MapView

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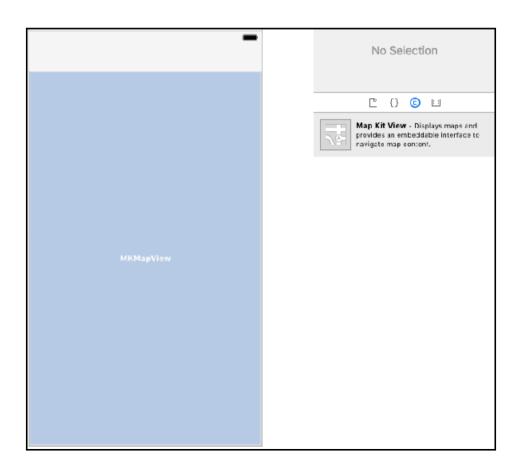


Framework Import

```
import UIKit
import MapKit
class ViewController: UIViewController {
```



Show MapView





용어

- Region : 지역 (MKCoordinateRegion사용)
- Span : 펼쳐진 영역(zoom level) (MKCoordinateSpan사용)

one degree of latitude is always approximately 111 kilometers

- Location Coordinate : 좌표
- latitude : 위도 (wgs84 좌표계 사용)
- · longitude : 경도 (wgs84 좌표계 사용)



Center 좌표 설정

```
42-117121 m 2 2/29.
let regionRadius: CLLocationDistance = 1000 <</pre>
let location = CLLocation(latitude: 37.515675, longitude: 127.021378)
let coordinateRegion = MKCoordinateRegionMakeWithDistance (location.coordinate,
regionRadius * 2.0, regionRadius * 2.0) K7 =
mapView.setRegion(coordinateRegion, animated: true)
    //setLocation Location
let location = CLLocation(latitude: 37.515675, longitude: 127.021378)
let span = MKCoordinateSpan(latitudeDelta: 0.1, longitudeDelta: 0.1)
let coordinateRegion = MKCoordinateRegionMake(location.coordinate, span)
mapView.setRegion(coordinateRegion, animated: true)
```



Pin 추가 (Add Annotation)

- MKAnnotation Protocol을 사용하여 annotation 클래스 생성 (NSObject 필수 상속)
- annotation 인스턴스 생성 후 Mapview에 Add



MKAnnotation Protocol

```
public protocol MKAnnotation : NSObjectProtocol {

    // Center latitude and longitude of the annotation view.
    // The implementation of this property must be KVO compliant.
    public var coordinate: CLLocationCoordinate2D { get }

    // Title and subtitle for use by selection UI.
    optional public var title: String? { get }

    optional public var subtitle: String? { get }
}
```



CustomAnnotation Example

```
class CustomAnnotation:NSObject, MKAnnotation {
   var coordinate: CLLocationCoordinate2D

   var title: String?
   var subtitle: String?

   init(title: String, coordinate: CLLocationCoordinate2D) {
      self.title = title
      self.coordinate = coordinate
   }
}
```



Pin 추가 (Add Annotation) - 예제

```
let customPin = CustomAnnotation(title: "Sample", coordinate: location.coordinate)
mapview.addAnnotation(customPin)
```



MKMapViewDelegate

```
func mapView( mapView: MKMapView, viewFor annotation: MKAnnotation) -> MKAnnotationView? {
    if let annotation = annotation as? CustomAnnotation {
        let identity = "pin"
        var pinView: MKPinAnnotationView
        if let dequeuedView = mapView.dequeueReusableAnnotationView(withIdentifier: identity)
            as? MKPinAnnotationView {
            degueuedView.annotation = annotation
            pinView = dequeuedView
        } else {
            pinView = MKPinAnnotationView(annotation: annotation, reuseIdentifier: identity)
            pinView.canShowCallout = true
            pinView. dalloutOffset = CGPoint(x: -5, v: 5)
            pinView. rightCalloutAccessoryView = UIButton(type: .detailDisclosure) as UIView
        }
        return pinView
    return nil
func mapView( mapView: MKMapView, annotationView view: MKAnnotationView,
                 calloutAccessoryControlTapped control: UIControl) {
 ///callout Action
}
```

Fast campus

사용자 위치 설정

- 사용자 허용
 - 1. info.plist 항목 추가 (택1) ios 10 이상
 - Privacy Location When In Use Usage Description : YES
 - Privacy Location Always Usage Description : YES
- Location Manager 객체 생성 (CLLocationManager)
 let manager = CLLocationManager()
 - - manager.requestAlwaysAuthorization()
 - manager.requestWhenInUseAuthorization()
 - 3. 업데이트
 - manager.startUpdatingLocation()
 - manager.stopUpdatingLocation()



사용자 위치 설정 - 예제

```
let manager = CLLocationManager()
manager.delegate = self
manager.requestAlwaysAuthorization()
manager.requestWhenInUseAuthorization()
manager.desiredAccuracy = kCLLocationAccuracyBest -> 74645
manager.startUpdatingLocation()
```



CLLocationManagerDelegate

```
func locationManager(_ manager: CLLocationManager, didUpdateLocations locations: [CLLocation]) {
  if let nowLocation = locations.last
  {
    //nowLocation 가지고 위치정보 가져오기
  }
}
```



maplien. show Usen Location