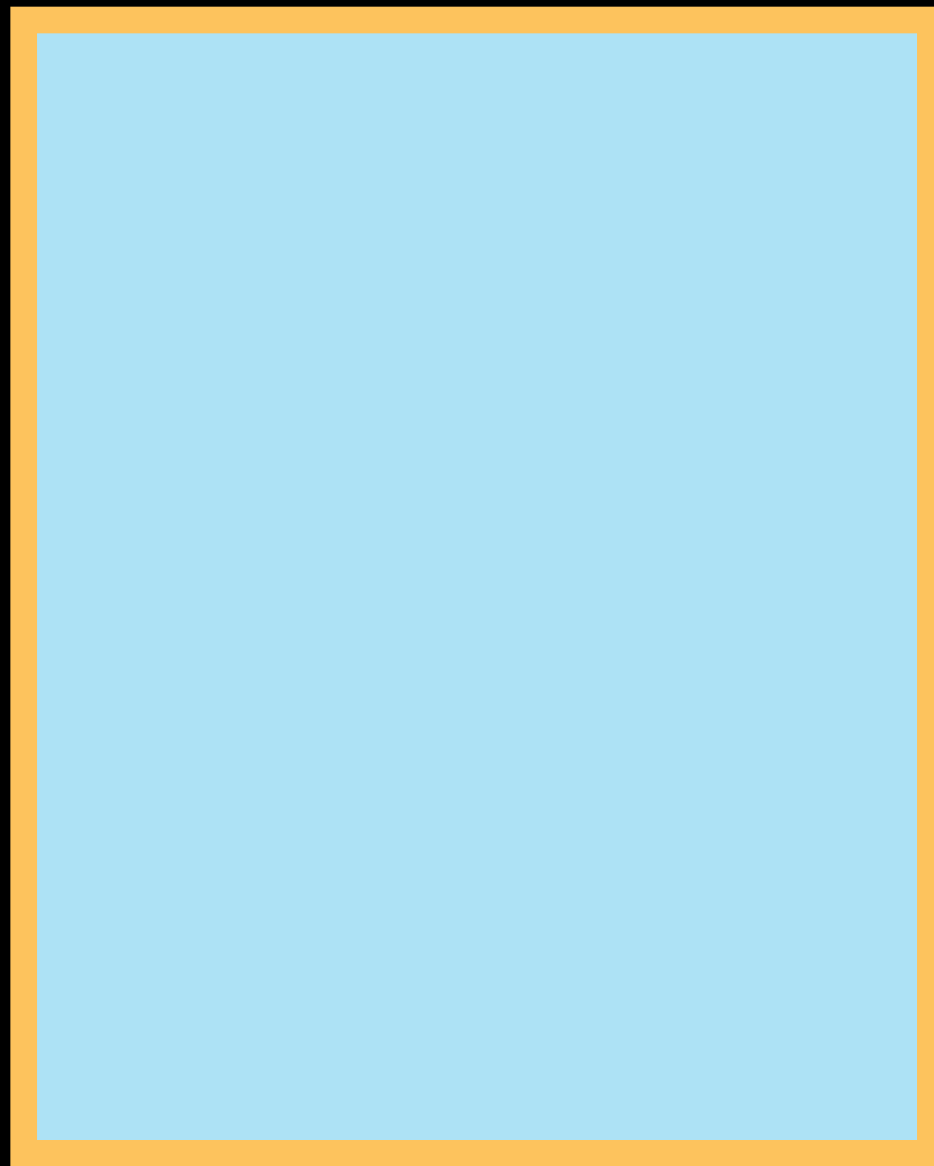


`.visible`



`.adaptive`

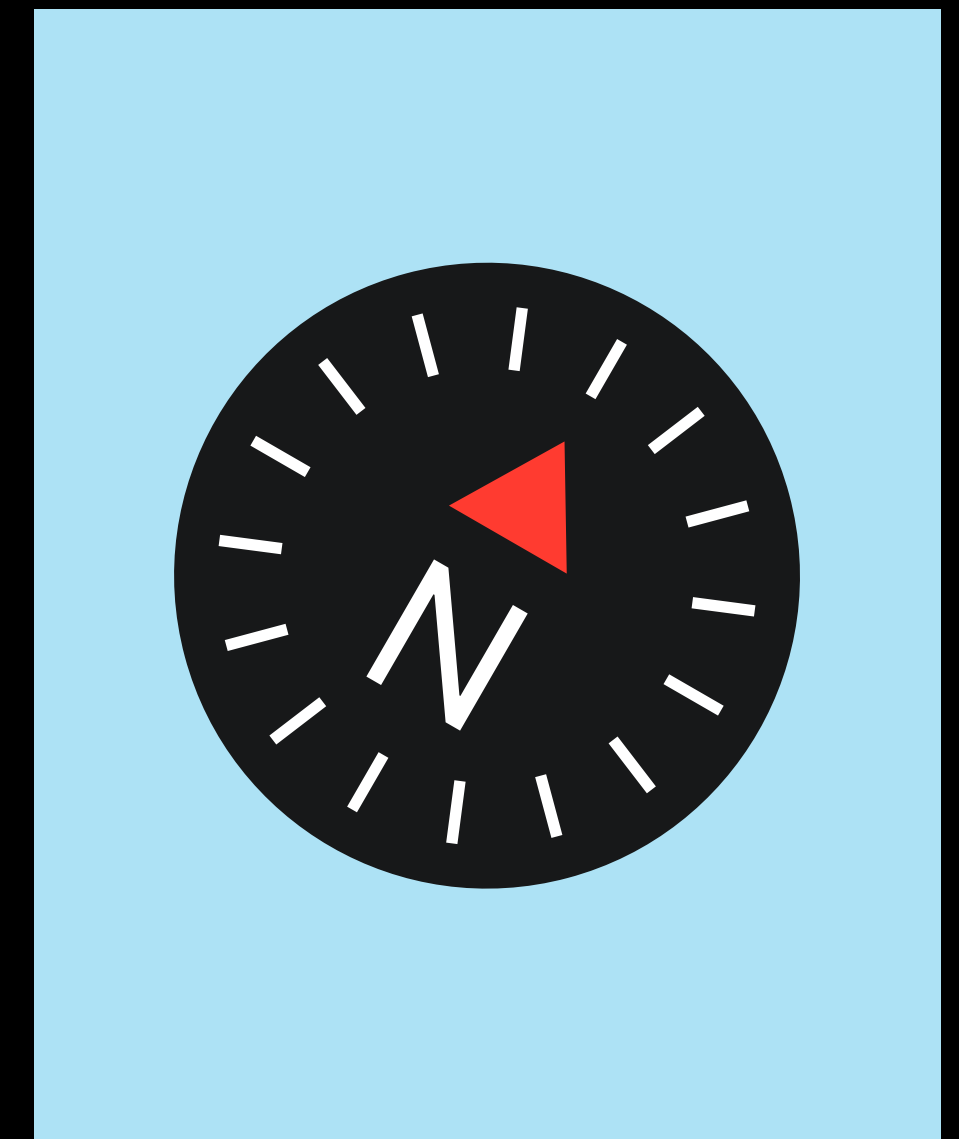
MKCompassButton.compassVisibility



`.hidden`

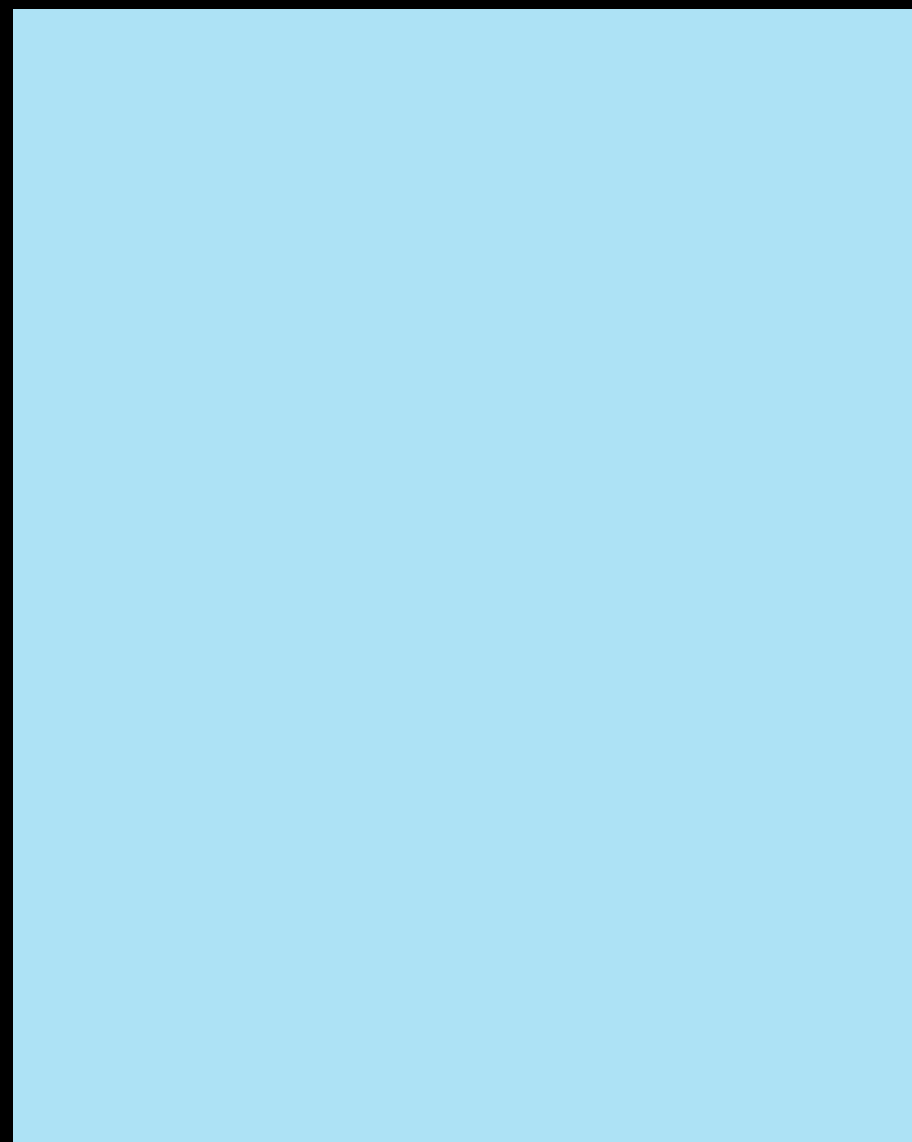


`.visible`



`.adaptive`

MKCompassButton.compassVisibility



`.hidden`

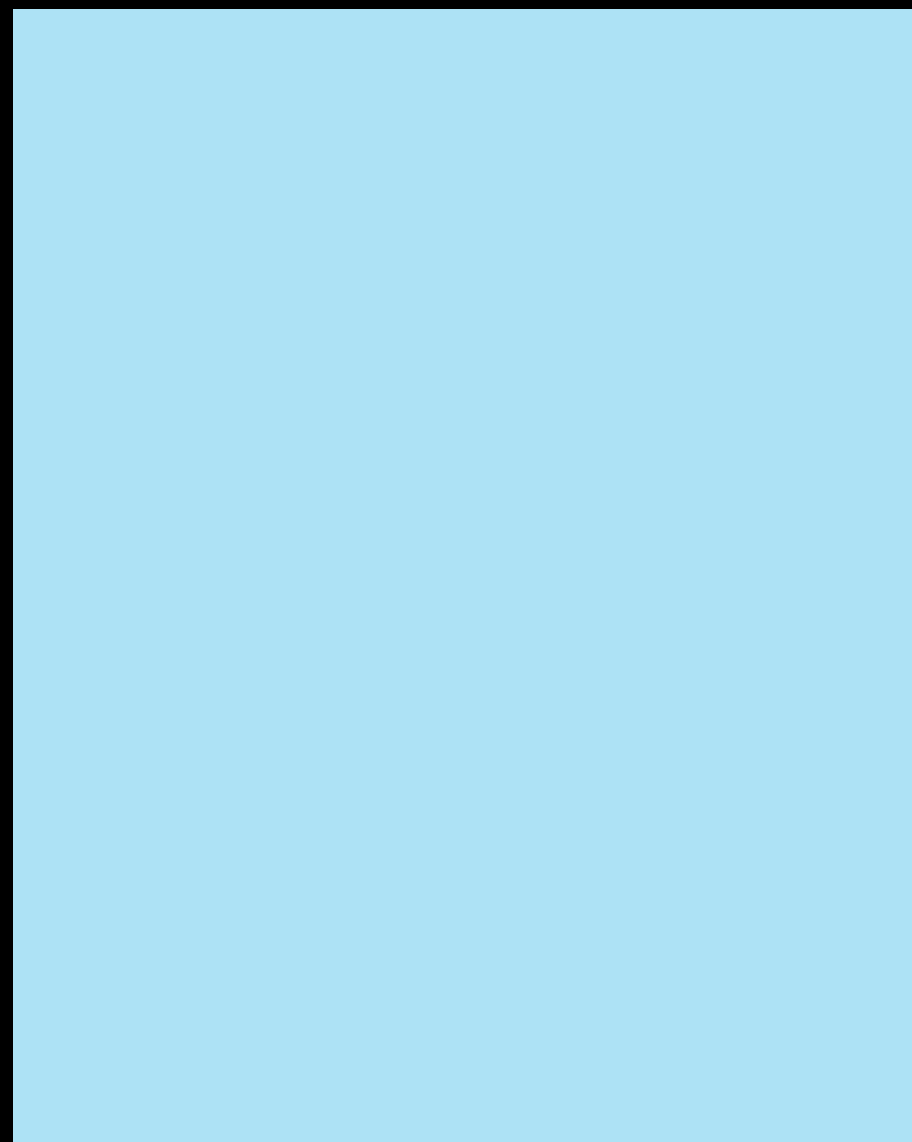


`.visible`



`.adaptive`

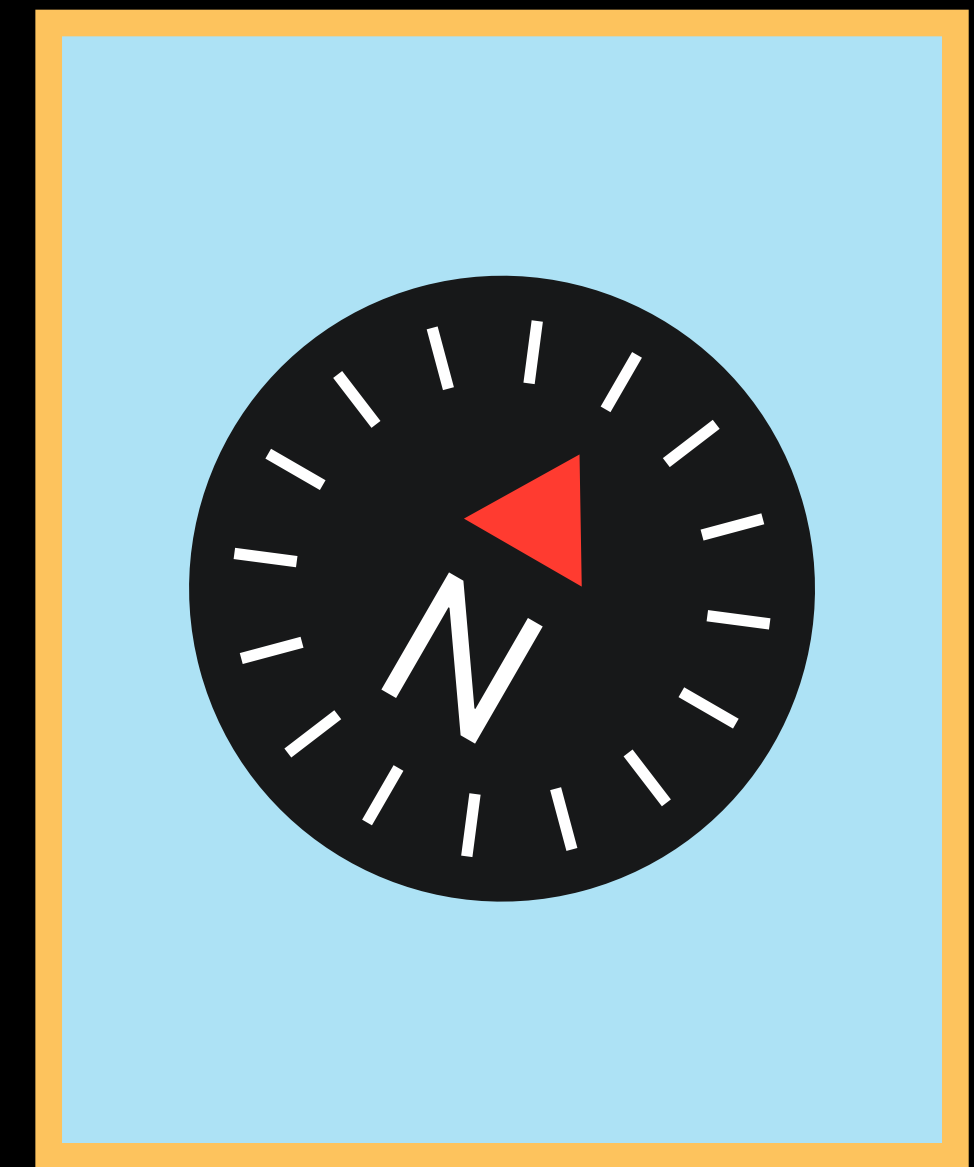
MKCompassButton.compassVisibility



`.hidden`

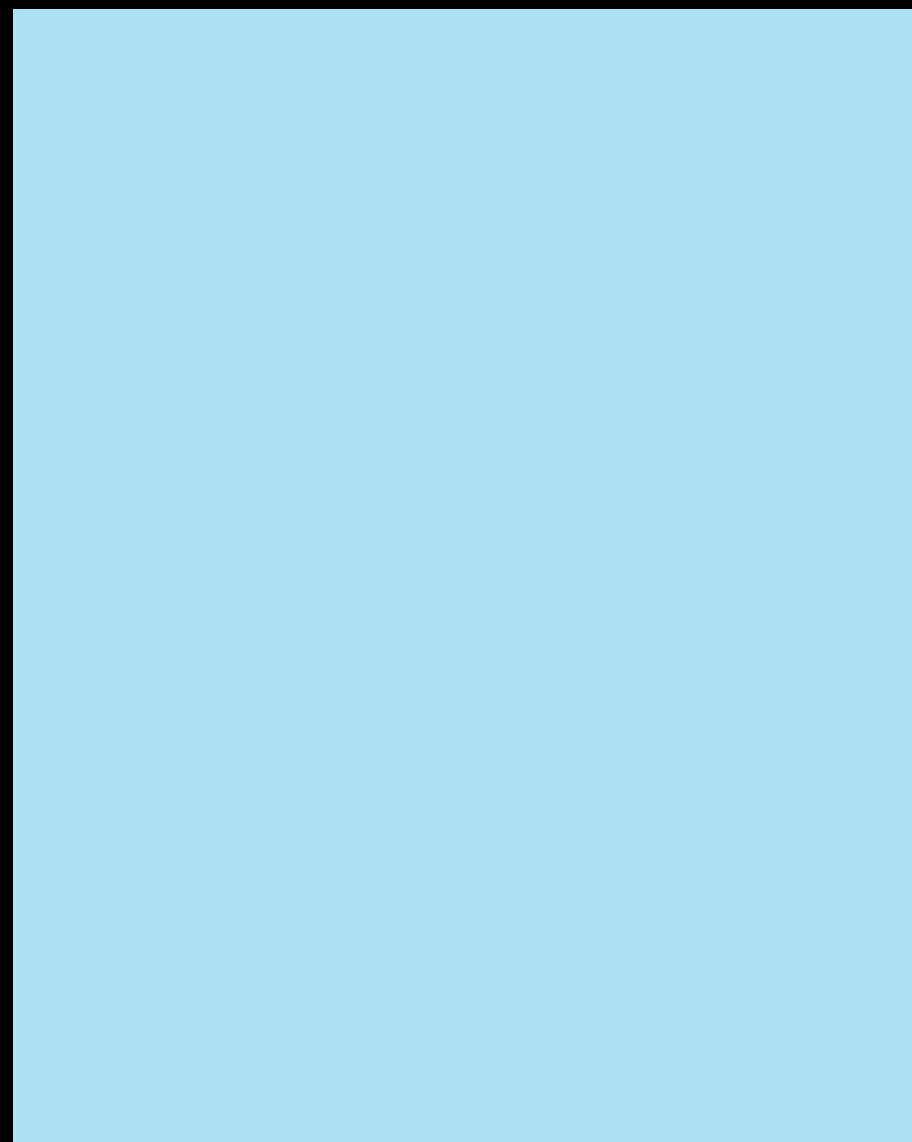


`.visible`

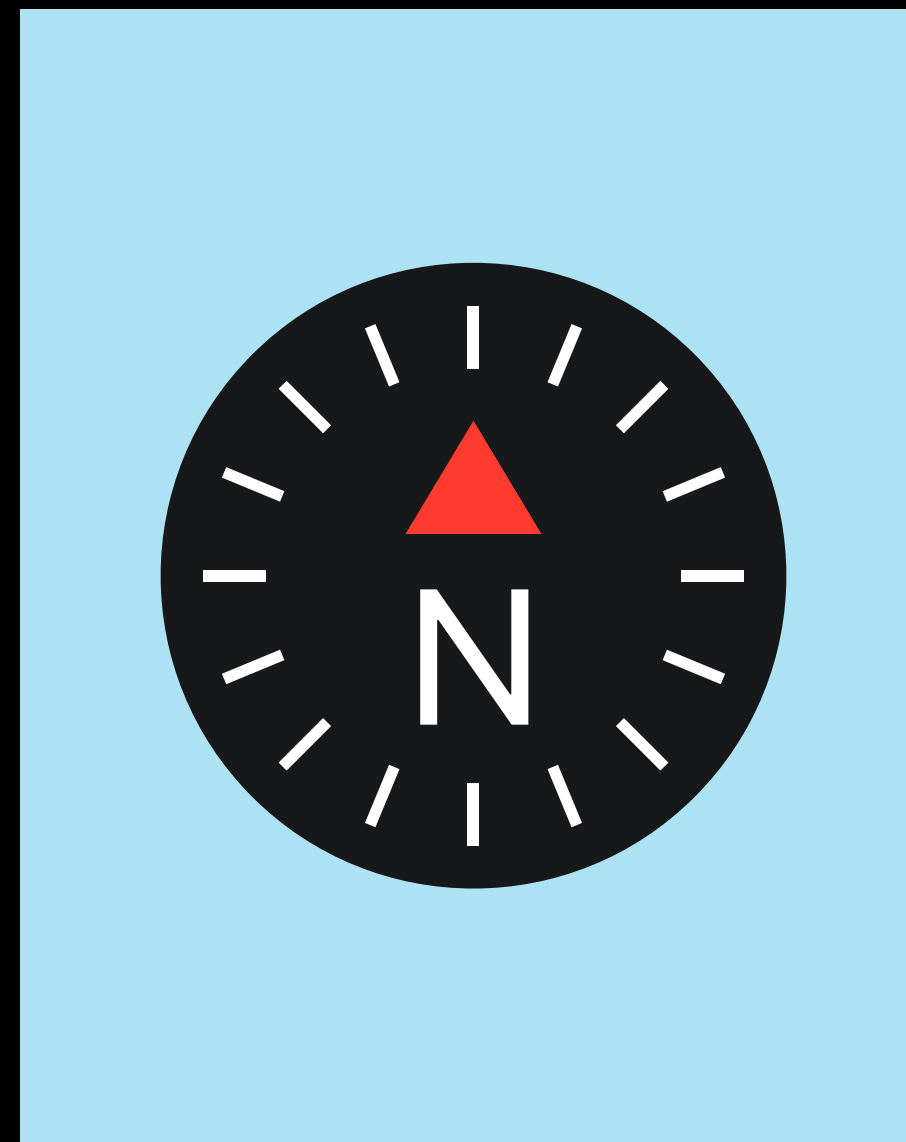


`.adaptive`

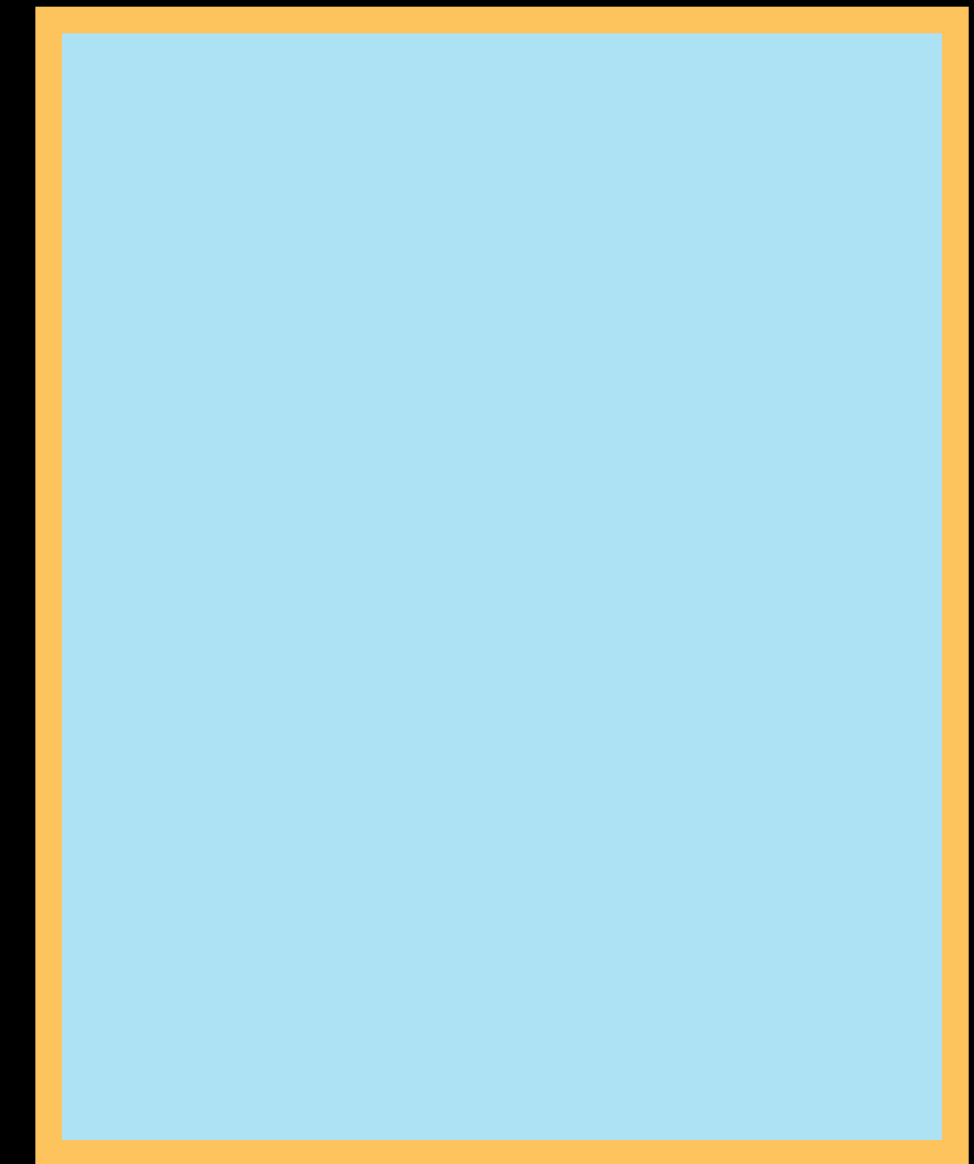
MKCompassButton.compassVisibility



`.hidden`

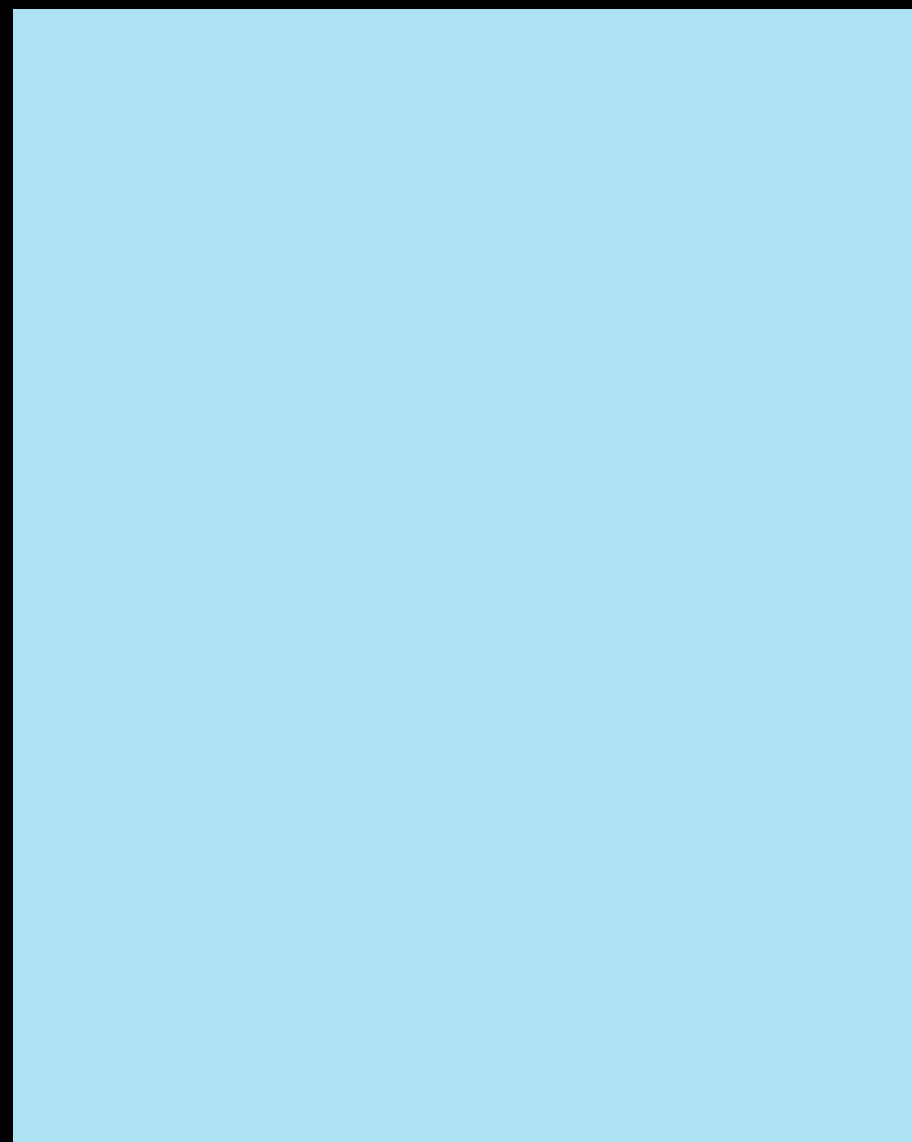


`.visible`



`.adaptive`

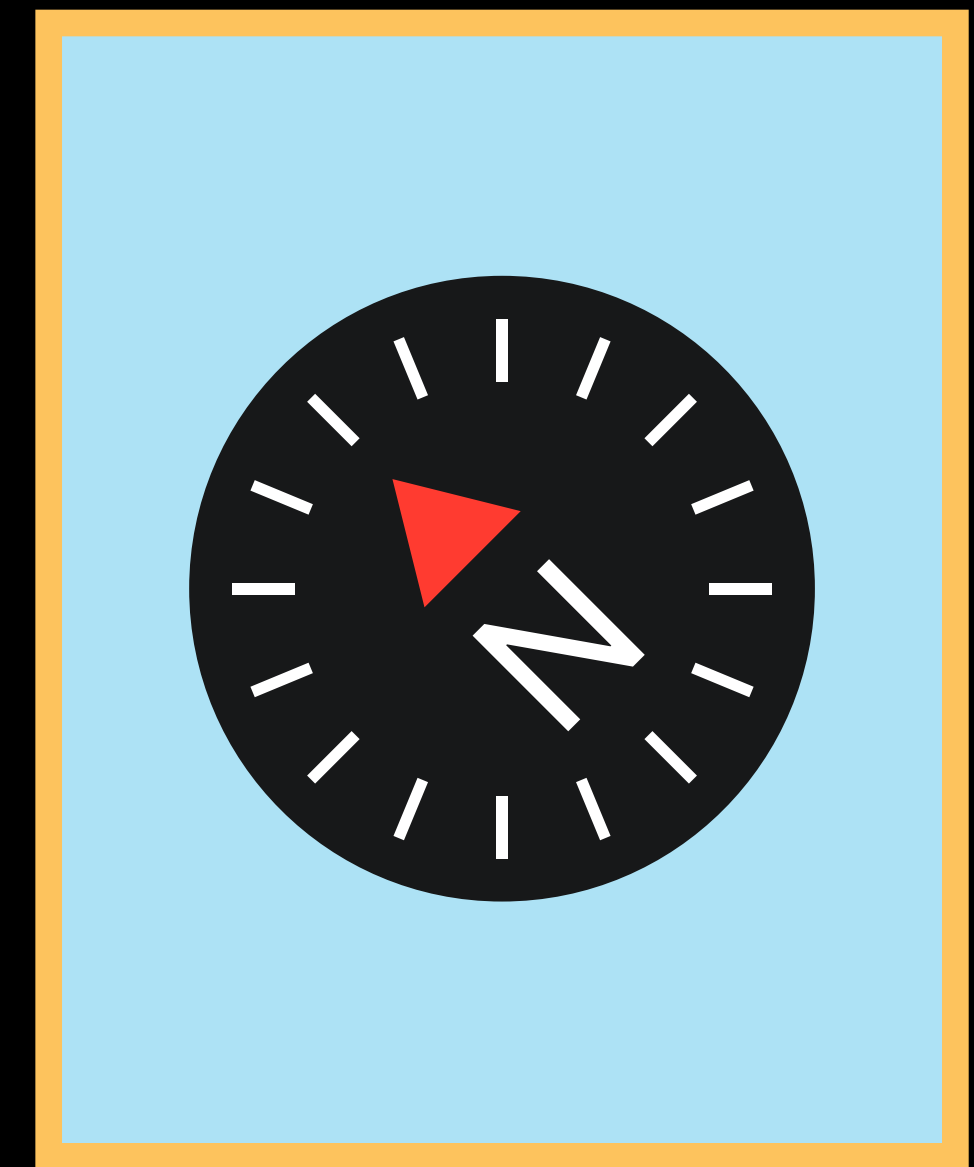
MKCompassButton.compassVisibility



`.hidden`



`.visible`



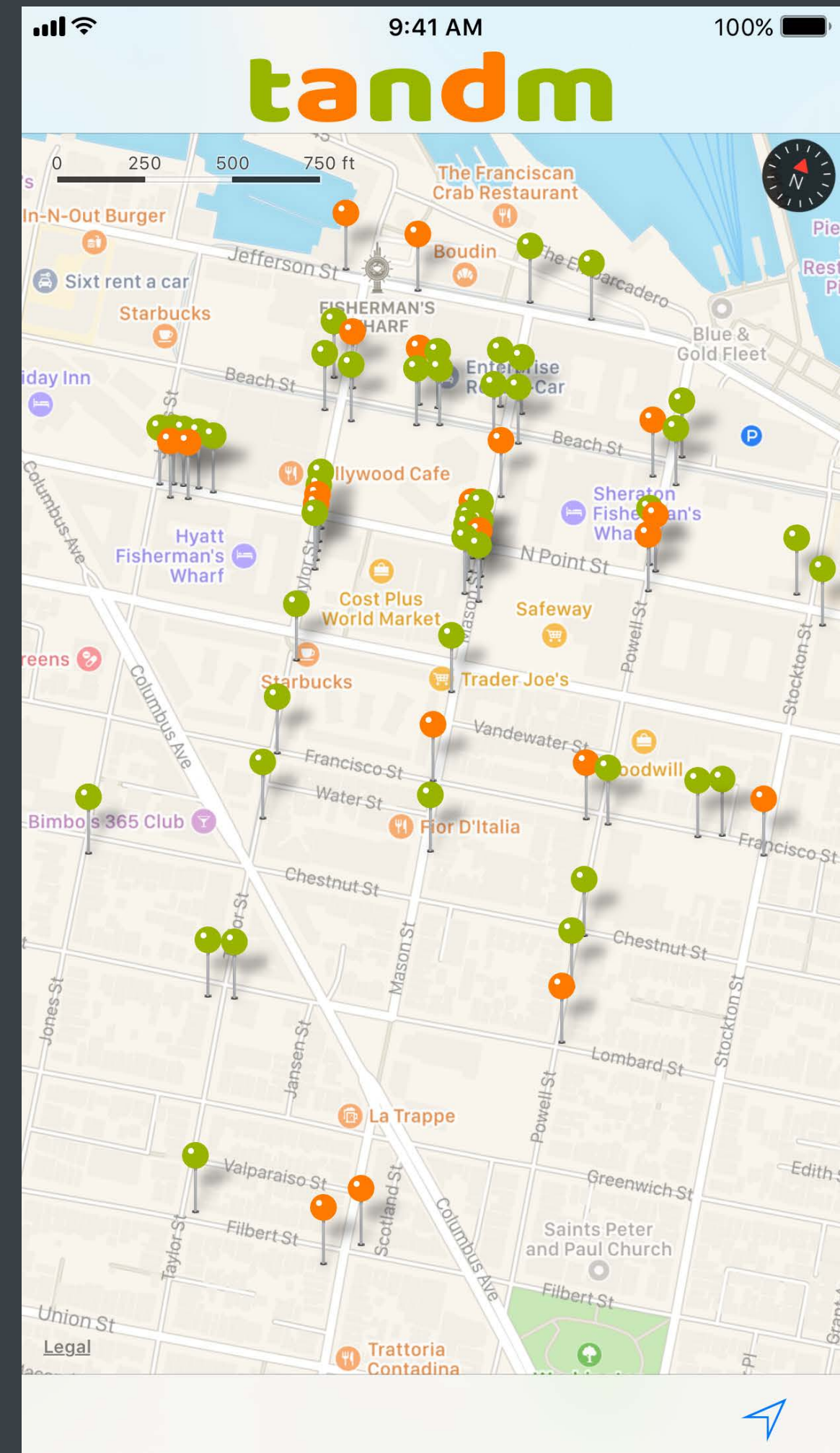
`.adaptive`

NEW

```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

```
open class MKScaleView : UIView {  
    init(mapView: MKMapView)  
    scaleVisibility: MKFeatureVisibility  
    legendAlignment: MKScaleViewAlignment  
}
```

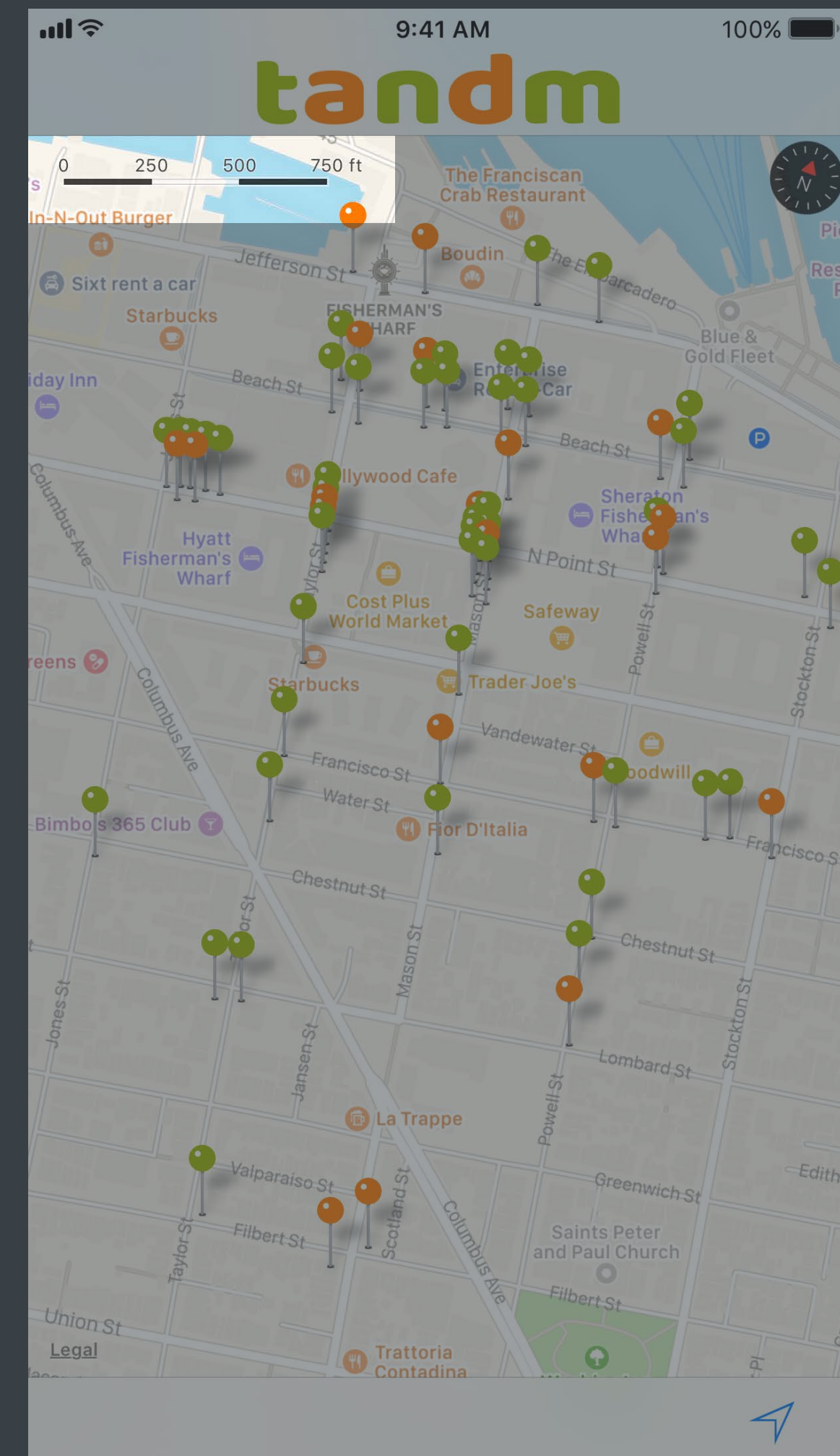


NEW

```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

```
open class MKScaleView : UIView {  
    init(mapView: MKMapView)  
    scaleVisibility: MKFeatureVisibility  
    legendAlignment: MKScaleViewAlignment  
}
```

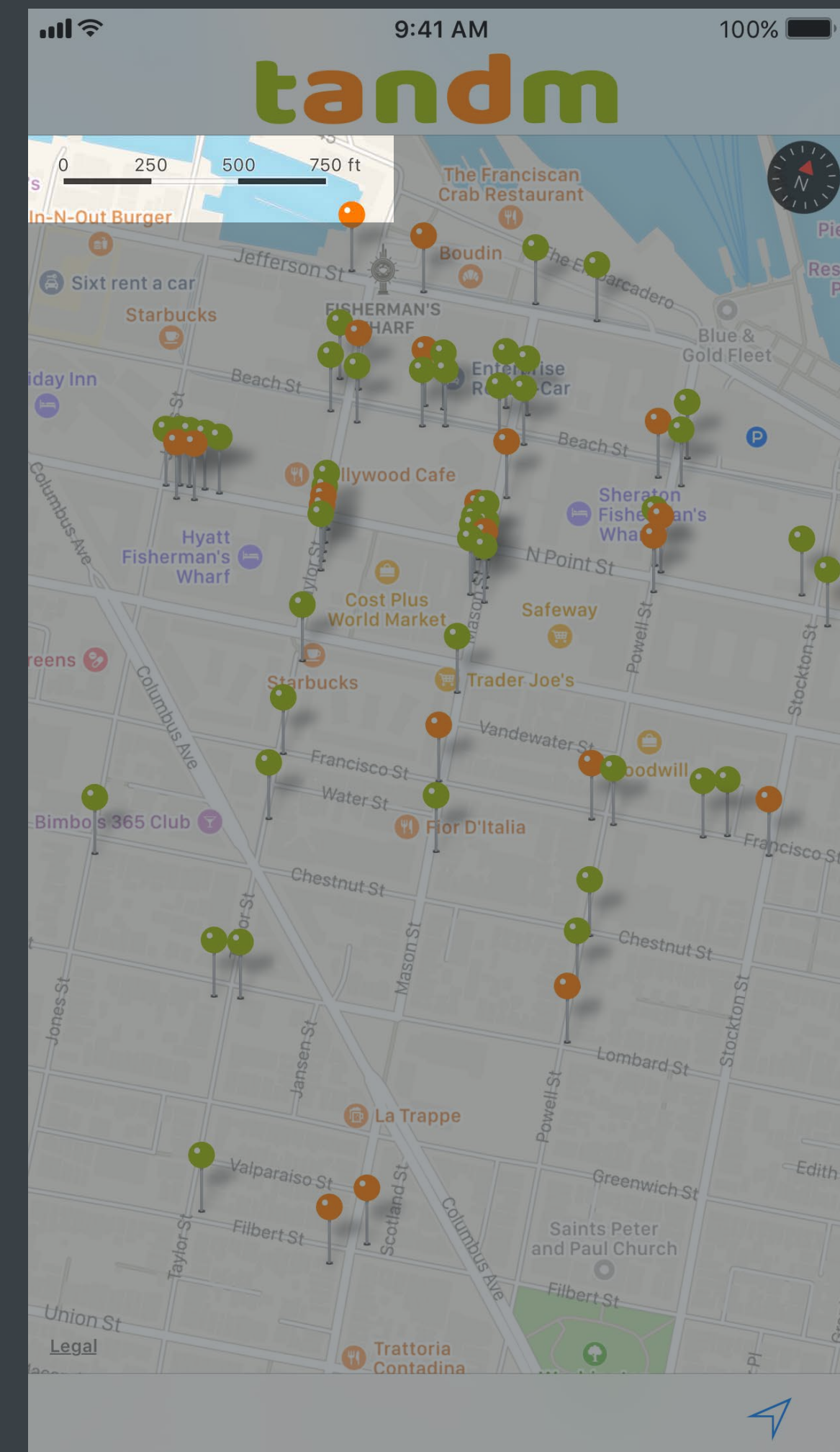


NEW

```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

```
open class MKScaleView : UIView {  
    init(mapView: MKMapView)  
    scaleVisibility: MKFeatureVisibility  
    legendAlignment: MKScaleViewAlignment  
}
```

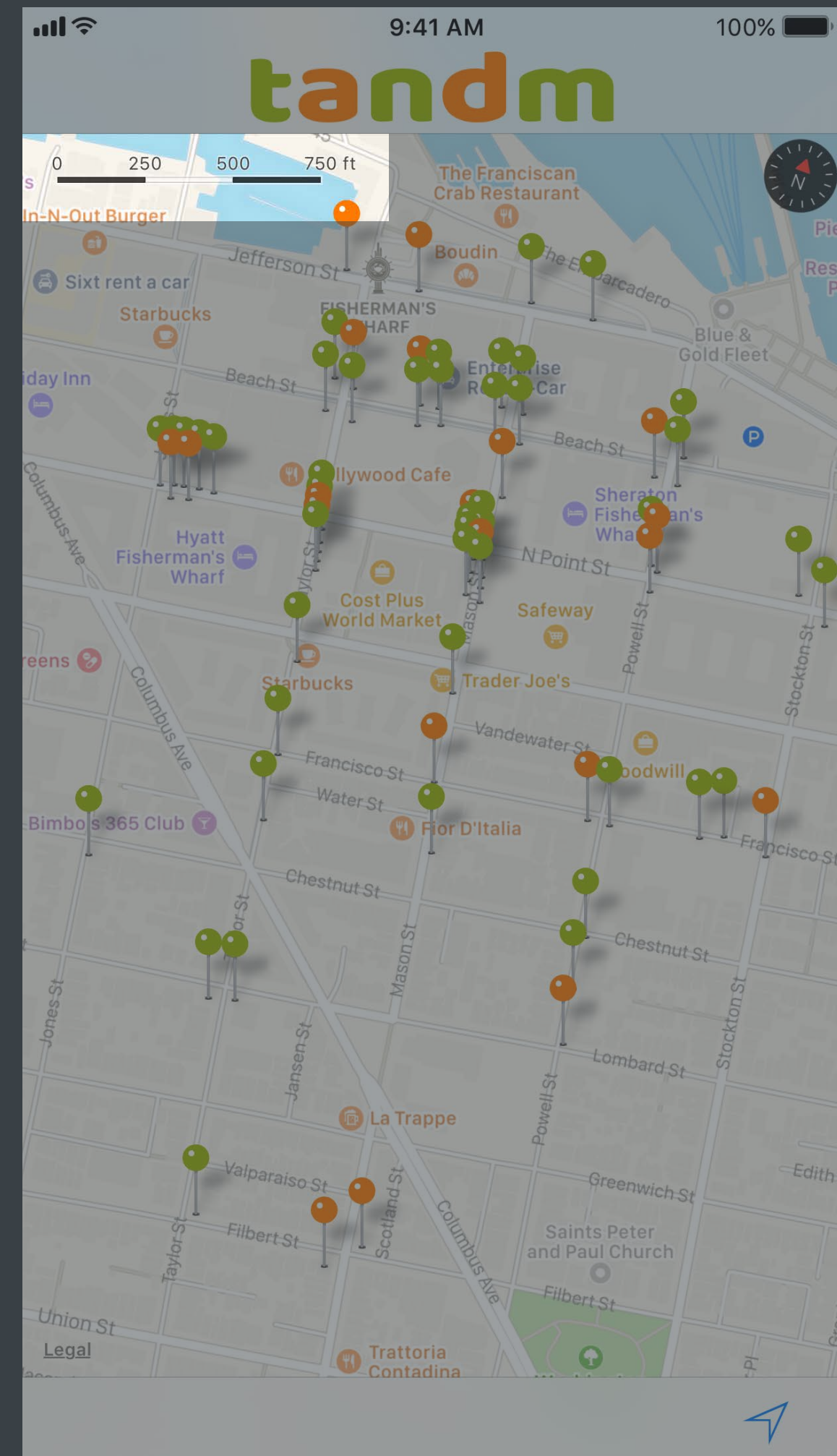


NEW

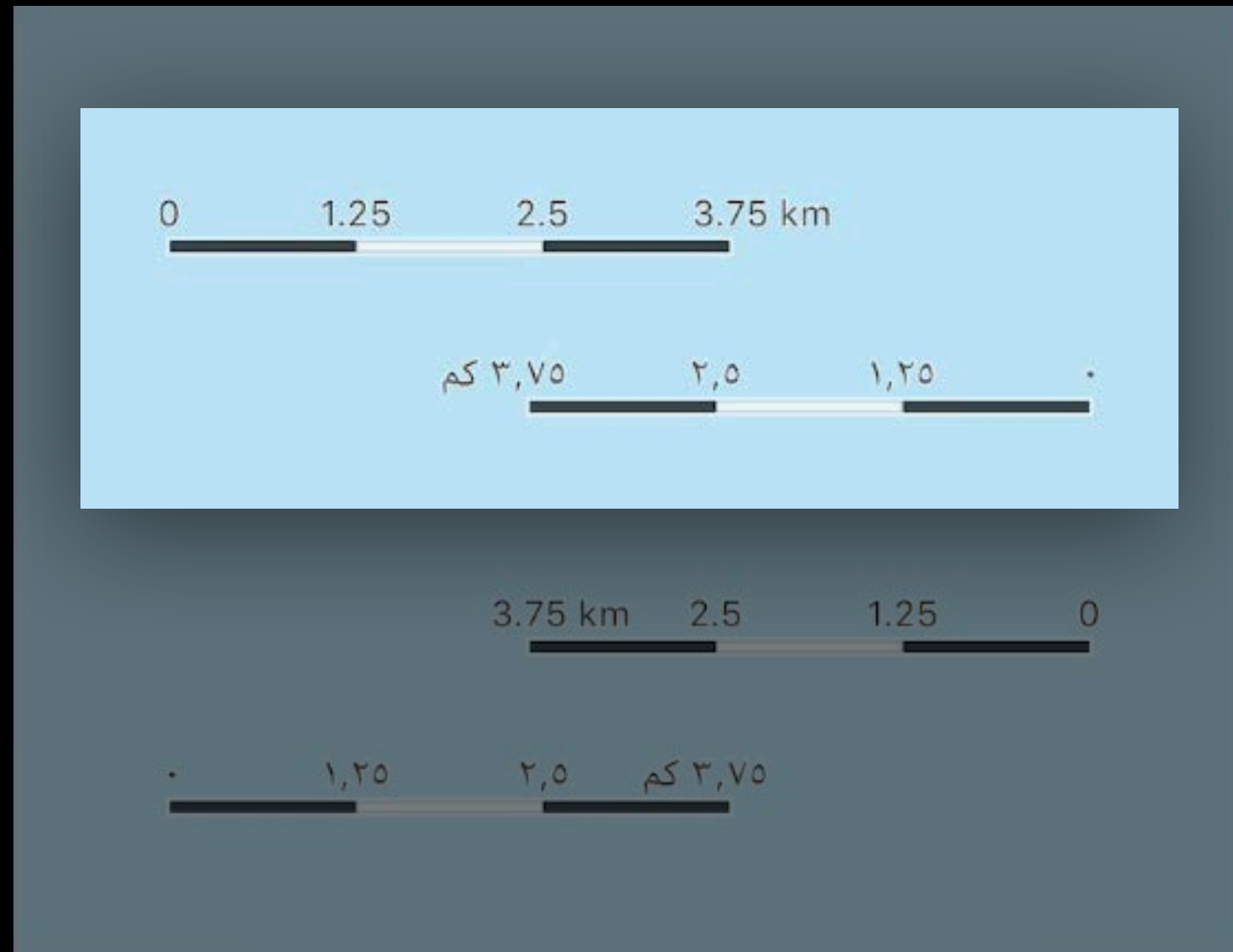
```
open class MKUserTrackingButton : UIView {  
    init(mapView: MKMapView)  
}
```

```
open class MKCompassButton : UIView {  
    init(mapView: MKMapView)  
    compassVisibility: MKFeatureVisibility  
}
```

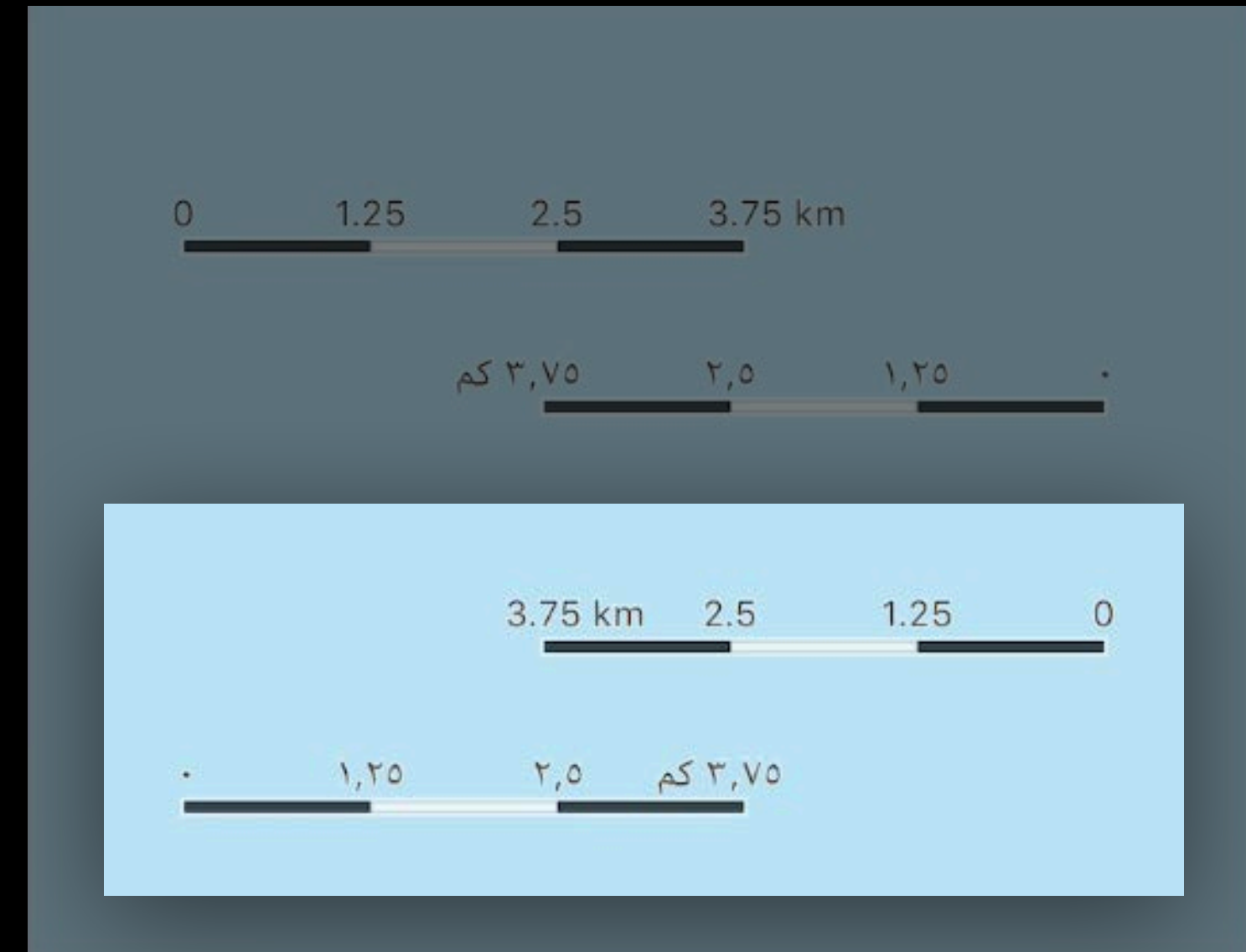
```
open class MKScaleView : UIView {  
    init(mapView: MKMapView)  
    scaleVisibility: MKFeatureVisibility  
    legendAlignment: MKScaleViewAlignment  
}
```



MKScaleView.legendAlignment

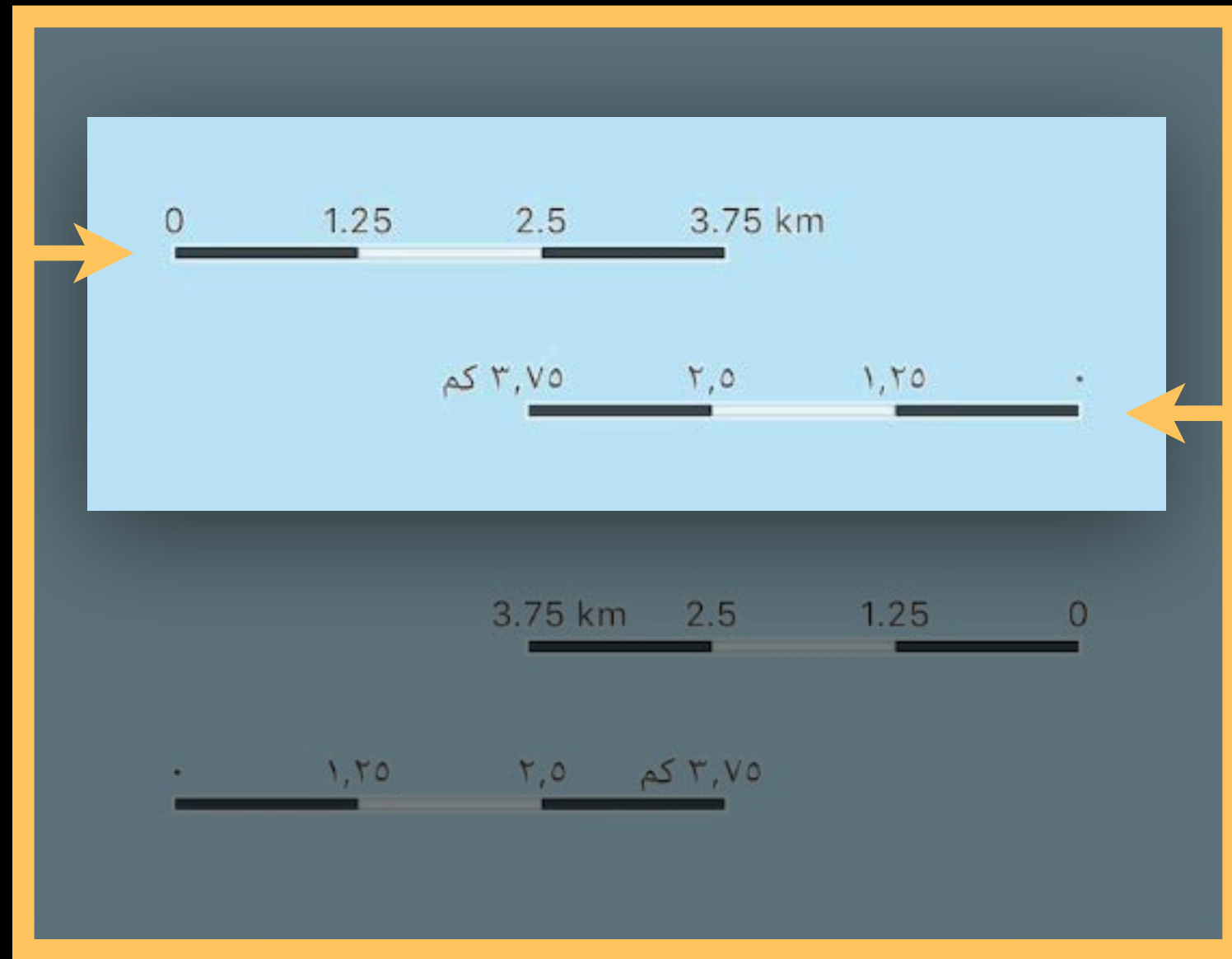


.leading

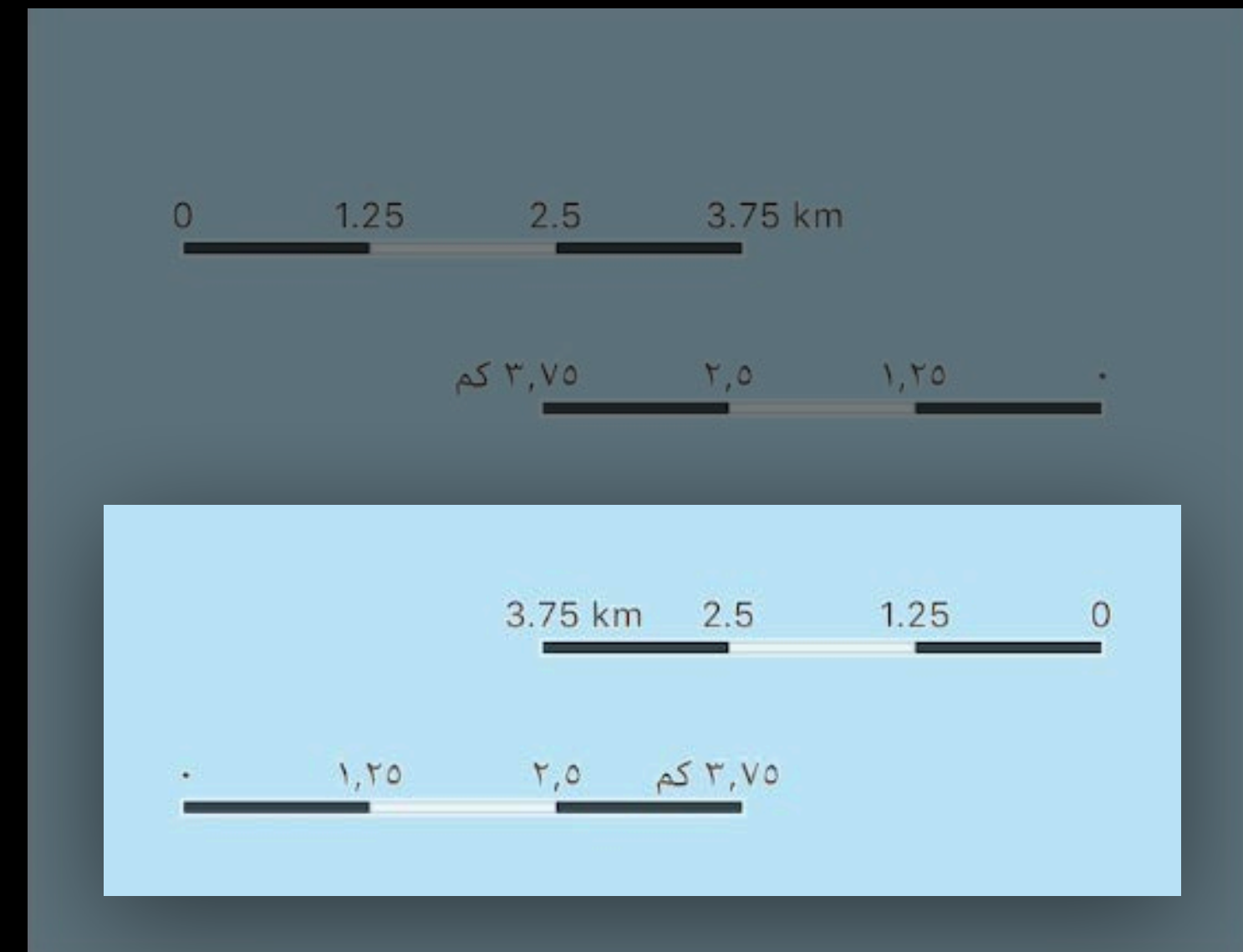


.trailing

MKScaleView.legendAlignment

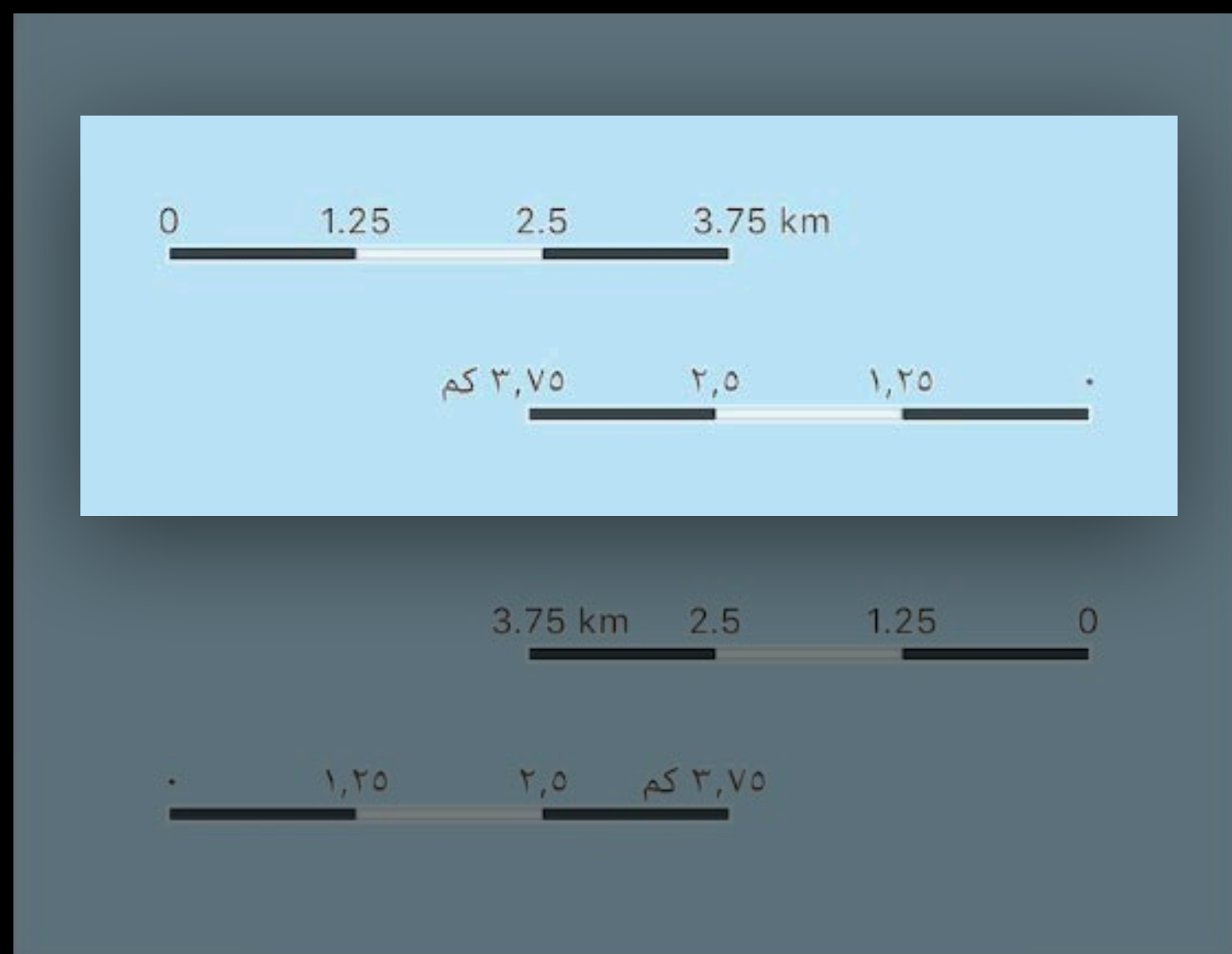


.leading

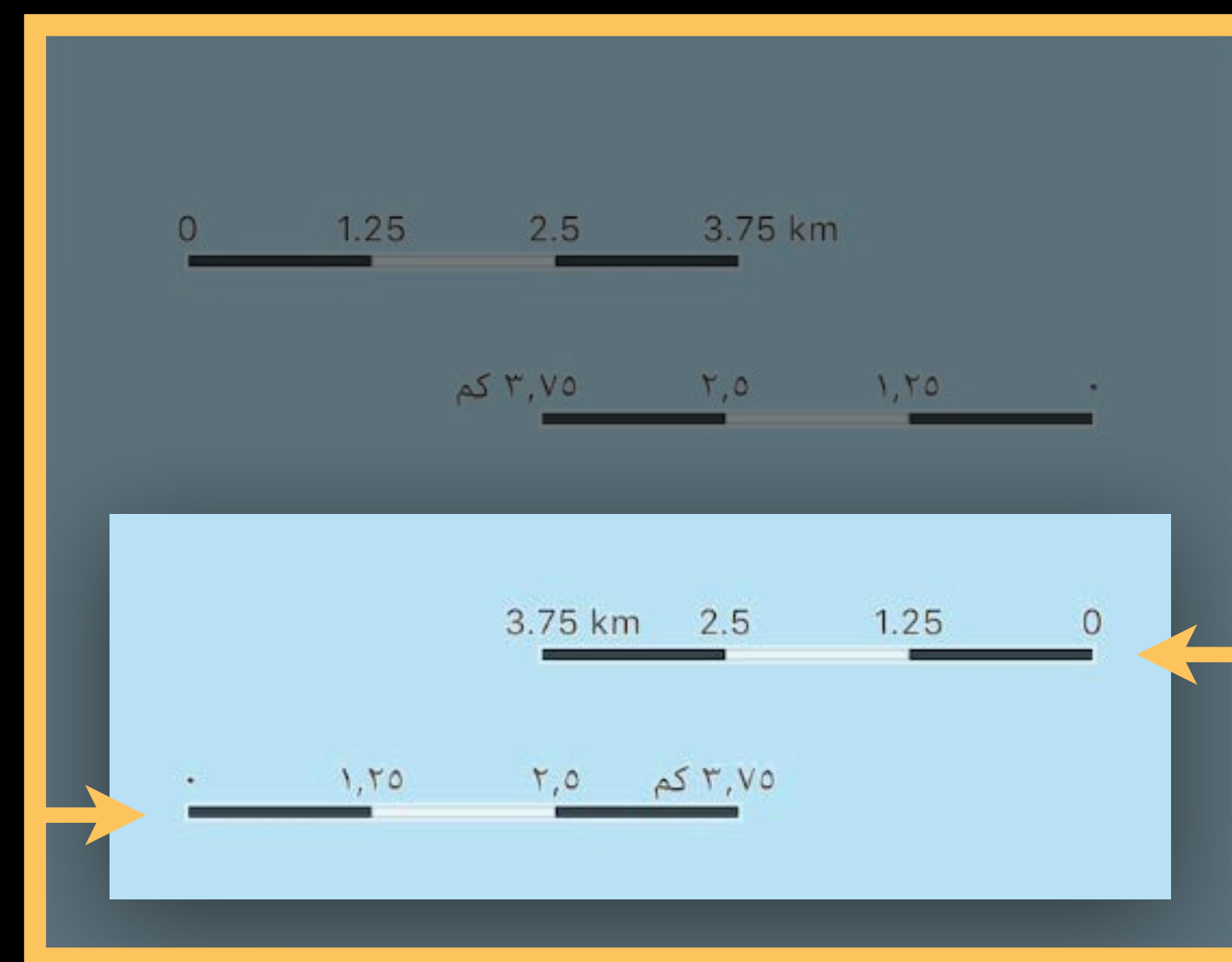


.trailing

MKScaleView.legendAlignment

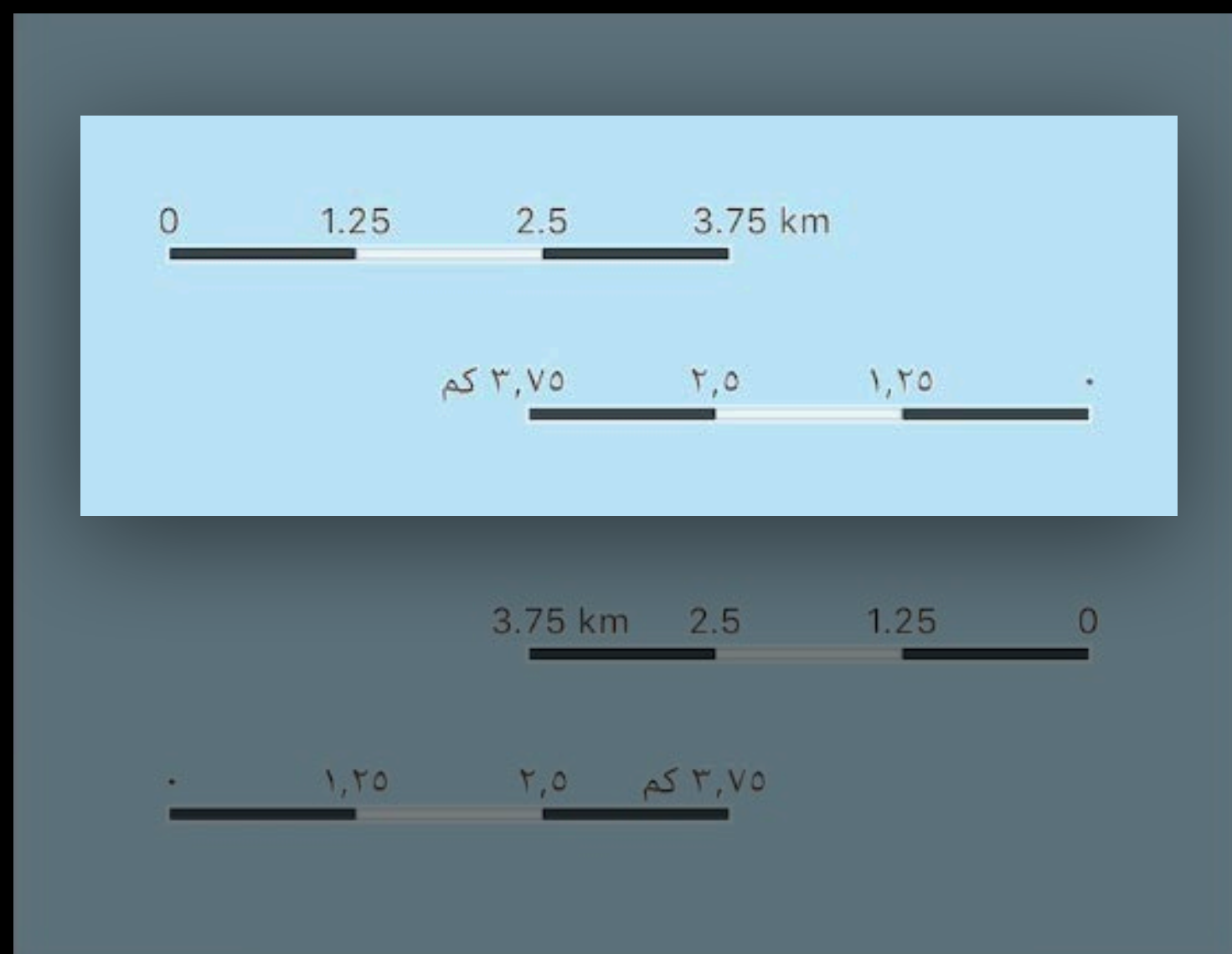


.leading

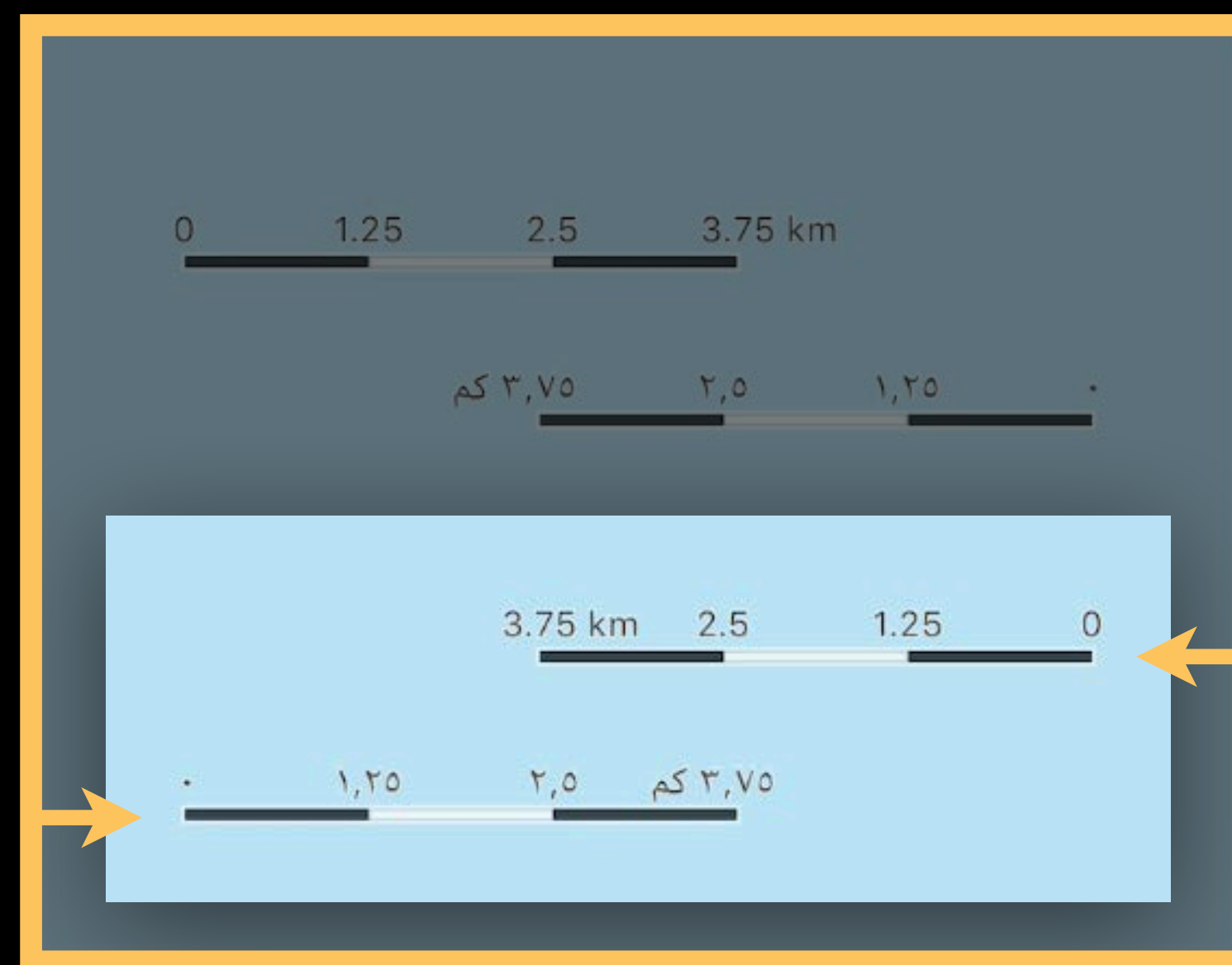


.trailing

MKScaleView.legendAlignment

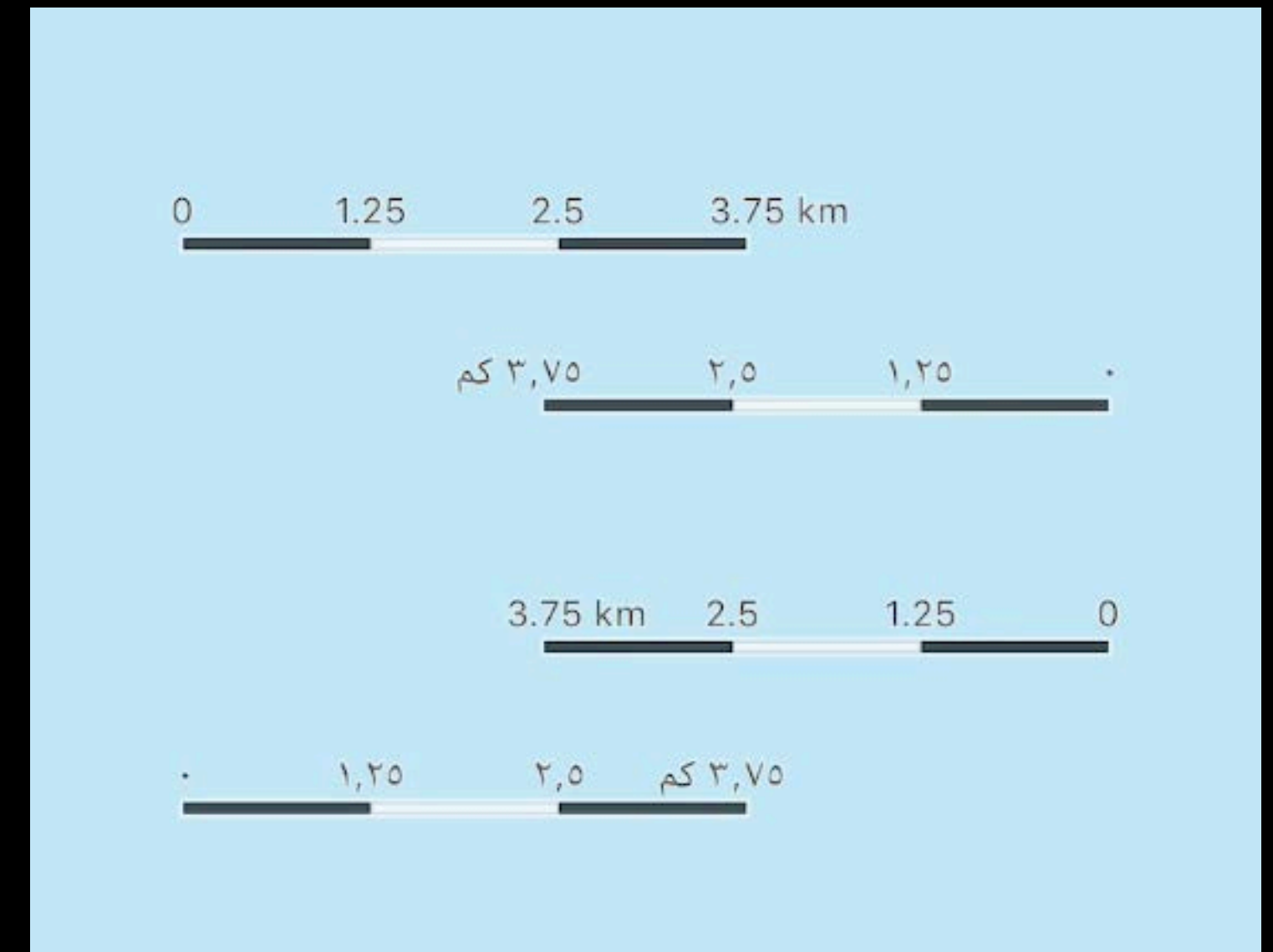
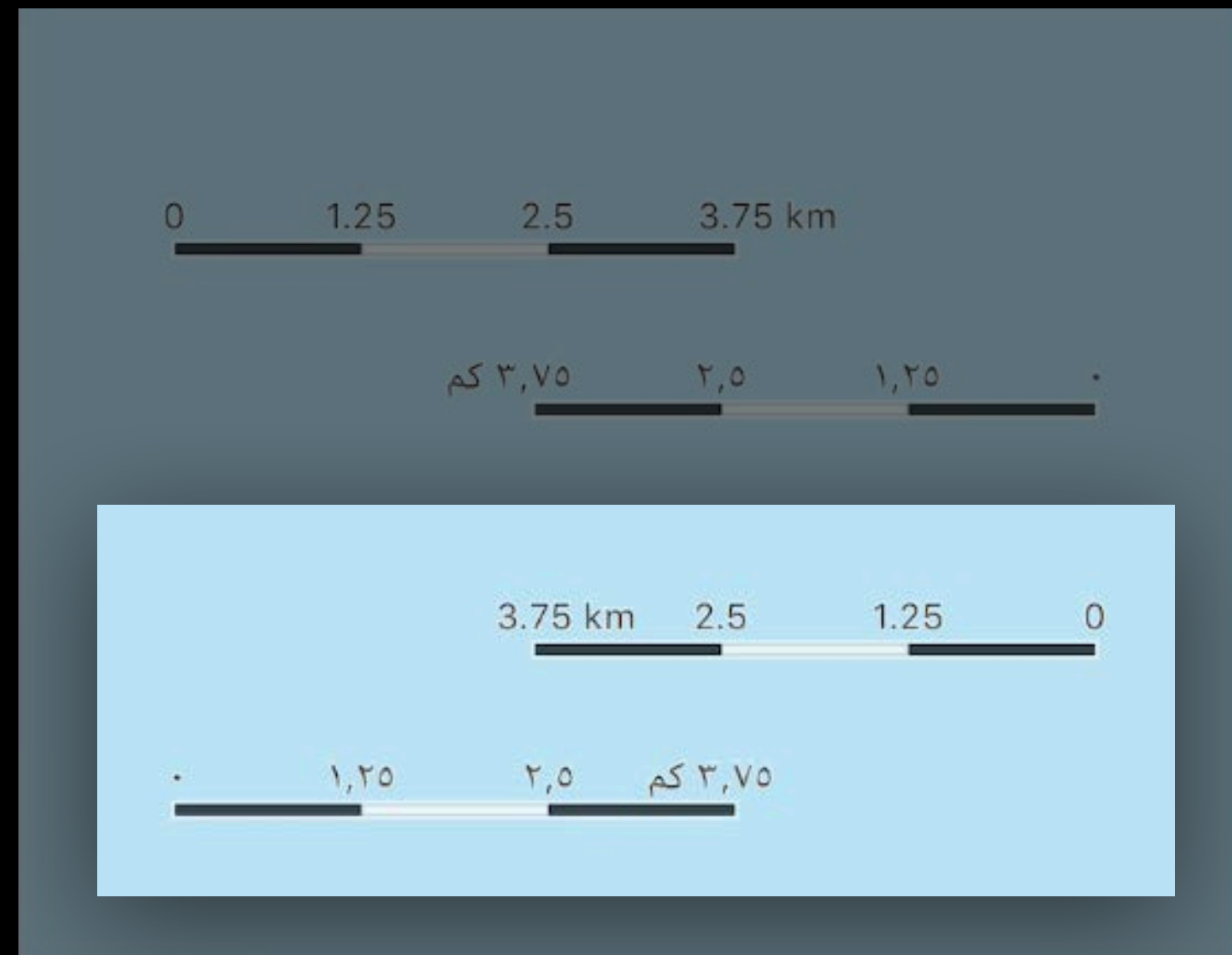
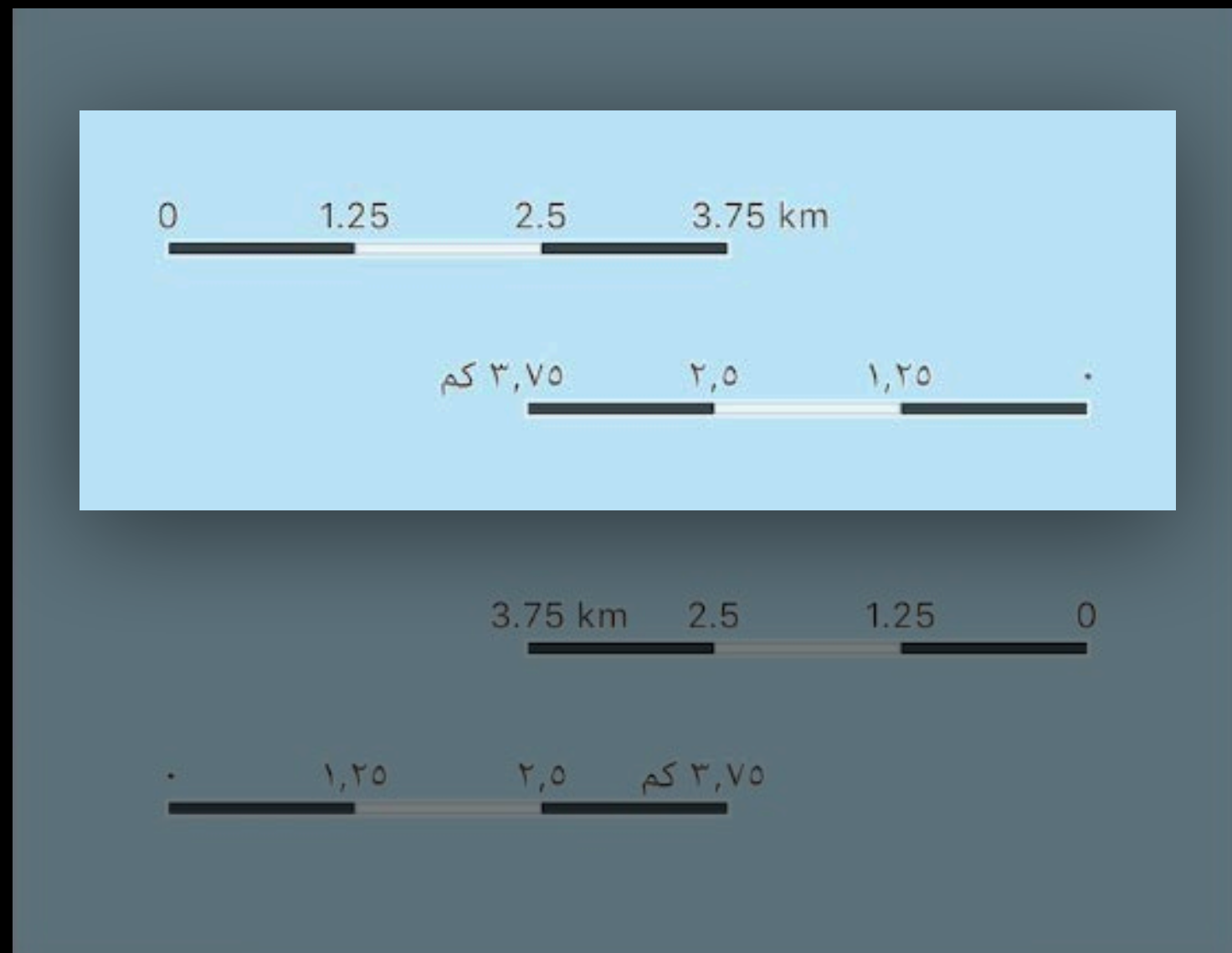


.leading



.trailing

MKScaleView.legendAlignment

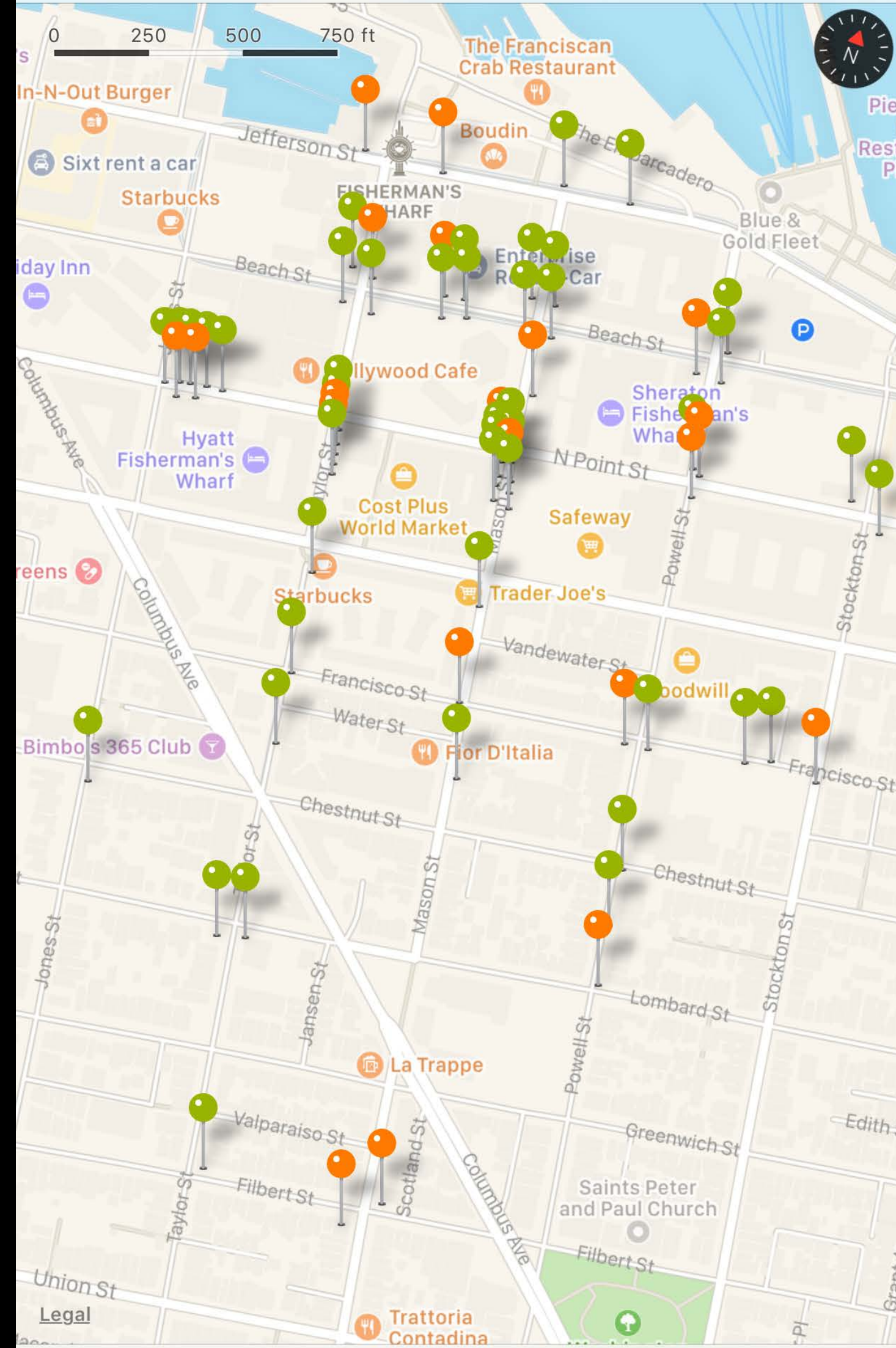




9:41 AM



tandm

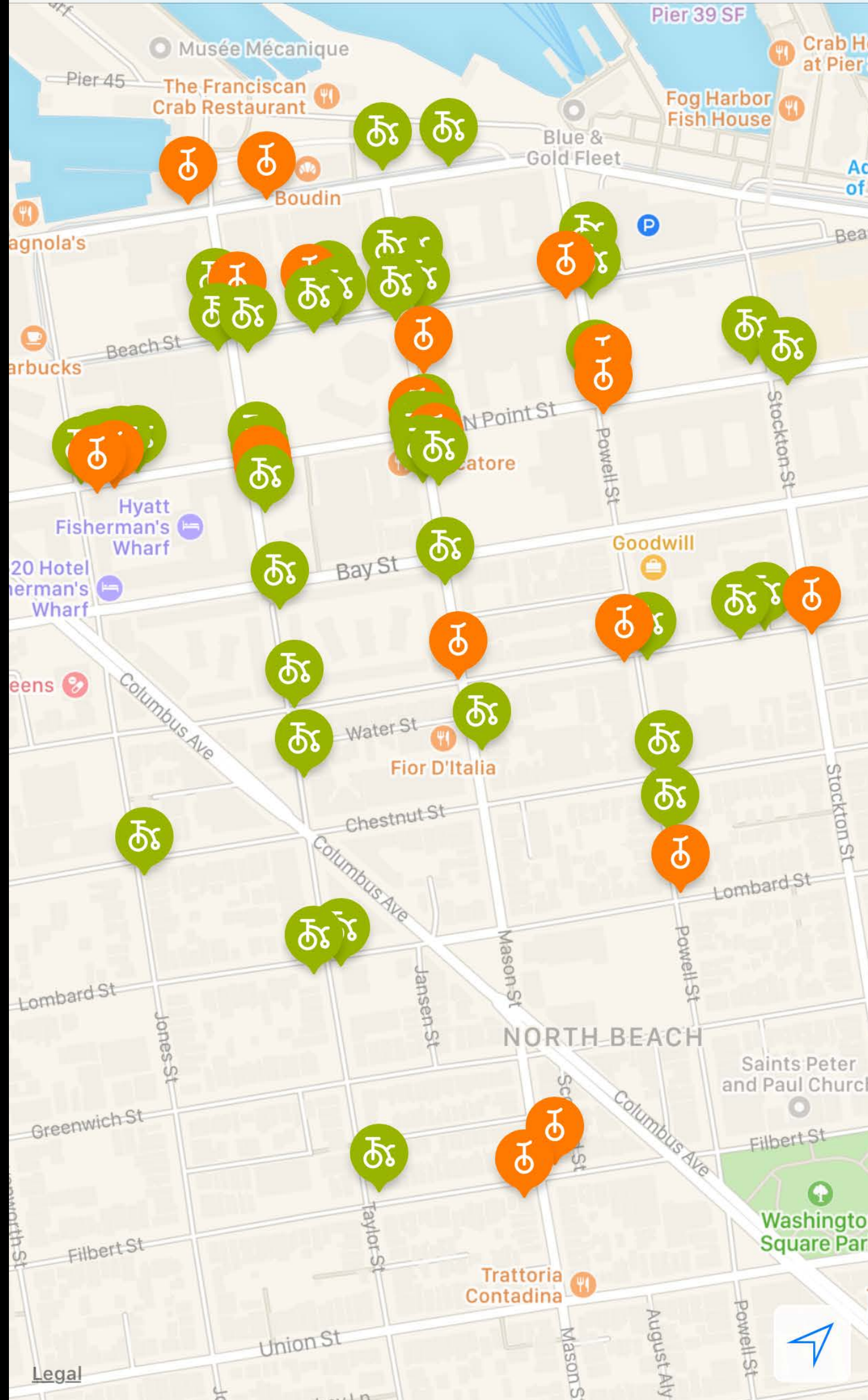




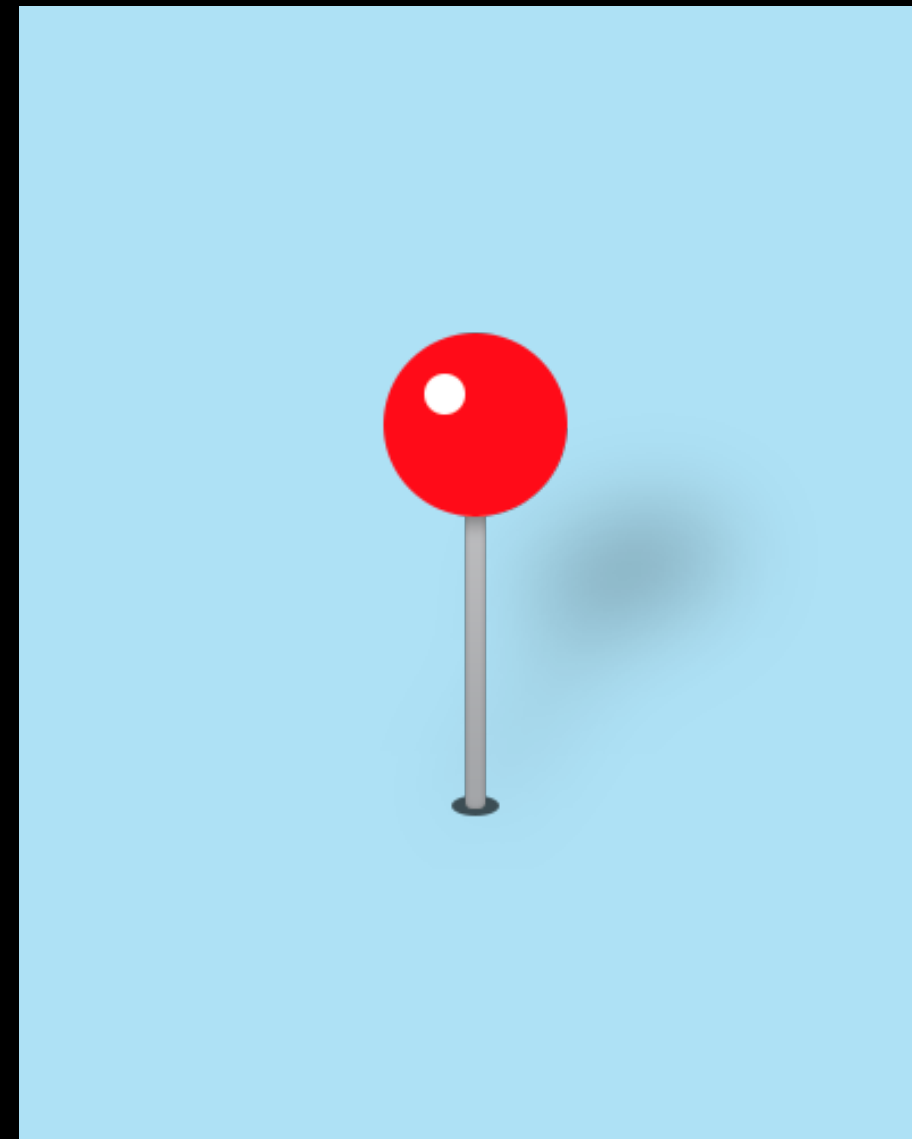
9:41 AM

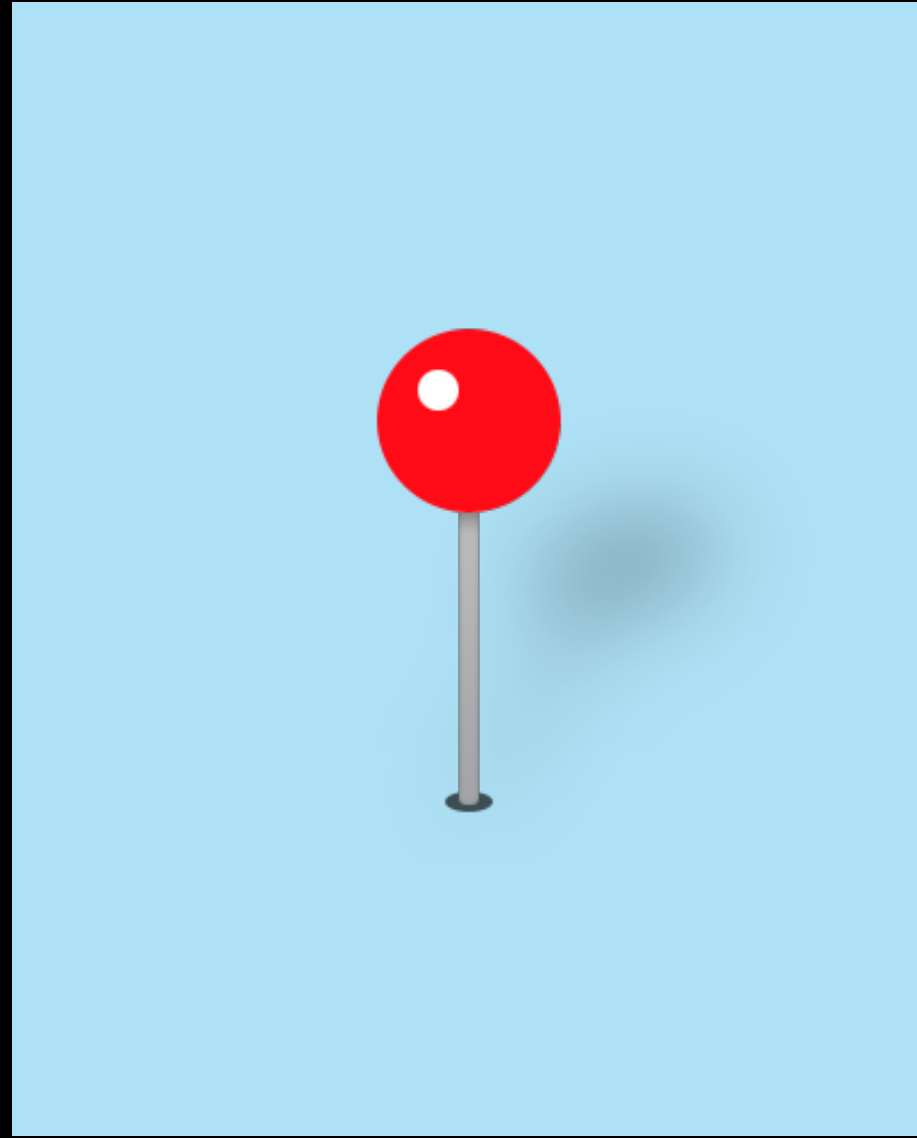


tandm

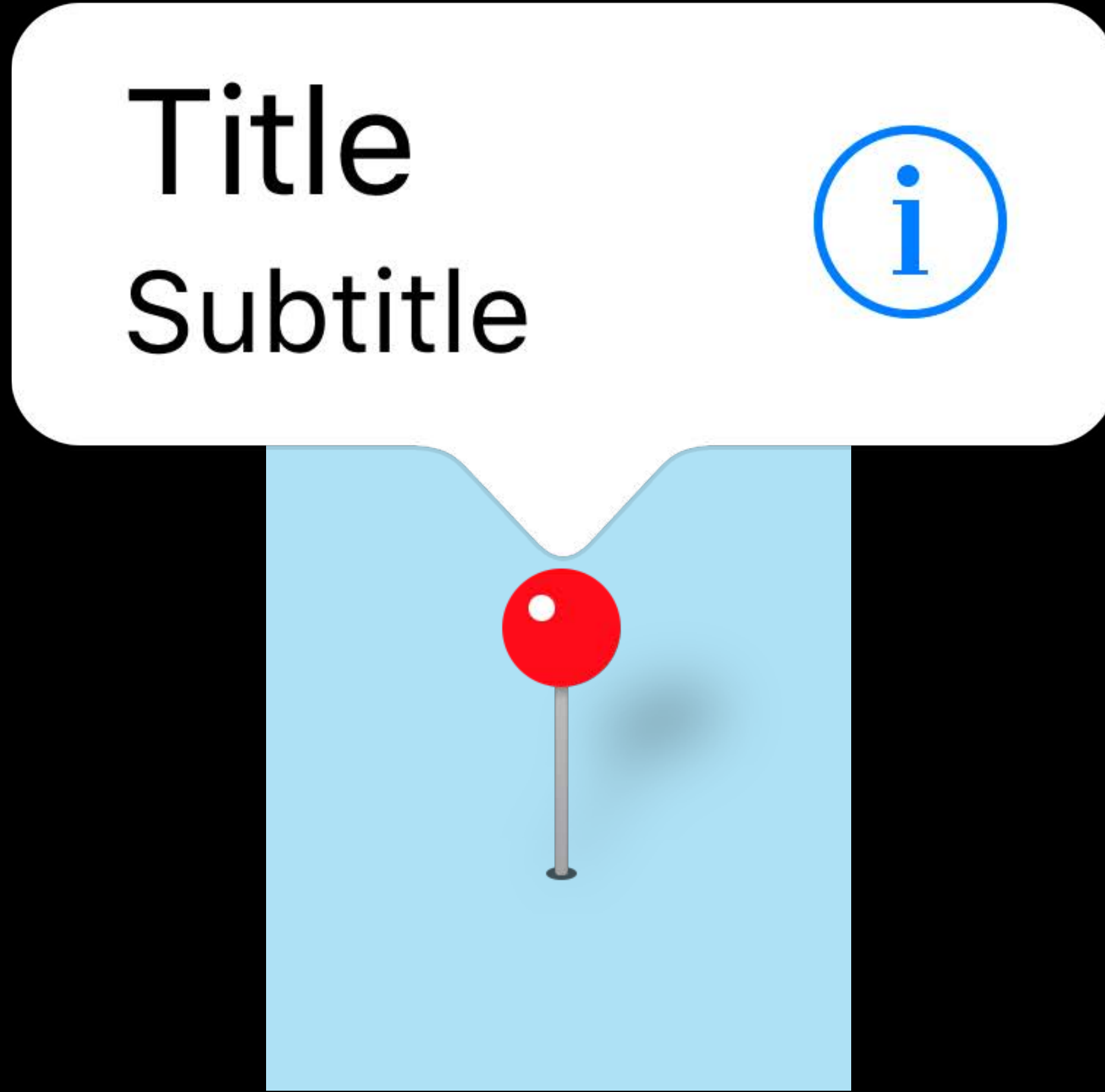


MKPinAnnotationView

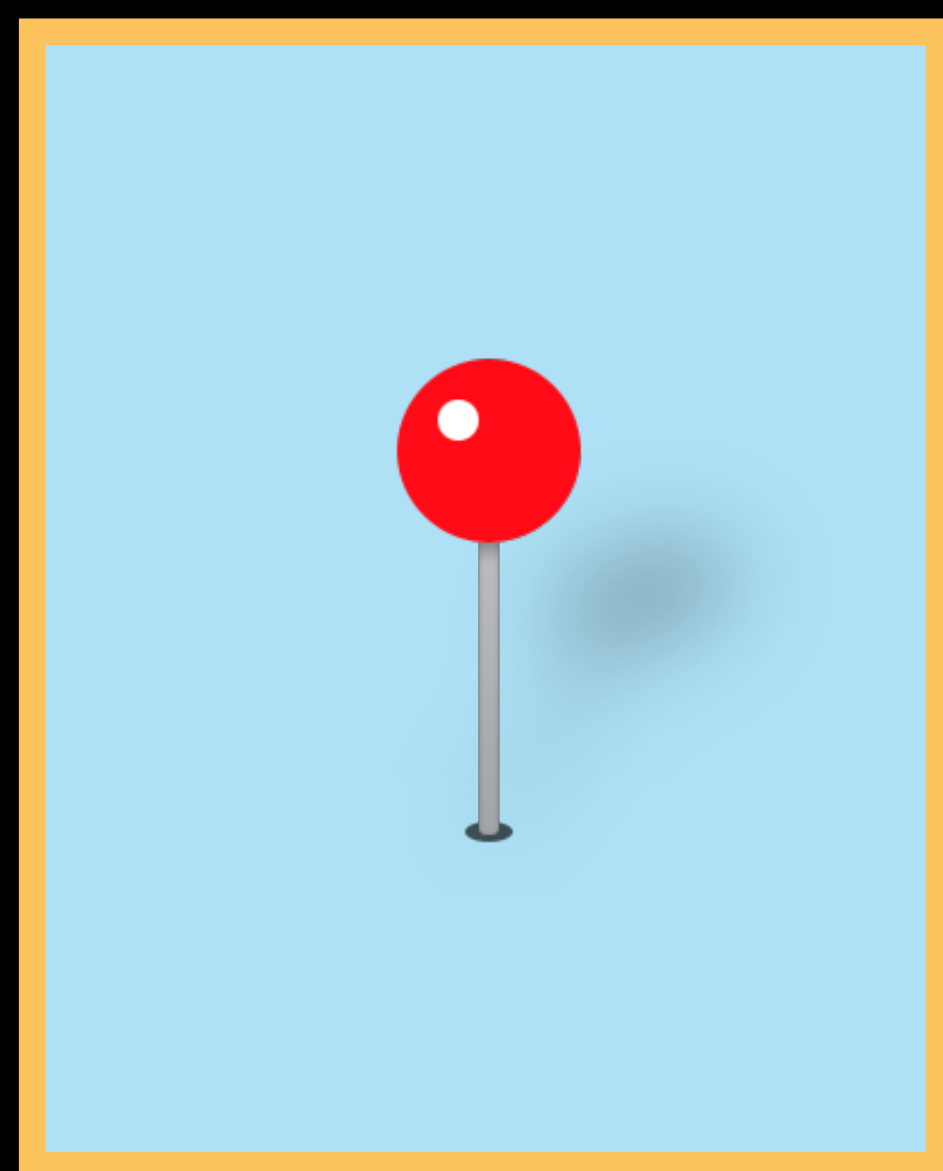




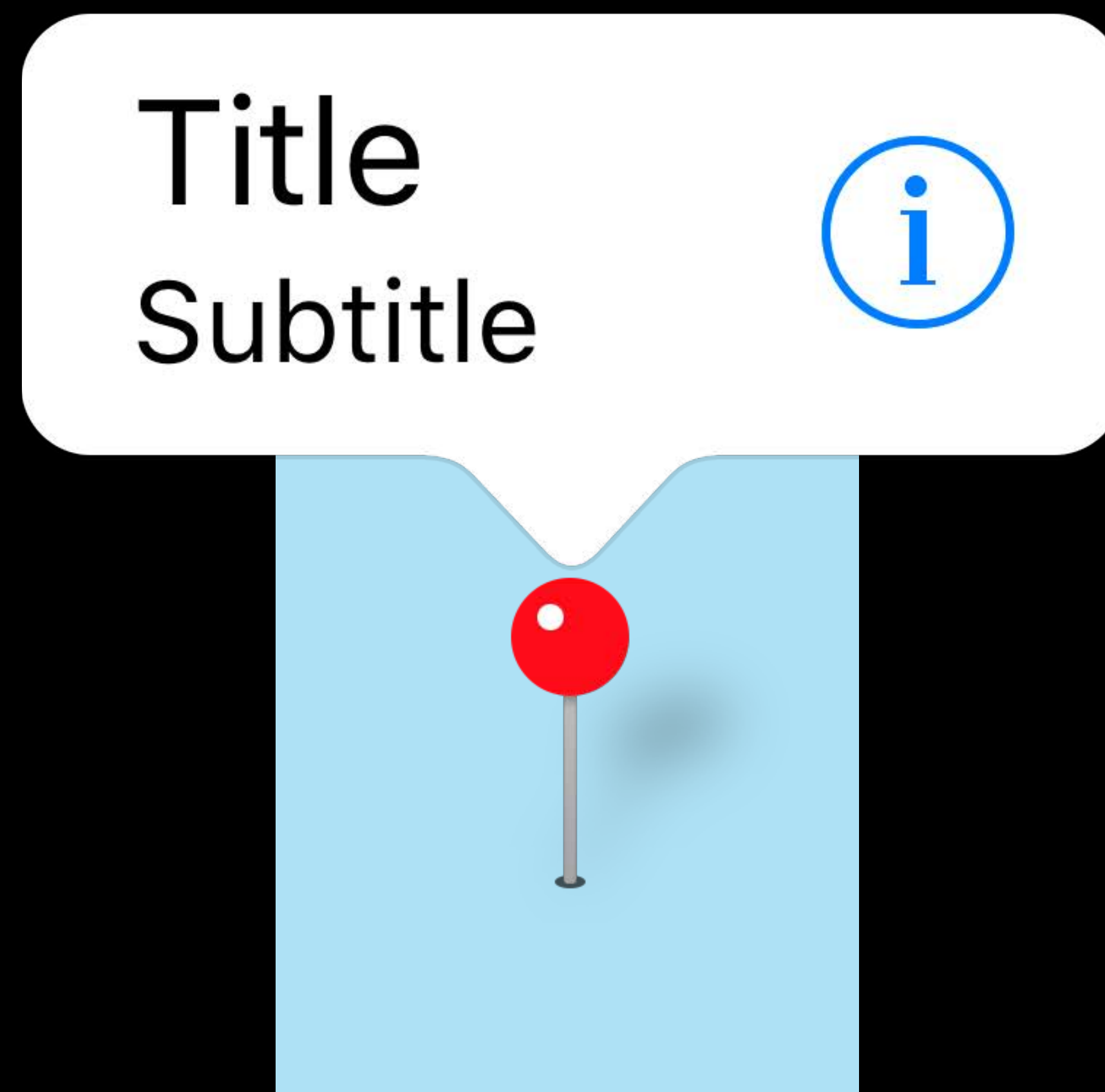
Normal



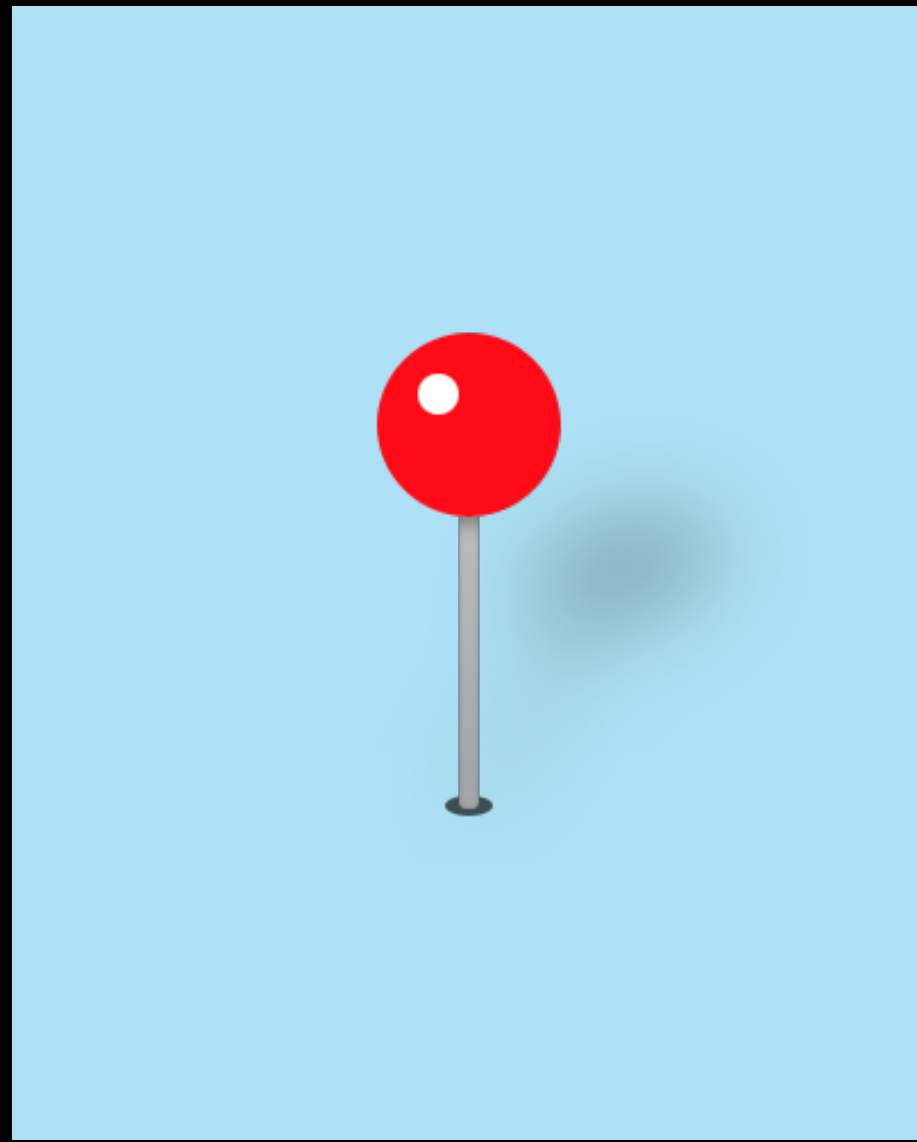
Selected



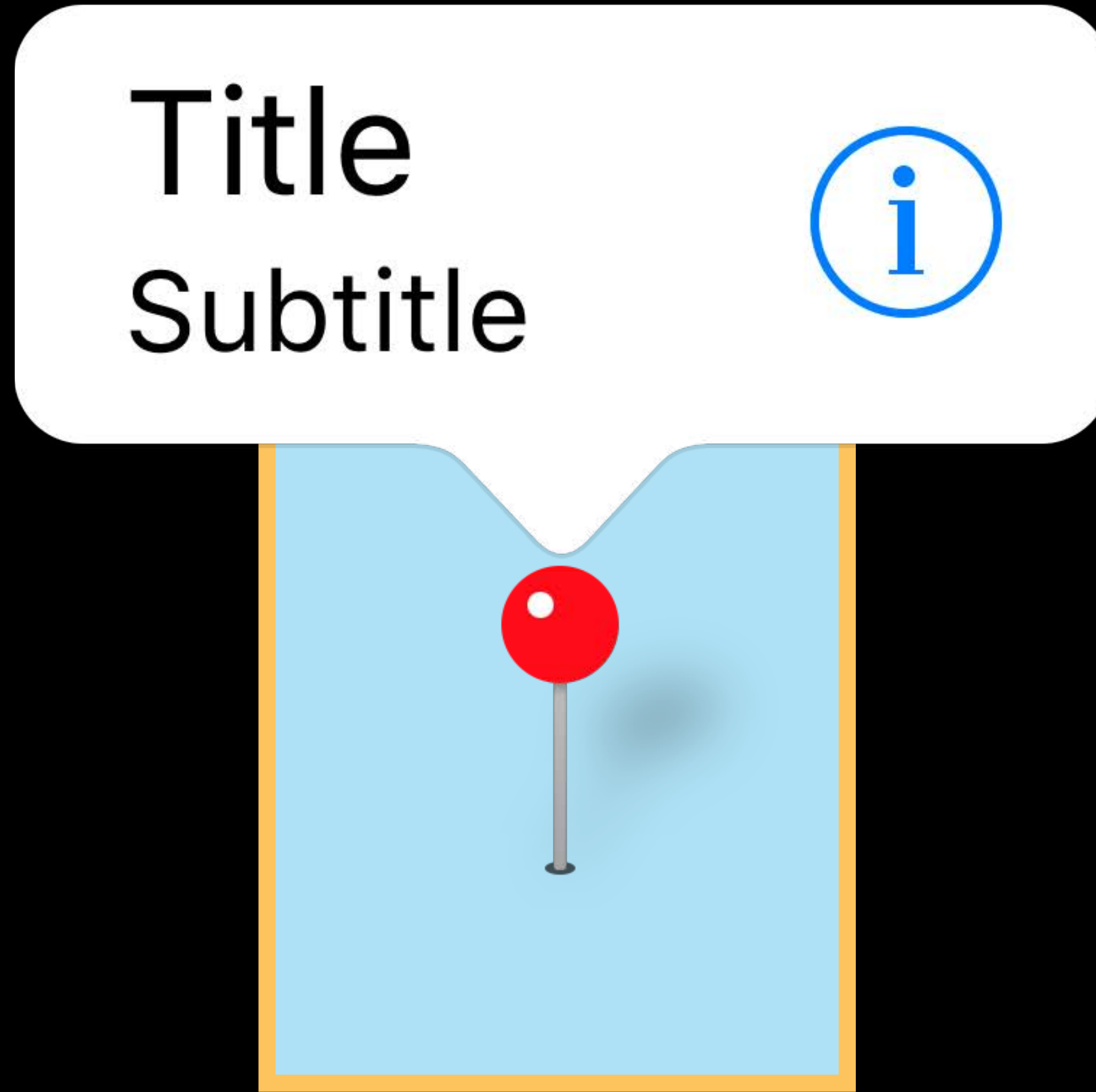
Normal



Selected



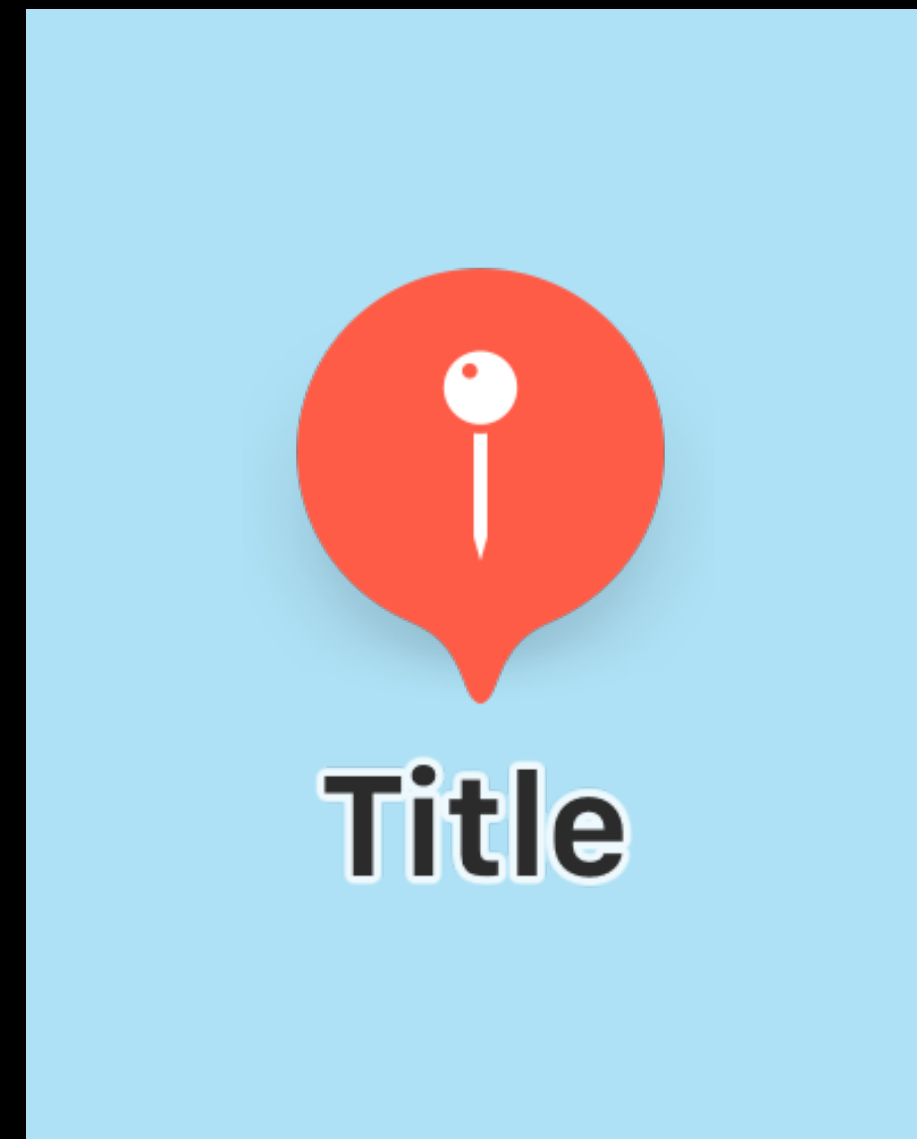
Normal



Selected

MKMarkerAnnotationView

NEW



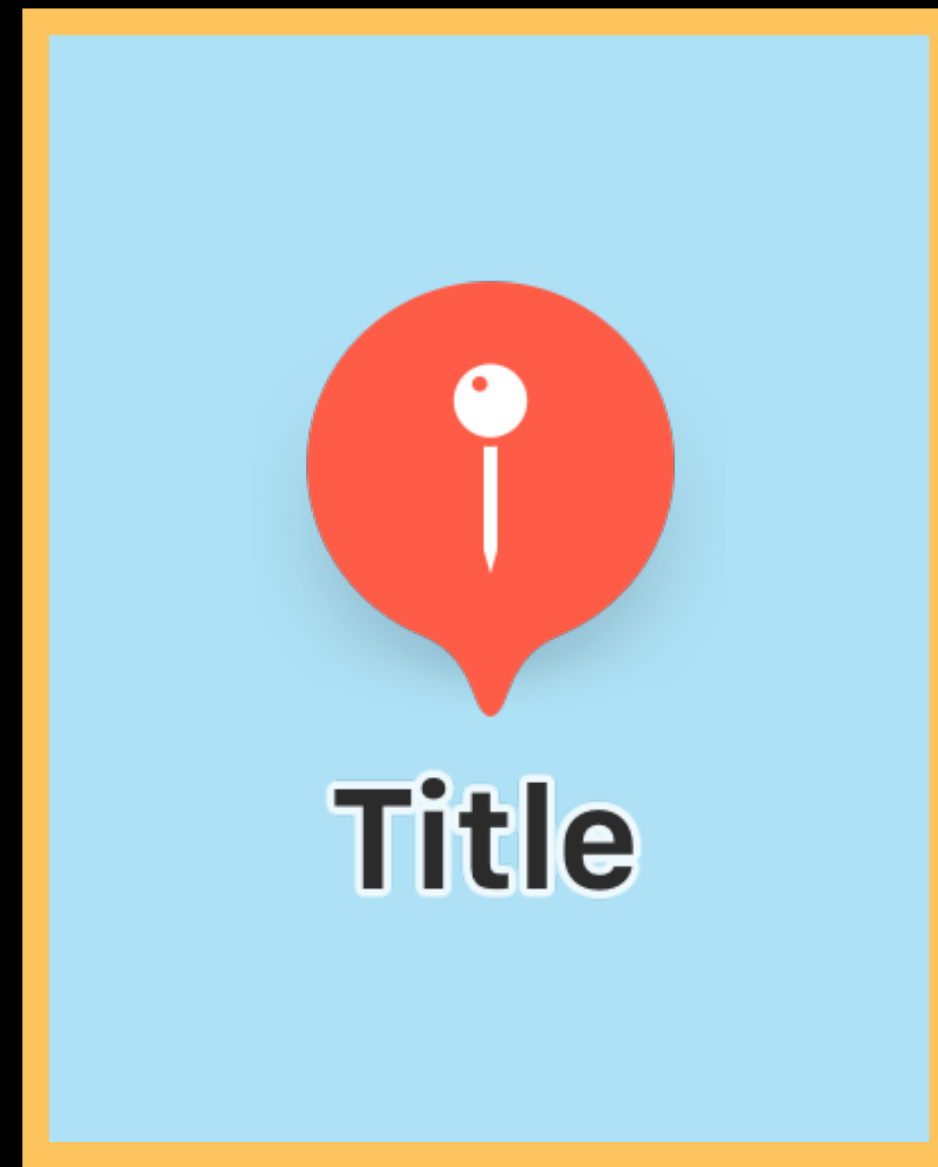
Normal



Selected

MKMarkerAnnotationView

NEW



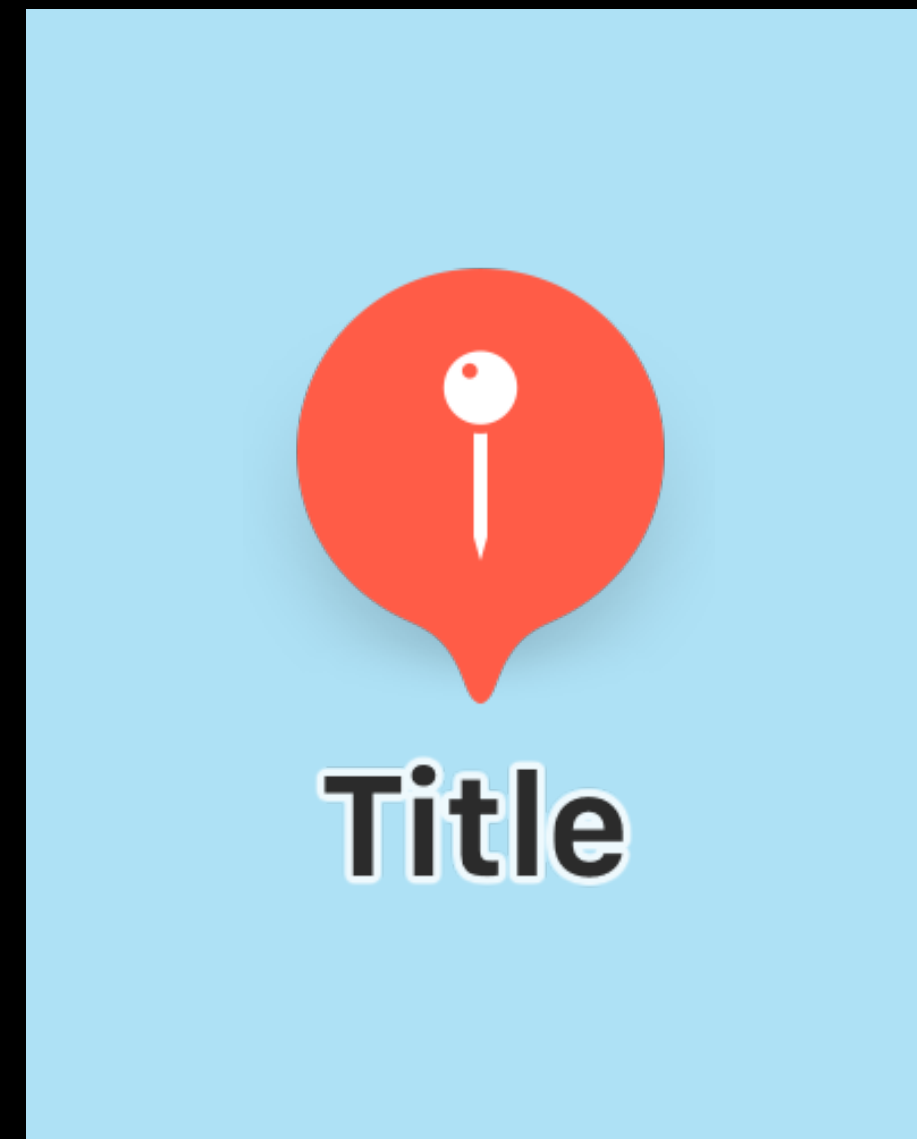
Normal



Selected

MKMarkerAnnotationView

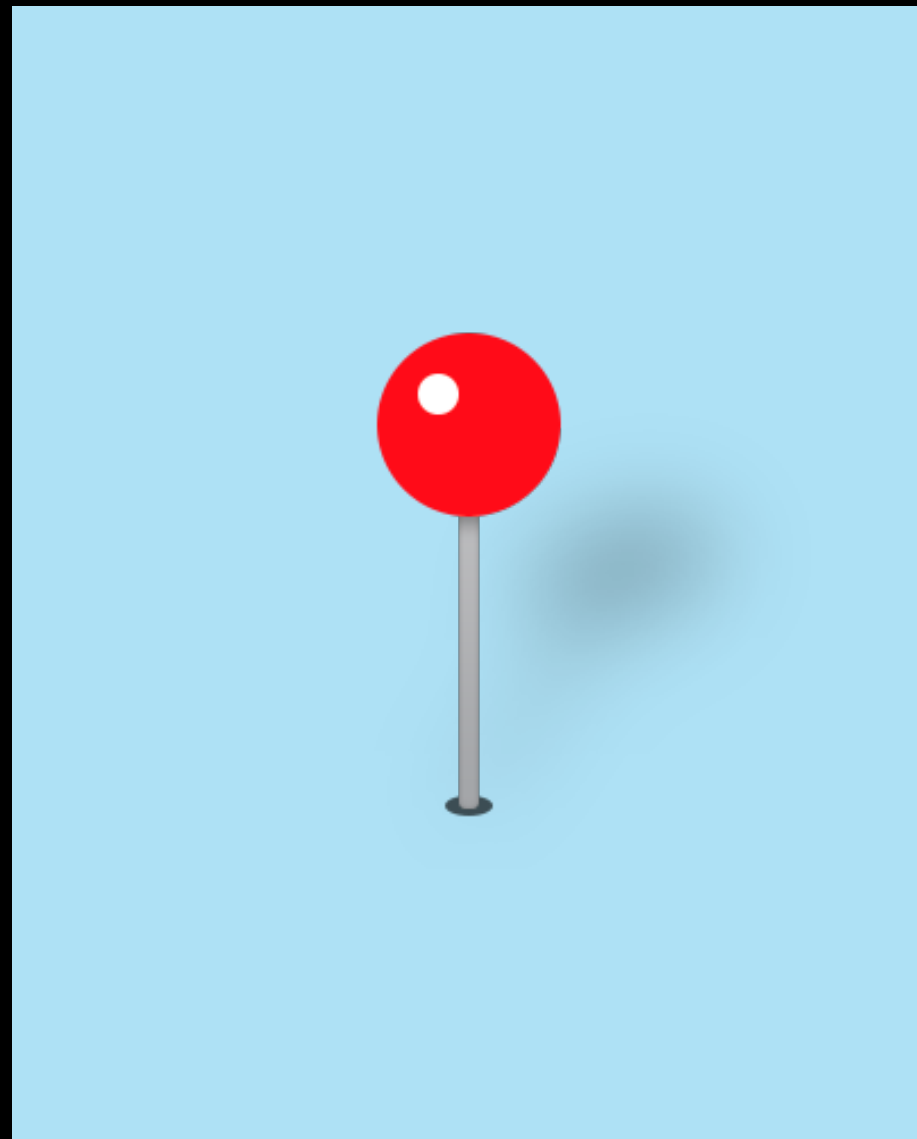
NEW



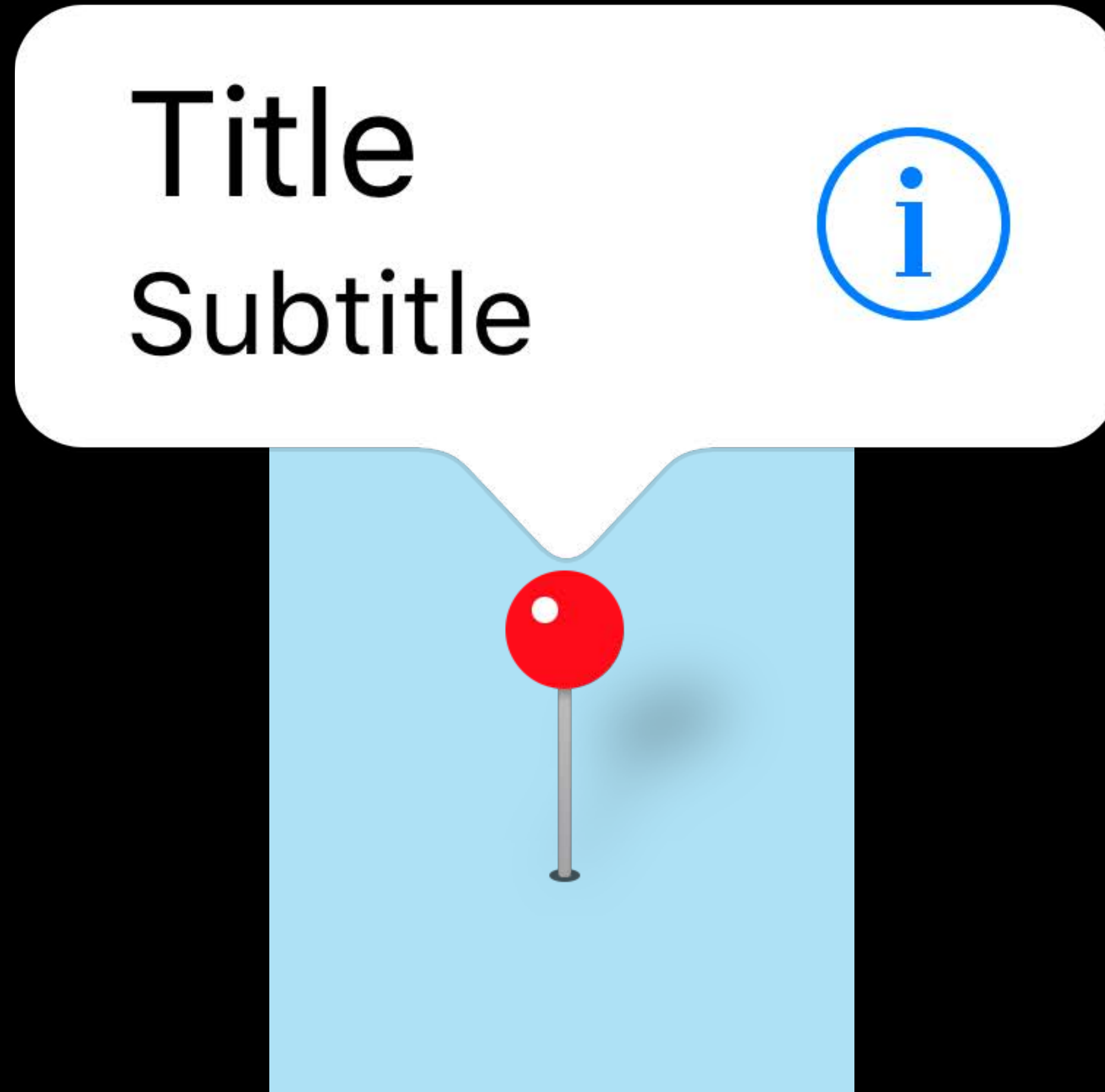
Normal



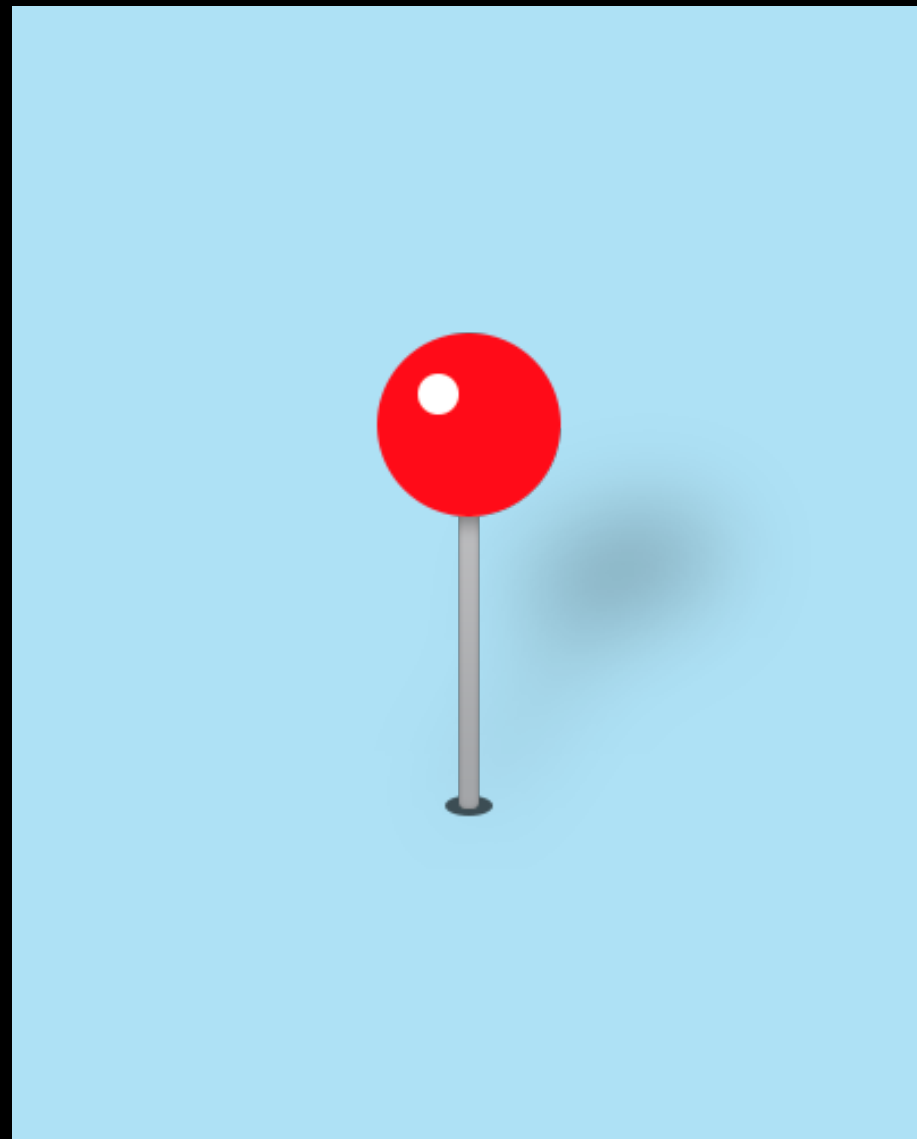
Selected



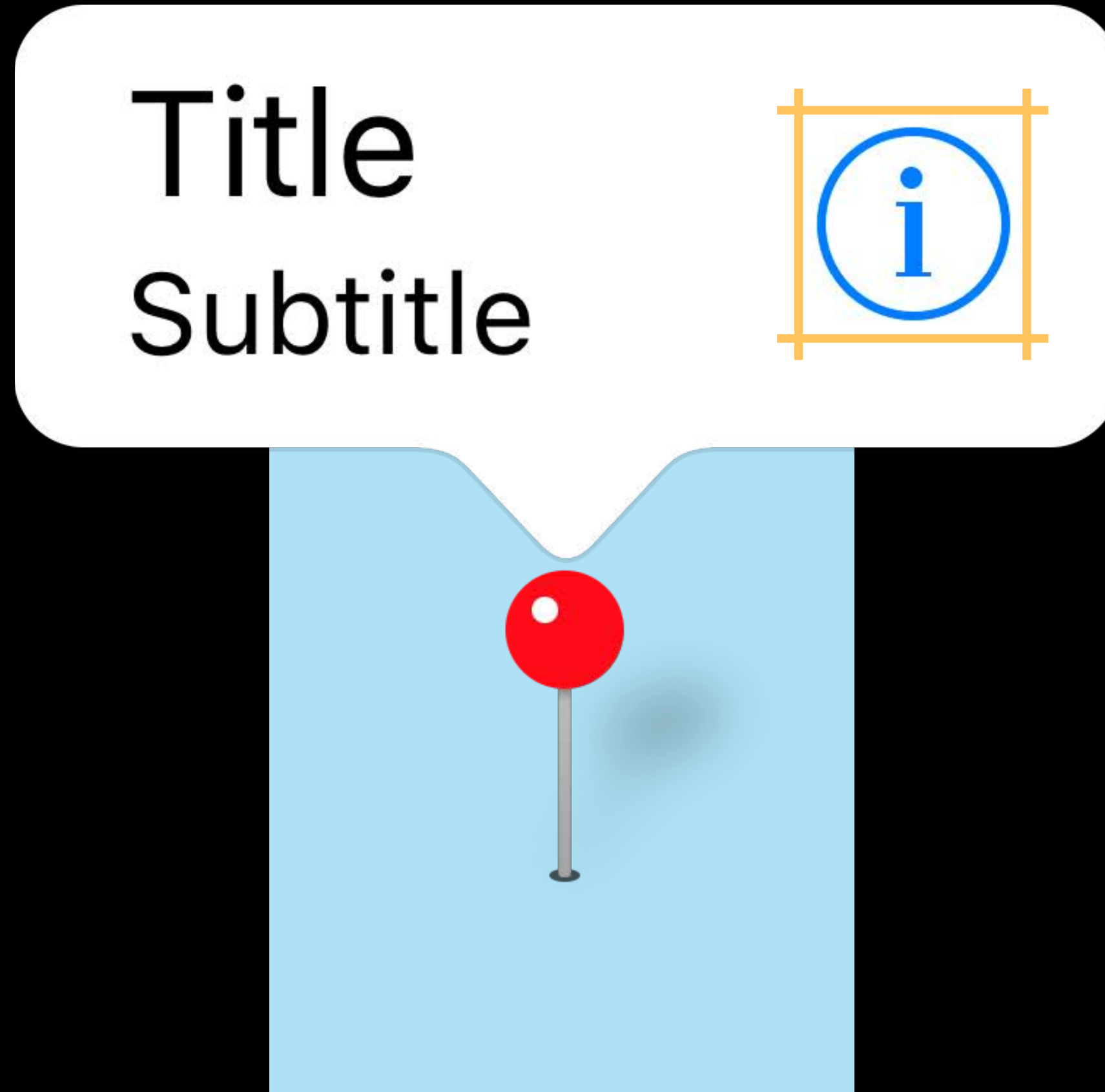
Normal



Selected

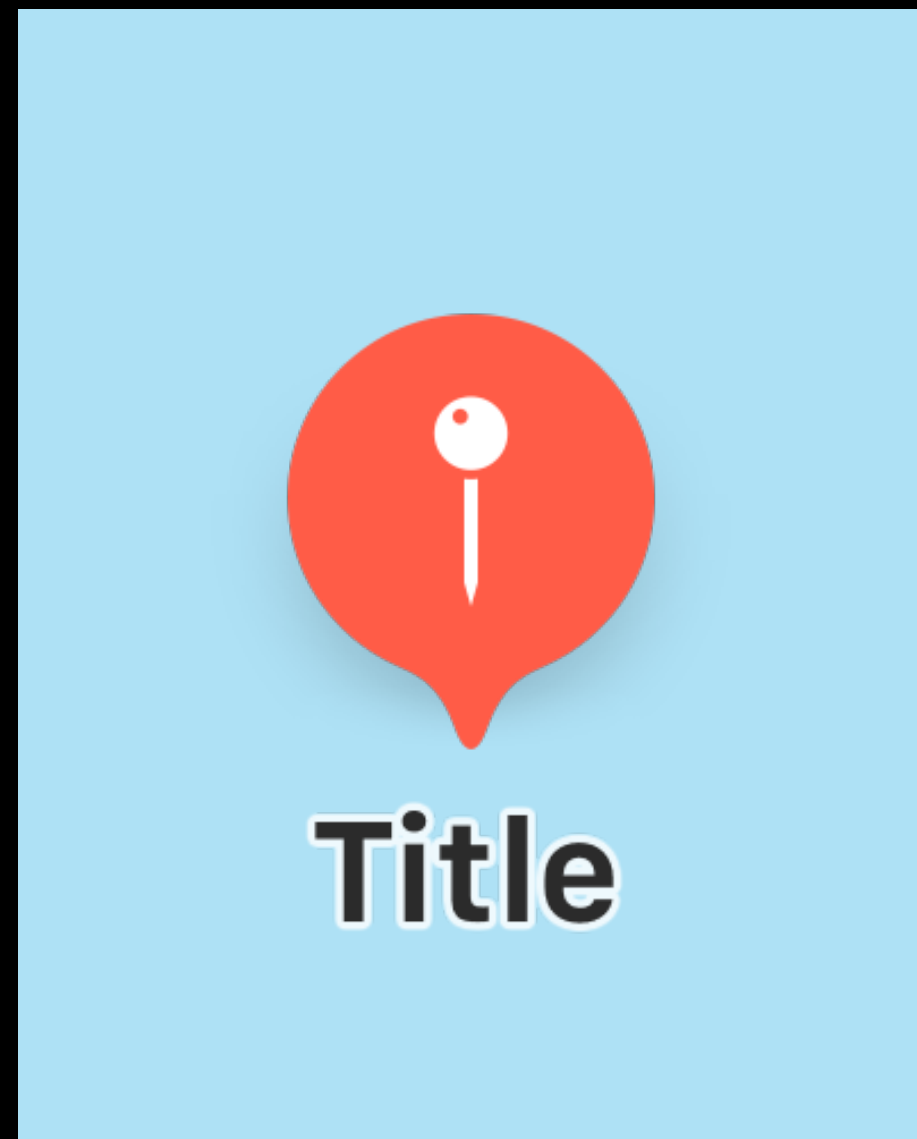


Normal



Selected

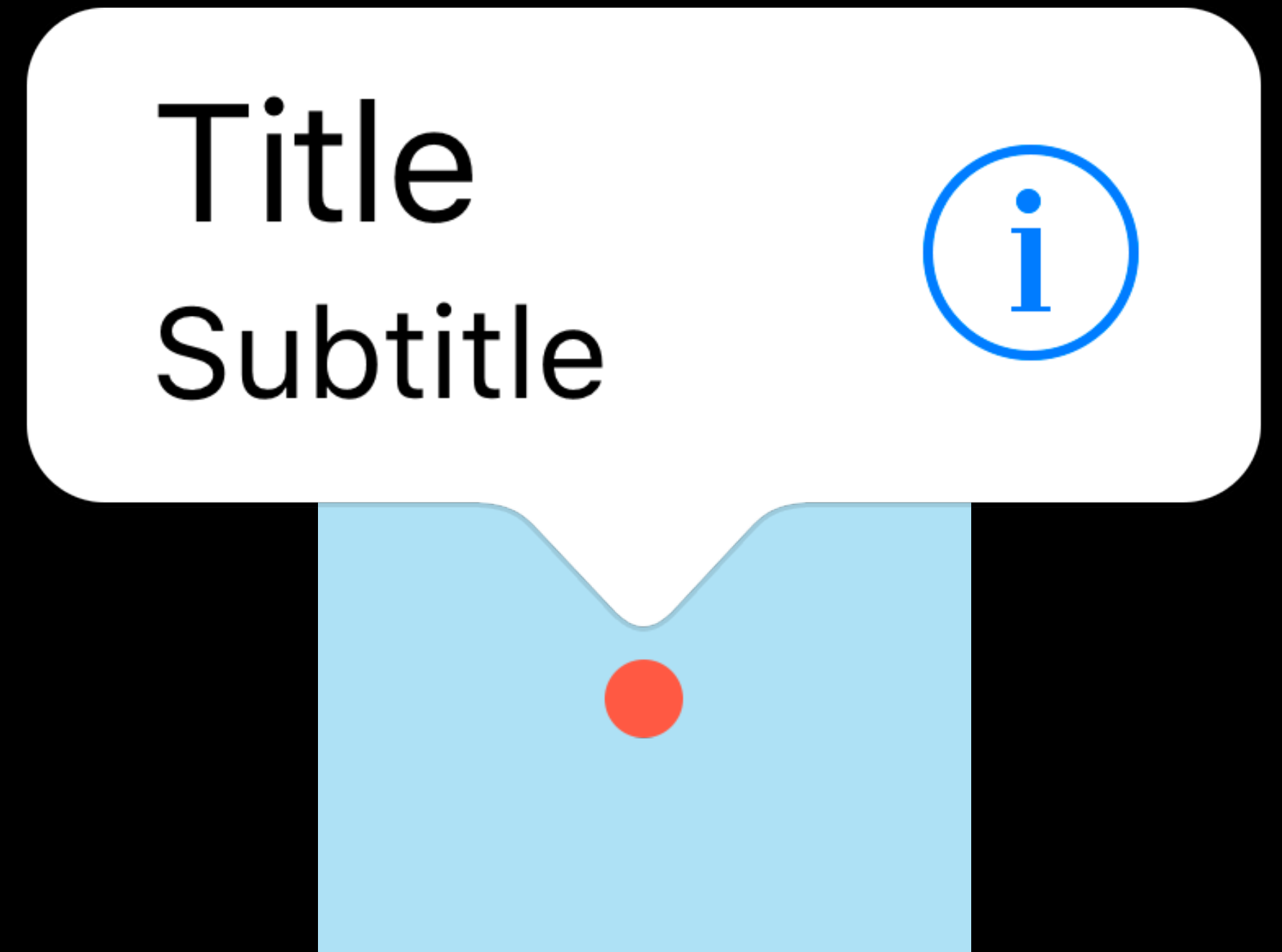
MKMarkerAnnotationView



Normal

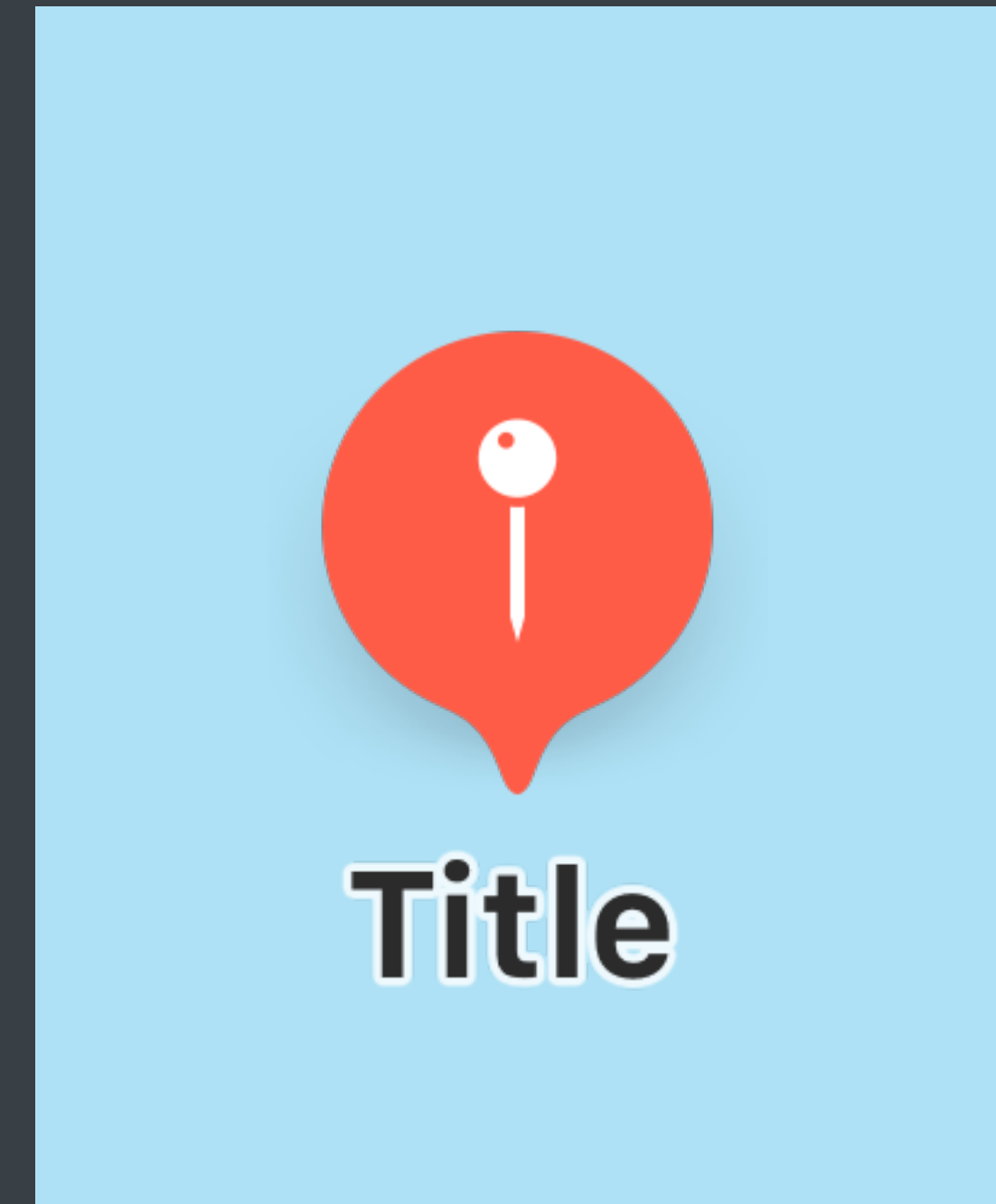


Selected

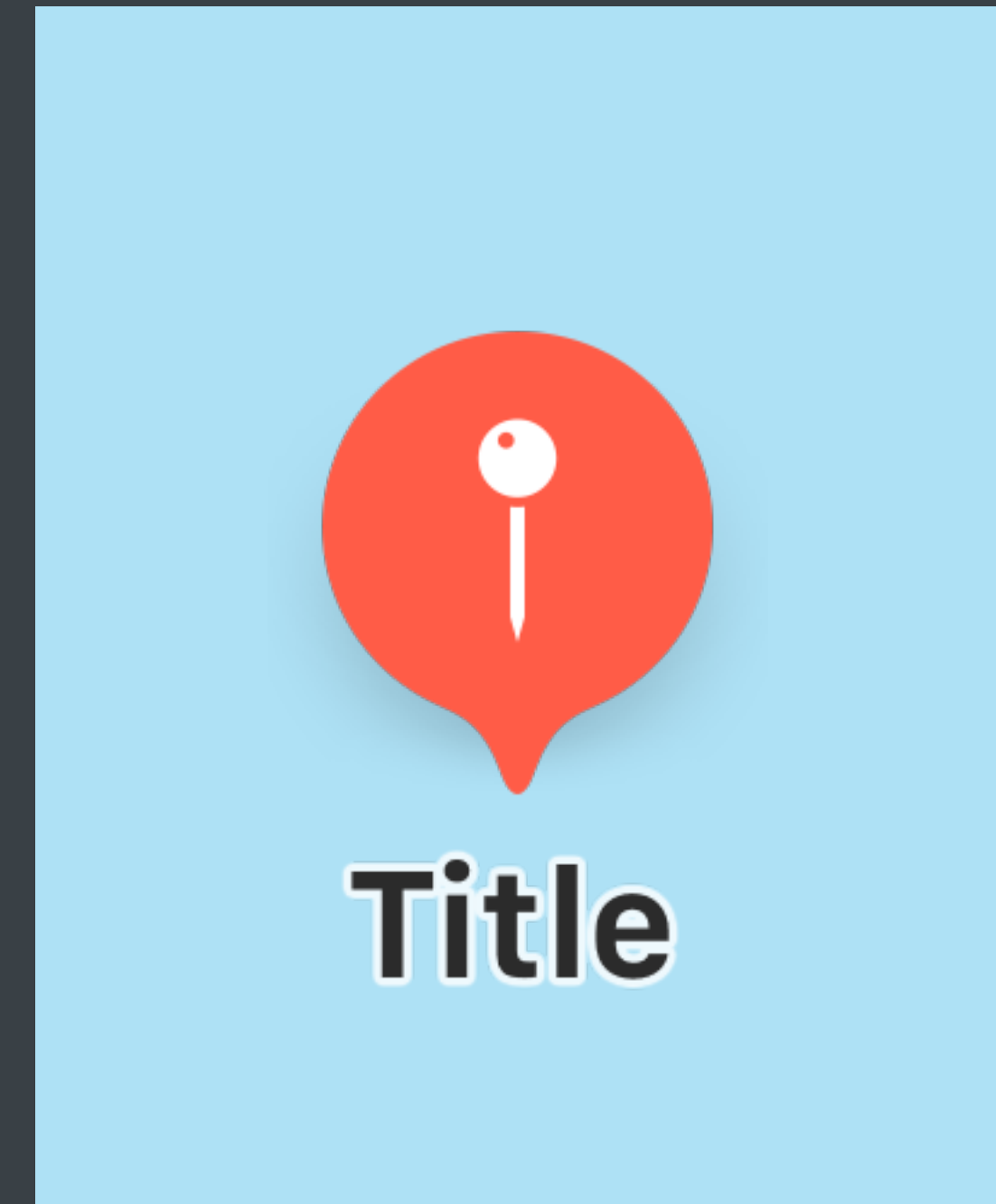


Selected
with Callout

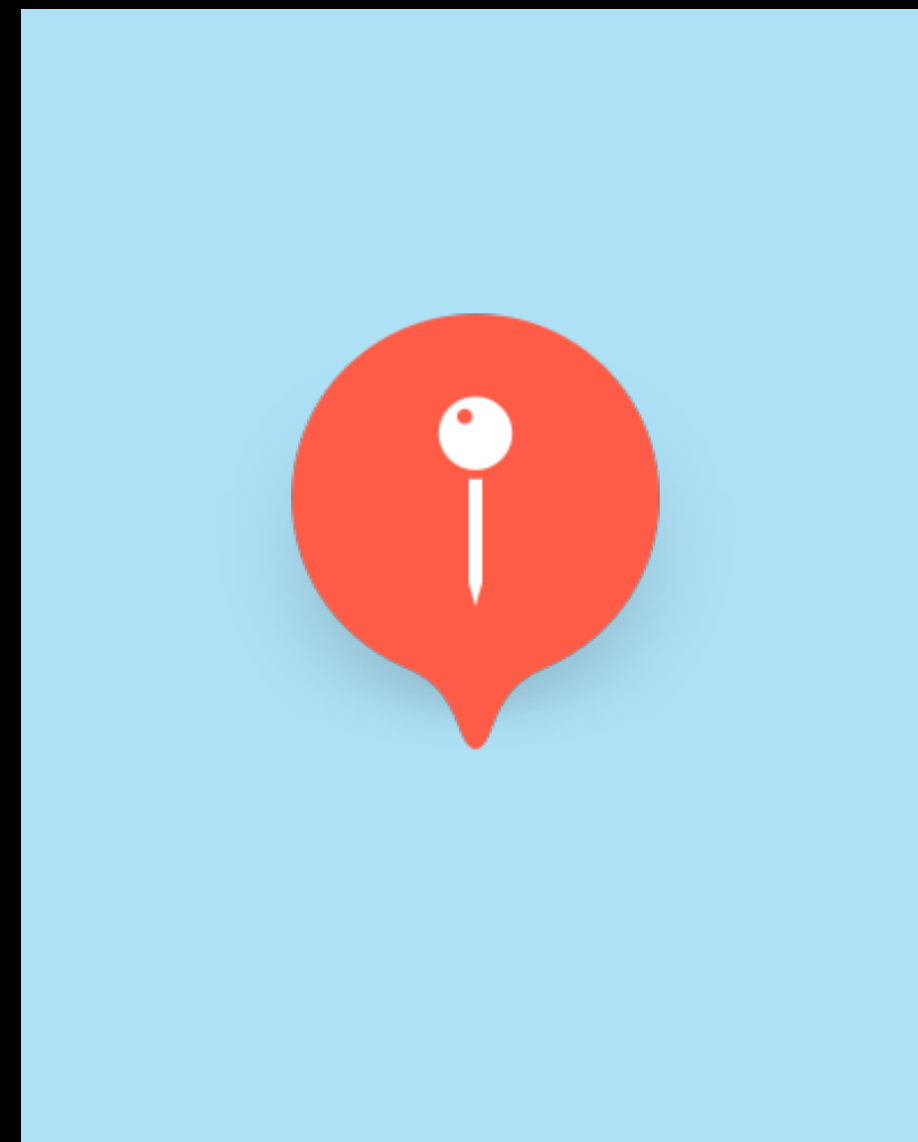
```
open class MKMarkerAnnotationView : MKAnnotationView {  
  
    open var titleVisibility: MKFeatureVisibility  
    open var subtitleVisibility: MKFeatureVisibility  
  
    @NSCopying open var markerTintColor: UIColor?  
    @NSCopying open var glyphTintColor: UIColor?  
  
    open var glyphText: String?  
    @NSCopying open var glyphImage: UIImage?  
    @NSCopying open var selectedGlyphImage: UIImage?  
  
    open var animatesWhenAdded: Bool  
  
}
```



```
open class MKMarkerAnnotationView : MKAnnotationView {  
  
    open var titleVisibility: MKFeatureVisibility  
    open var subtitleVisibility: MKFeatureVisibility  
  
    @NSCopying open var markerTintColor: UIColor?  
    @NSCopying open var glyphTintColor: UIColor?  
  
    open var glyphText: String?  
    @NSCopying open var glyphImage: UIImage?  
    @NSCopying open var selectedGlyphImage: UIImage?  
  
    open var animatesWhenAdded: Bool  
  
}
```



MKMarkerAnnotationView.titleVisibility

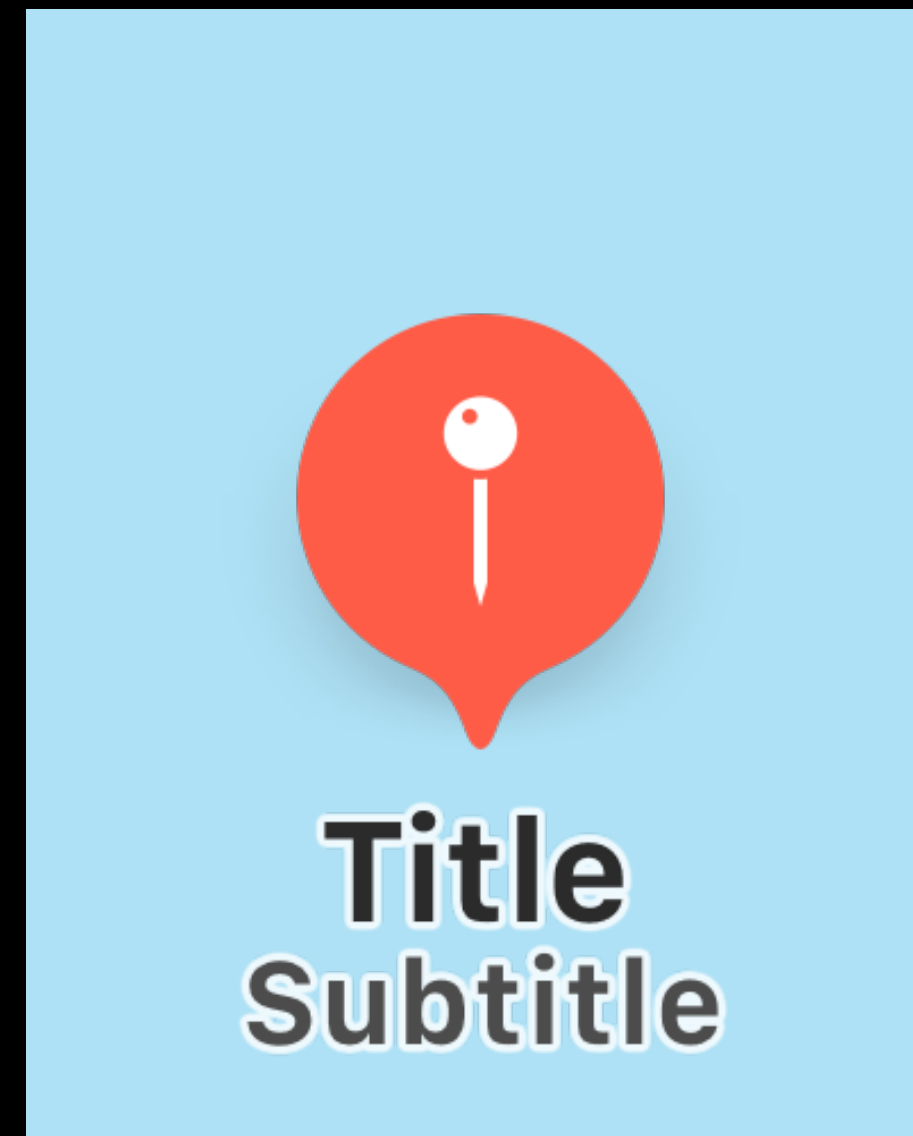


.hidden



.hidden

MKMarkerAnnotationView.titleVisibility



`.visible`



`.visible`

MKMarkerAnnotationView.titleVisibility

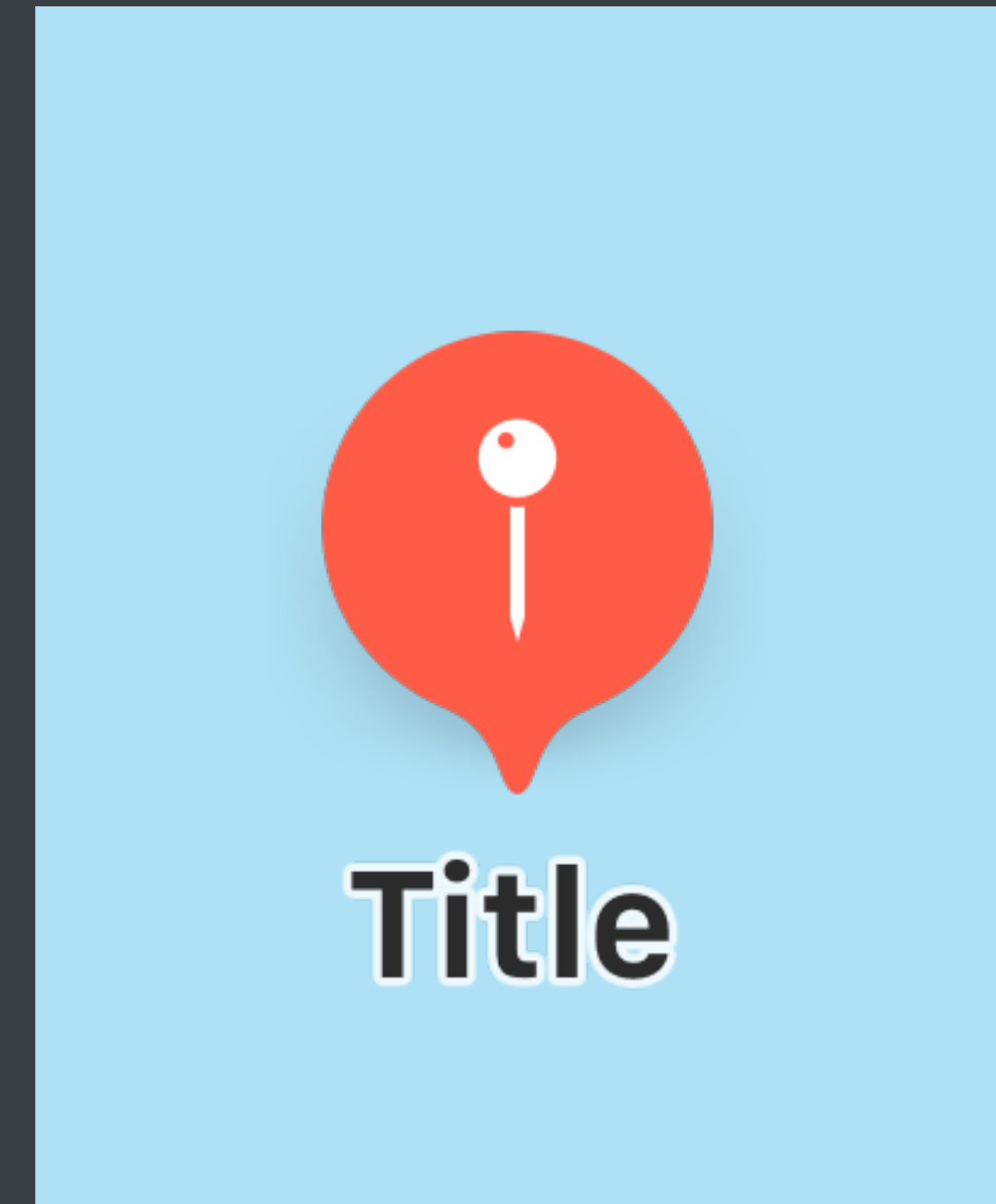


.adaptive



.adaptive

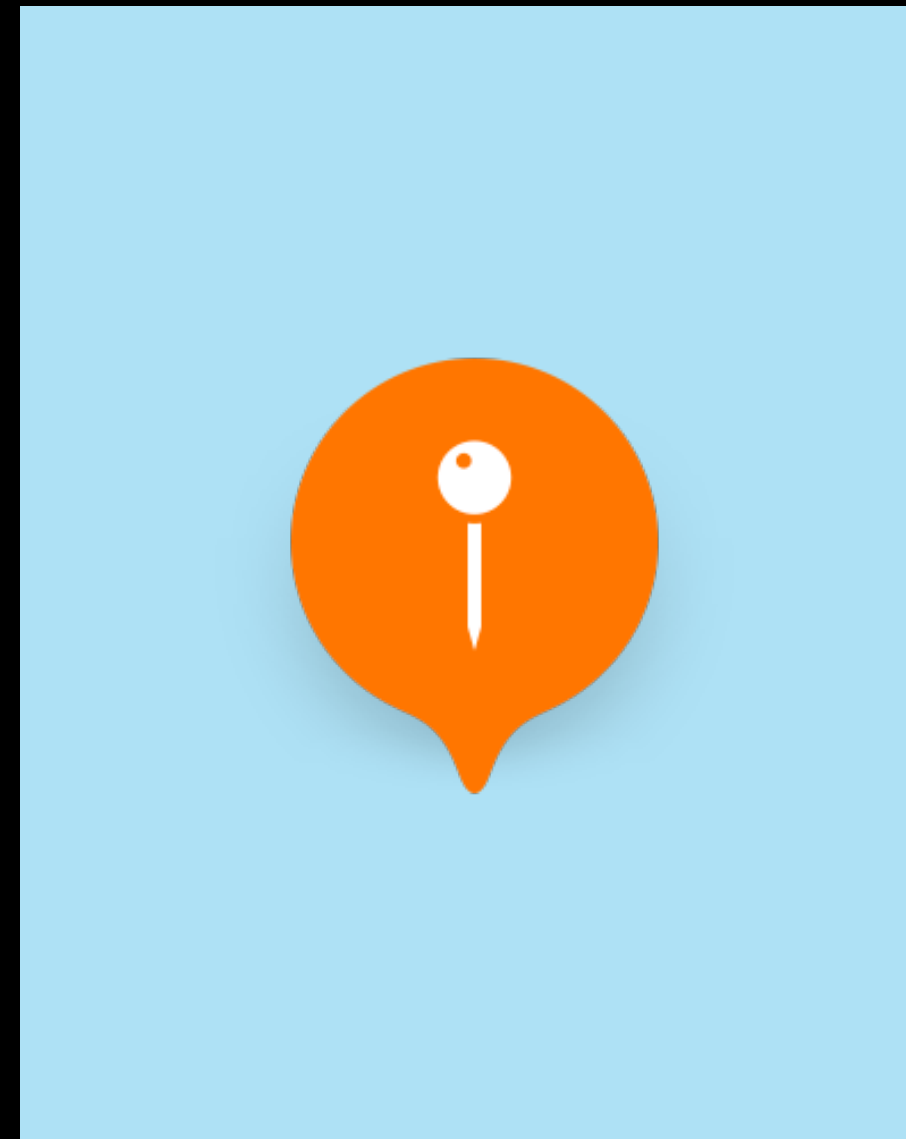
```
open class MKMarkerAnnotationView : MKAnnotationView {  
  
    open var titleVisibility: MKFeatureVisibility  
    open var subtitleVisibility: MKFeatureVisibility  
  
    @NSCopying open var markerTintColor: UIColor?  
    @NSCopying open var glyphTintColor: UIColor?  
  
    open var glyphText: String?  
    @NSCopying open var glyphImage: UIImage?  
    @NSCopying open var selectedGlyphImage: UIImage?  
  
    open var animatesWhenAdded: Bool  
  
}
```



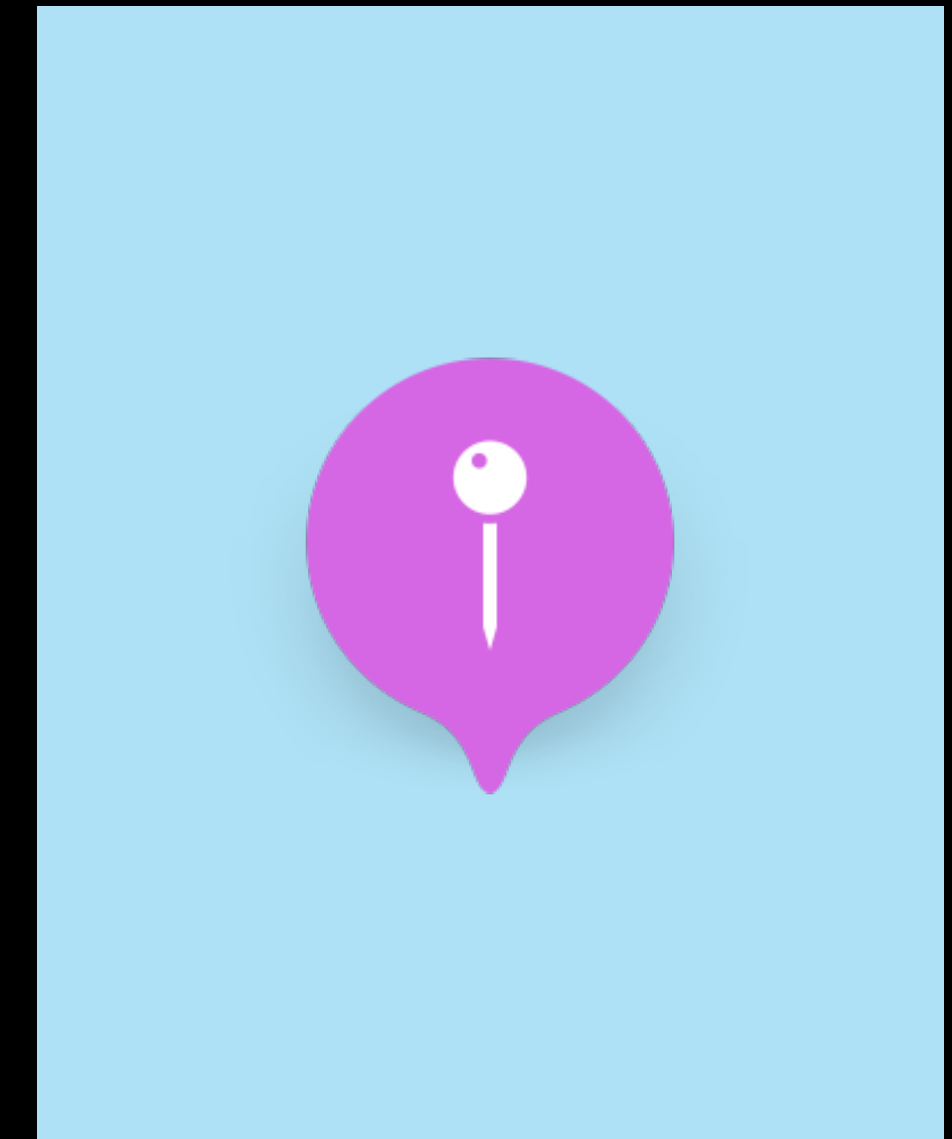
MKMarkerAnnotationView.markerTintColor



`nil`

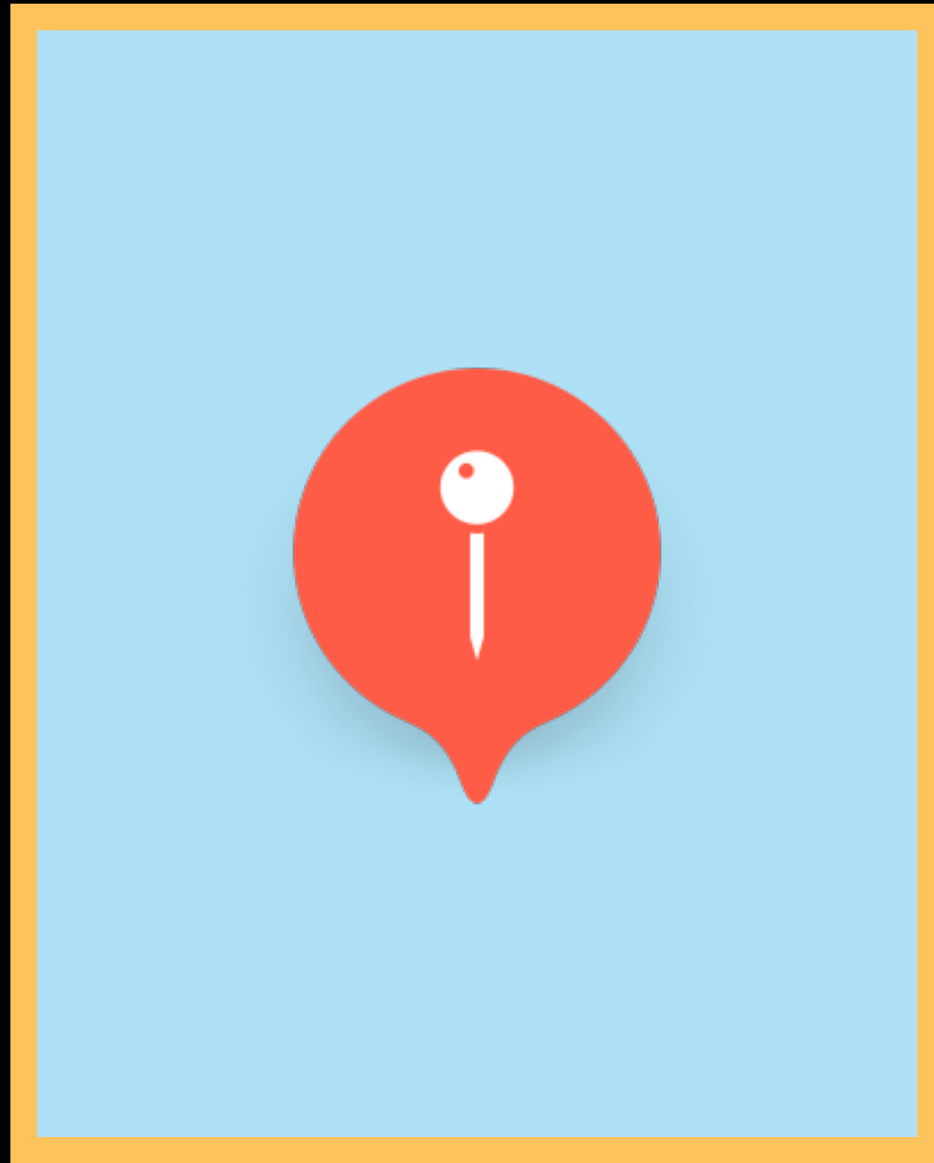


`UIColor.orange`

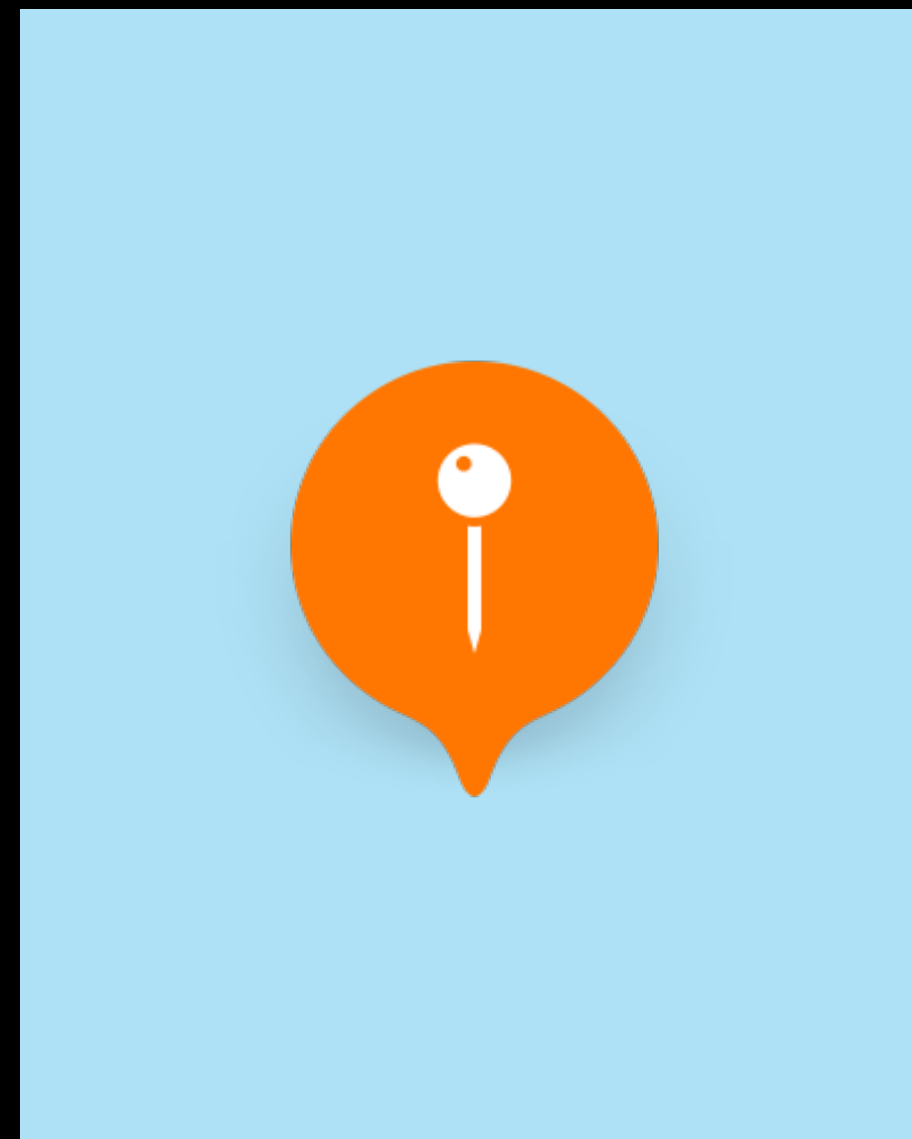


`UIColor.init(named:"myColor")`

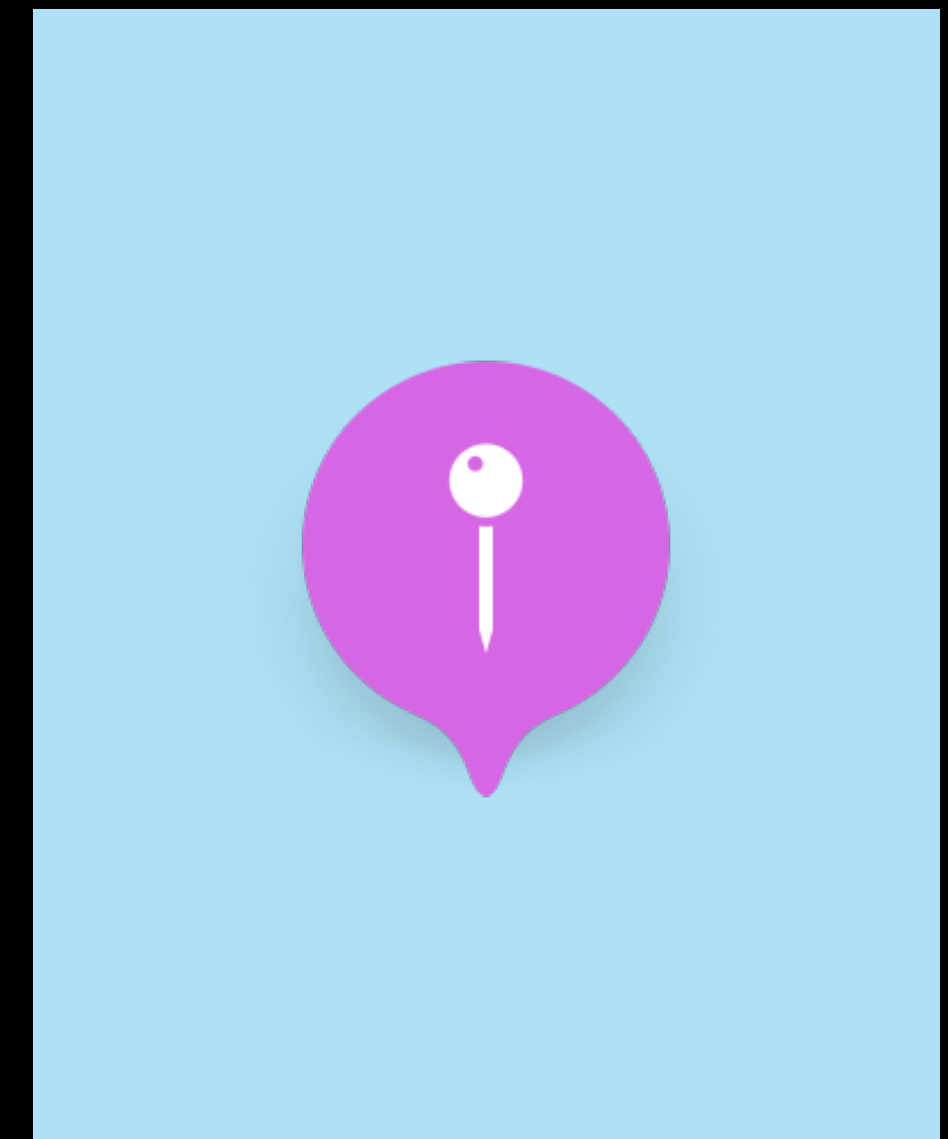
MKMarkerAnnotationView.markerTintColor



`nil`

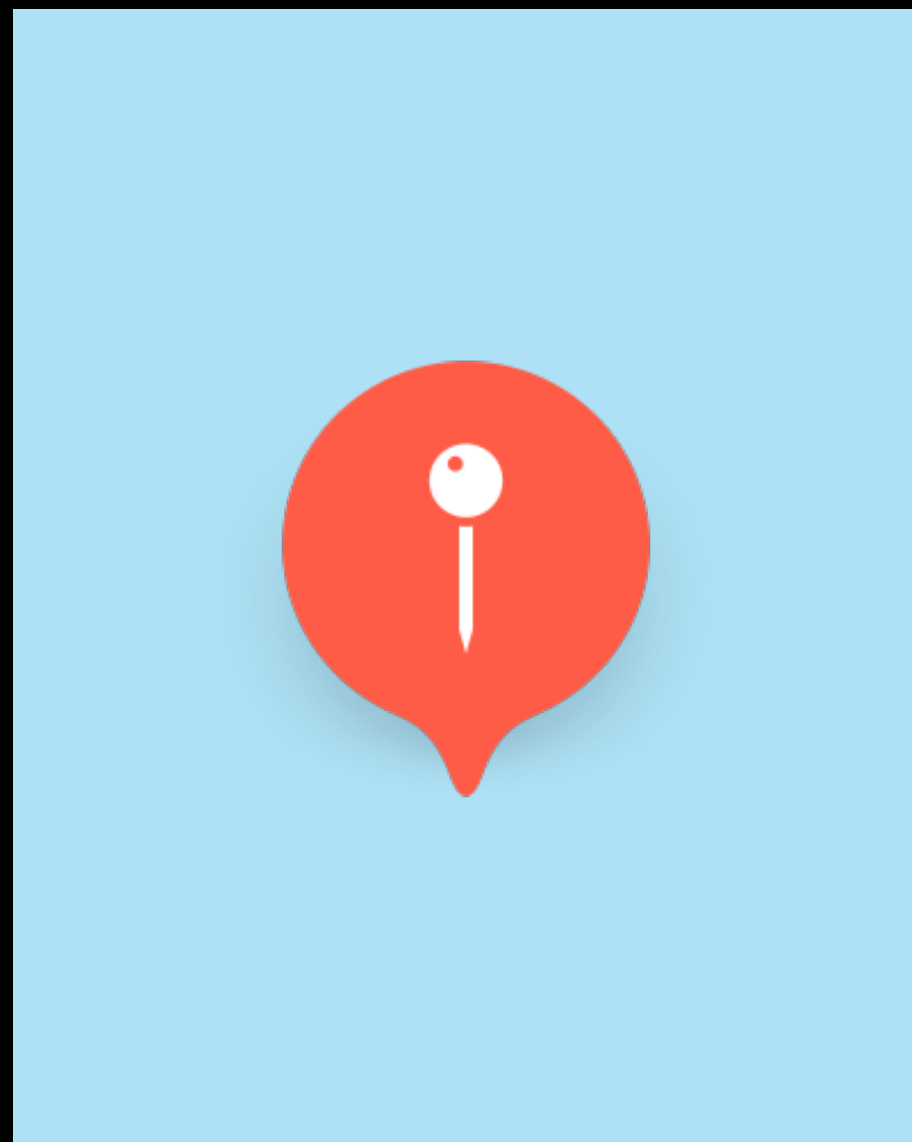


`UIColor.orange`

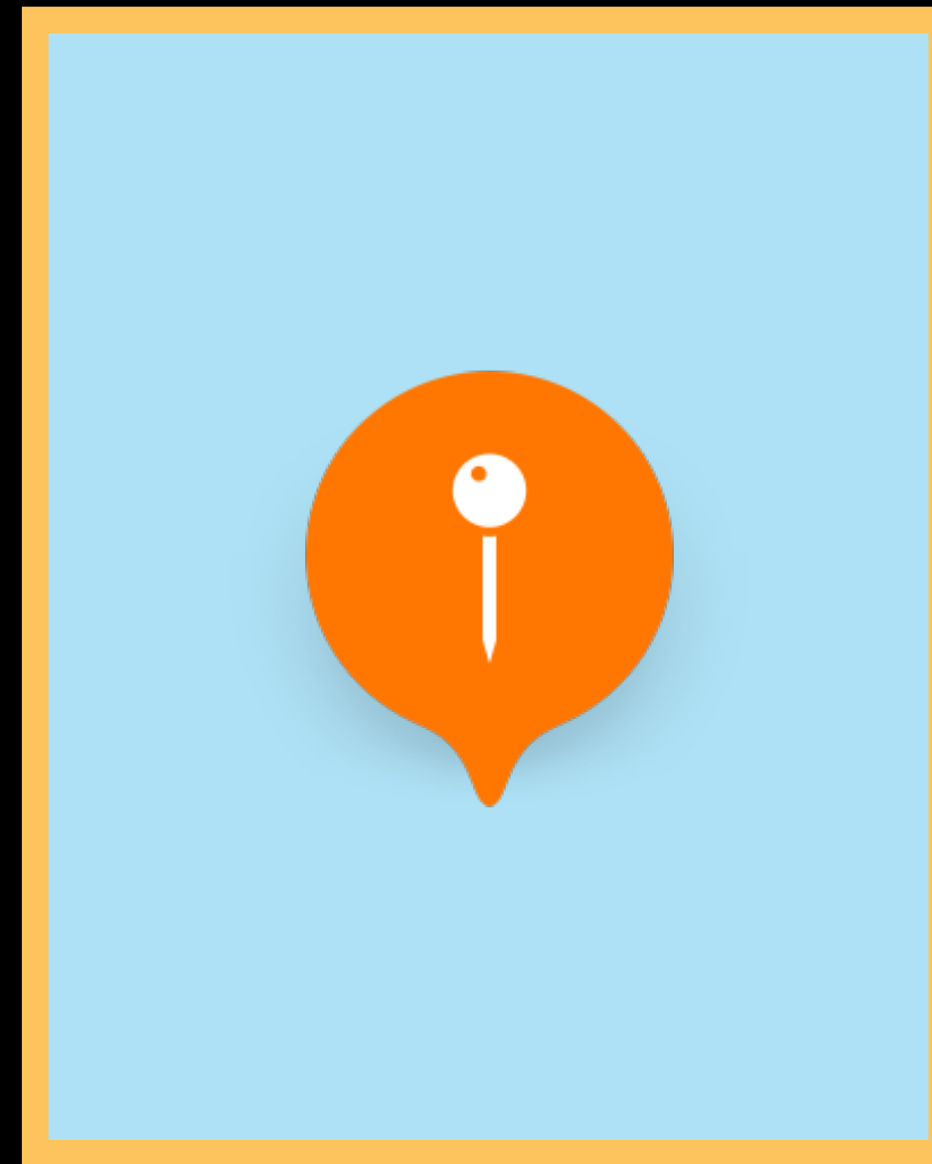


`UIColor.init(named:"myColor")`

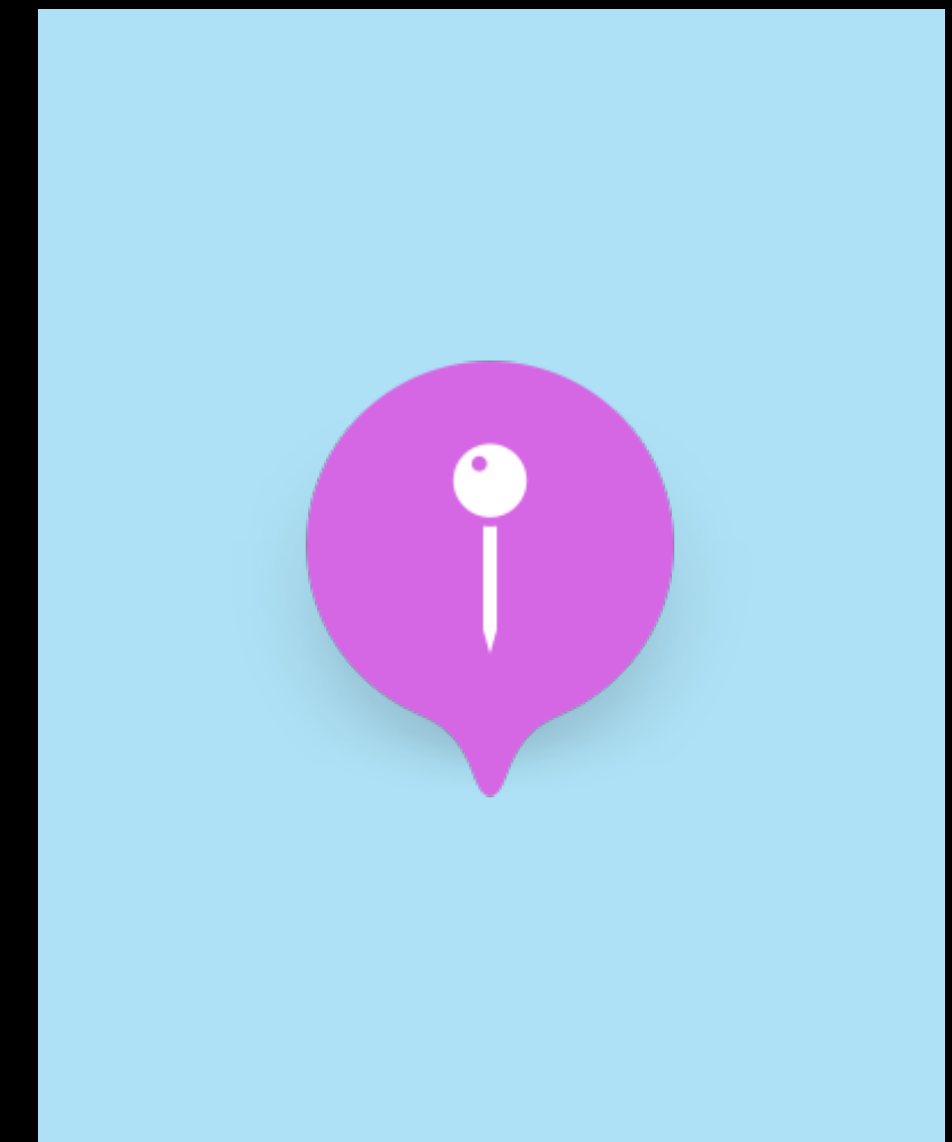
MKMarkerAnnotationView.markerTintColor



`nil`



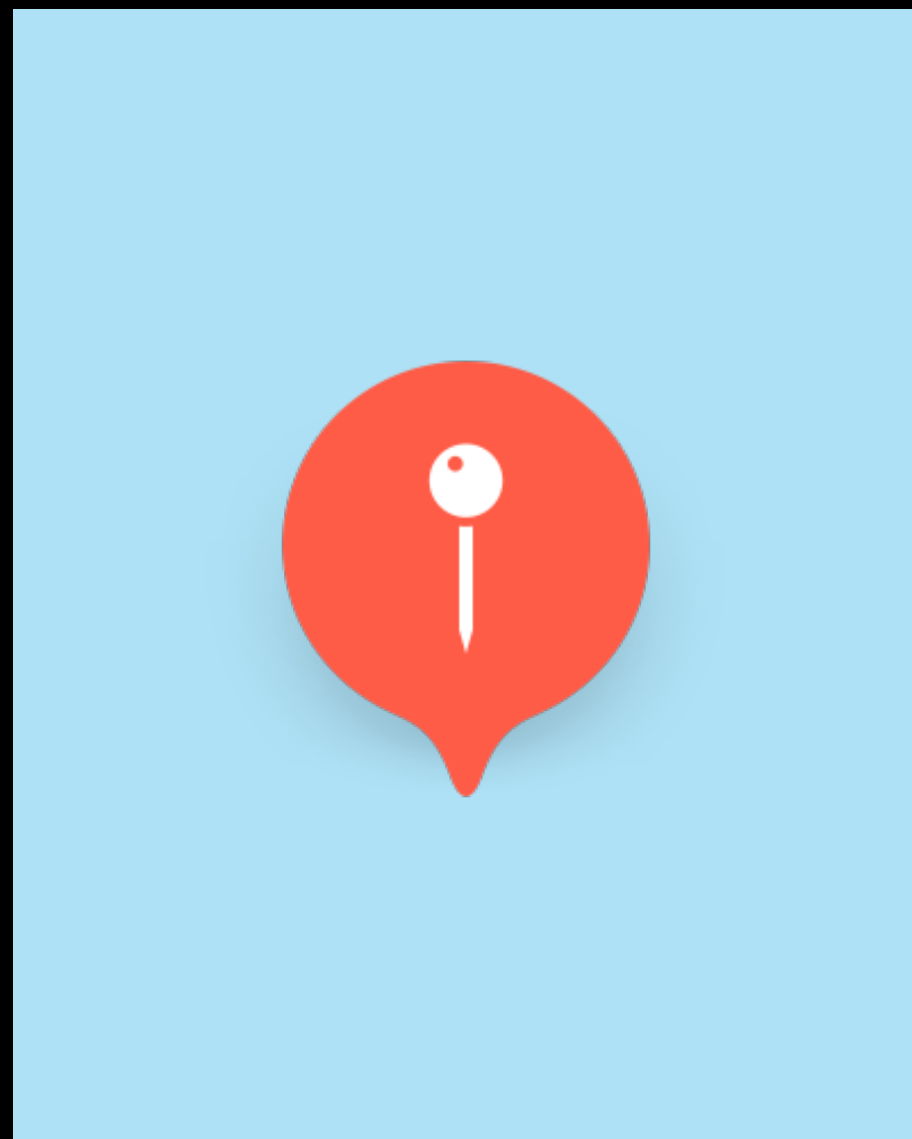
`UIColor.orange`



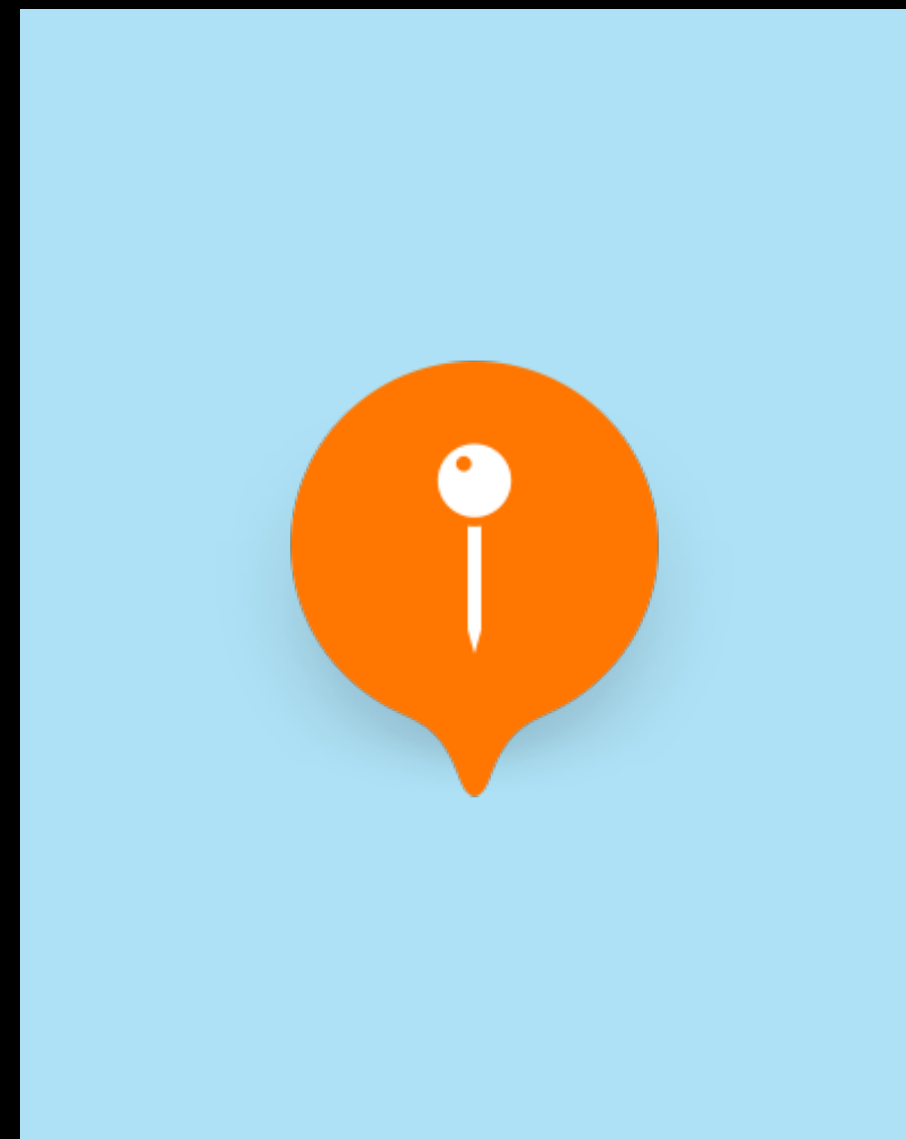
`UIColor.init(named:"myColor")`

MKMarkerAnnotationView.markerTintColor

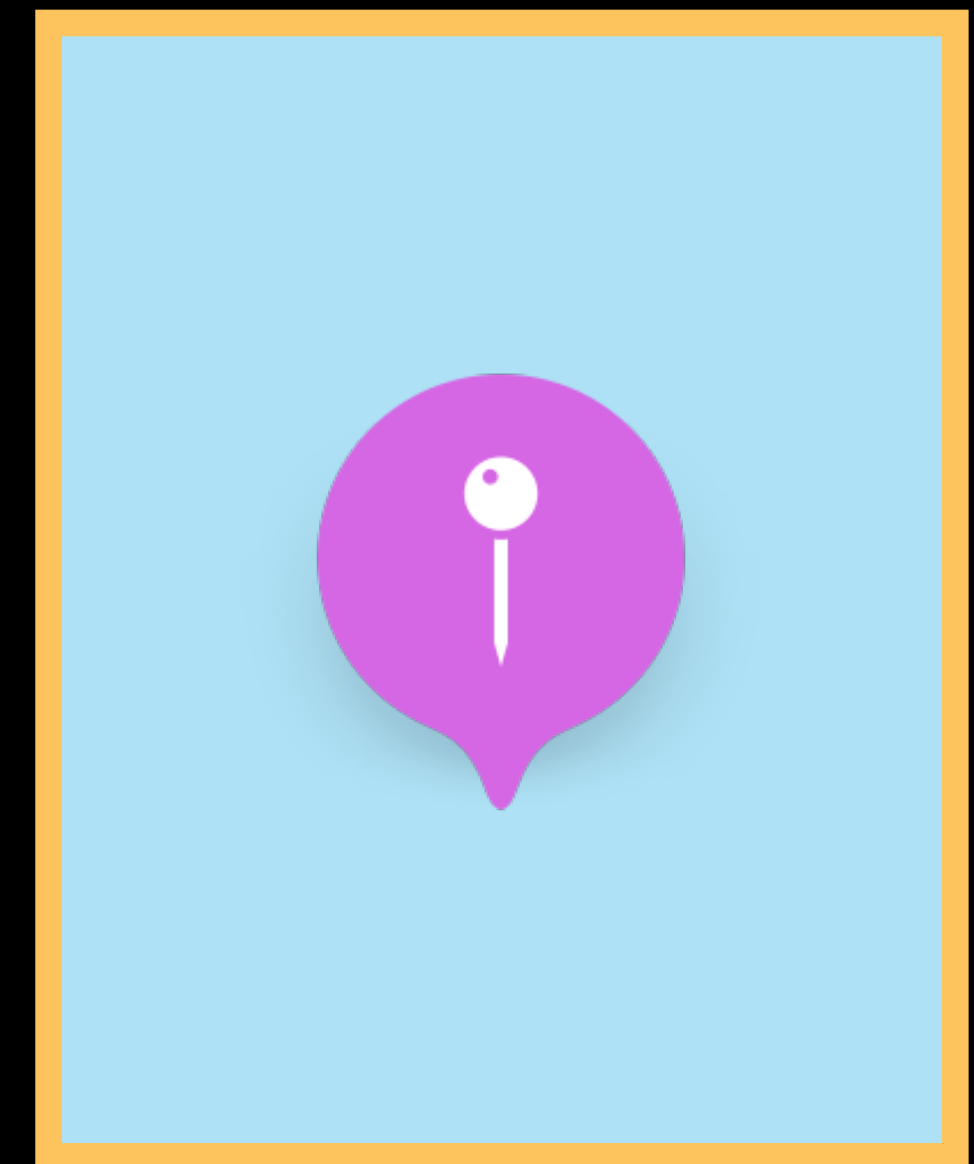
NEW



`nil`

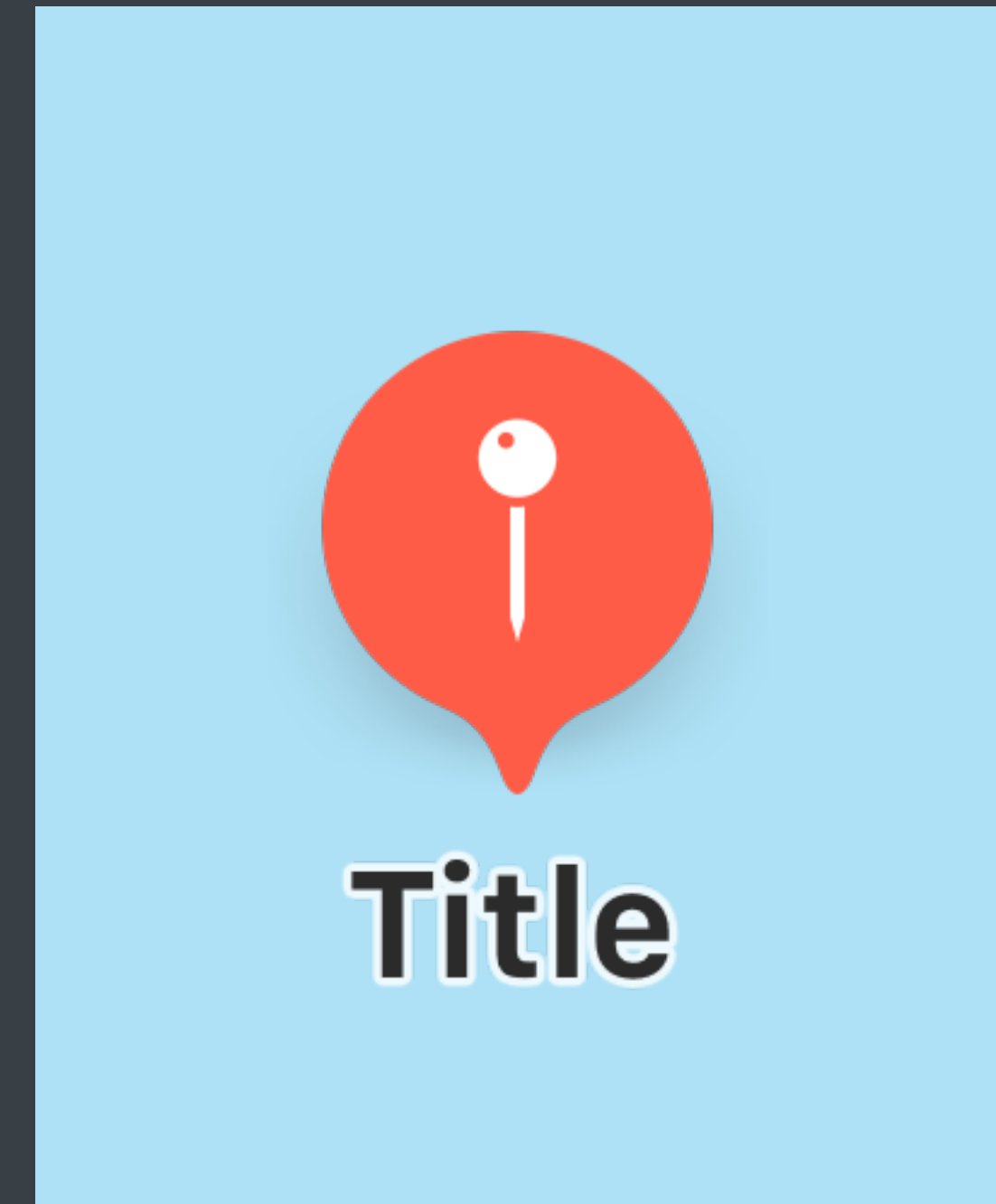


`UIColor.orange`



`UIColor.init(named:"myColor")`

```
open class MKMarkerAnnotationView : MKAnnotationView {  
  
    open var titleVisibility: MKFeatureVisibility  
    open var subtitleVisibility: MKFeatureVisibility  
  
    @NSCopying open var markerTintColor: UIColor?  
    @NSCopying open var glyphTintColor: UIColor?  
  
    open var glyphText: String?  
    @NSCopying open var glyphImage: UIImage?  
    @NSCopying open var selectedGlyphImage: UIImage?  
  
    open var animatesWhenAdded: Bool  
  
}
```



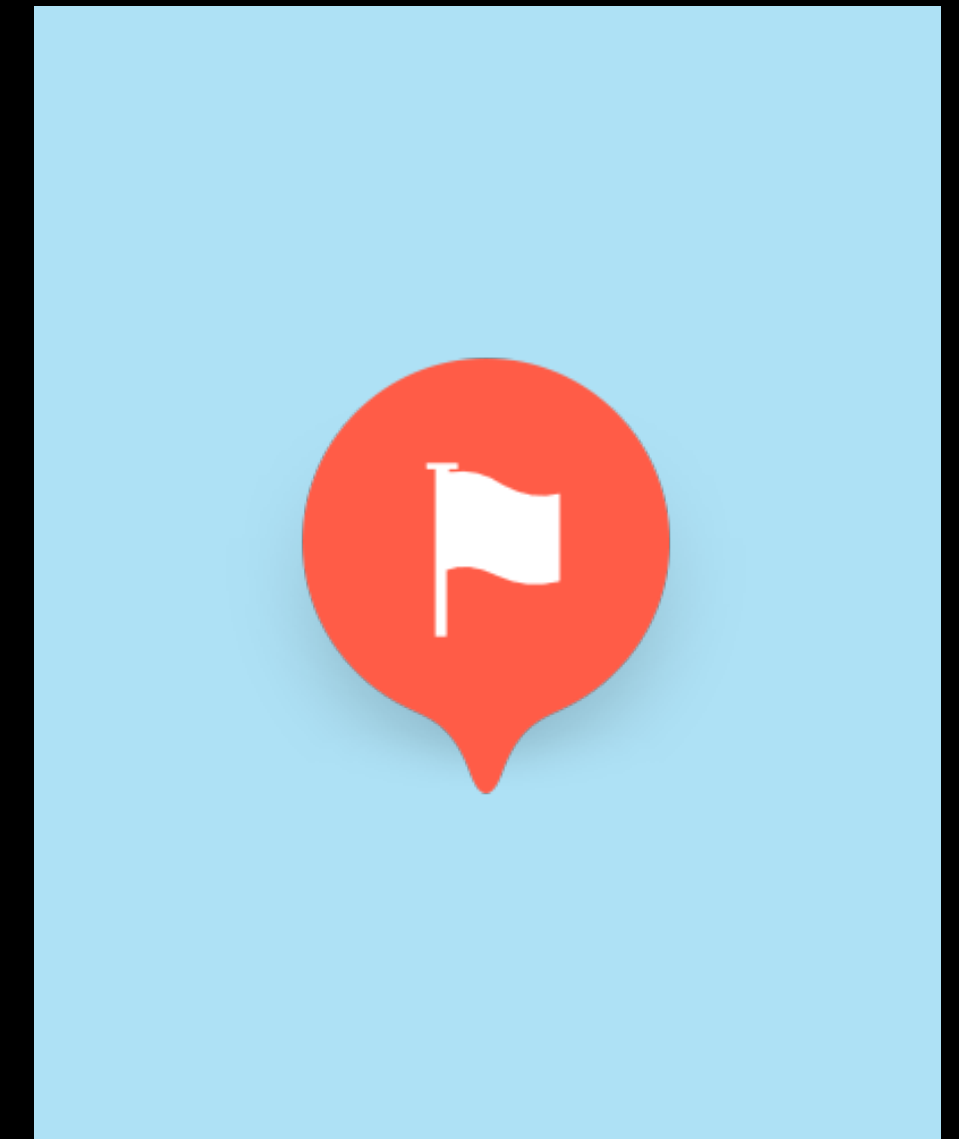
MKMarkerAnnotationView.glyphText



`nil`

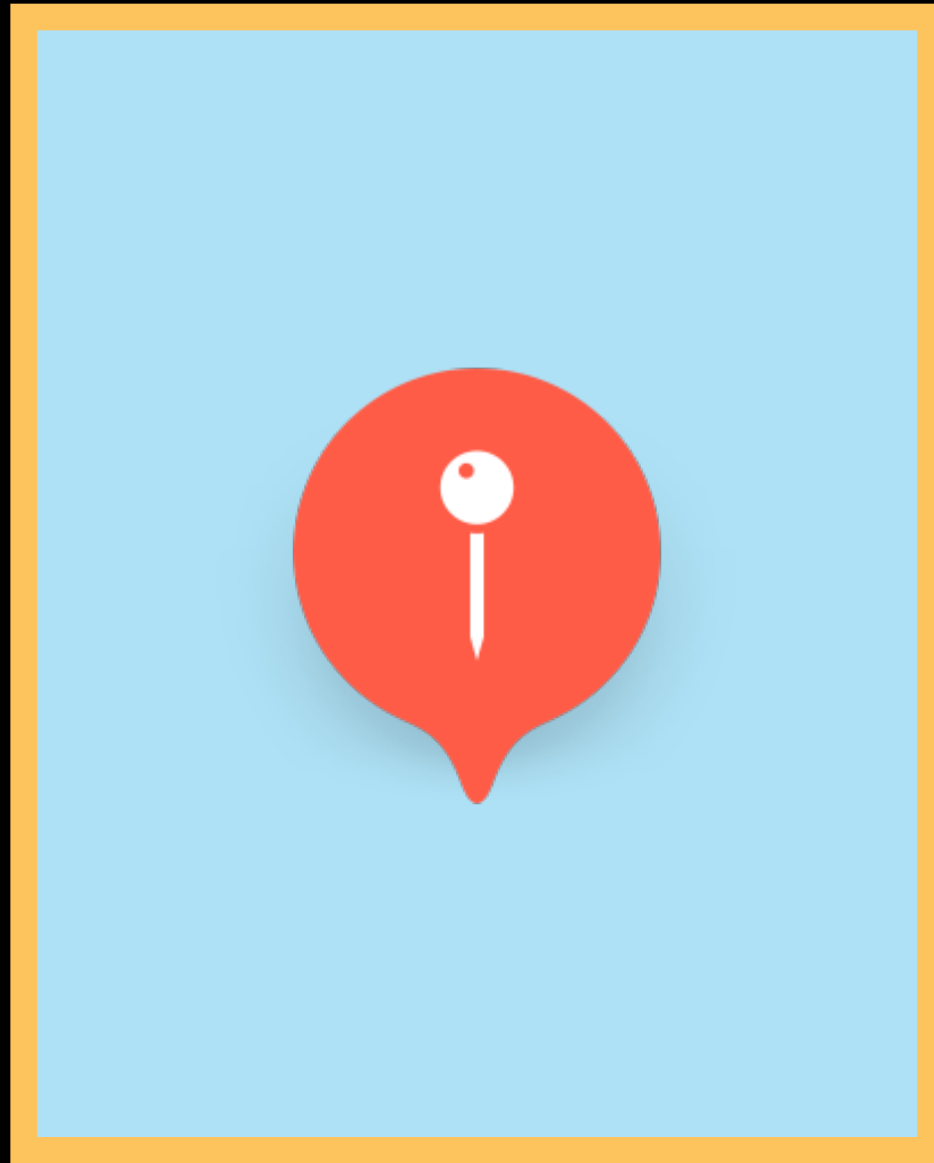


`"A+"`



`"🚩"`

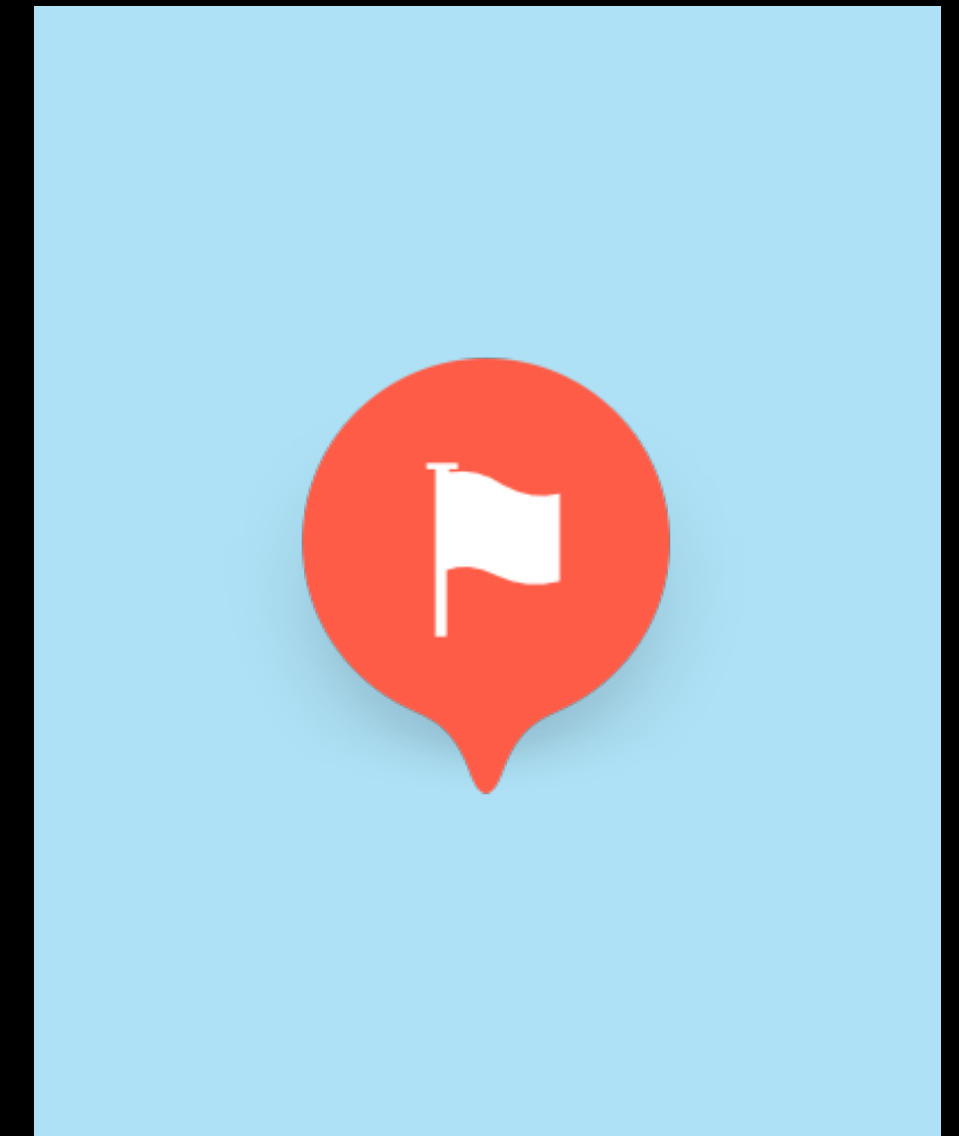
MKMarkerAnnotationView.glyphText



`nil`



`"A+"`

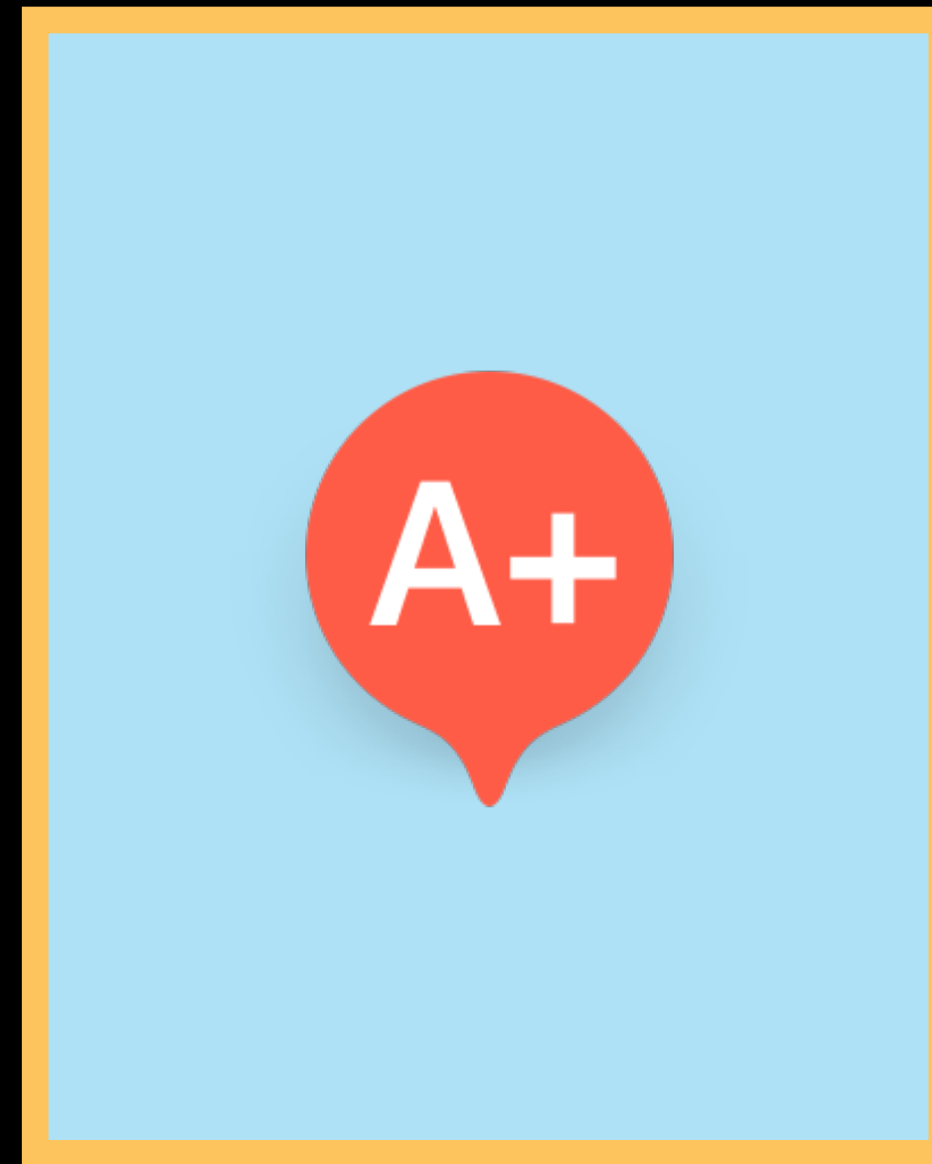


`"🚩"`

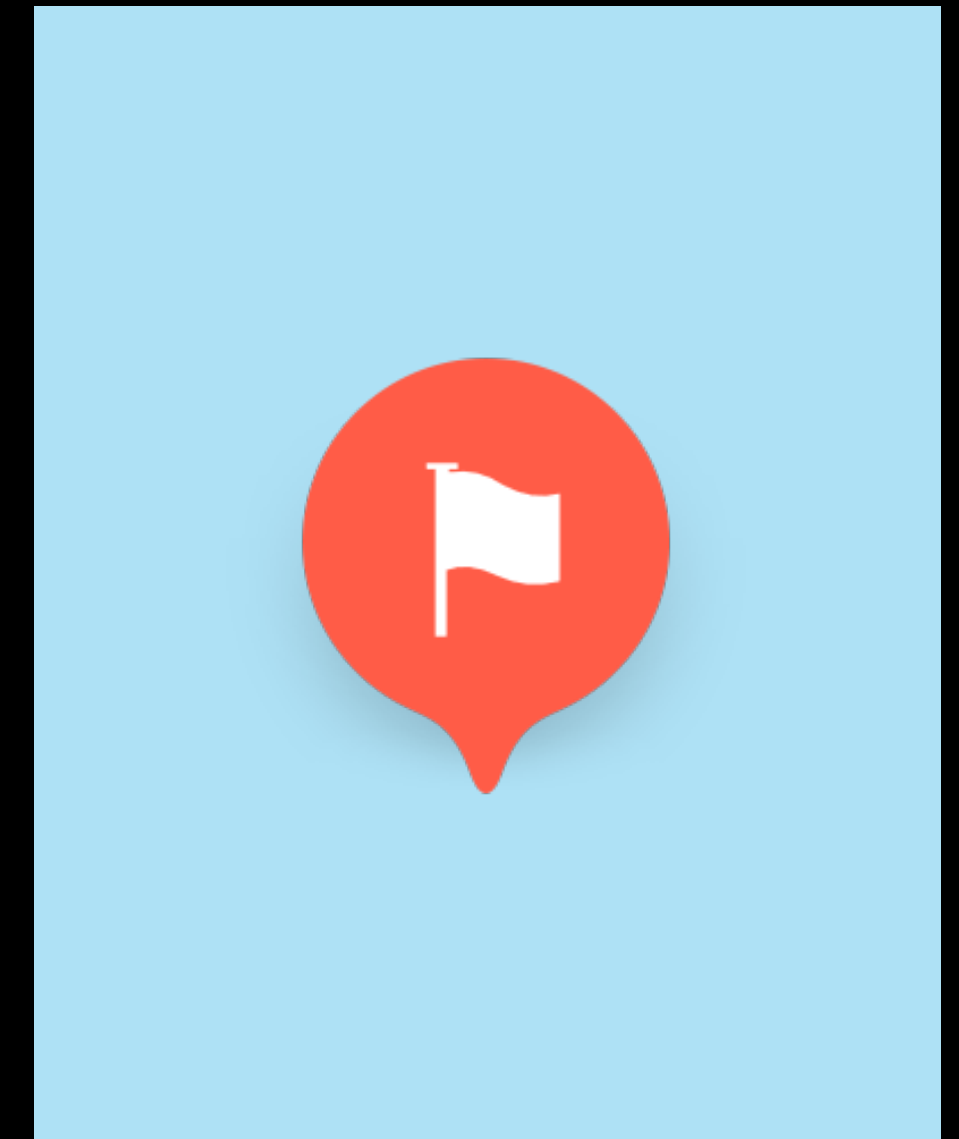
MKMarkerAnnotationView.glyphText



`nil`



`"A+"`



`"🚩"`

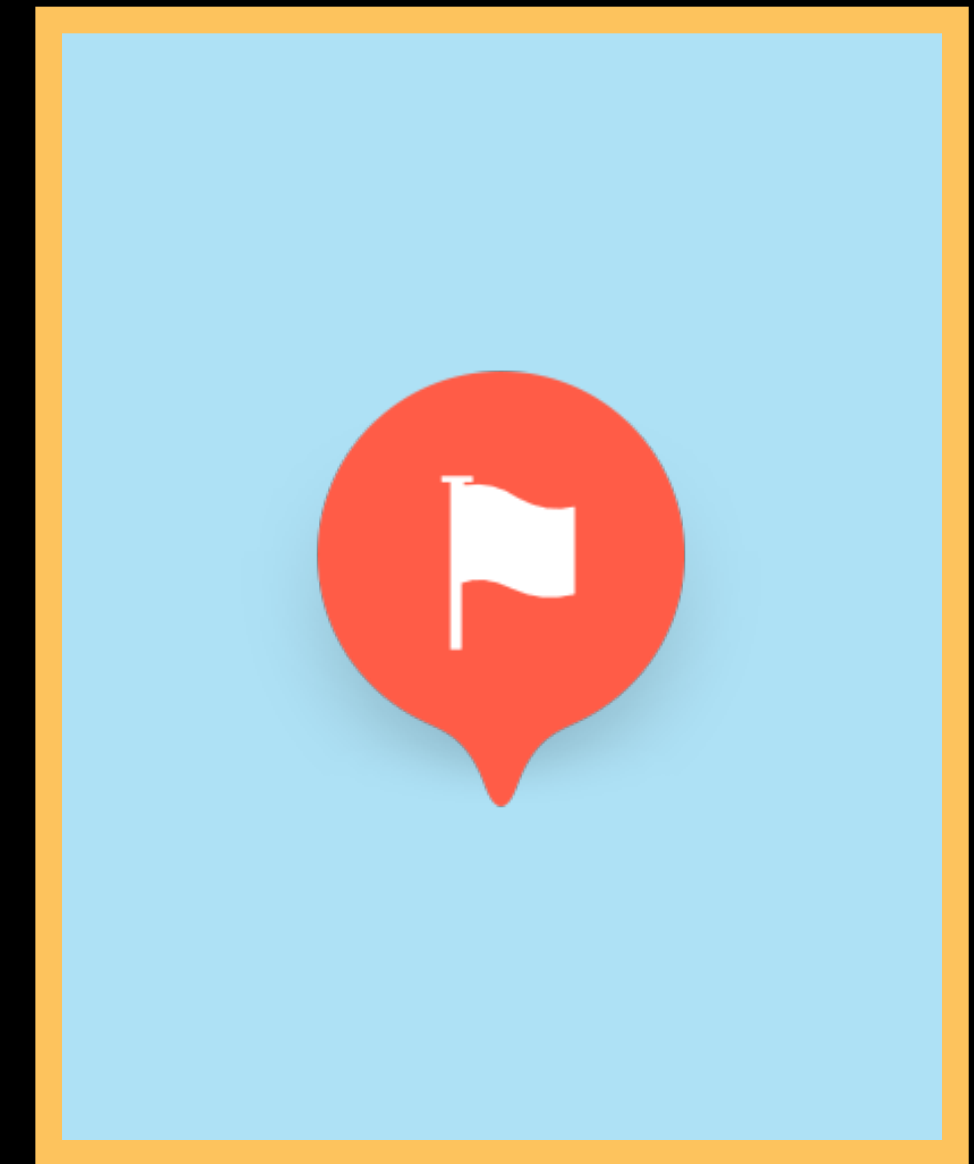
MKMarkerAnnotationView.glyphText



`nil`



`"A+"`

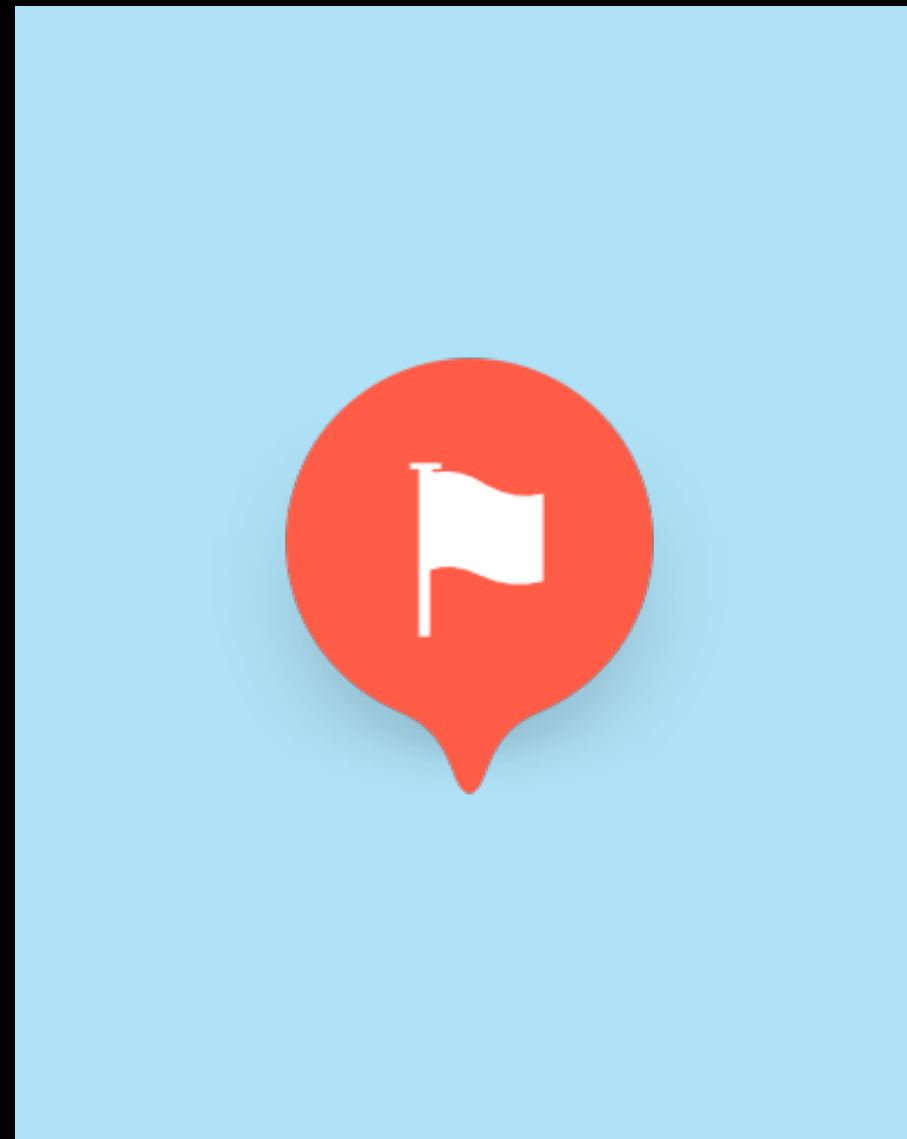


`"🚩"`

MKMarkerAnnotationView.glyphText



"A+"

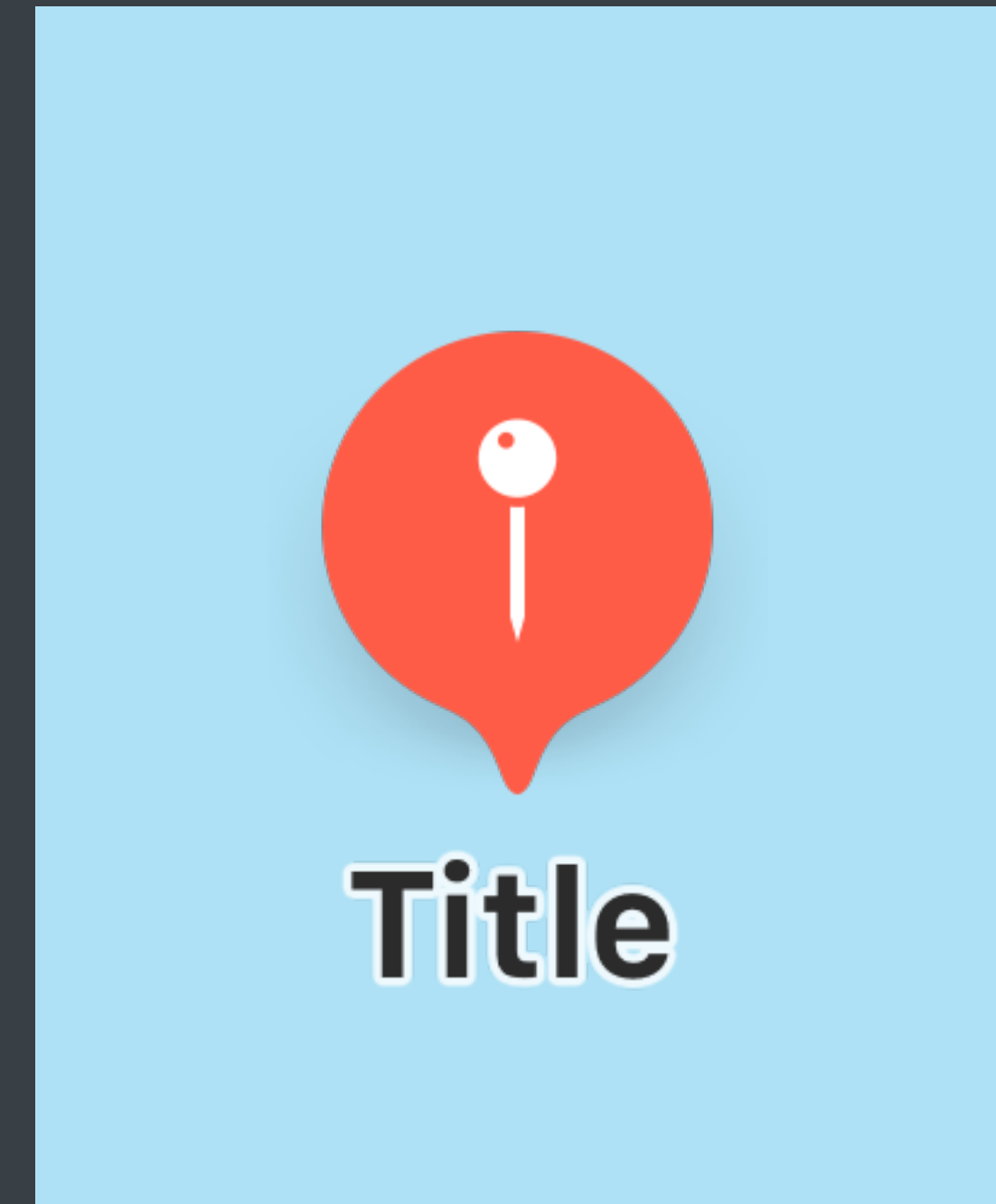


"🚩"



"Hello World"

```
open class MKMarkerAnnotationView : MKAnnotationView {  
  
    open var titleVisibility: MKFeatureVisibility  
    open var subtitleVisibility: MKFeatureVisibility  
  
    @NSCopying open var markerTintColor: UIColor?  
    @NSCopying open var glyphTintColor: UIColor?  
  
    open var glyphText: String?  
    @NSCopying open var glyphImage: UIImage?  
    @NSCopying open var selectedGlyphImage: UIImage?  
  
    open var animatesWhenAdded: Bool  
  
}
```



MKMarkerAnnotationView.glyphImage

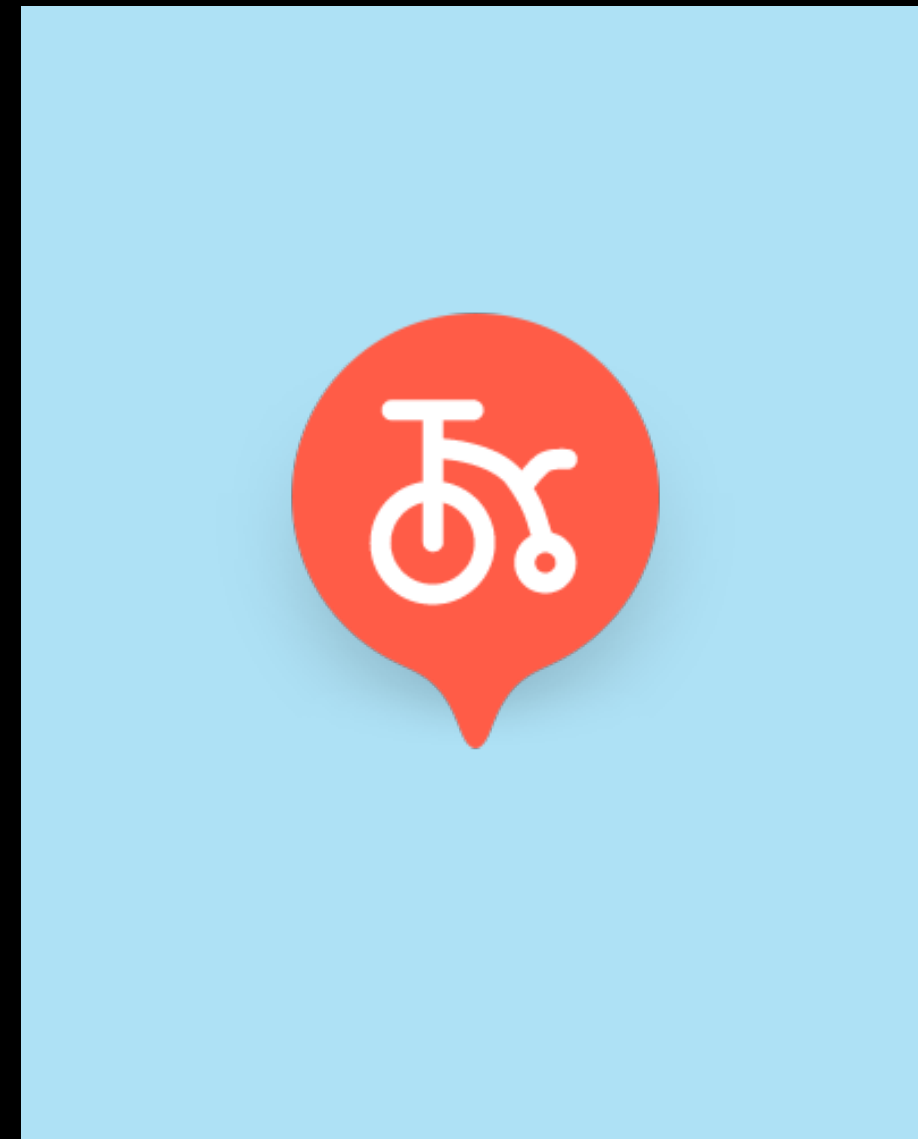


MKMarkerAnnotationView.glyphImage



40x40 pts

MKMarkerAnnotationView.glyphImage



40x40 pts

MKMarkerAnnotationView.glyphImage

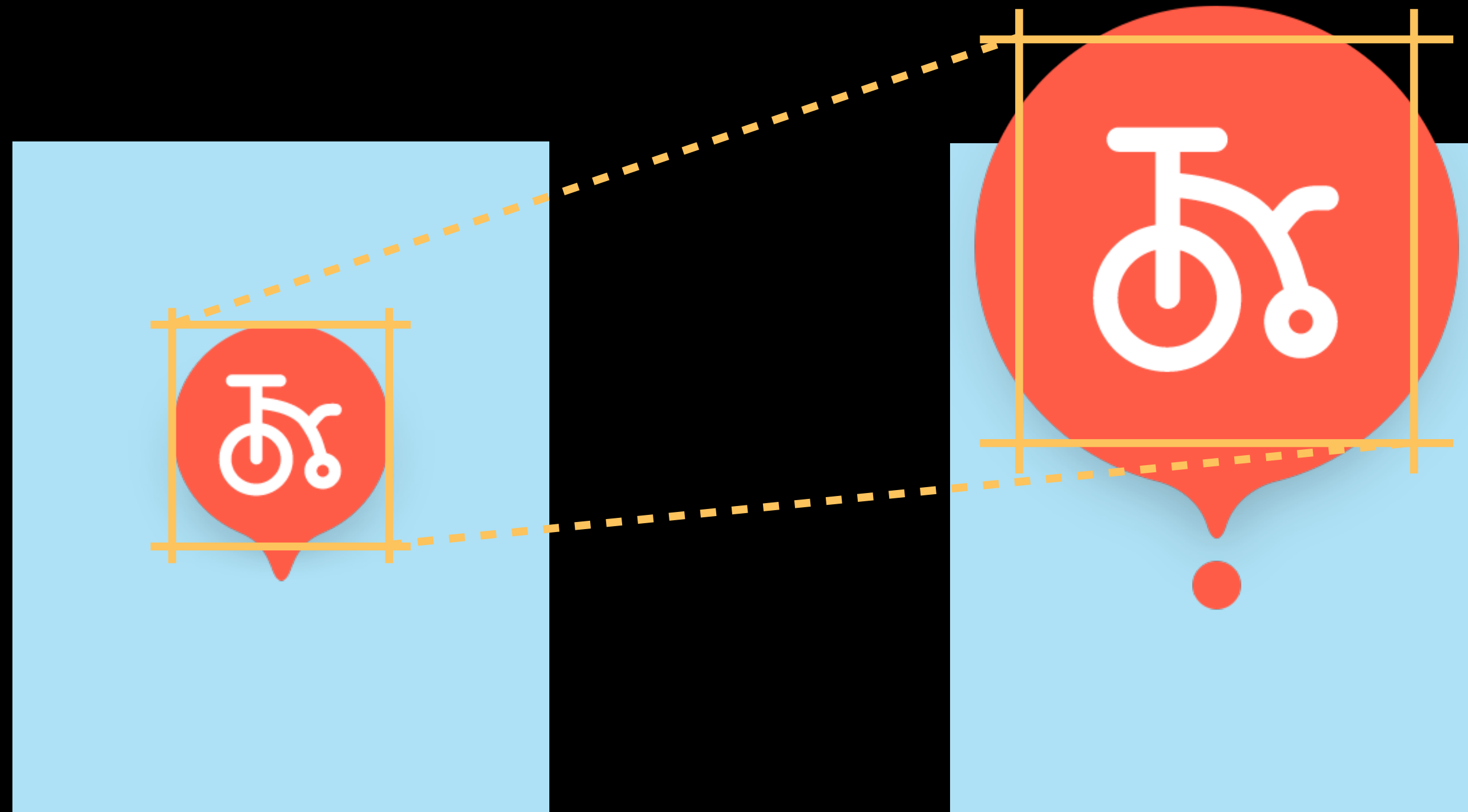


20x20 pts



40x40 pts

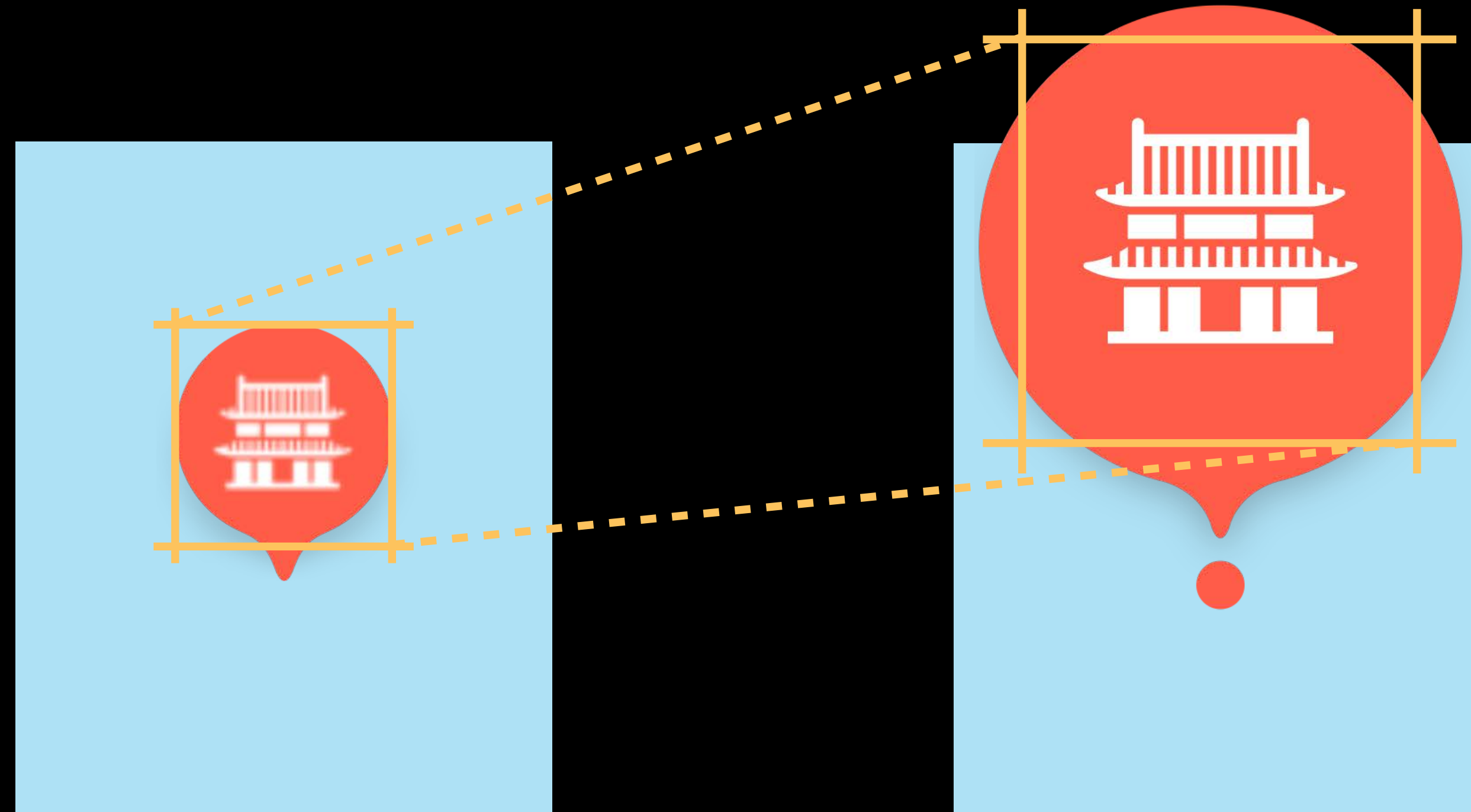
MKMarkerAnnotationView.glyphImage



20x20 pts

40x40 pts

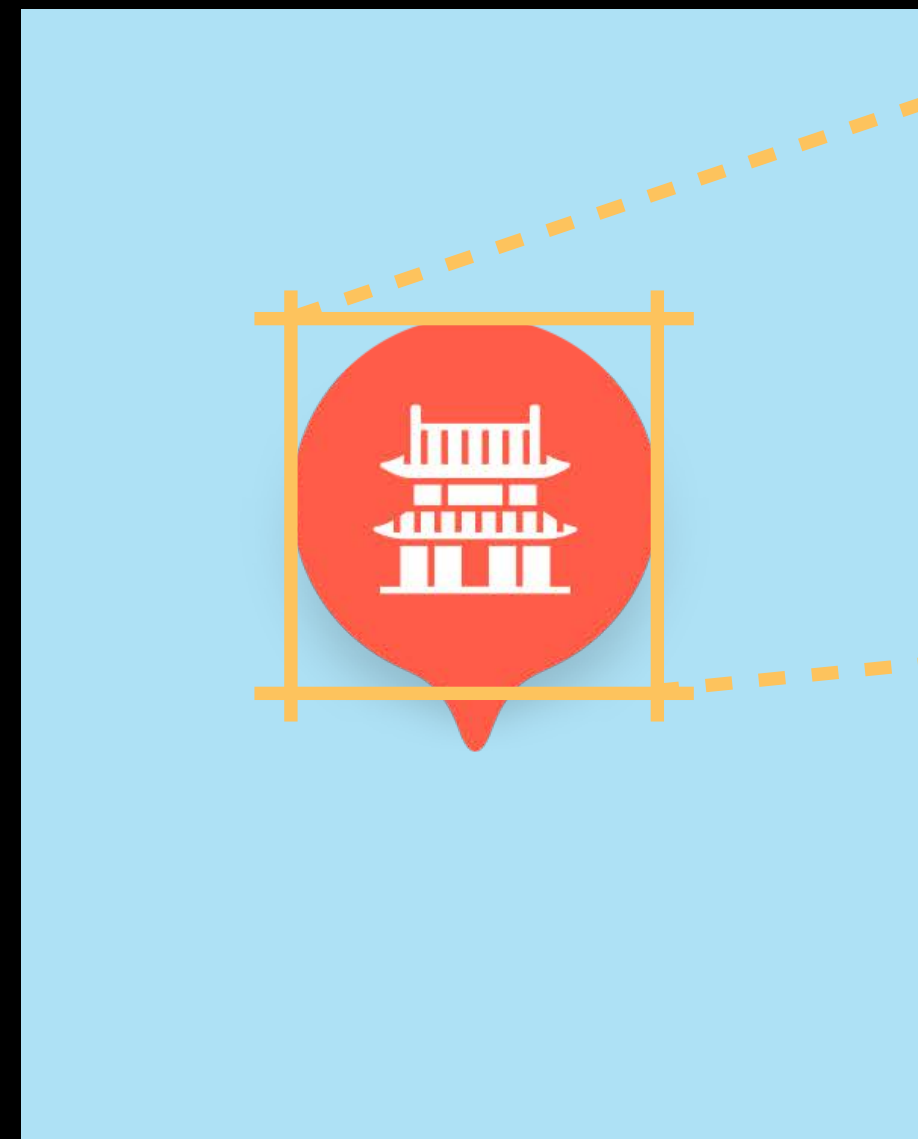
MKMarkerAnnotationView.glyphImage



20x20 pts

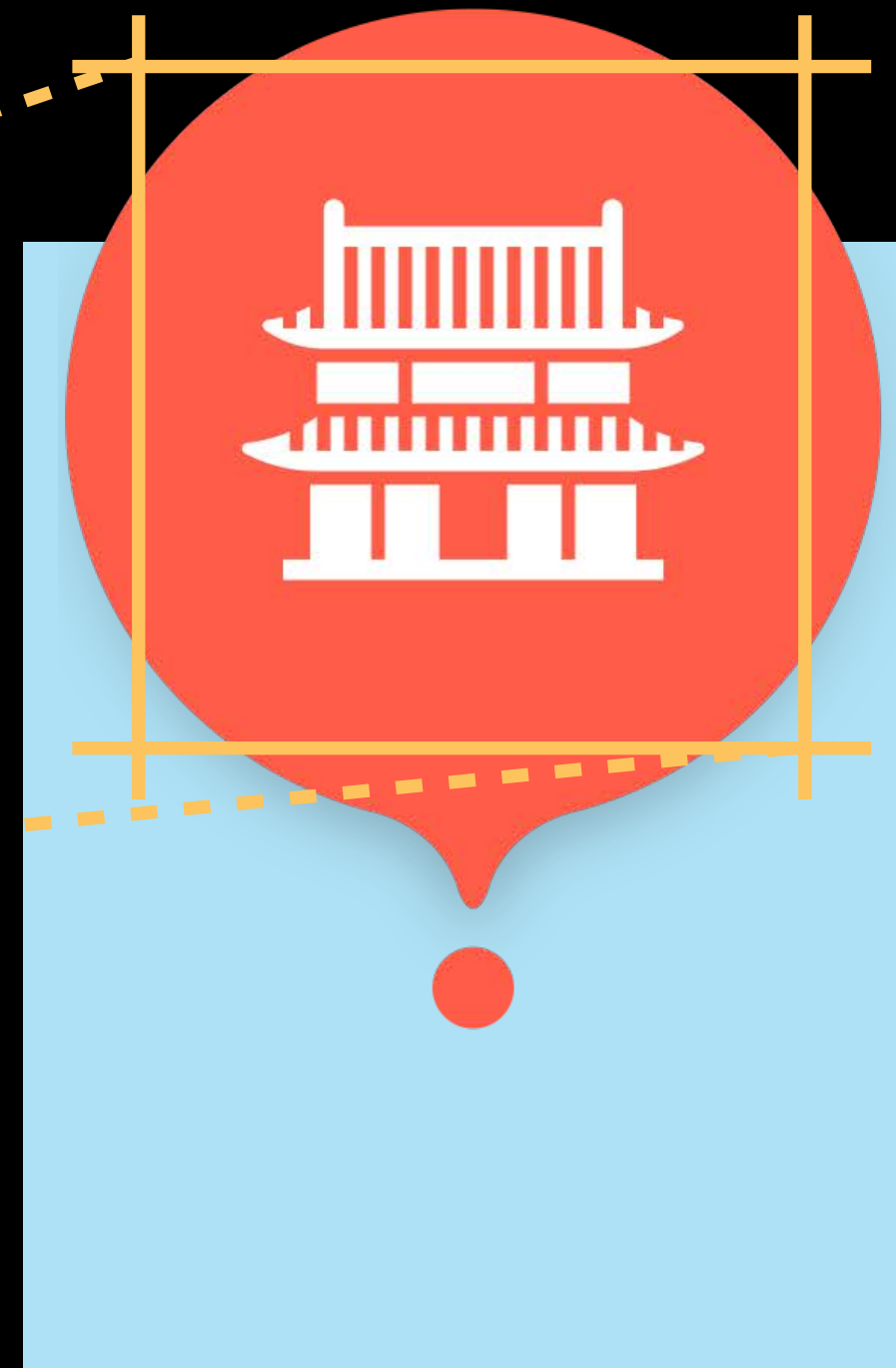
40x40 pts

`.glyphImage`



20x20 pts

`.selectedGlyphImage`



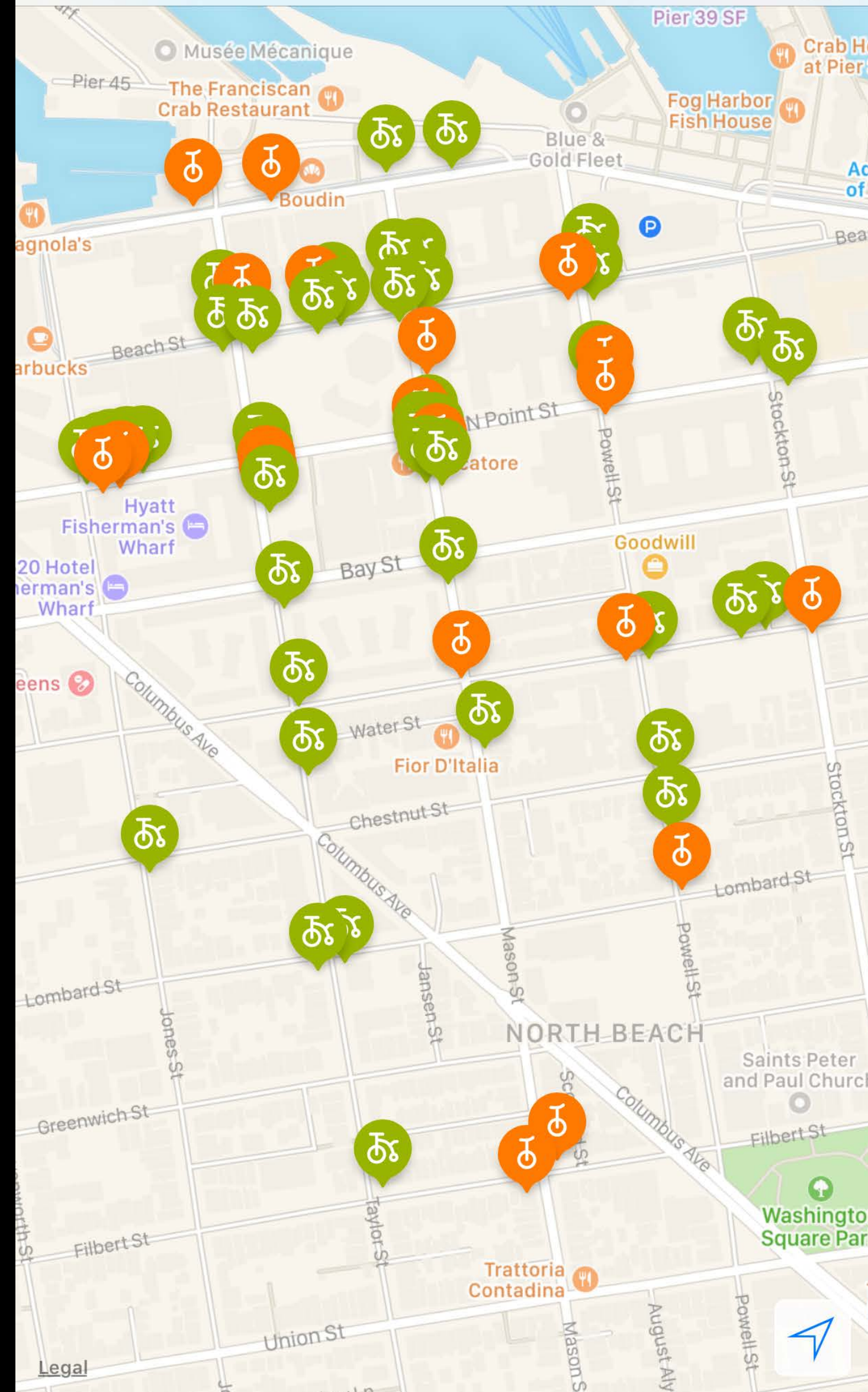
40x40 pts



9:41 AM



tandm

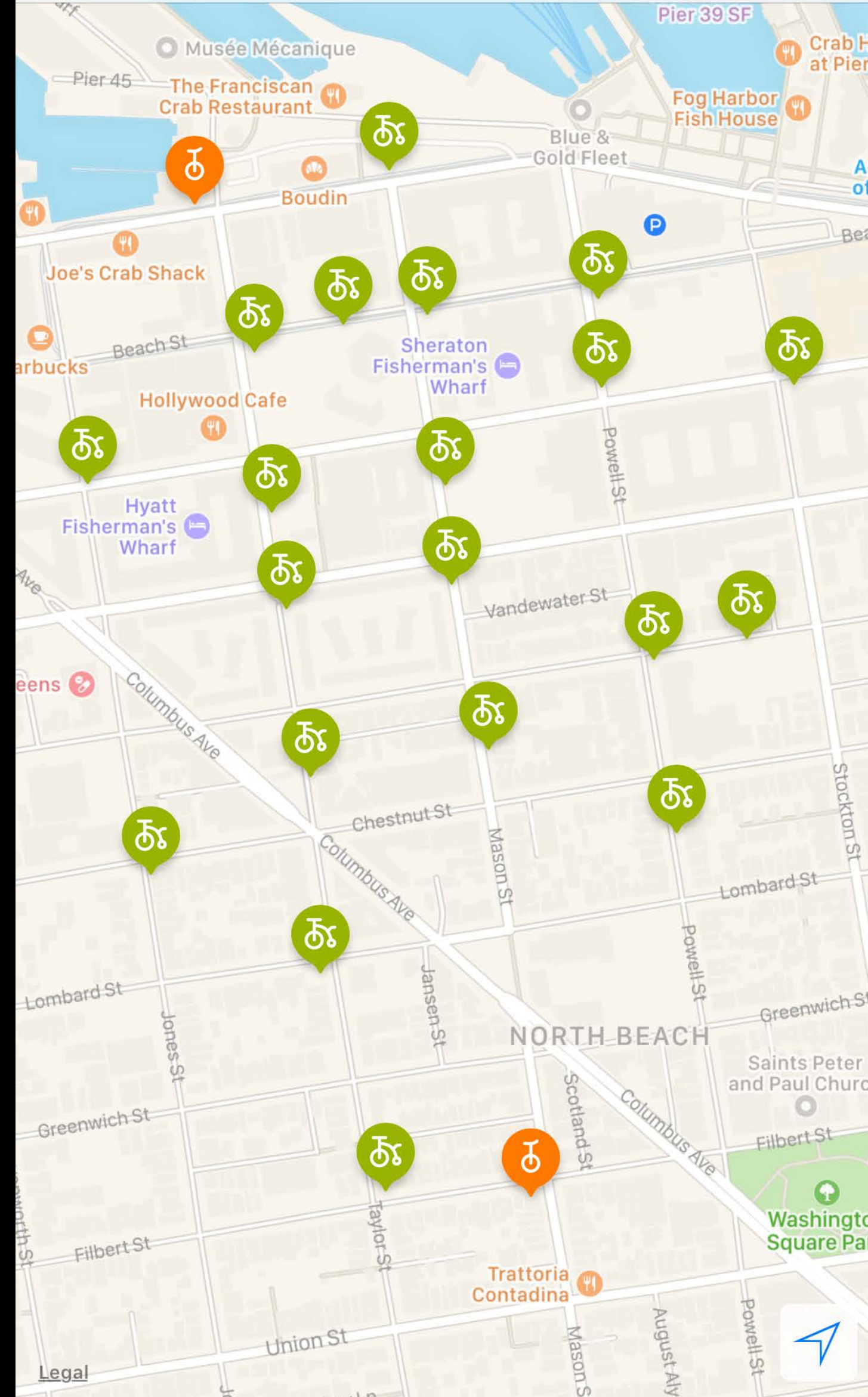




9:41 AM



tandm

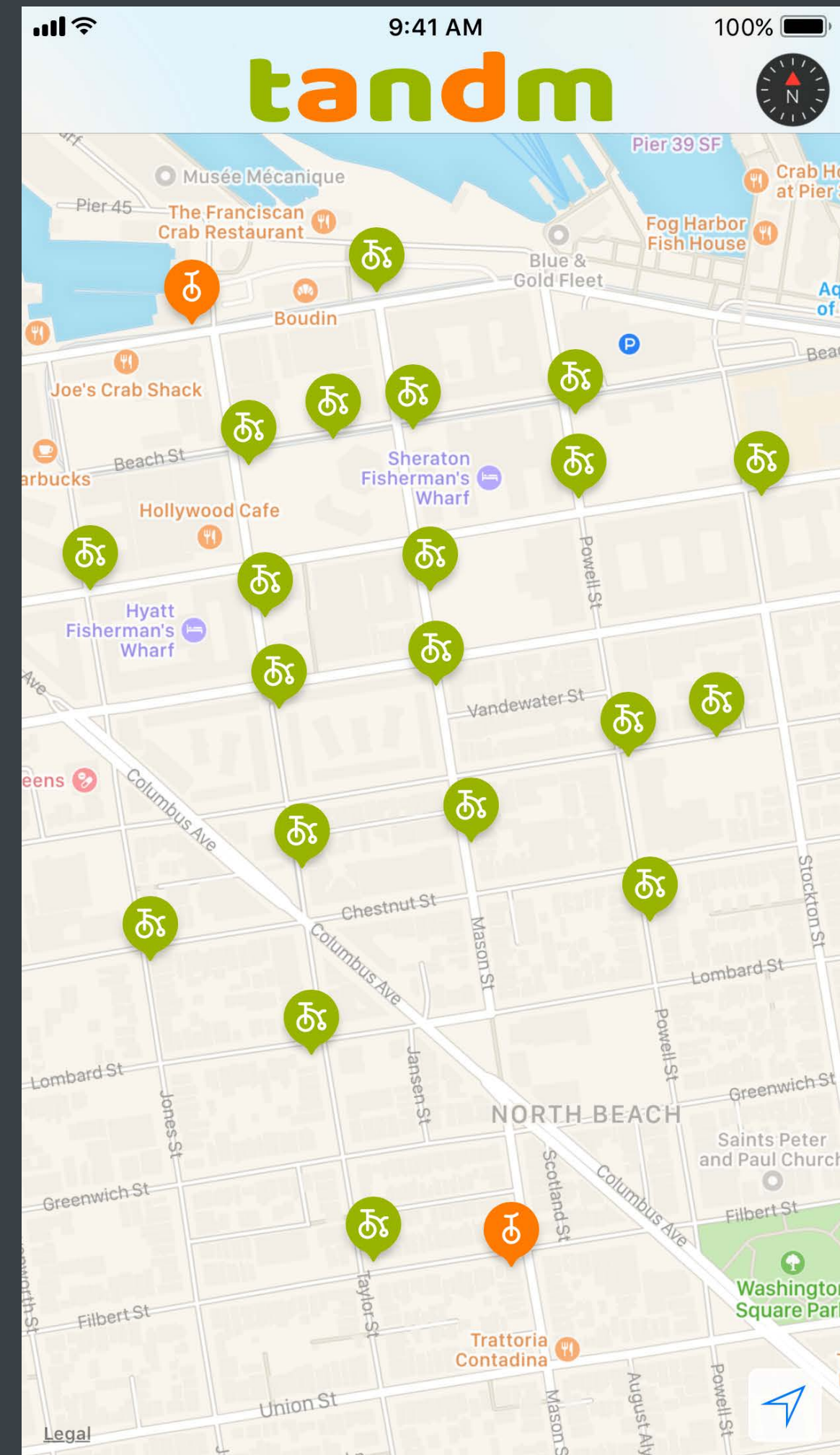


```
open class MKAnnotationView : UIView {
```

```
    open var displayPriority: MKFeatureDisplayPriority
```

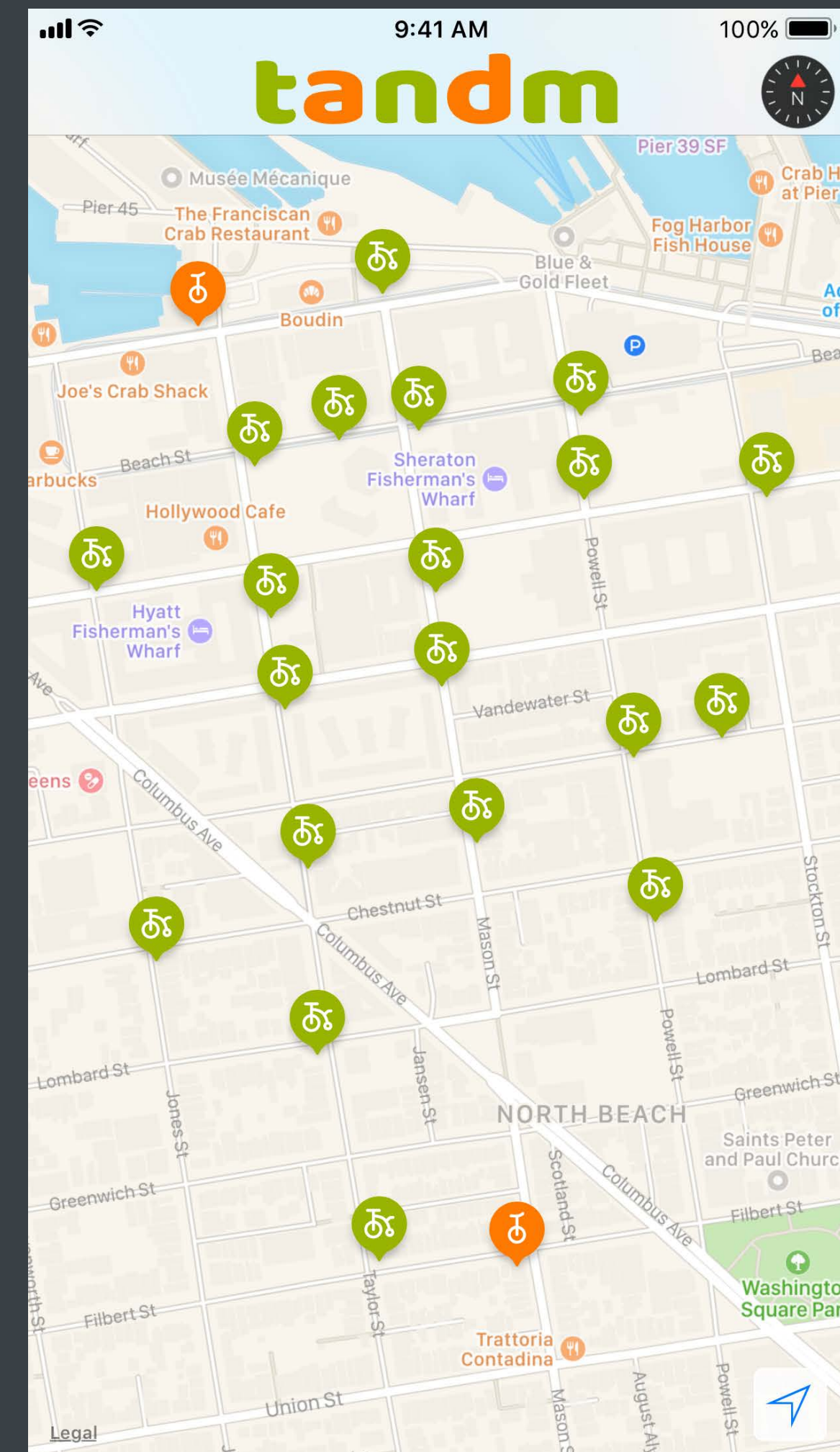
```
}
```

NEW



```
open class MKAnnotationView : UIView {  
  
    open var displayPriority: MKFeatureDisplayPriority  
  
}  
  
extension MKFeatureDisplayPriority {  
  
    public static let required: MKFeatureDisplayPriority!  
    public static let defaultHigh: MKFeatureDisplayPriority!  
    public static let defaultLow: MKFeatureDisplayPriority!  
  
}
```

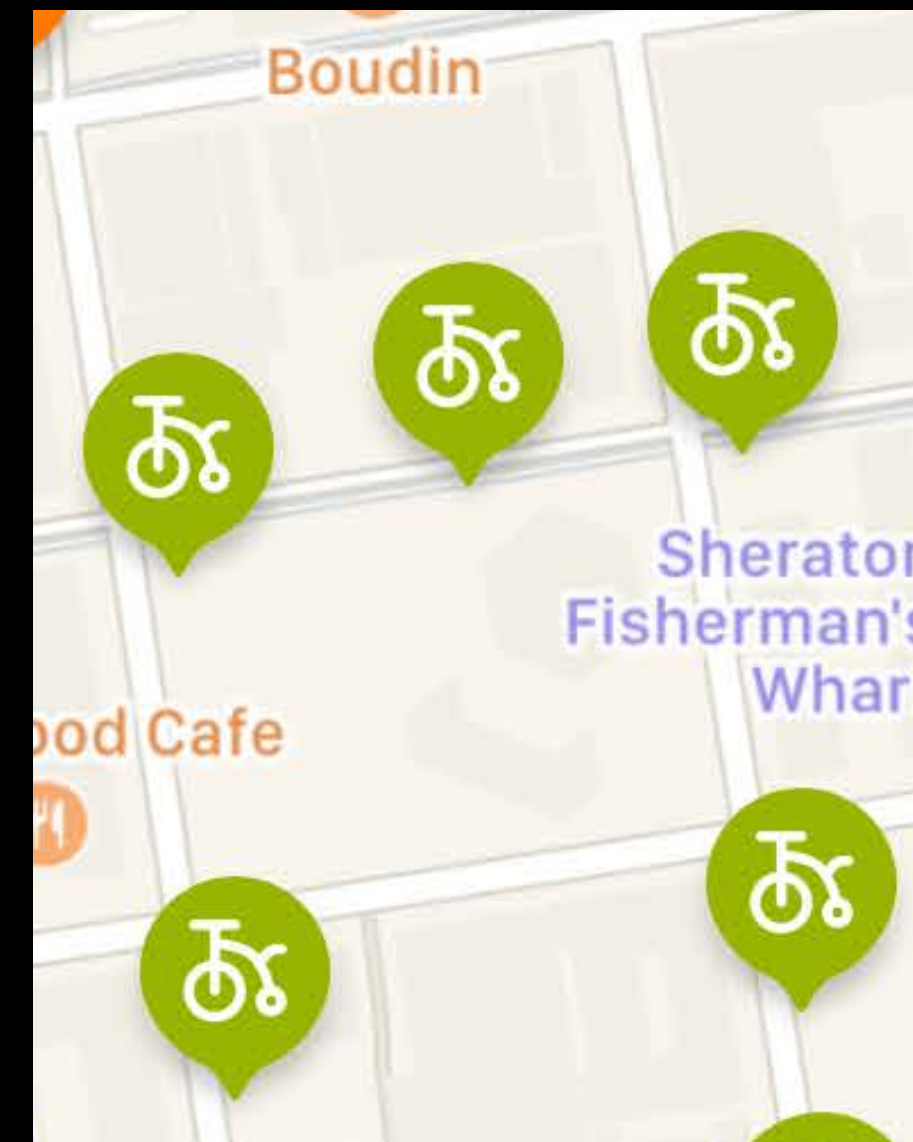
NEW



MKAnnotationView.displayPriority



`.required`

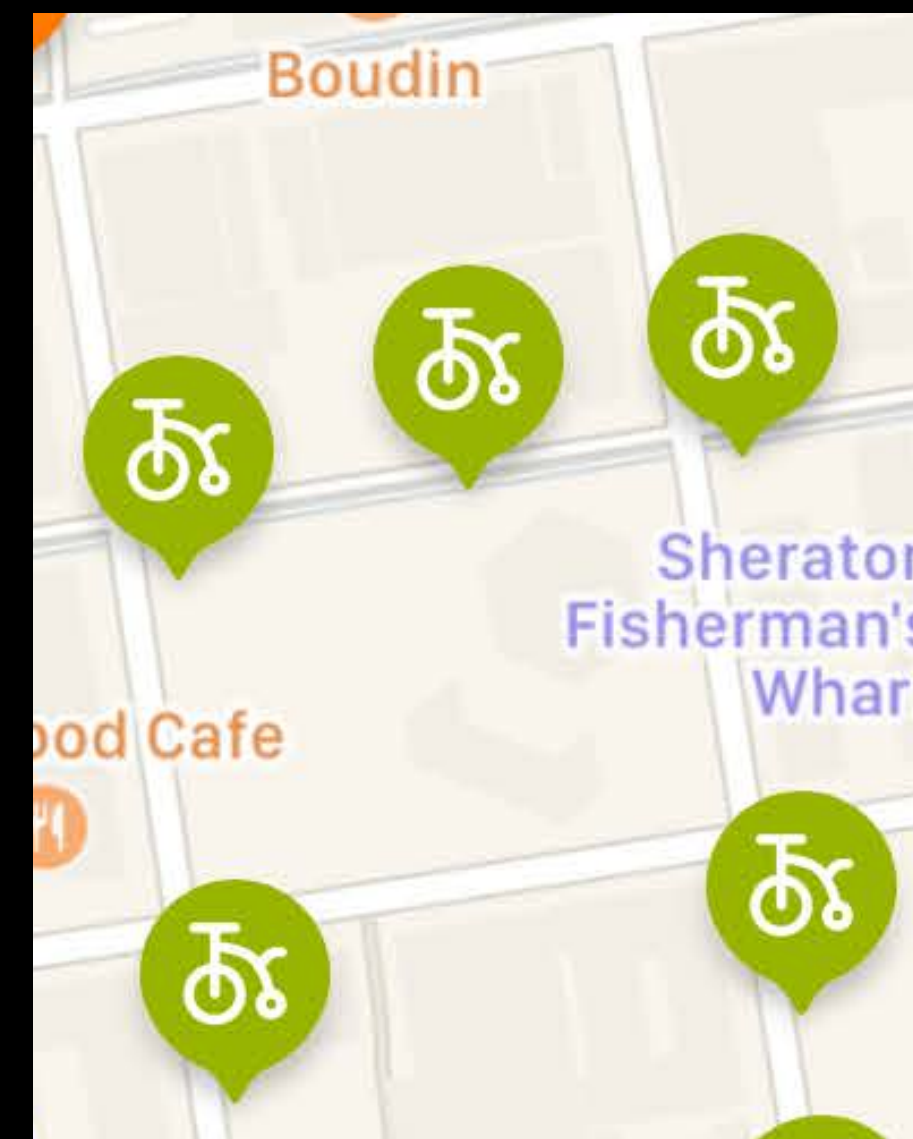


`.defaultHigh`
`.defaultLow`

MKAnnotationView.displayPriority



`.required`



`.defaultHigh`
`.defaultLow`

MKAnnotationView.displayPriority



`.required`



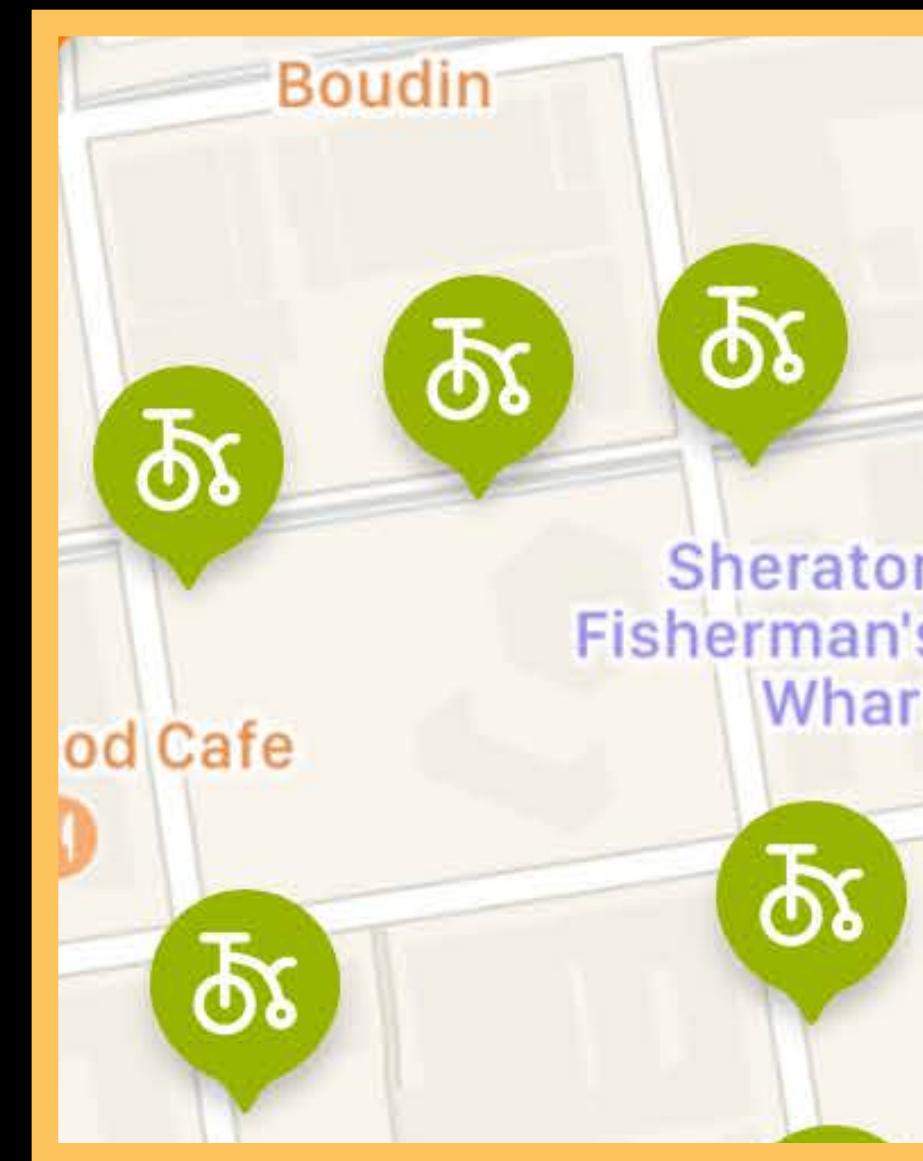
`.defaultHigh`

`.defaultLow`

MKAnnotationView.displayPriority



`.required`



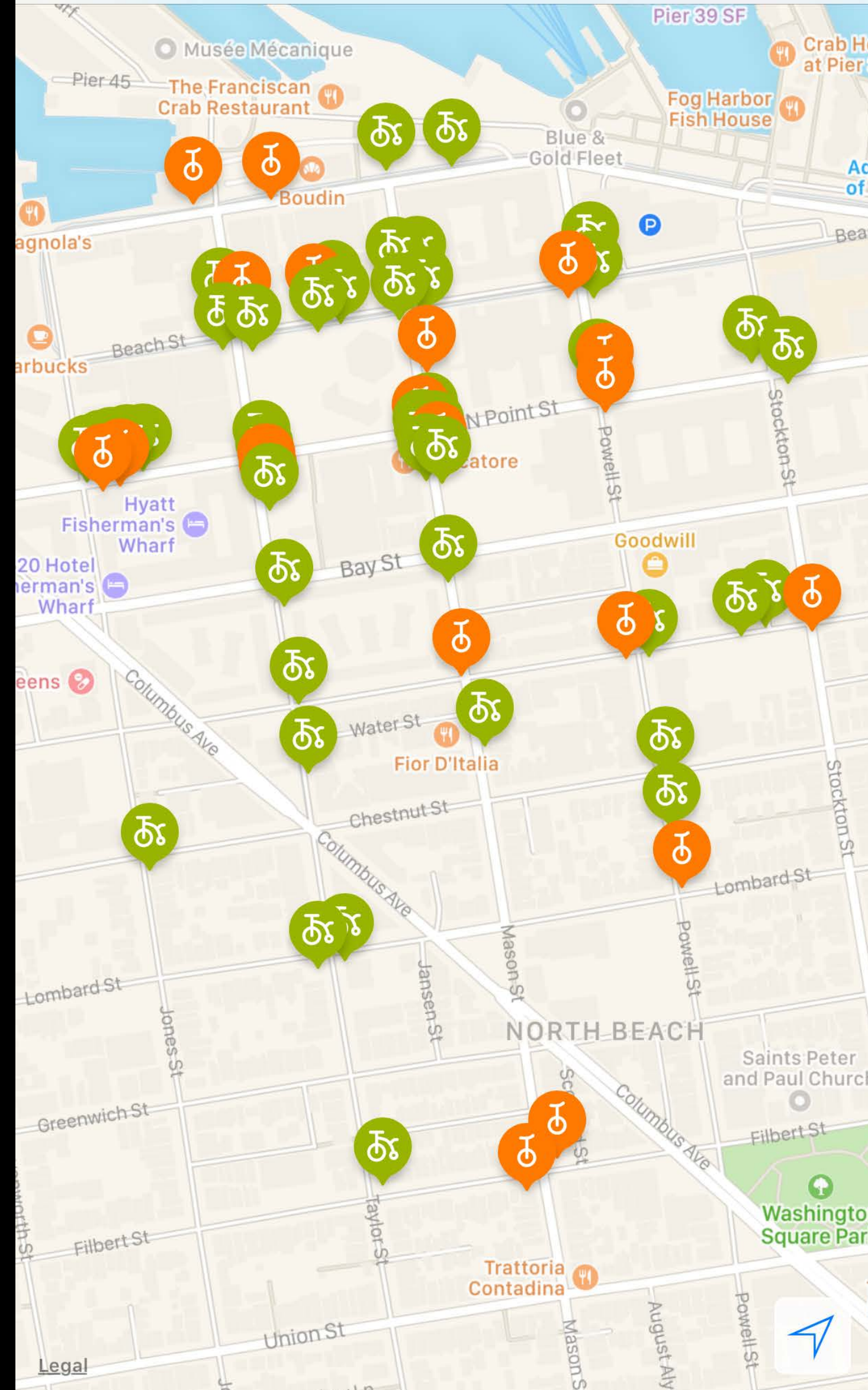
`0..999`



9:41 AM



tandm

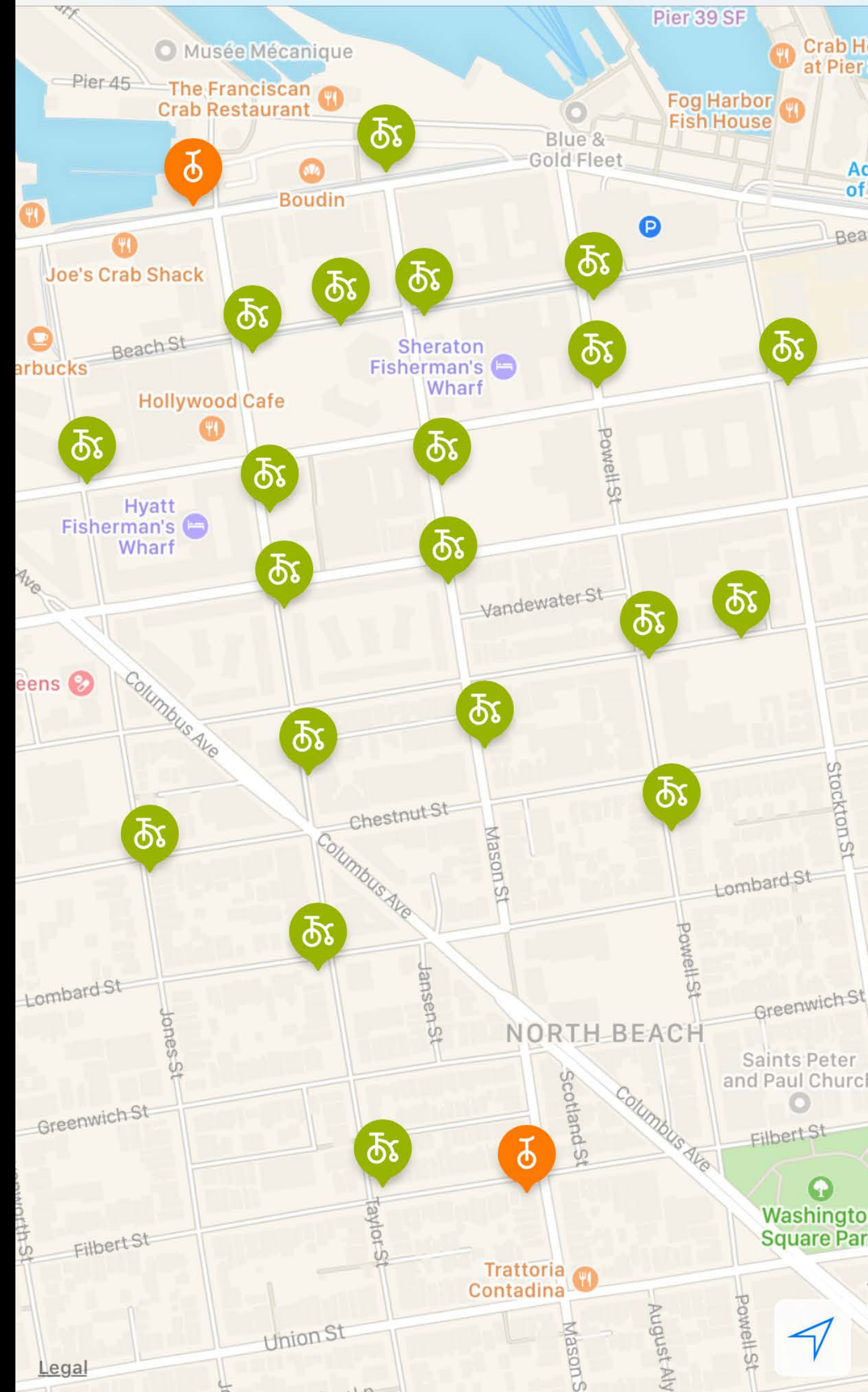


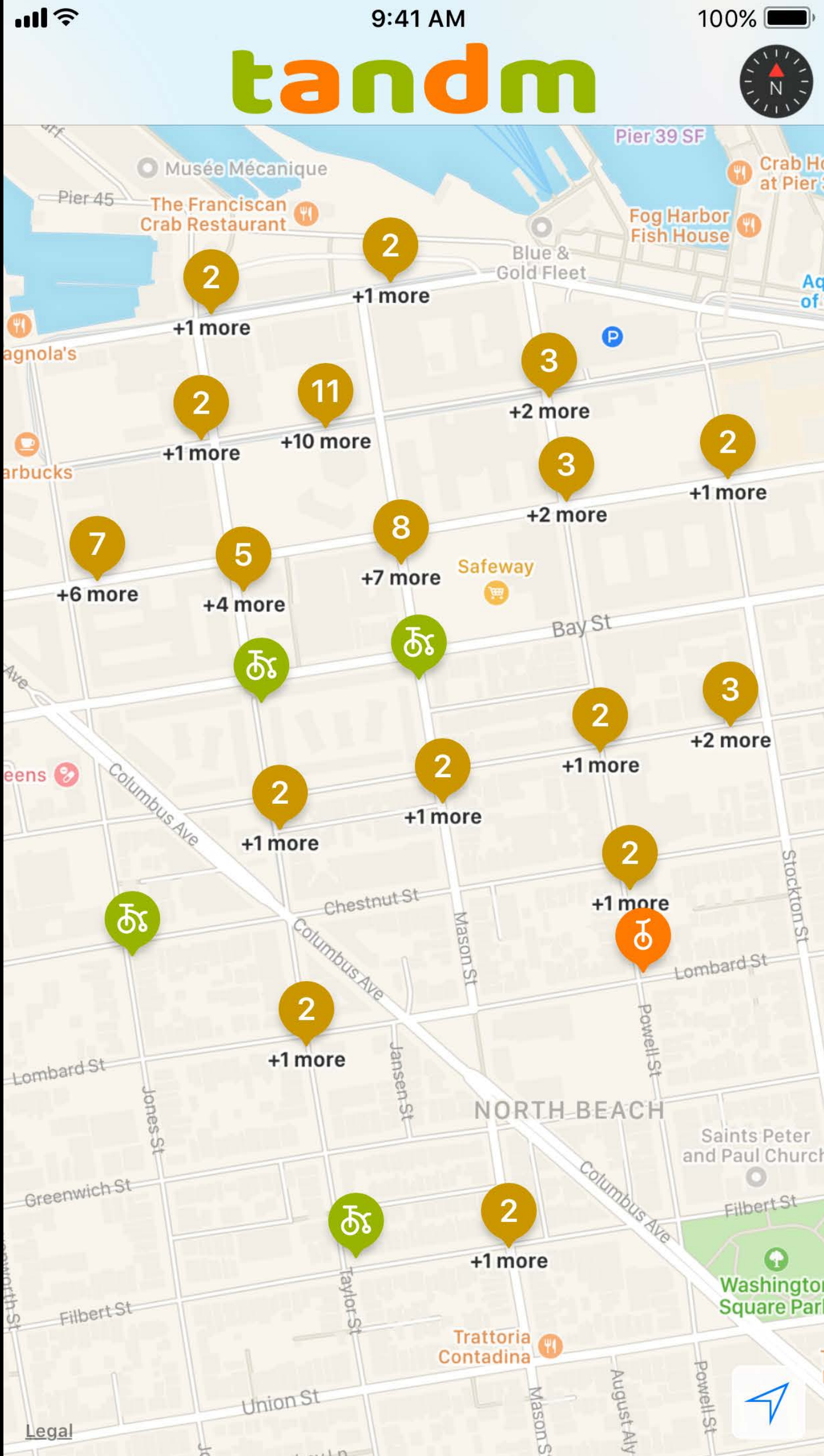


9:41 AM



tandm



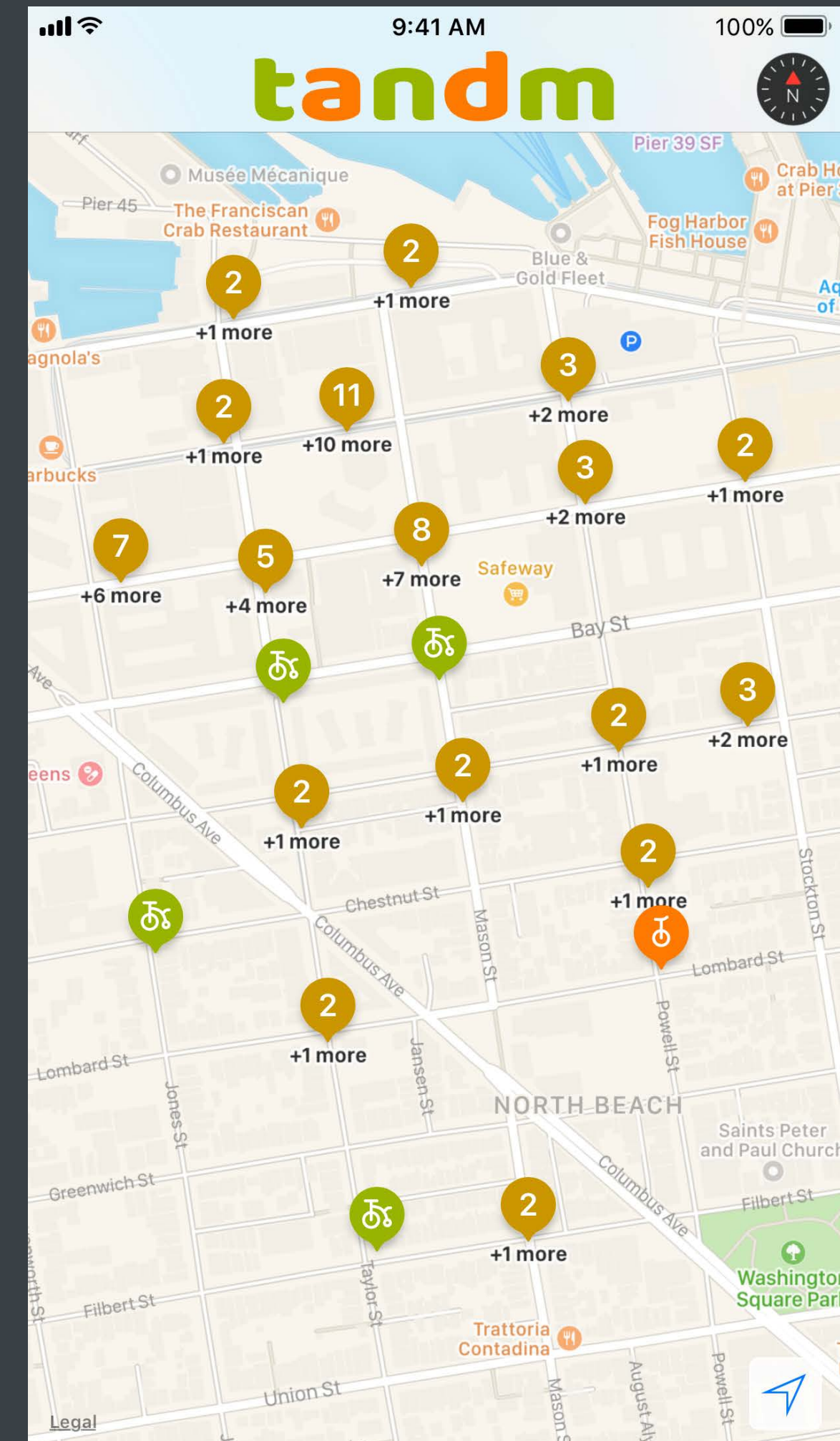


```
open class MKAnnotationView : UIView {
```

```
    open var clusteringIdentifier: String?
```

```
}
```

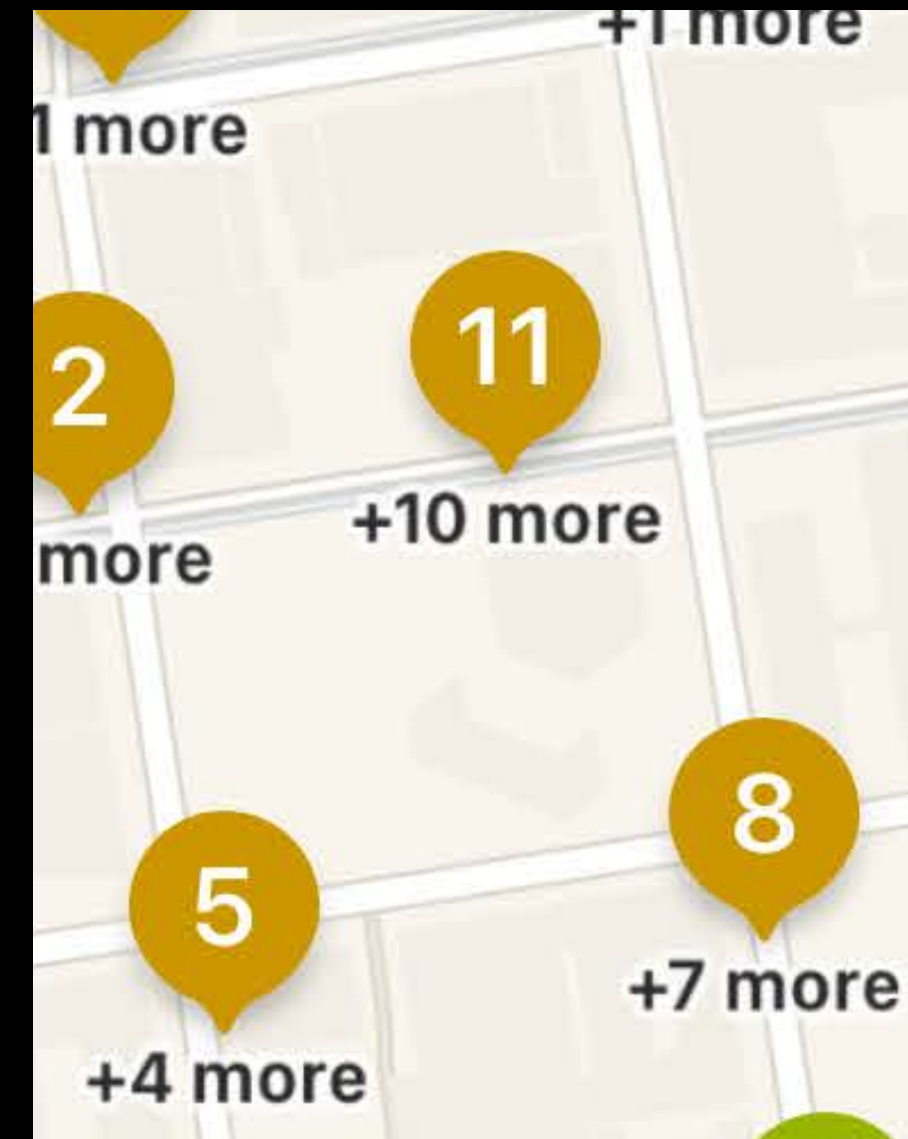
NEW



MKAnnotationView.clusteringIdentifier



nil

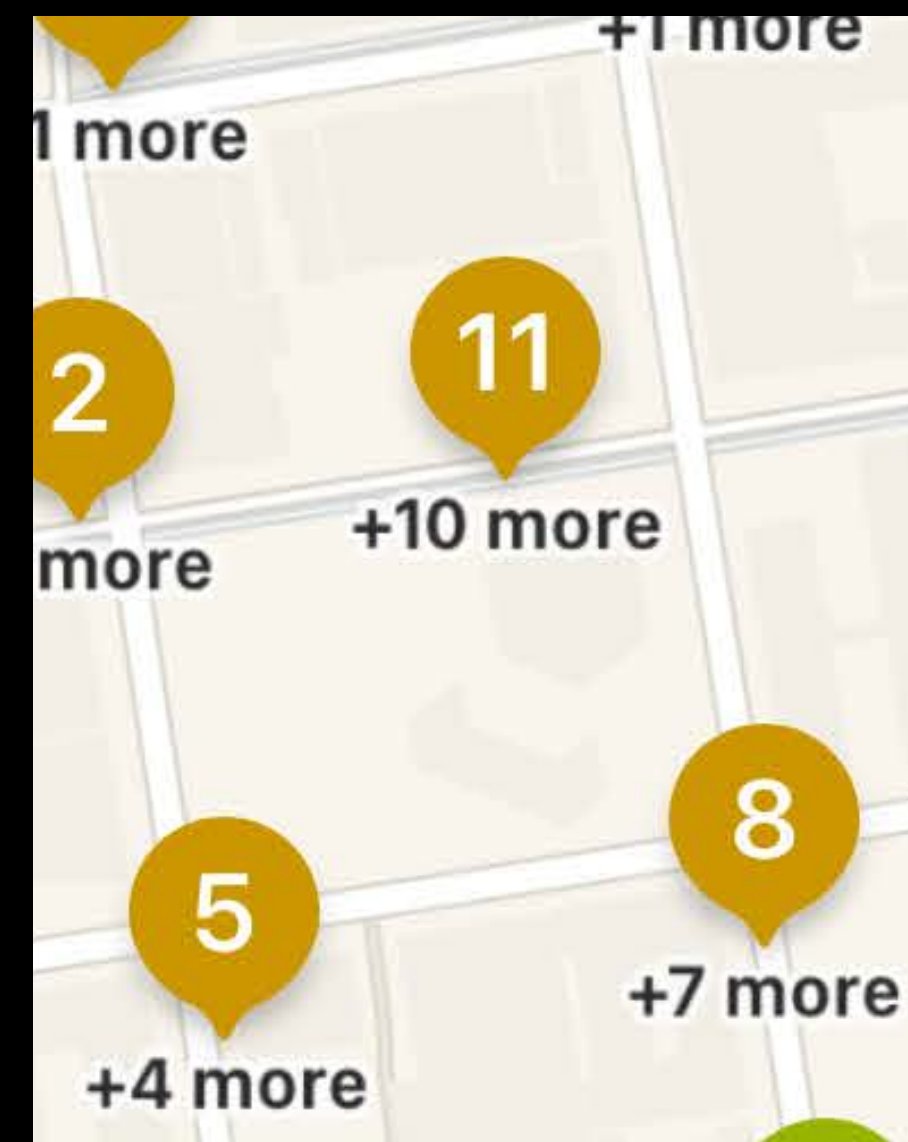


"identifier"

MKAnnotationView.clusteringIdentifier



`nil`

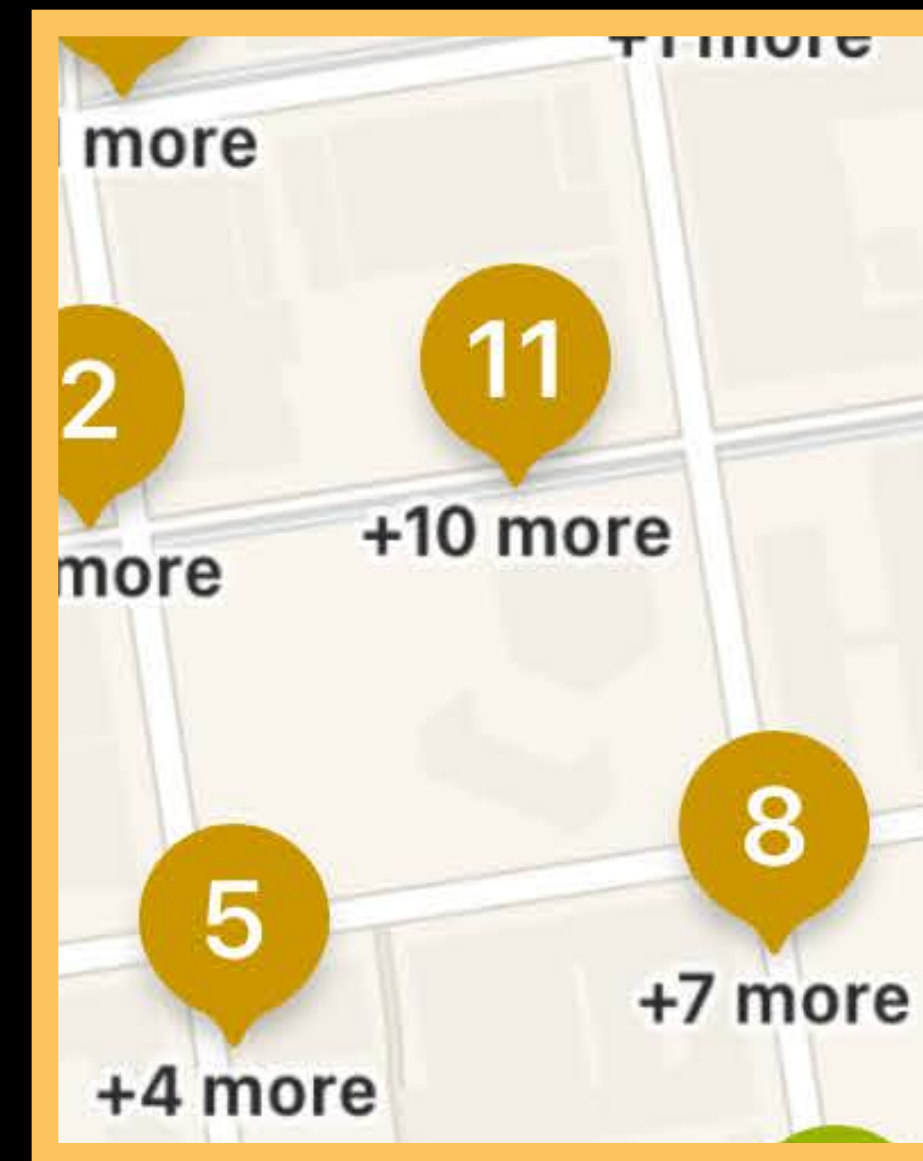


`"identifier"`

MKAnnotationView.clusteringIdentifier



`nil`



`"identifier"`

Demo

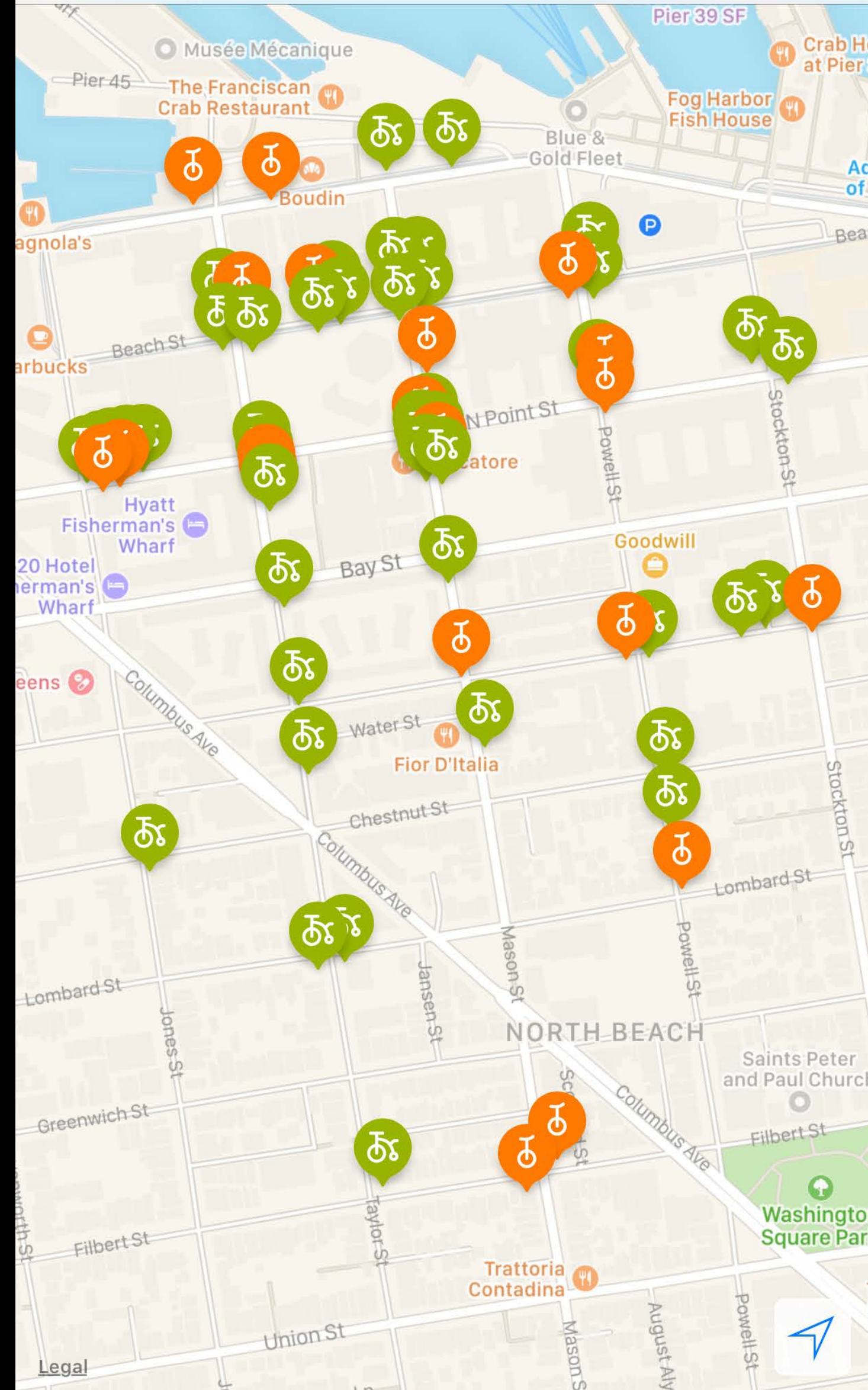
Clustering and display priority

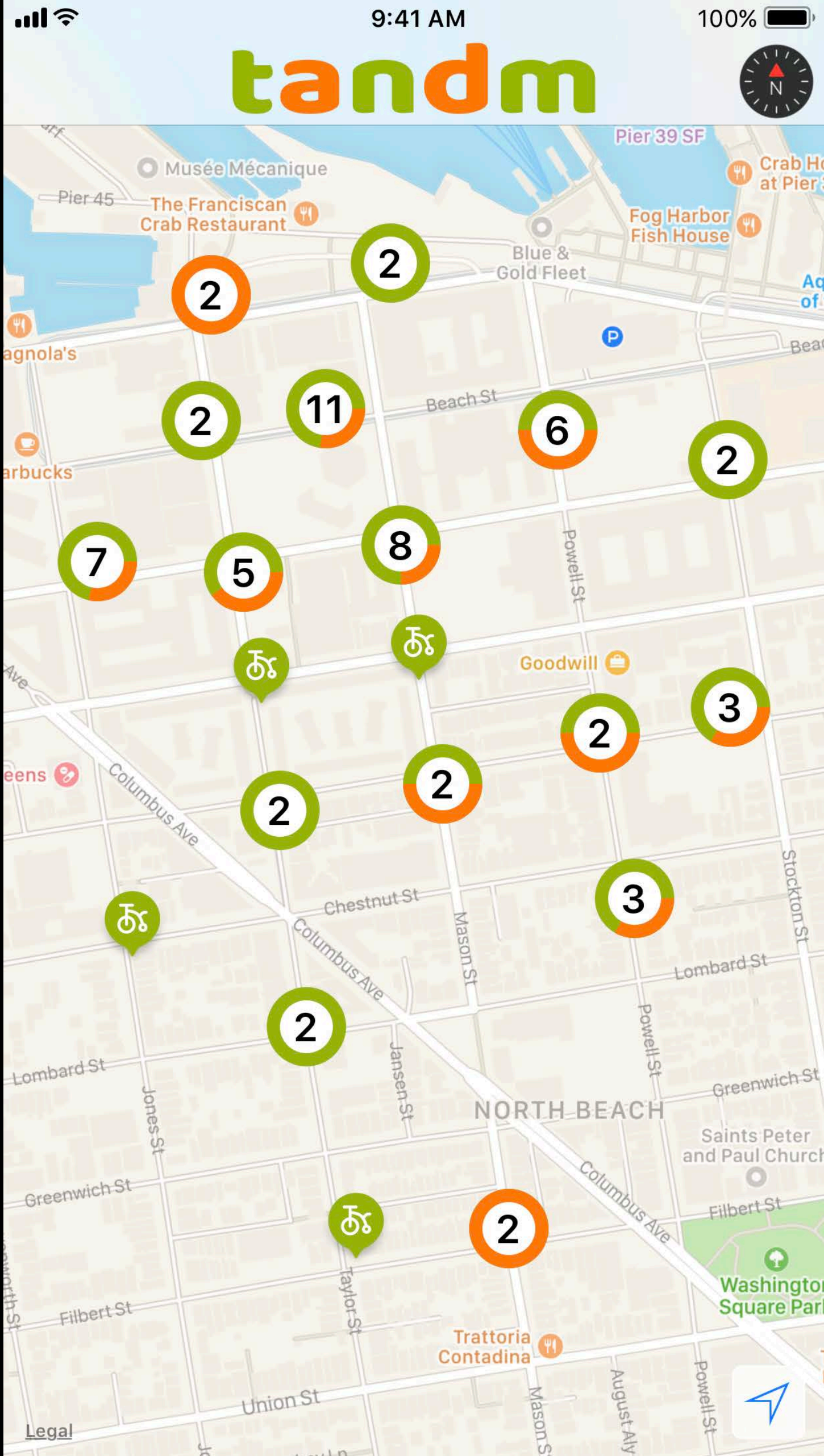


9:41 AM



tandm





```
func mapView(_ mapView: MKMapView,
             viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if annotation is MKUserLocation {
        return nil
    } else {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "identifier")
        // setup the view
        return view
    }
}
```

```
func mapView(_ mapView: MKMapView,
             viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if annotation is MKUserLocation {
        return nil
    } else {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "identifier")
        // setup the view
        return view
    }
}
```



```
func mapView(_ mapView: MKMapView,
             viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if annotation is MKUserLocation {
        return nil
    } else {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "identifier")
        // setup the view
        return view
    }
}
```



NEW

```
func mapView(_ mapView: MKMapView,
             viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if annotation is MKUserLocation {
        return nil
    } else if let cluster = annotation as? MKClusterAnnotation {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "cluster")
        // setup the view
        return view
    } else {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "bike")
        // setup the view
        return view
    }
}
```

3

Title
+2 more


```
open class MKClusterAnnotation : NSObject, MKAnnotation {  
  
    open var title: String?  
    open var subtitle: String?  
  
    open var memberAnnotations: [MKAnnotation] { get }  
    public init(memberAnnotations: [MKAnnotation])  
}
```

NEW

3

Title
+2 more

```
open class MKClusterAnnotation : NSObject, MKAnnotation {  
  
    open var title: String?  
    open var subtitle: String?  
  
    open var memberAnnotations: [MKAnnotation] { get }  
    public init(memberAnnotations: [MKAnnotation])  
}
```

NEW

3

Title
+2 more

```
open class MKClusterAnnotation : NSObject, MKAnnotation {  
  
    open var title: String?  
    open var subtitle: String?  
  
    open var memberAnnotations: [MKAnnotation] { get }  
    public init(memberAnnotations: [MKAnnotation])  
}
```

NEW

3

Title
+2 more

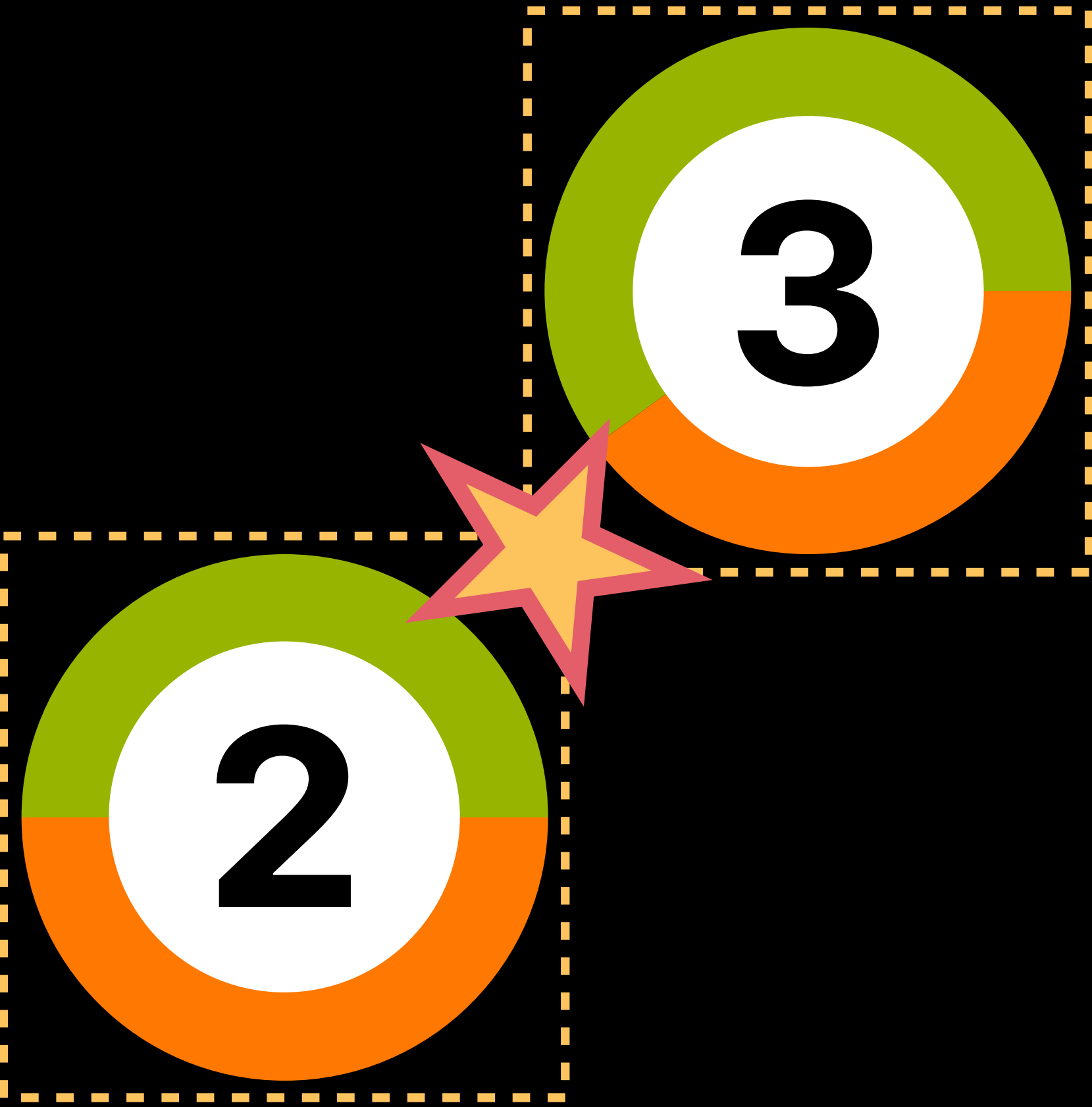
NEW

```
func mapView(_ mapView: MKMapView,
             viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if annotation is MKUserLocation {
        return nil
    } else if let cluster = annotation as? MKClusterAnnotation {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "cluster")
        // setup the view
        return view
    } else {
        var view = mapView.dequeueReusableAnnotationView(withIdentifier: "bike")
        // setup the view
        return view
    }
}
```

3







```
open class MKAnnotationView : UIView {
```

```
    open var collisionMode: MKAnnotationViewCollisionMode
```

```
}
```



NEW

MKAnnotationView.collisionMode



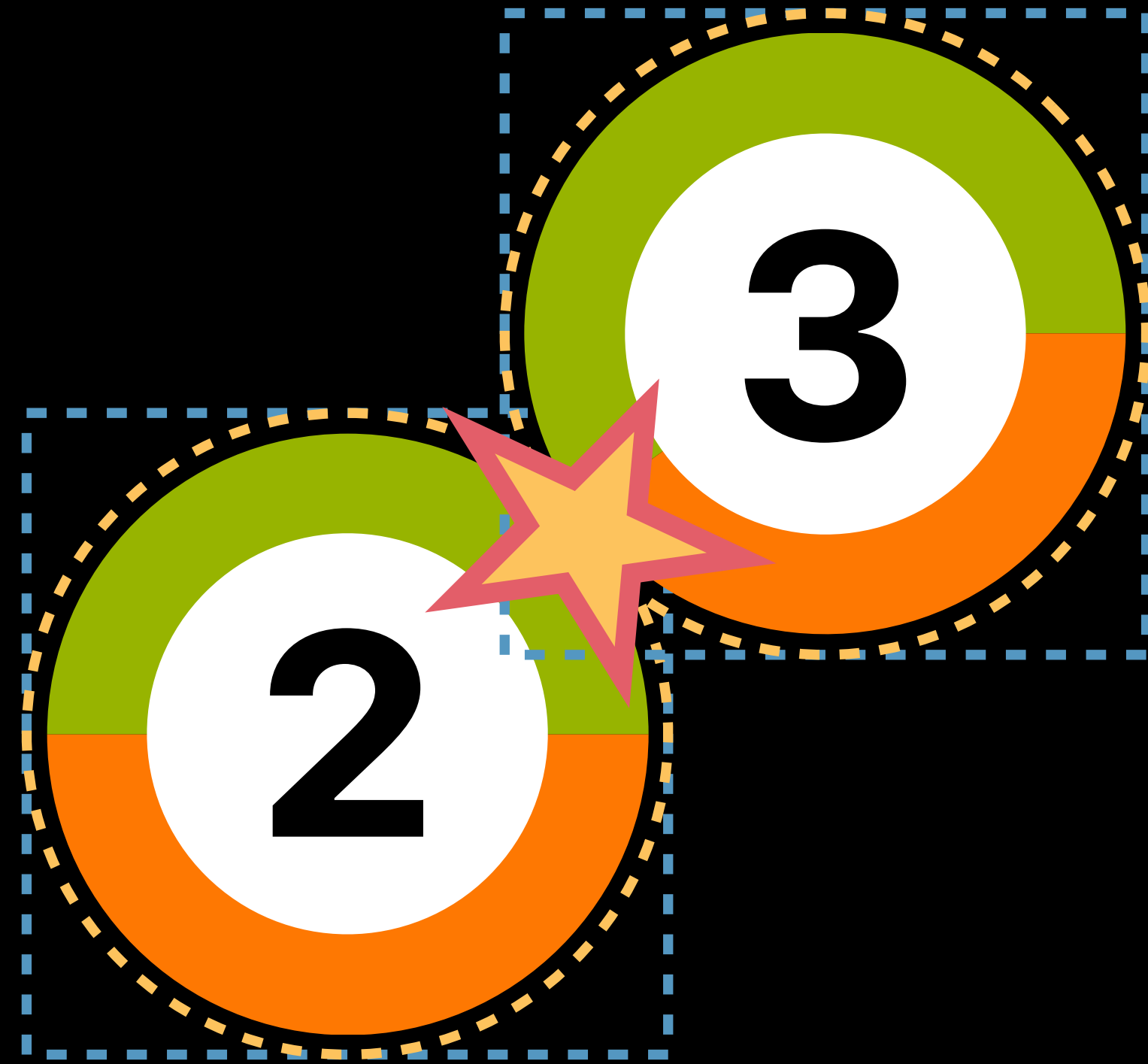
.rectangle

MKAnnotationView.collisionMode



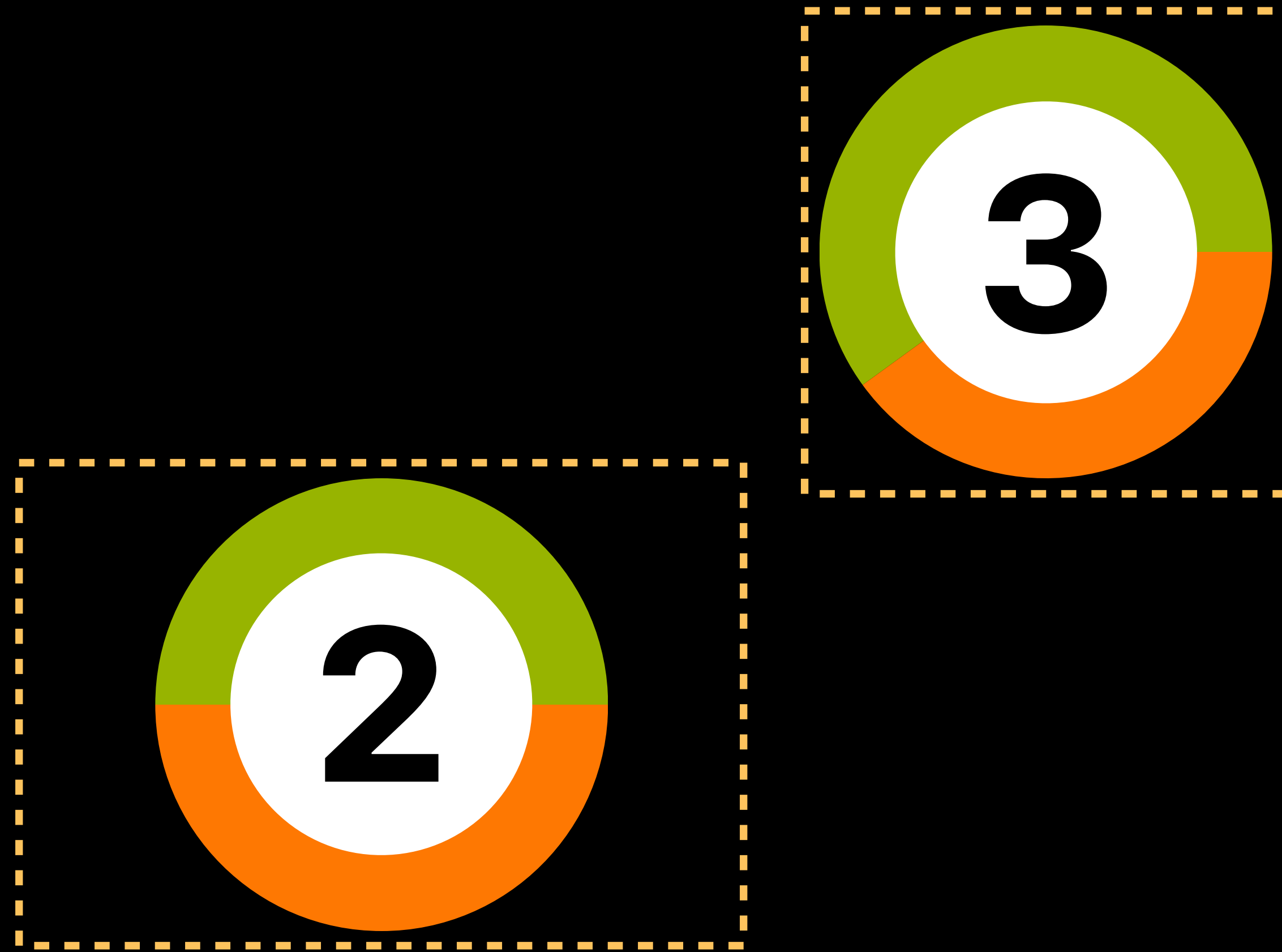
`.circle`

MKAnnotationView.collisionMode



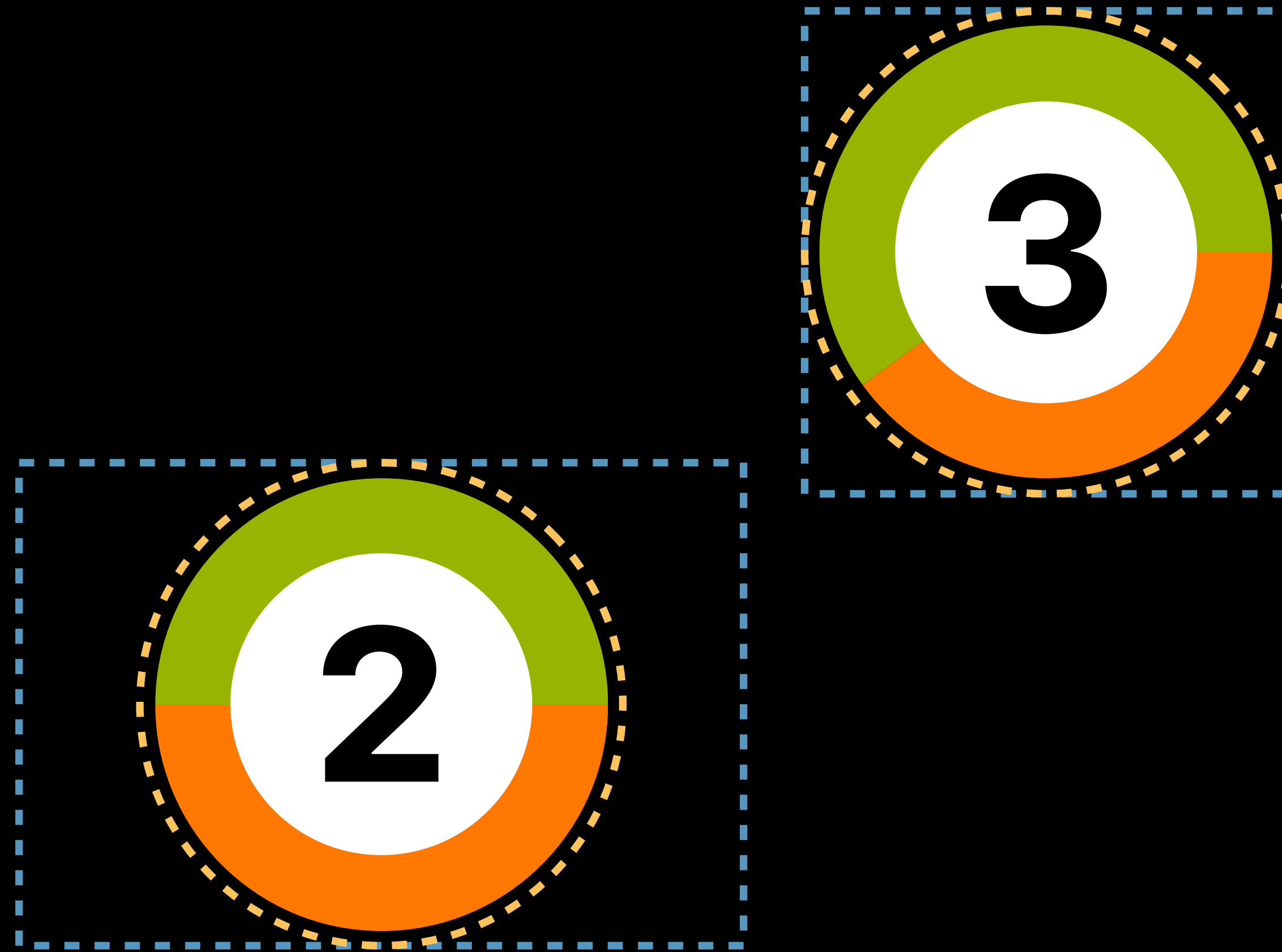
.circle

MKAnnotationView.collisionMode

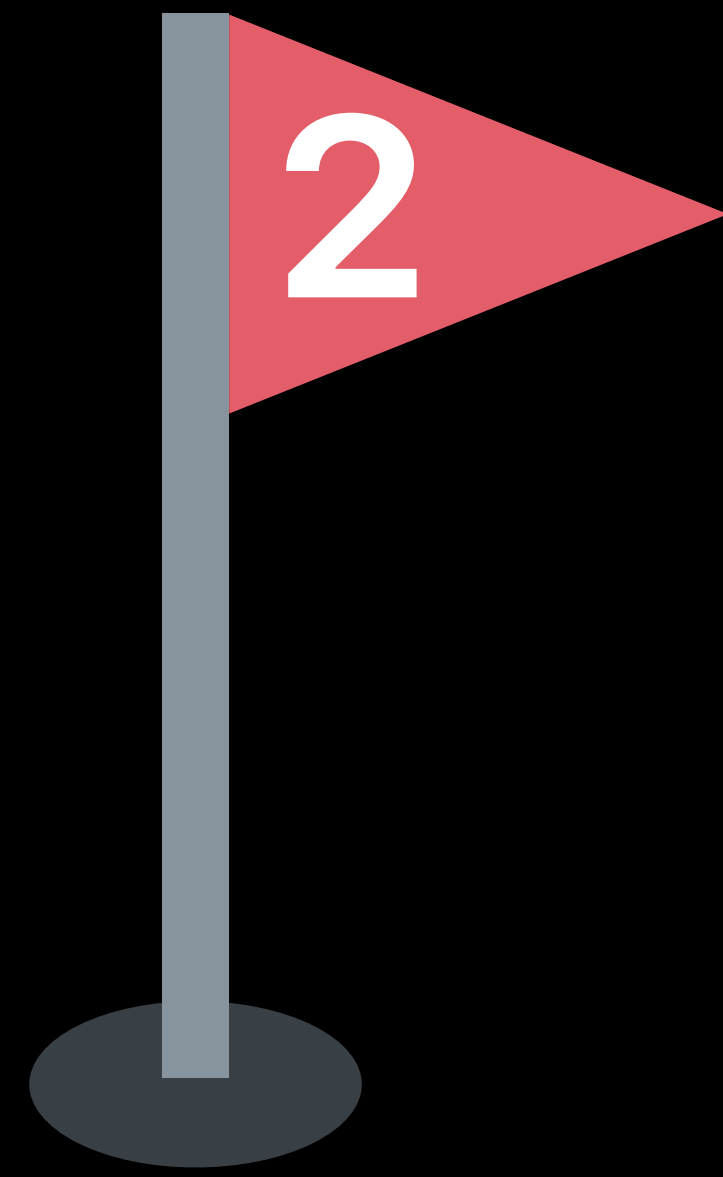
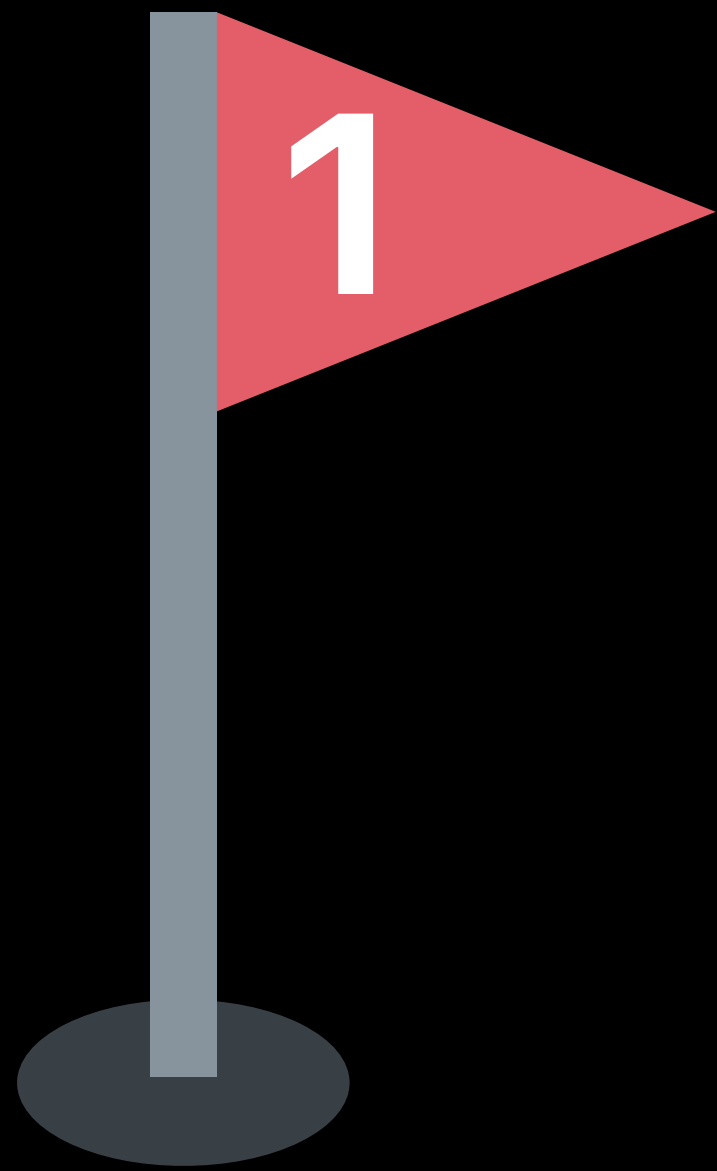


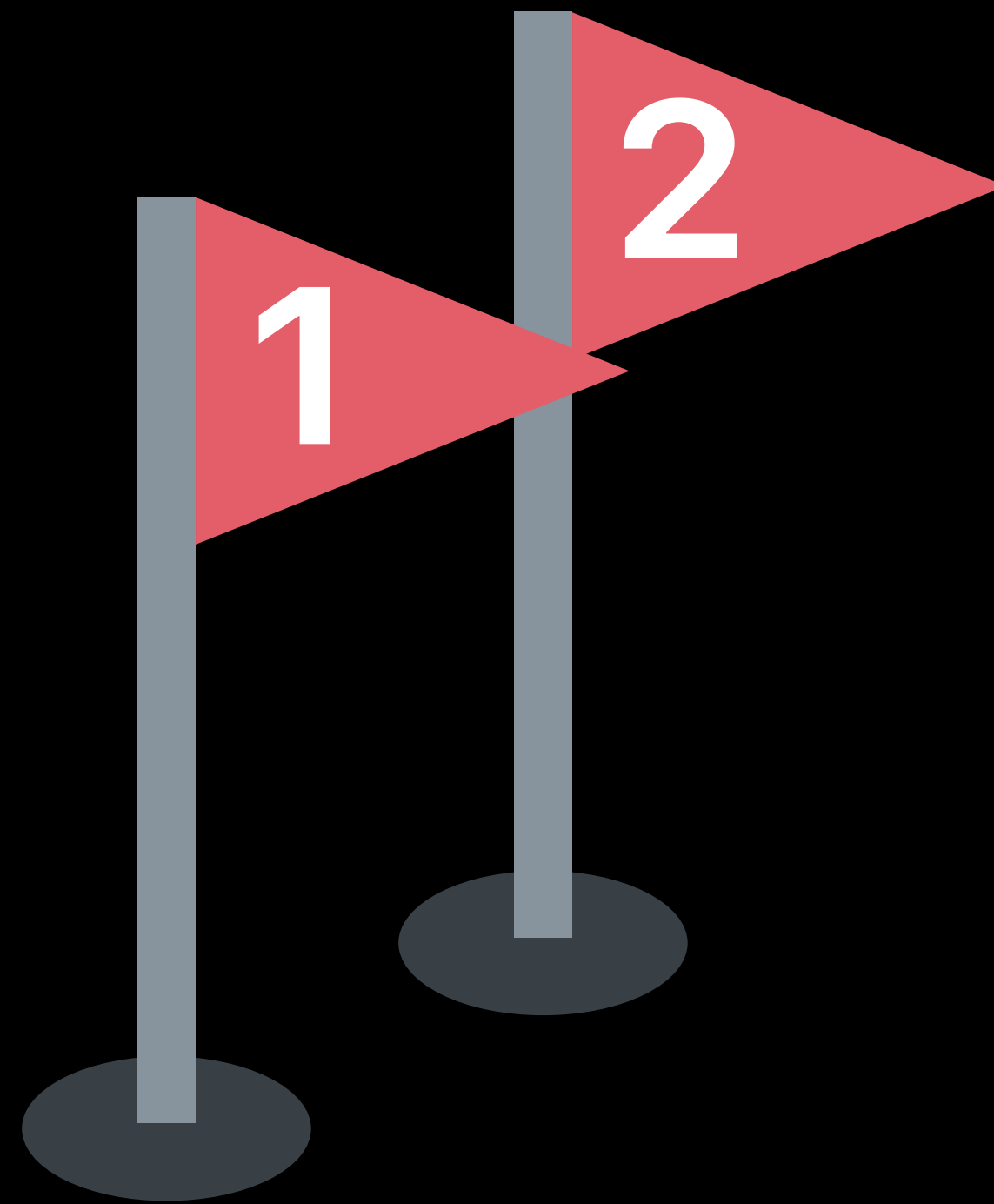
.rectangle

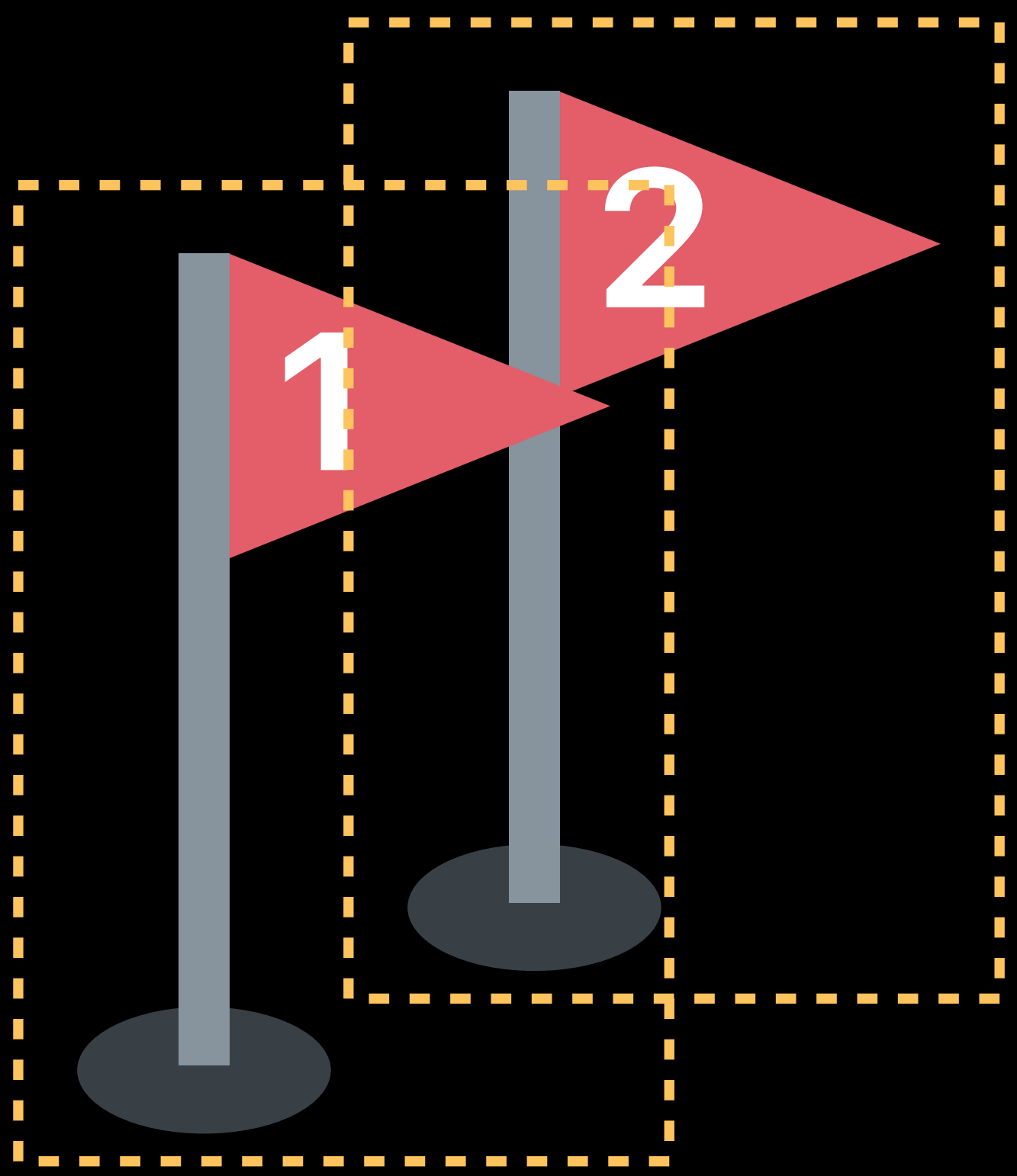
MKAnnotationView.collisionMode

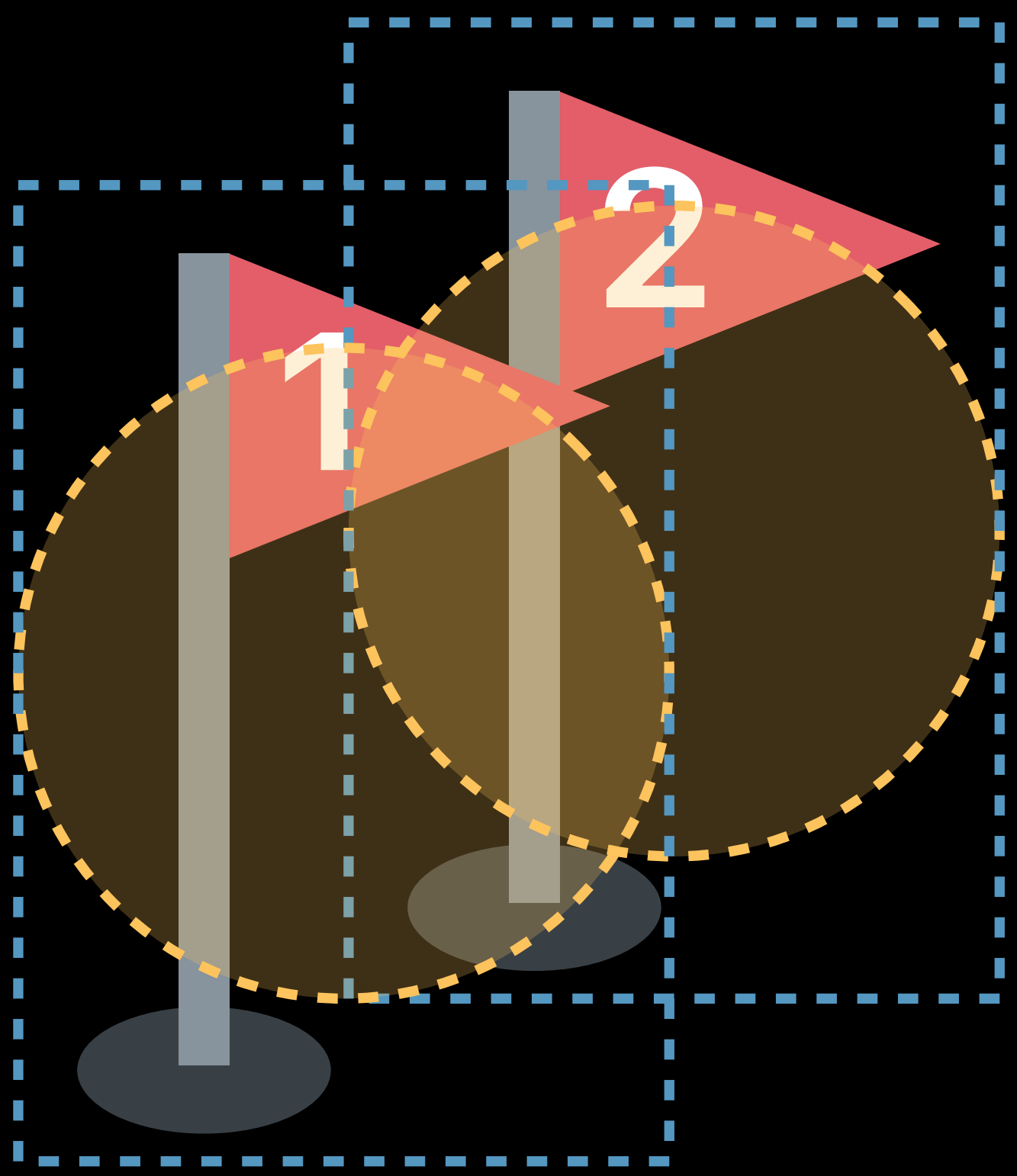


`.circle`

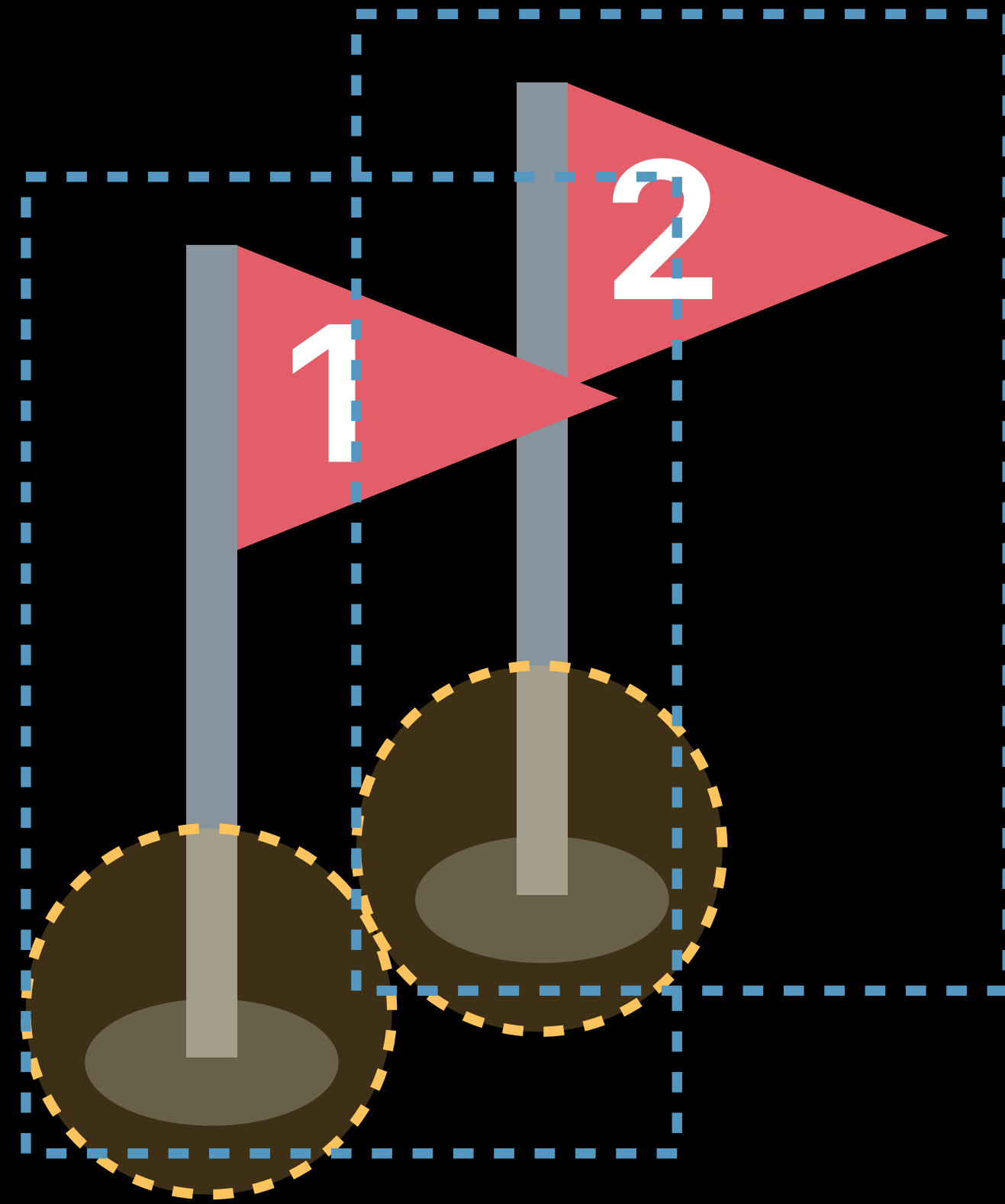




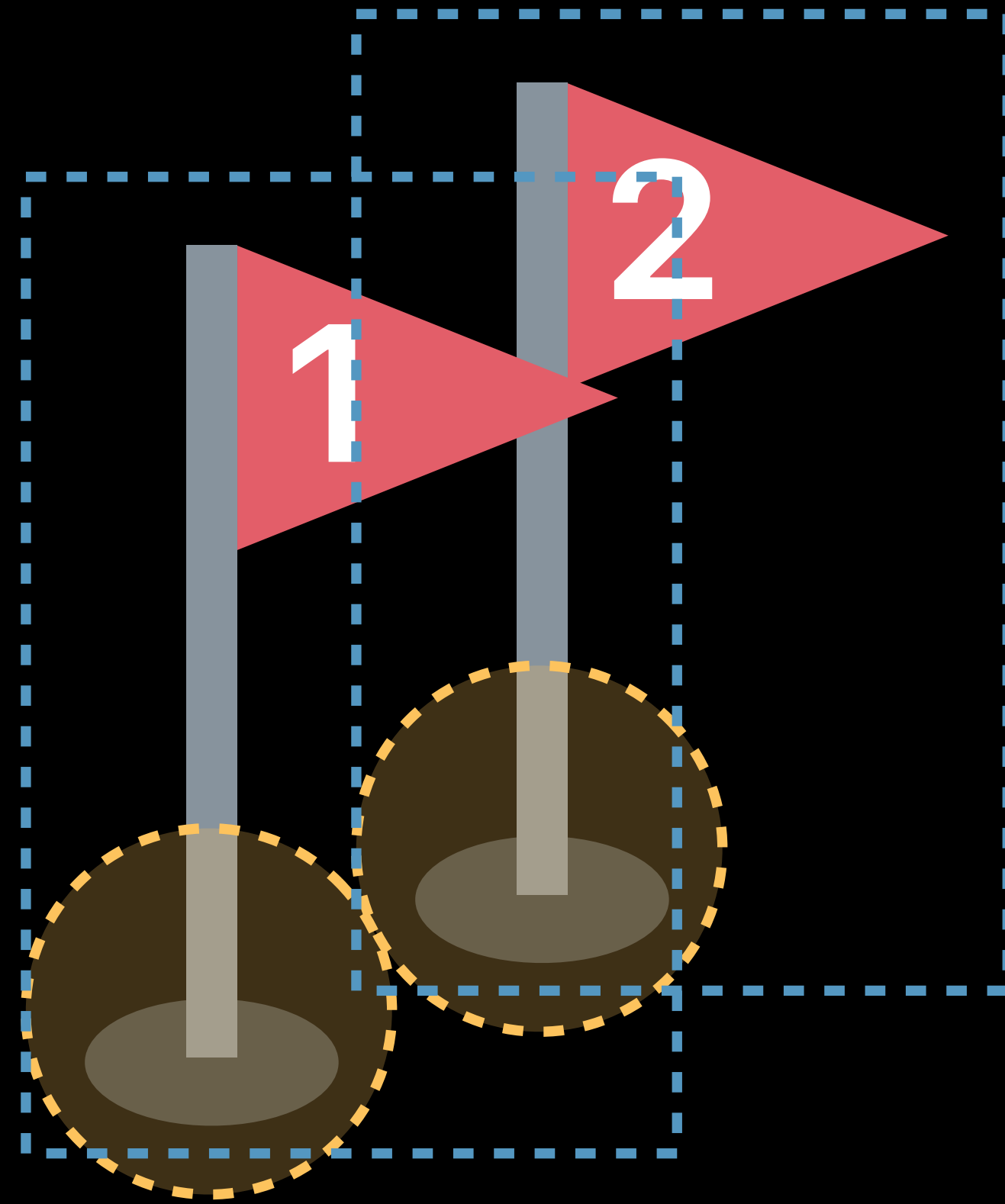




MKAnnotationView.collisionMode

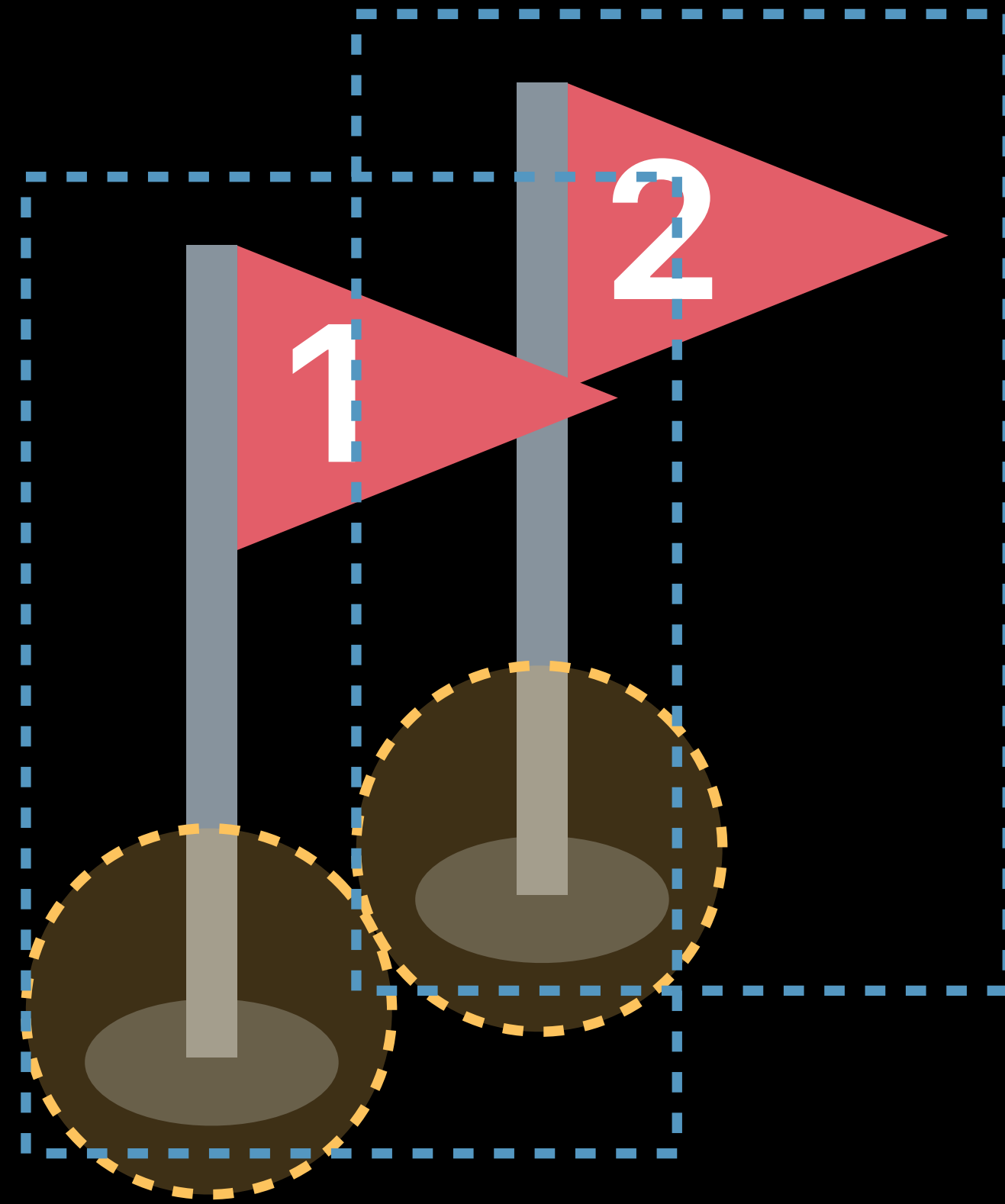


MKAnnotationView.collideionMode

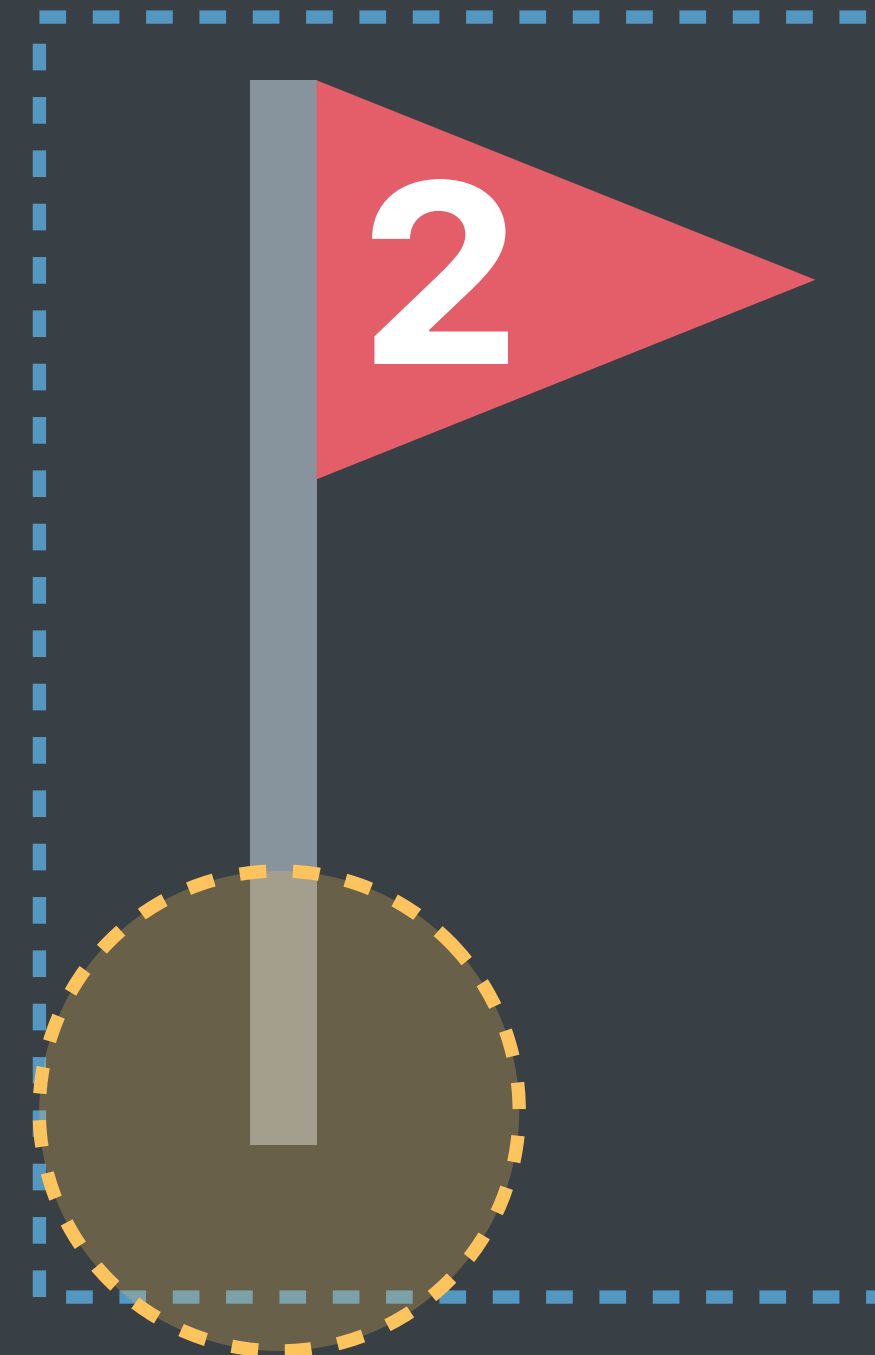


`.circleInBottomLeftWithFivePointsVerticalInset`

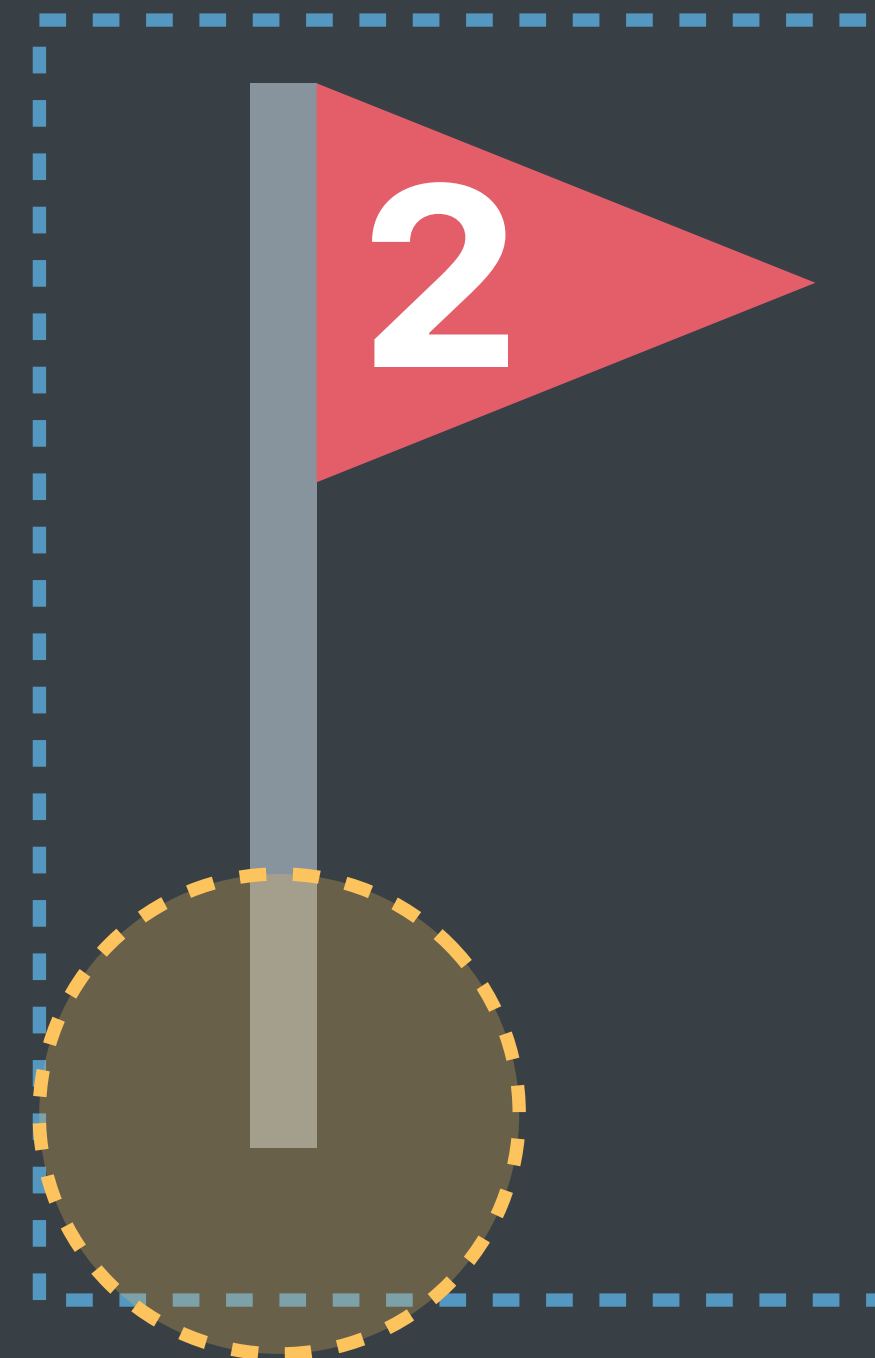
MKAnnotationView.collisionMode



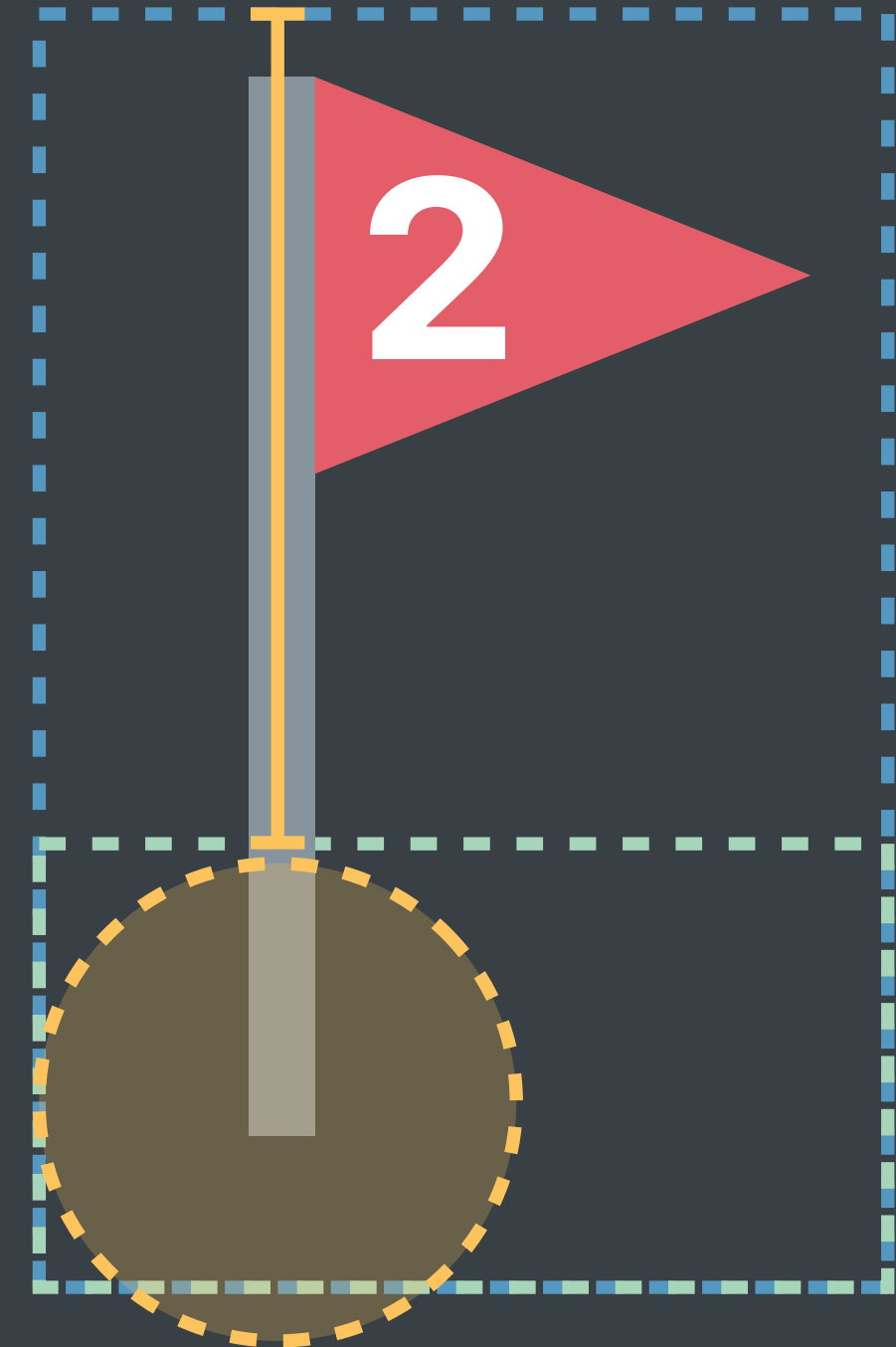
```
open class UIView : NSObject {  
  
    @available(iOS 6.0, *)  
    open var alignmentRectInsets: UIEdgeInsets { get }  
  
}
```



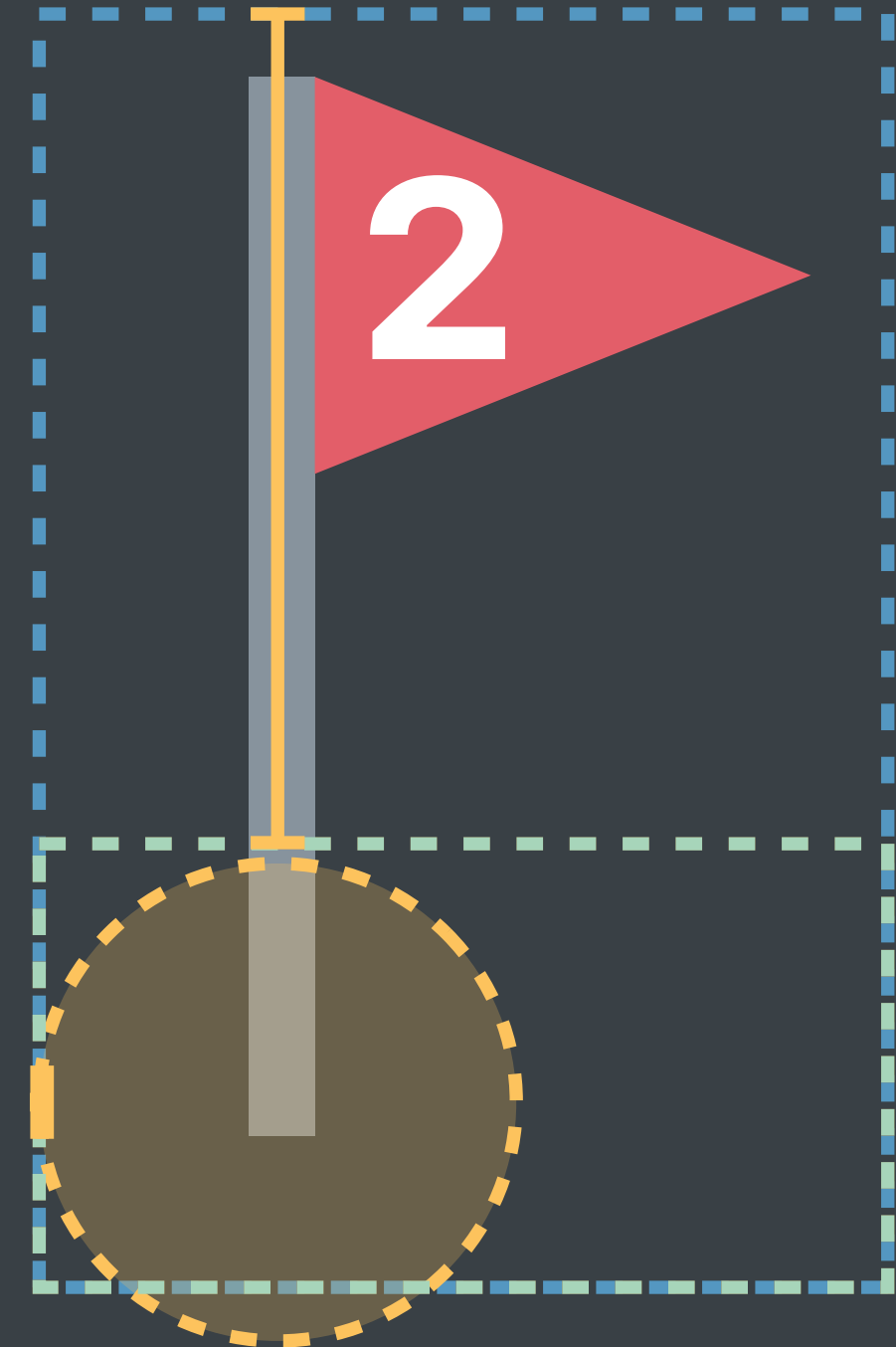
```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```



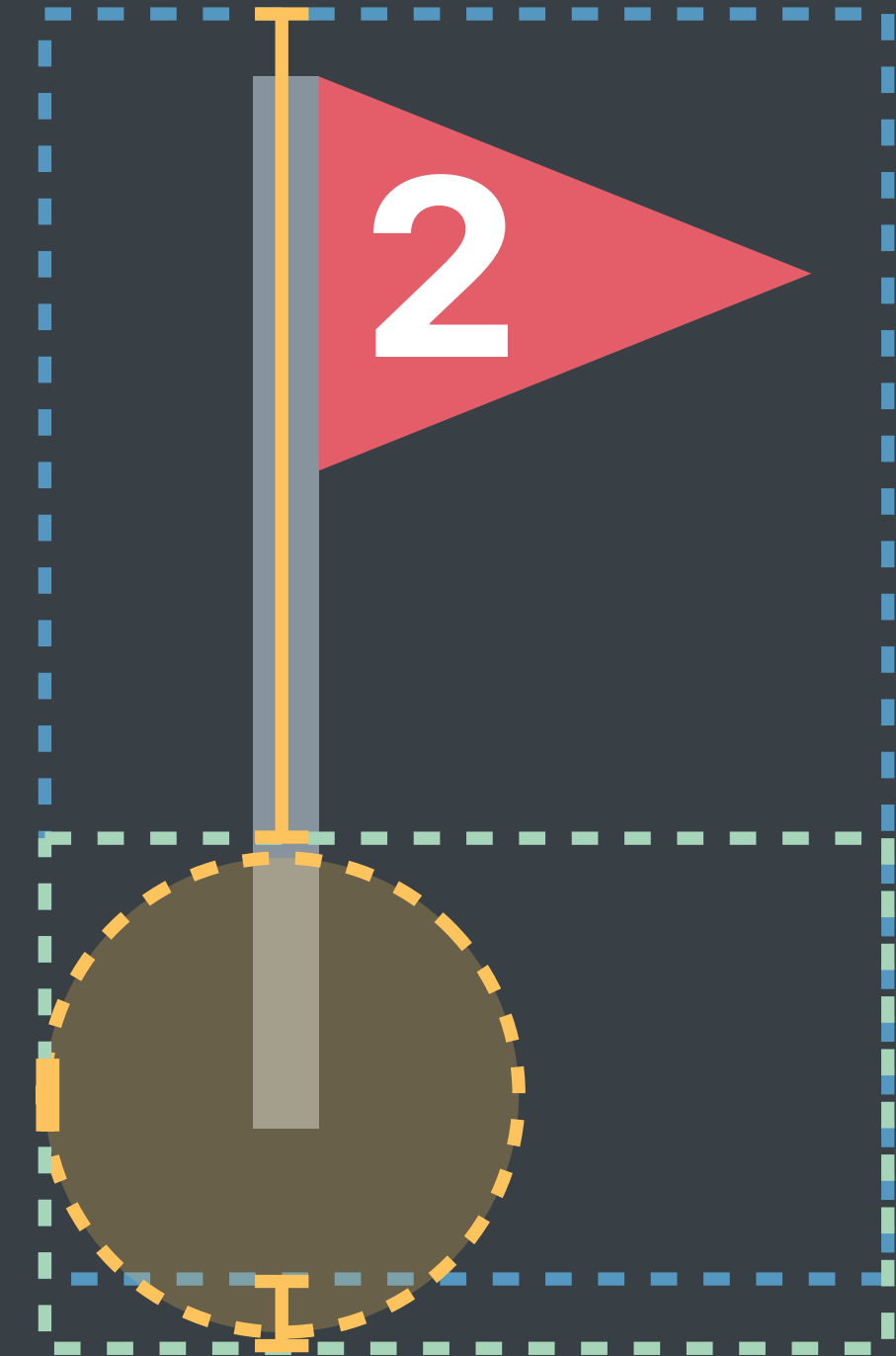
```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```



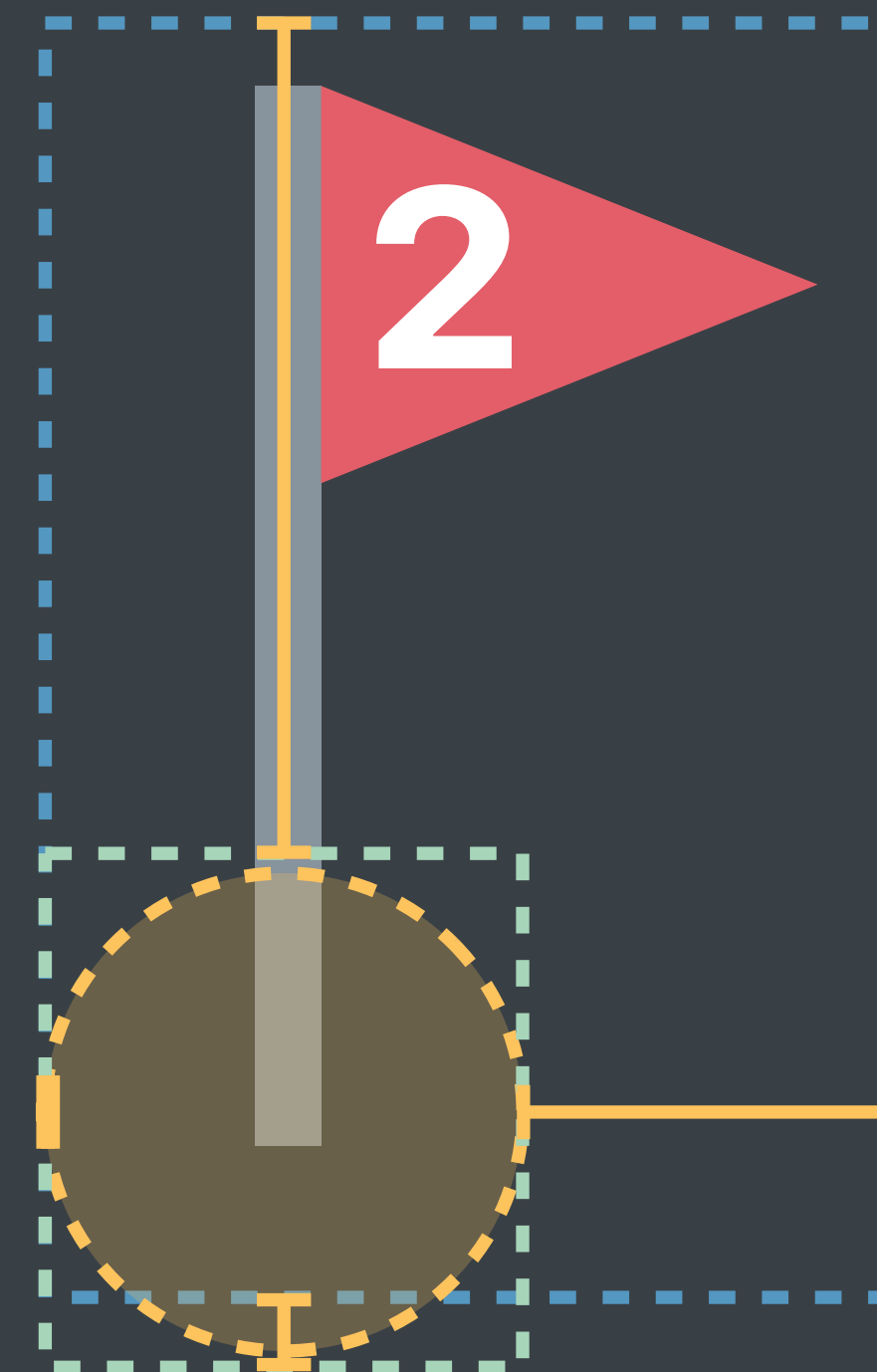
```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```



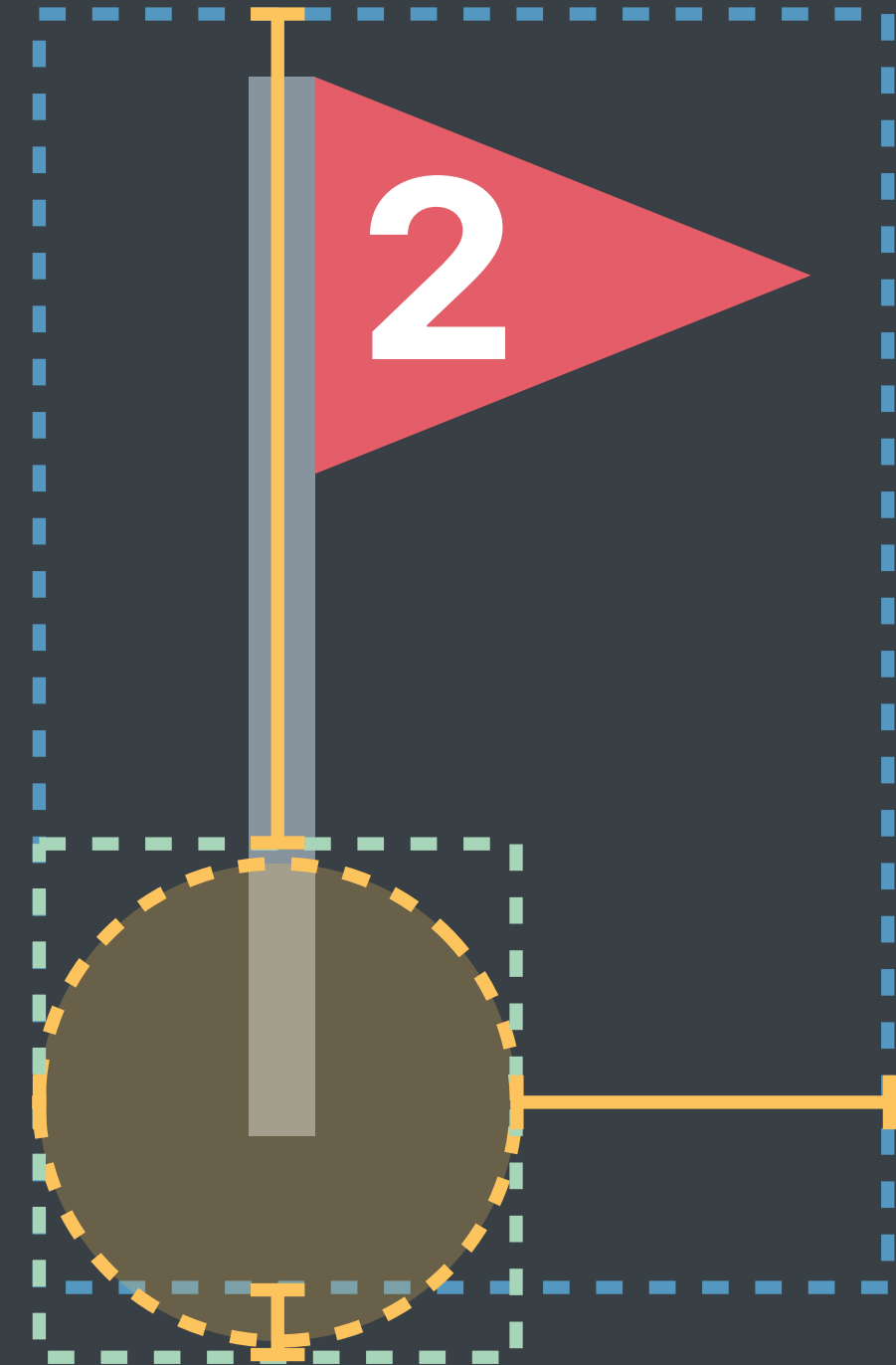

```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```



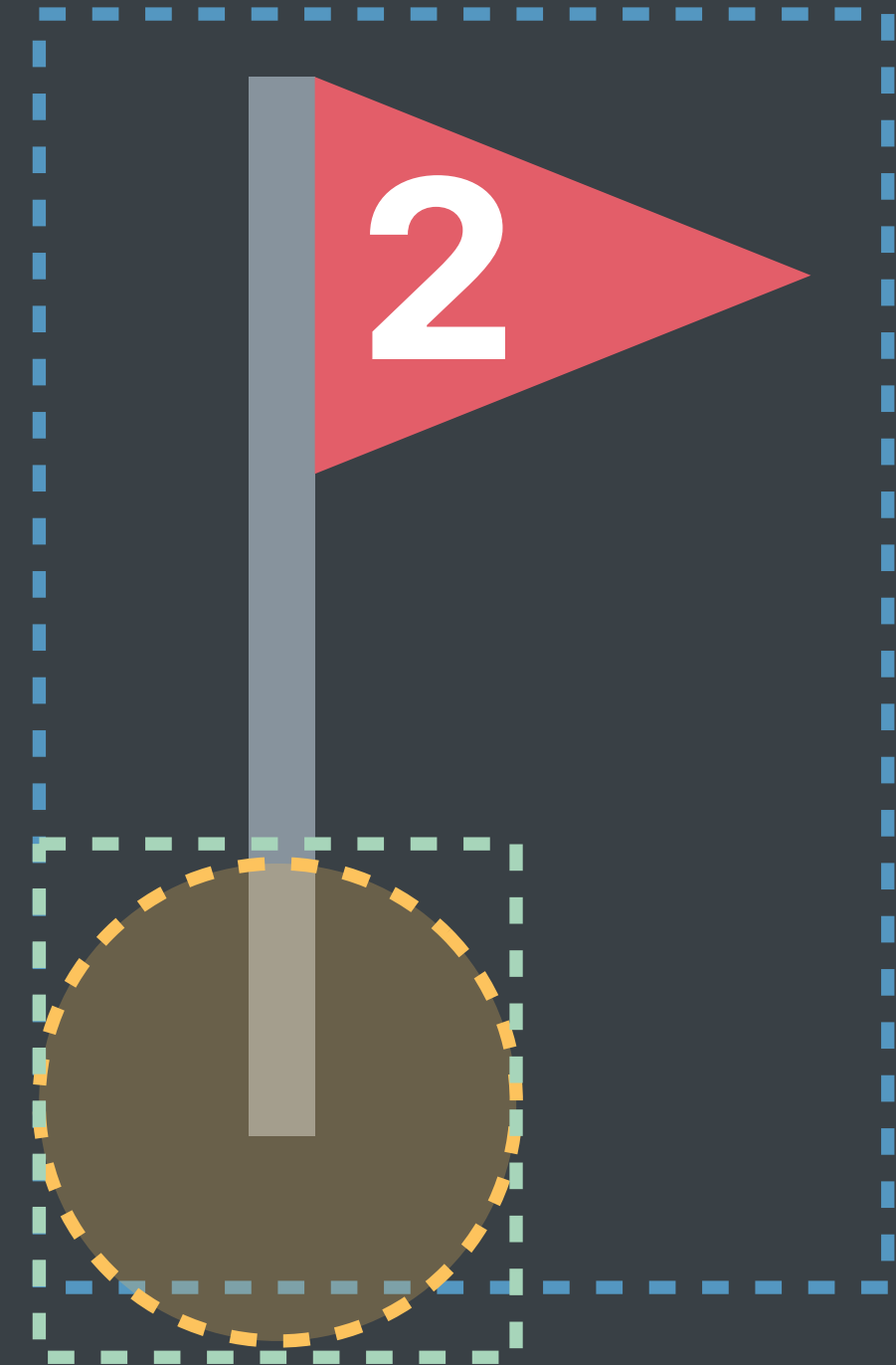
```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
}  
}
```

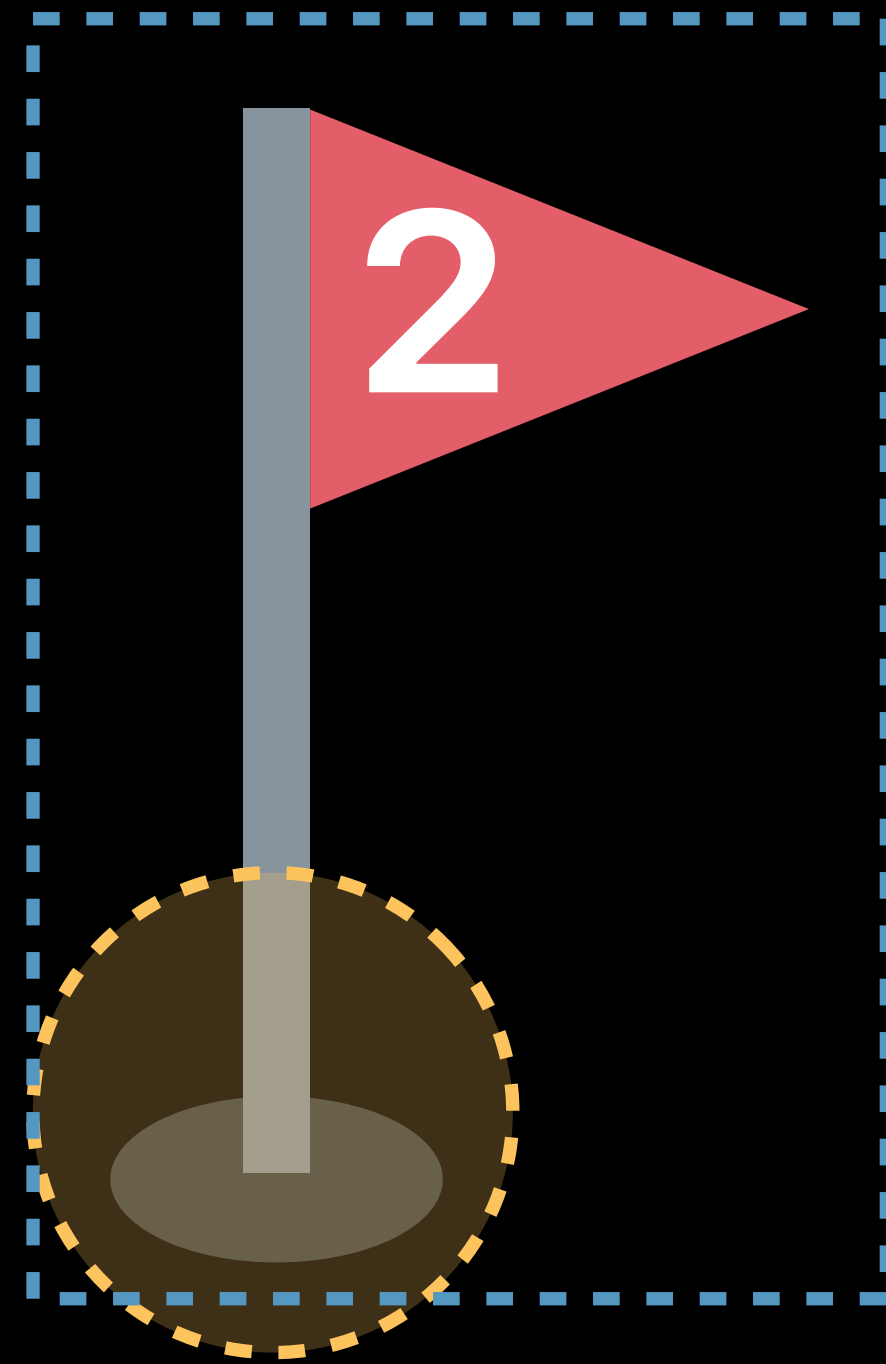
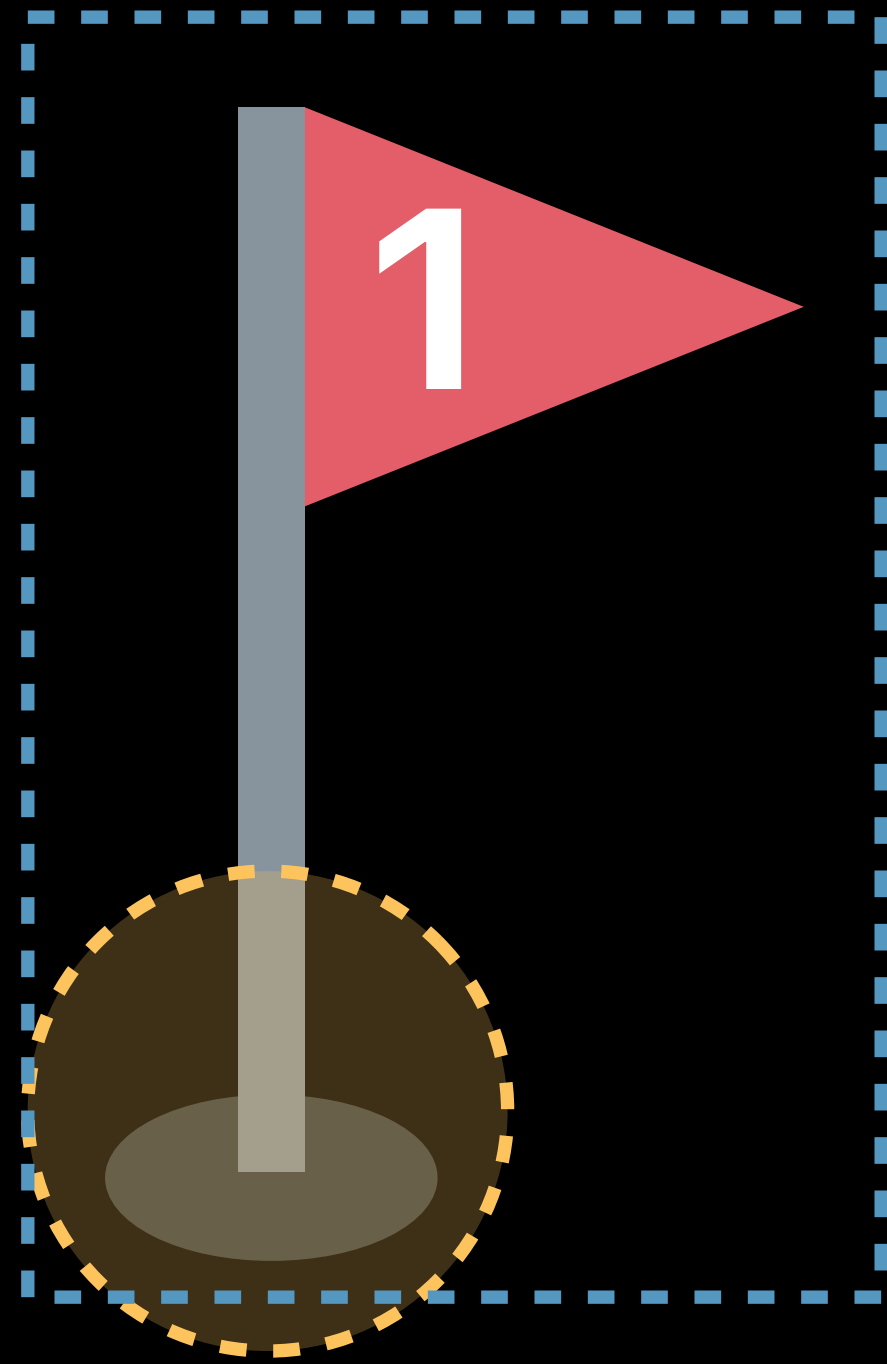


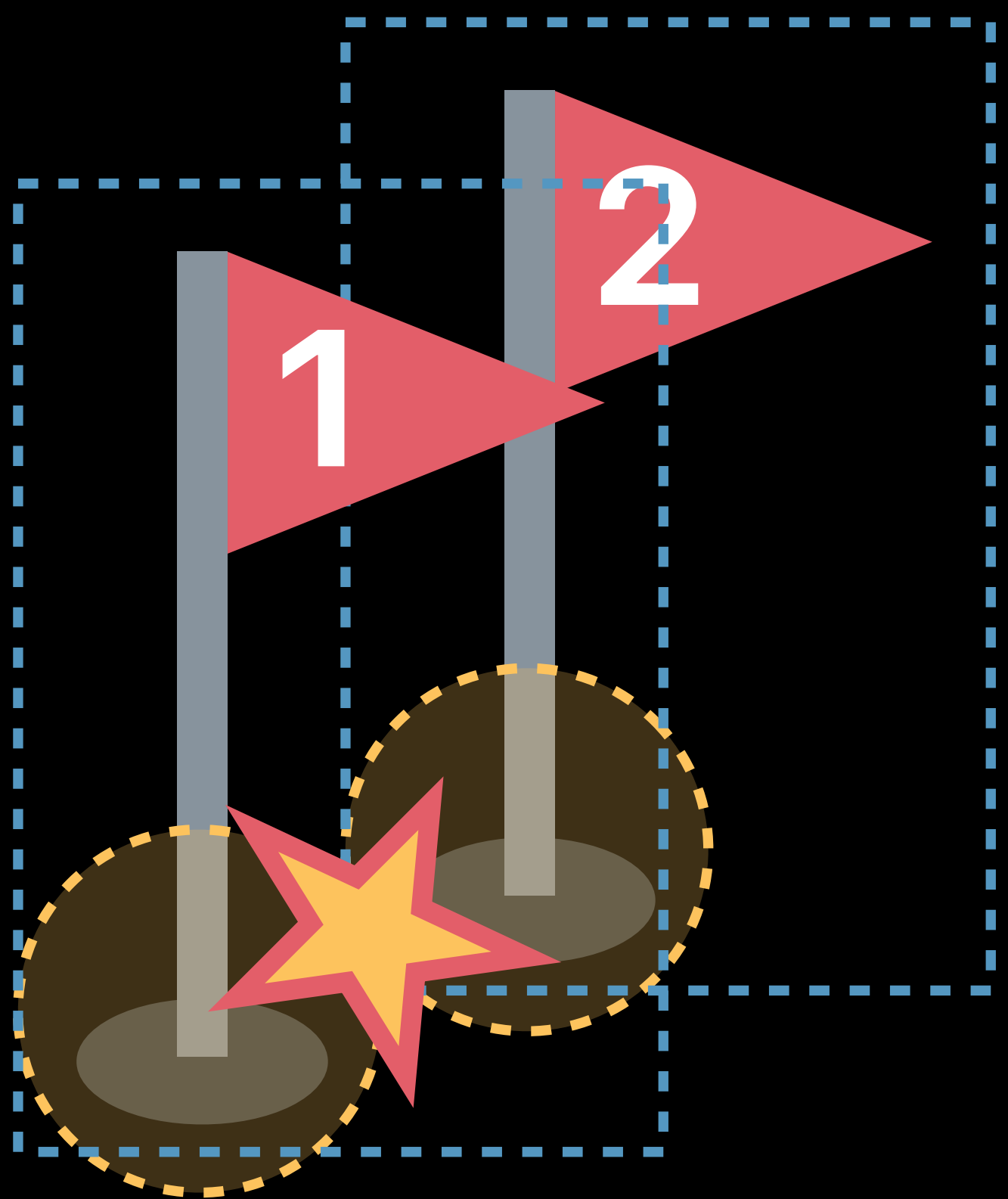
```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```



```
class FlagAnnotationView : MKAnnotationView {  
  
    override var alignmentRectInsets: UIEdgeInsets {  
        return UIEdgeInsetsMake(50, 0, -5, 20)  
    }  
  
}
```







Demo

Custom annotation views

Summary

Muted Standard Map Type

New Map Controls

Marker Annotation View

Annotation Display Priority

Annotation Clustering

Summary

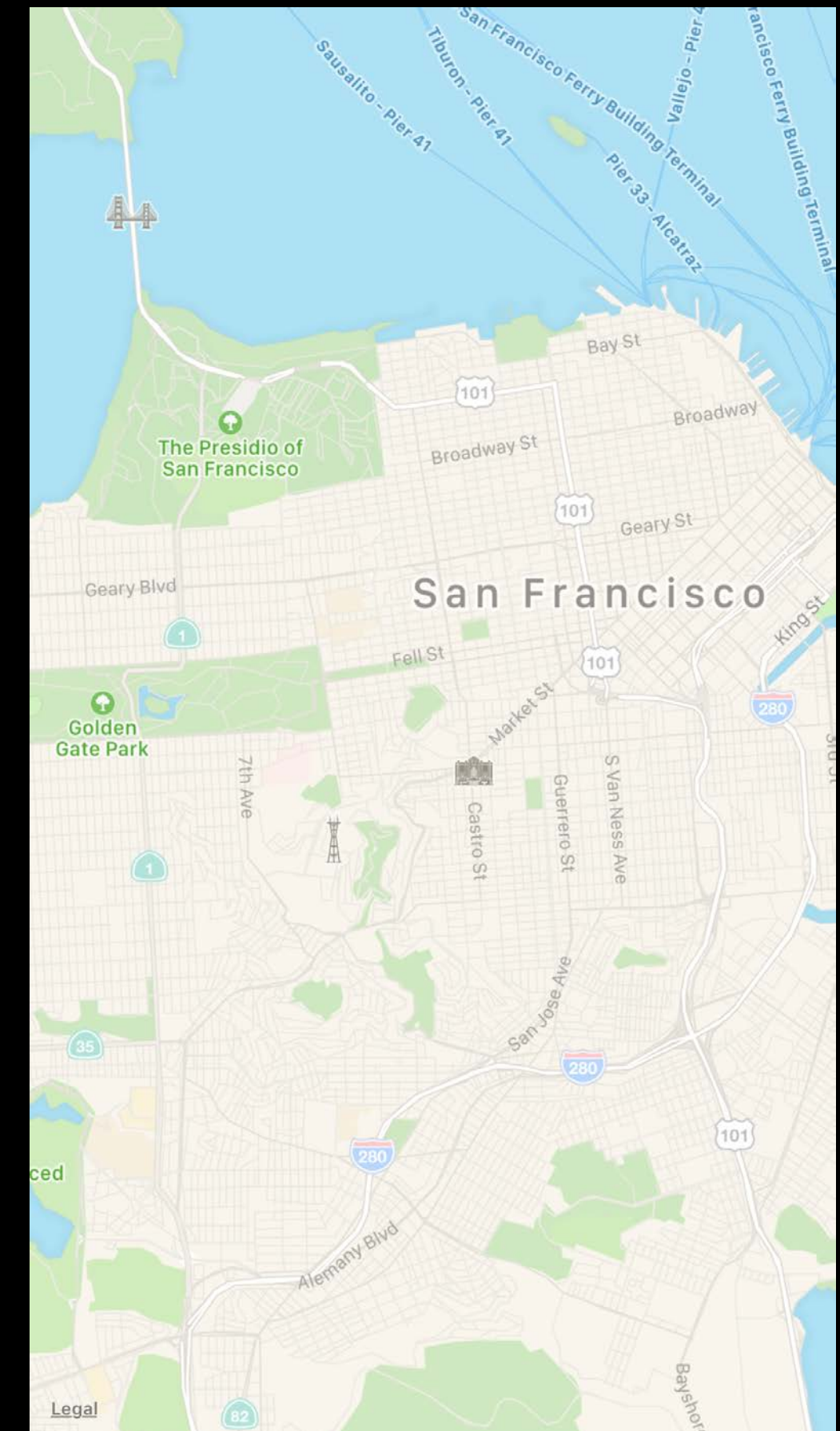
Muted Standard Map Type

New Map Controls

Marker Annotation View

Annotation Display Priority

Annotation Clustering



Summary

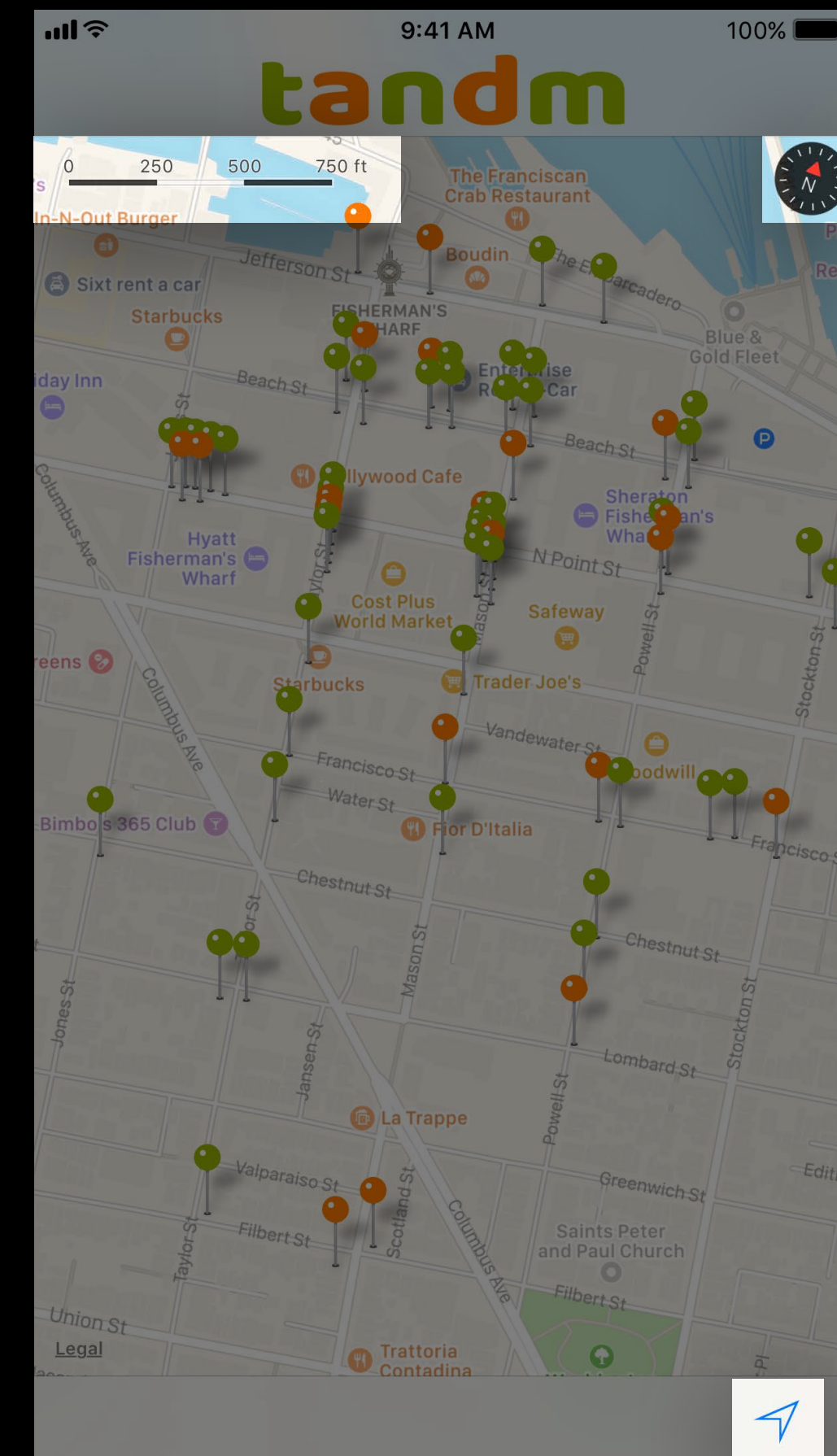
Muted Standard Map Type

New Map Controls

Marker Annotation View

Annotation Display Priority

Annotation Clustering



Summary

Muted Standard Map Type

New Map Controls

Marker Annotation View

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Annotation Clustering



Summary

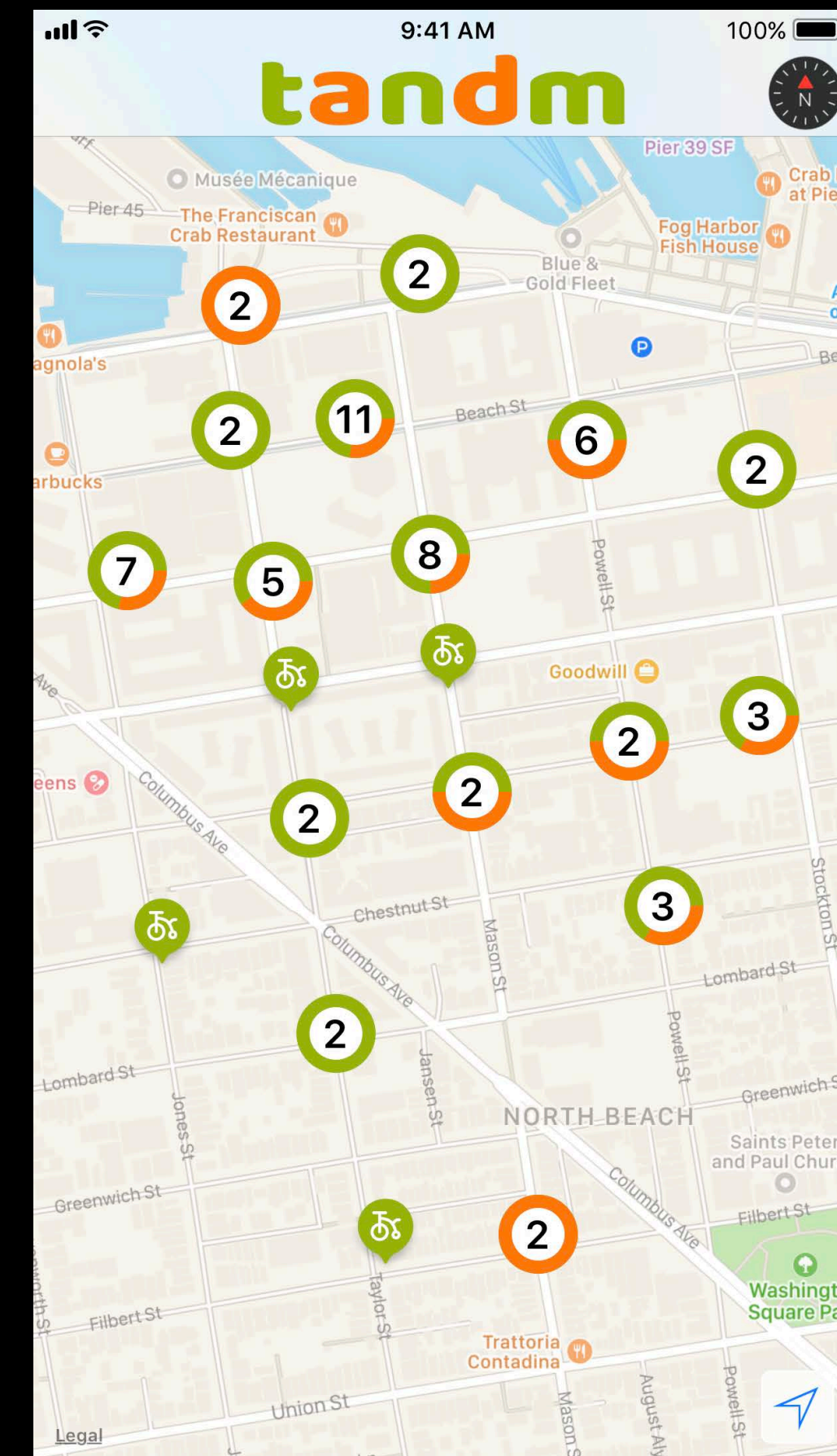
Muted Standard Map Type

New Map Controls

Marker Annotation View

Annotation Display Priority

Annotation Clustering



More Information

<https://developer.apple.com/wwdc17/237>

Related Sessions

What's New in Location Technologies

WWDC 2017

What's New in MapKit

WWDC 2015

Labs

Location and Mapping Technologies Lab

Technology Lab K

Fri 10:00AM–12:00PM

