

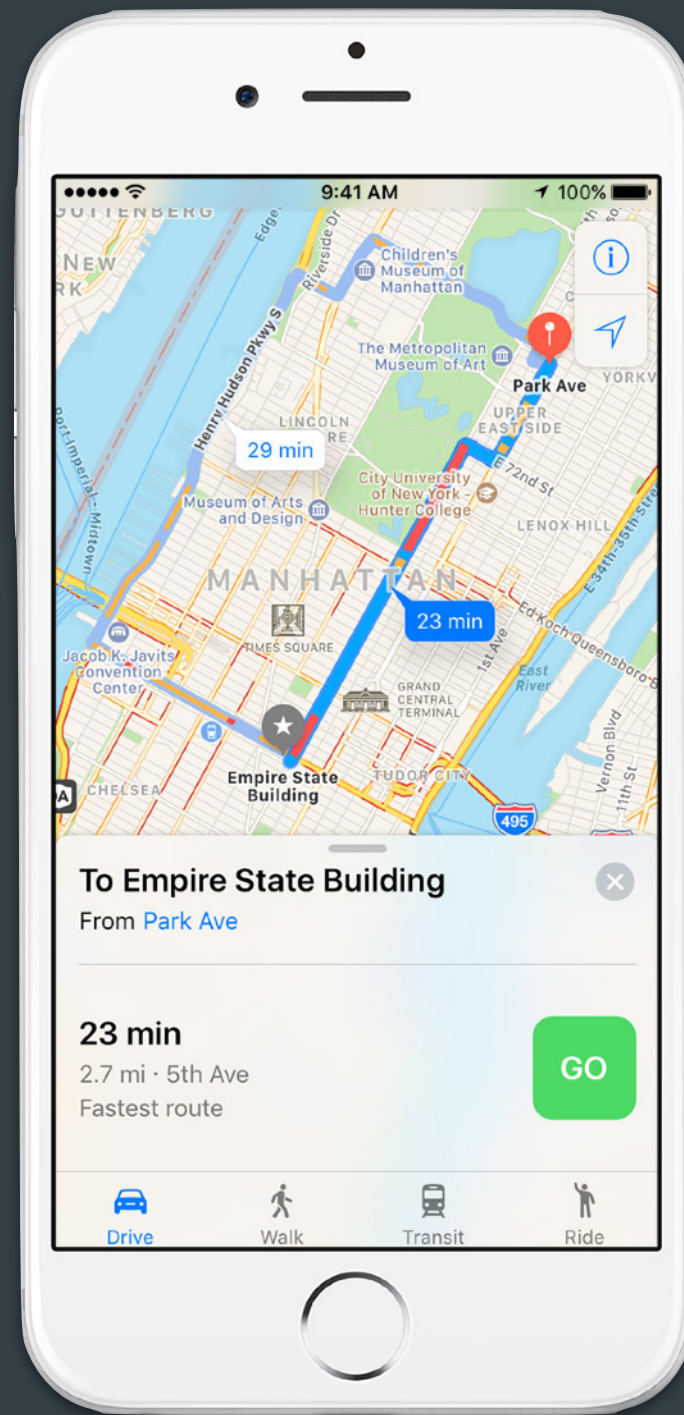
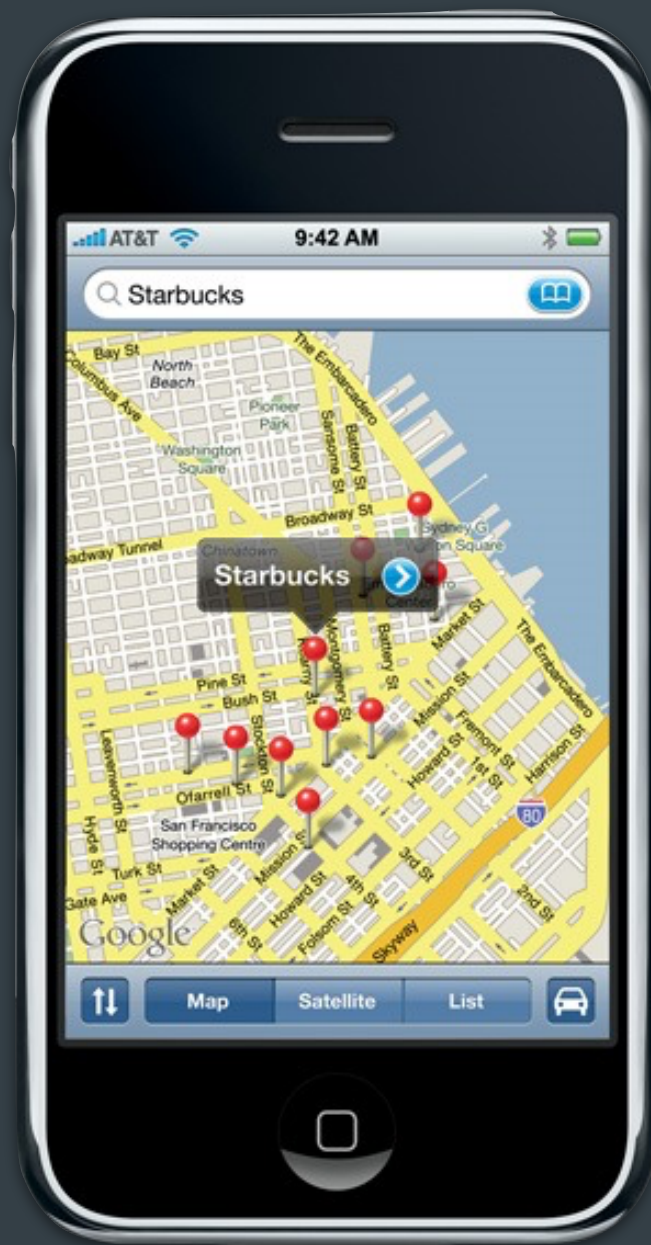
A Brief Tour of





HouseCanary







Treasure . app

Treasure.app

Single Pin

Custom Styling

Clustering

Custom Drawing

Real-World Examples

Single Pin

MKAnnotation



MKAnnotationView

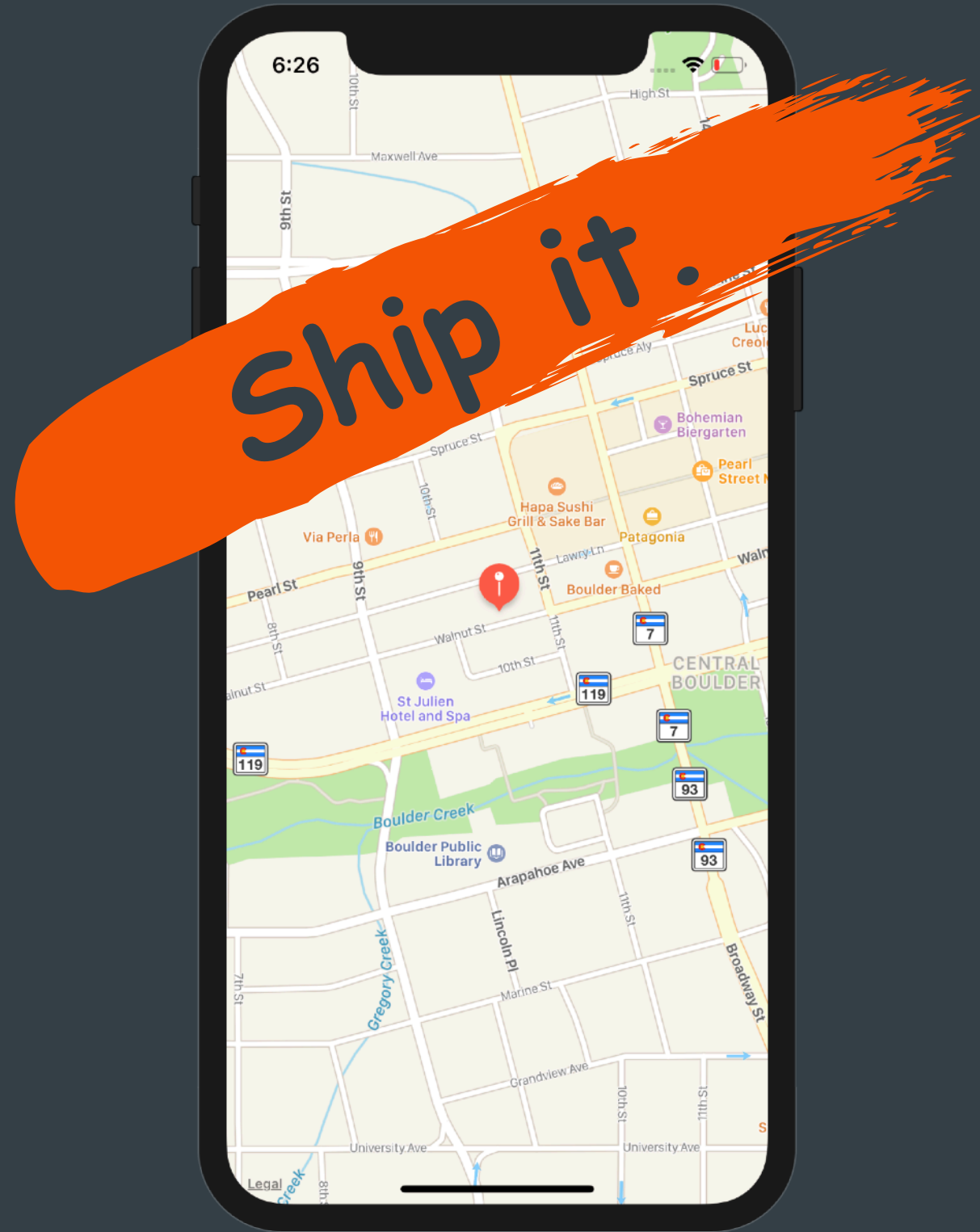


MKMapView



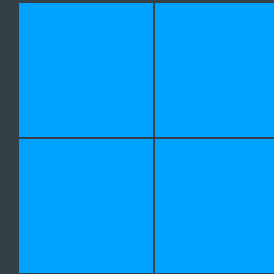

```
public protocol MKAnnotation : NSObjectProtocol {  
    public var coordinate: CLLocationCoordinate2D { get }  
    optional public var title: String? { get }  
    optional public var subtitle: String? { get }  
}
```

Code Example



Custom Styling

MKTileOverlay



MKTileOverlayRenderer



MKMapView



MKTileOverlay

Mercator Tiles

MKTileOverlay



`z:0 | x:0 | y:0`

MKTileOverlay



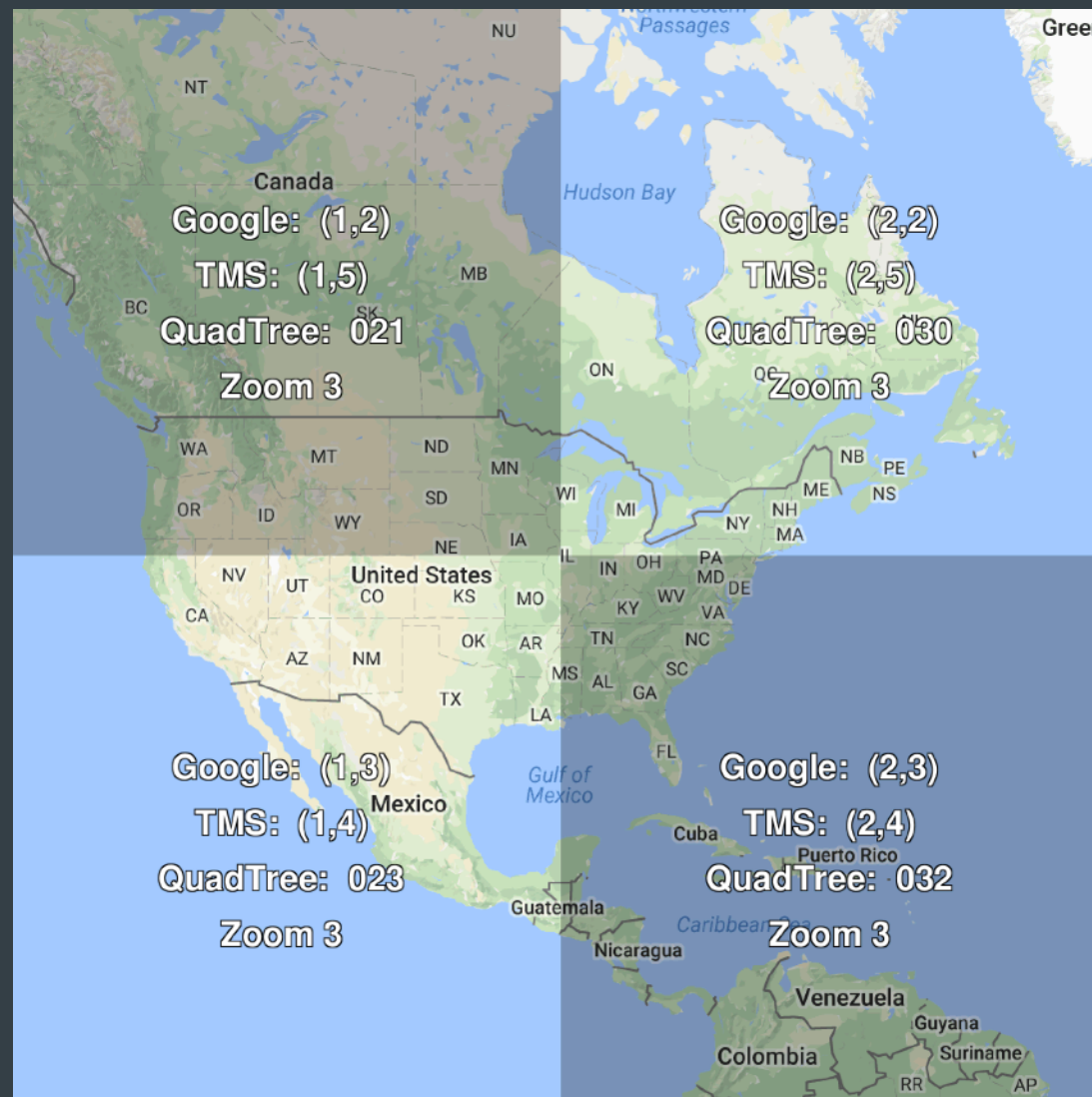
z:1 | x:0 | y:0

MKTileOverlay



z:2 | x:0 | y:1

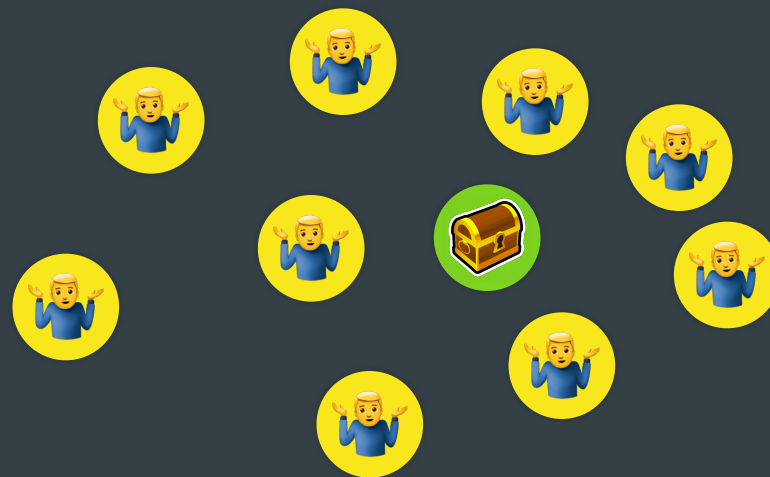
MKTileOverlay



z:3 | x:1 | y:3

Code Example

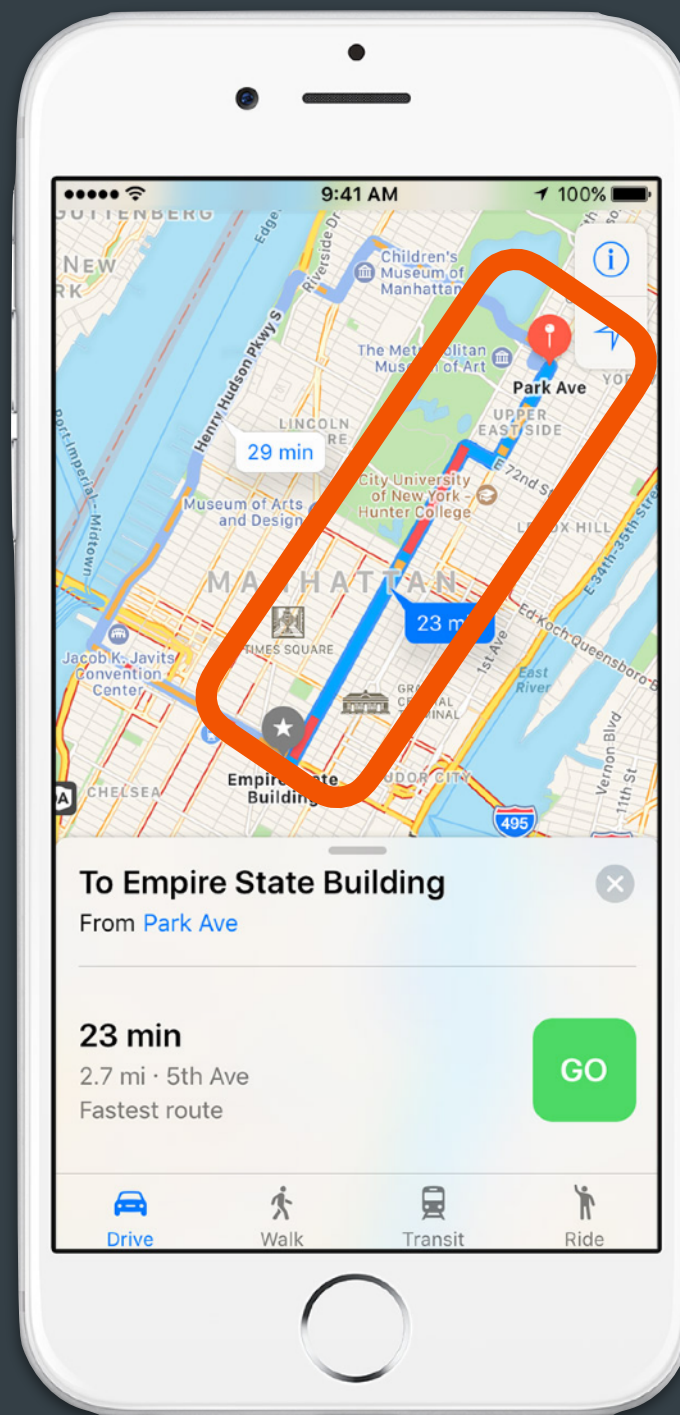
Clustering





Code Example

Custom Drawing



Code Example

Real-World Examples



HouseCanary



Tile-Based API
GeoJSON
MKMapSnapshotter



```
let options = MKMapSnapshotOptions()

options.camera = MKMapCamera(lookingAtCenter: coordinate, fromDistance: 10000, pitch: 0, heading: 0)
options.size = CGSize(width: 300, height: 300)
options.mapType = .mutedStandard
options.showsBuildings = false
options.showsPointsOfInterest = false

let snapshotter = MKMapSnapshotter(options: options)
snapshotter.start { snapshot, _ in
    guard let mapImage = snapshot?.image else { return }
    // perform work
}
```