

‘Xcode’로
쉽게 따라해보는
실전 Swift 2
프로그래밍

Outline



Vandad Nahavandipoor,
iOS 8 Swift Programming Cookbook,
O'Reilly Media(2014.11)

1. ~~MapKit Tutorial~~
2. ~~Pinning on Map~~
3. Tracking with GPX file
 - GPX
 - XML Parsing

Tracking with GPX file

- GPS Exchange Format (GPX)
: device-independent data format used for GPS navigation devices
- Extensible Markup Language (XML)로 설계된 공개 포맷
- Data types: wptType / rteType / trkType

* <https://en.wikipedia.org/wiki/GPX>

* https://en.wikipedia.org/wiki/GPS_Exchange_Format

Tracks:

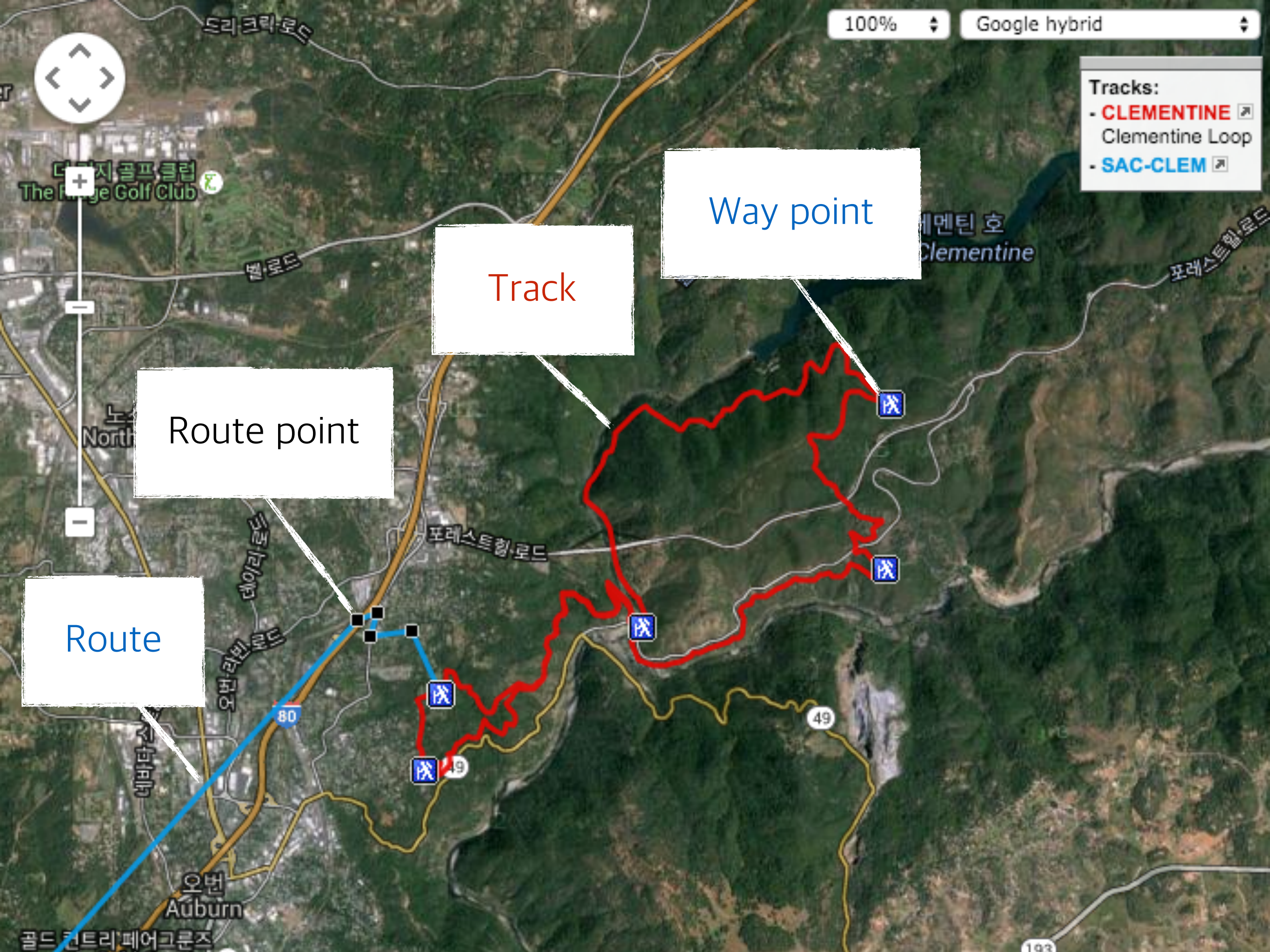
- **CLEMENTINE**
Clementine Loop
- **SAC-CLEM**

Way point

Track

Route point

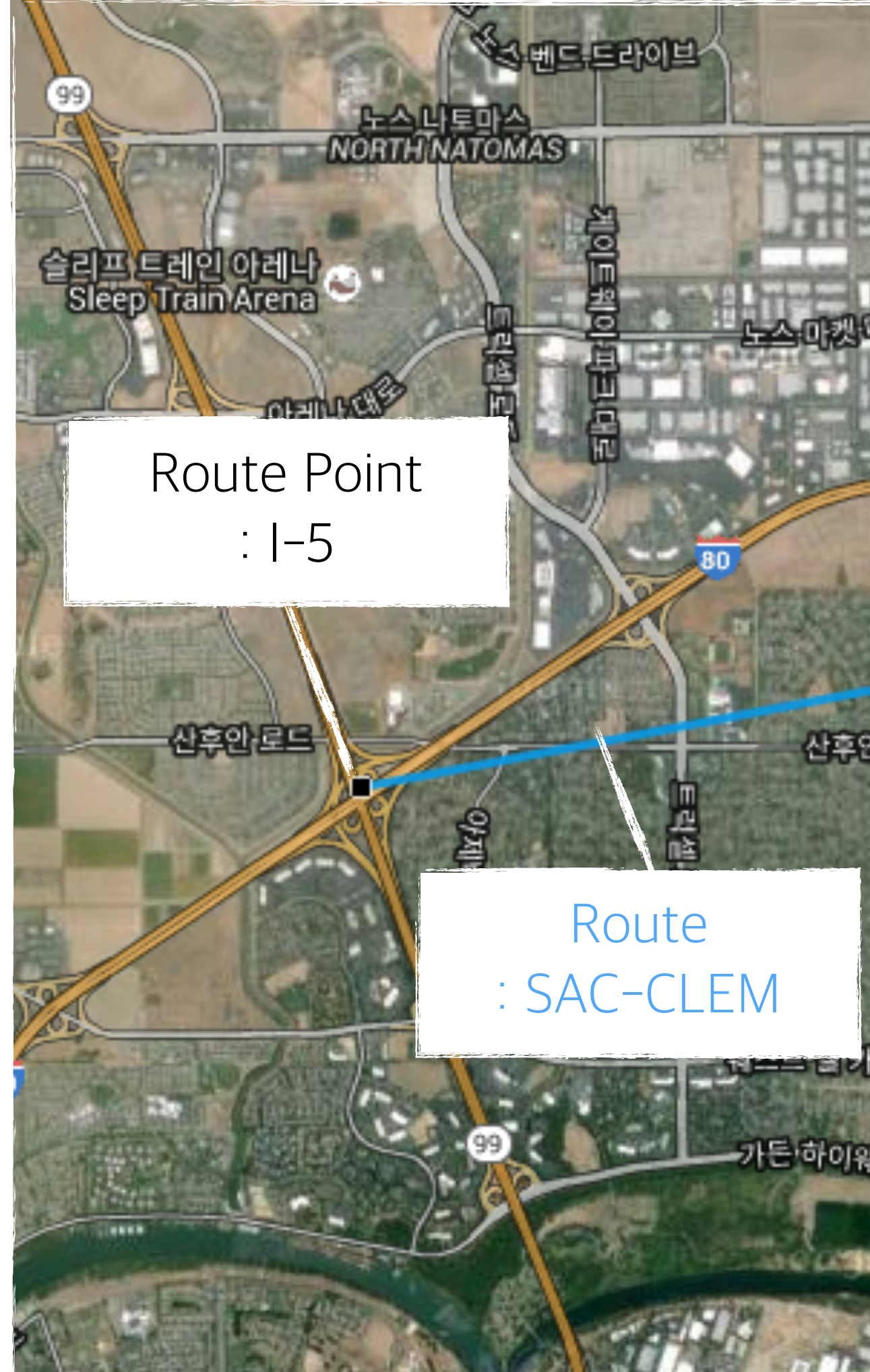
Route



▪
▪
▪

```
<rte>
  <name>SAC-CLEM</name>
  <desc>Auto route from Sacramento to
  Clementine Loop trail head.</desc>
  <number>1</number>
  <topografix:color>ff0000</
  topografix:color>
  <rtept lat="38.625526432"
  lon="-121.516942989">
    <time>2003-02-05T18:08:15Z</time>
    <name>I-5</name>
    <desc>I-5</desc>
    <sym>Waypoint</sym>
    <type>Waypoint</type>
```

▪
▪
▪



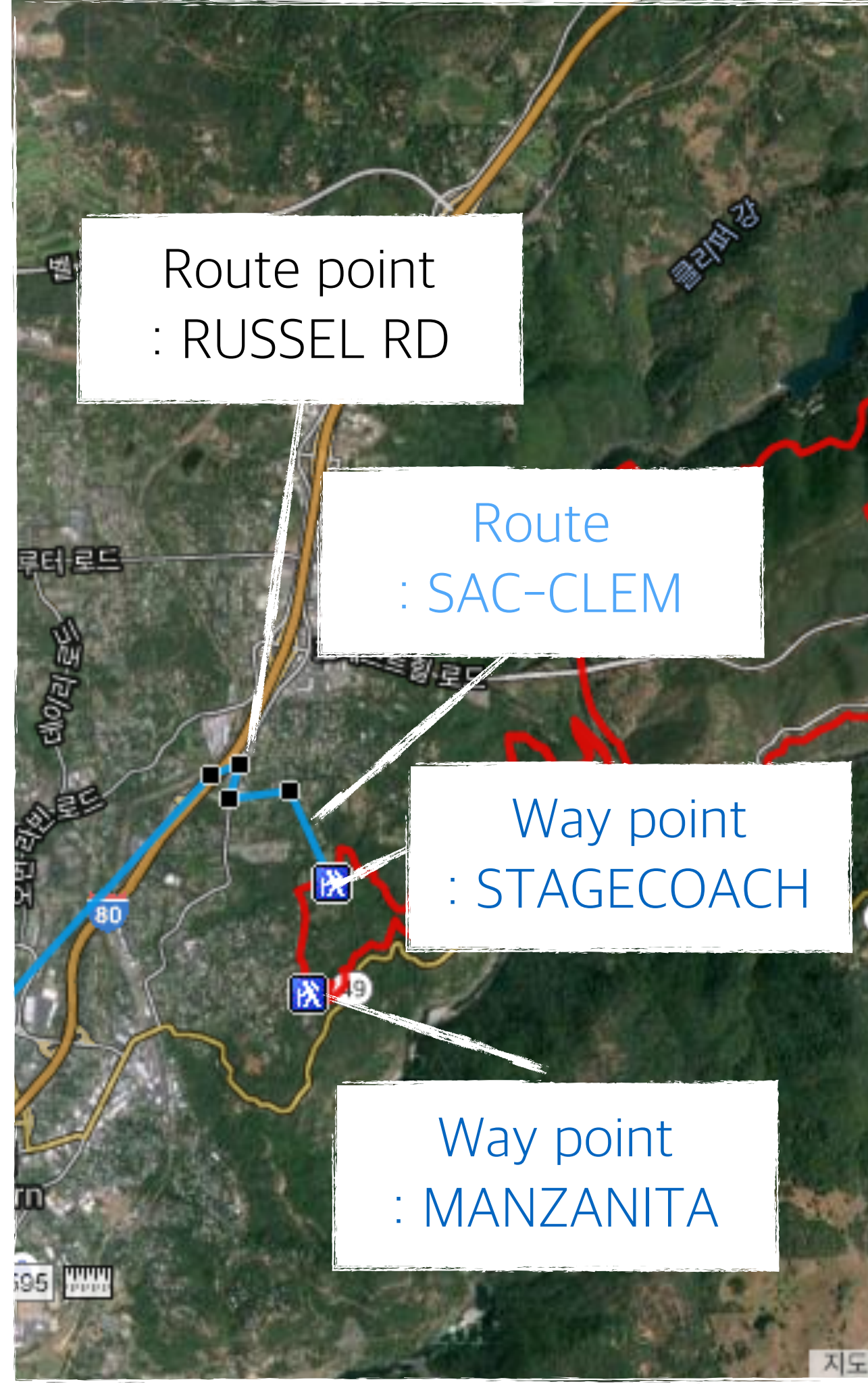
Route Point
: I-5

Route
: SAC-CLEM


```

      .
      .
      .
<wpt lat="38.905900003"
lon="-121.055939991">
  <ele>371.912964</ele>
  <time>2003-02-04T21:14:35Z</time>
  <name>MANZANITA</name>
  <desc>MANZANITA</desc>
  <sym>Trail Head</sym>
  <type>Trail Head</type>
</wpt>
</wpt>
<wpt lat="38.911470029"
lon="-121.054369977">
  <ele>405.318481</ele>
  <time>2003-02-04T21:14:35Z</time>
  <name>STAGECOACH</name>
  <desc>STAGECOACH</desc>
  <sym>Trail Head</sym>
  <type>Trail Head</type>
</wpt>
<rte>
  <name>SAC-CLEM</name>
  <desc>Auto route from Sacramento to
Clementine Loop trail head.</desc>
  <number>1</number>
  <topografix:color>ff0000</
topografix:color>

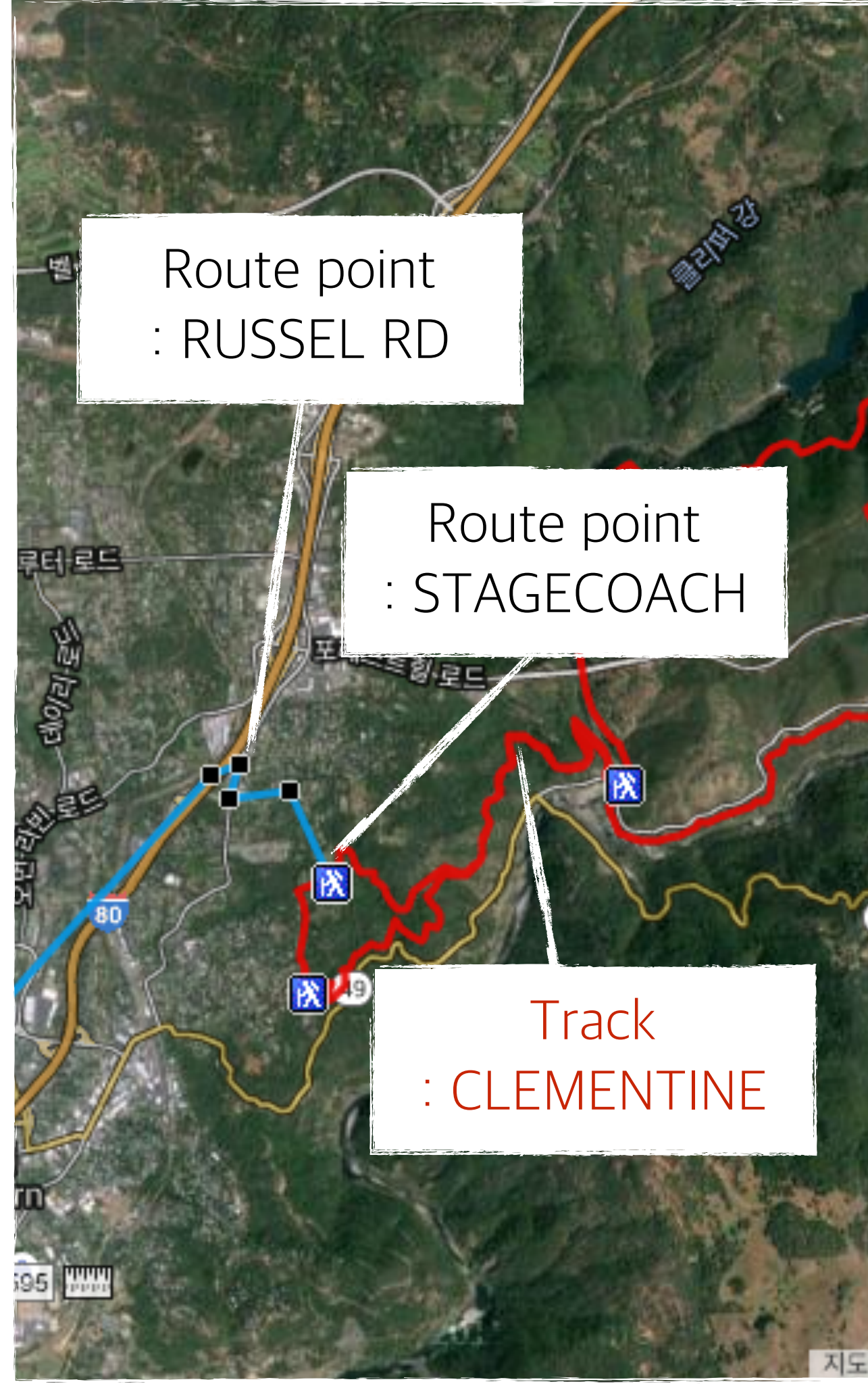
```




```

    .
    .
    .
<rtept lat="38.911467012"
lon="-121.054374419">
  <time>2003-02-05T18:08:15Z</time>
  <name>STAGECOACH</name>
  <desc>STAGECOACH</desc>
  <sym>Trail Head</sym>
  <type>Trail Head</type>
</rtept>
</rte>
<trk>
  <name>CLEMENTINE</name>
  <desc>Clementine Loop</desc>
  <number>1</number>
  <topografix:color>ff0000</
topografix:color>
<trkseg>
<trkpt lat="38.919839863"
lon="-121.020112049">
  <ele>265.447754</ele>
  <time>2003-02-05T18:19:20Z</
time>
  <sym>Waypoint</sym>
</trkpt>
    .
    .
    .

```



Tracking with GPX file

- GPS Exchange Format (GPX)
: device-independent data format used for GPS navigation devices
- Extensible Markup Language (XML)로 설계된 공개 포맷
- Data types: wptType / rteType / trkType
- 깔끔하게 바로 처리하는 방법을 분명 지원 하겠지만,
일단 XML 파싱을 통해 정보를 나열해보자

* <https://en.wikipedia.org/wiki/GPX>

* https://en.wikipedia.org/wiki/GPS_Exchange_Format

XML Parsing

- 구문 분석(**Parsing**)이란? 문장을 구성 성분으로 분해하고, 위계관계를 분석하여 문장의 구조를 결정하는 것을 말한다.
- Swift에선 **SWXMLHash**를 통해 쉽게 파싱할 수 있다.

<https://github.com/drmohundro/SWXMLHash>

```
/* SWXMLHash provides a translation from XML to  
   a dictionary of arrays (aka hash).*/  
  
//initialization  
var xml = SWXMLHash.parse(xmlWithNamespace)  
  
//Single Element Lookup  
xml["root"]["header"]["title"].element!.text!
```

```
<root>
  <h:table>
    <h:tr>
      <h:td>Apples</h:td>
      <h:td>Bananas</h:td>
    </h:tr> ...
```

```
graph TD; A["XML"] --> B["Code"]; B --> C["Output"]; style A fill:#fff,stroke:#333,stroke-width:1px; style B fill:#fff,stroke:#333,stroke-width:1px; style C fill:#fff,stroke:#333,stroke-width:1px;
```

```
for var i in xml["root"]["h:table"]["h:tr"]["h:td"] {
  print (i.element!.text!)
}
```

Apples
Bananas

Reference

- GPX-POI Generator,
<http://gpx-poi.com/>
- Download: GPX sample files,
<https://code.google.com/p/terrabrowser/downloads/detail?name=sample%20waypoint%20files.zip&can=2&q=>
- SWXMLHash: Simple XML parsing in Swift,
<https://github.com/drmohundro/SWXMLHash>
- GPS Visualizer: Do-It-Yourself Mapping,
<http://www.gpsvisualizer.com/>