

The leaflet.extras Package

INTERACTIVE MAPS WITH LEAFLET IN R



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The leaflet.extras Package

- We will focus on three extras:
 - `addSearchOSM()` - make map searchable
 - `addReverseSearchOSM()` - geocode with a mouse click
 - `addResetMapButton()` - reset map view

addSearchOSM()

```
leaflet() %>%  
  addTiles() %>%  
  addSearchOSM()
```



Find the Twine

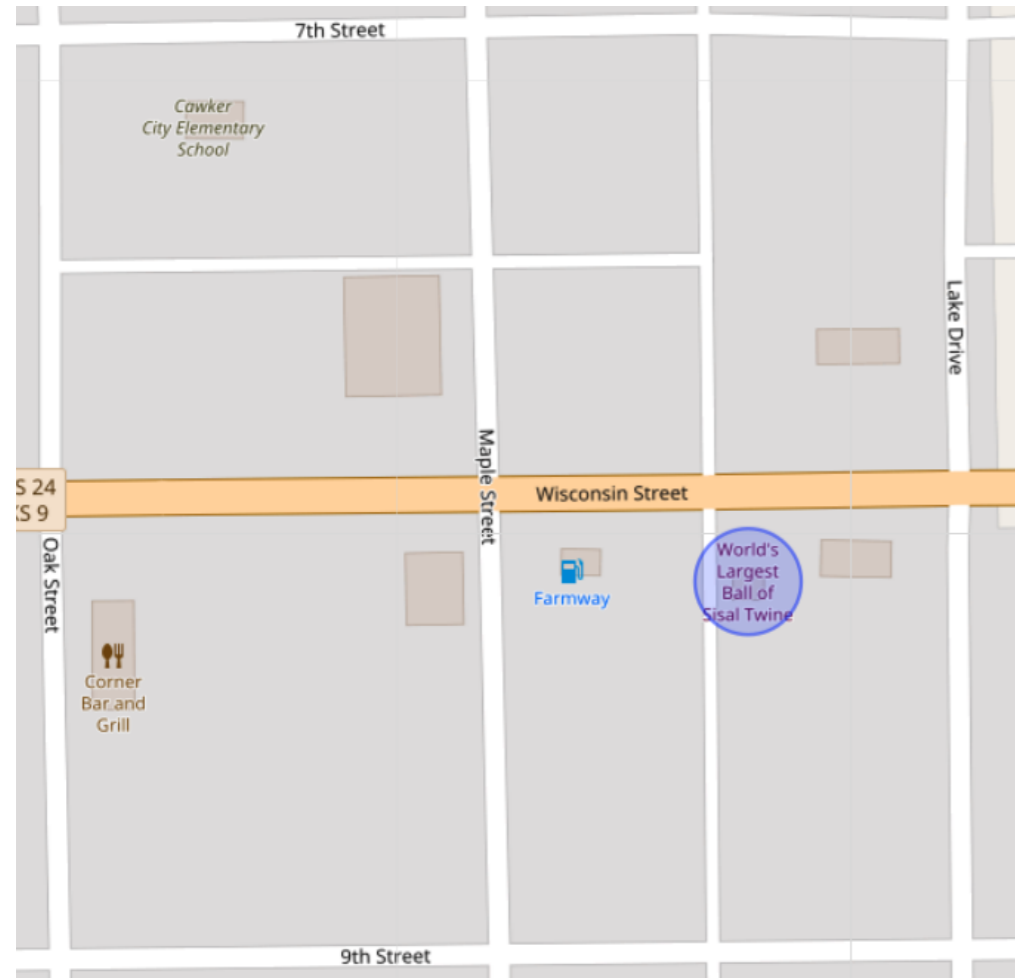


Image By TigerPaw2154,
Wikipedia - Public Domain

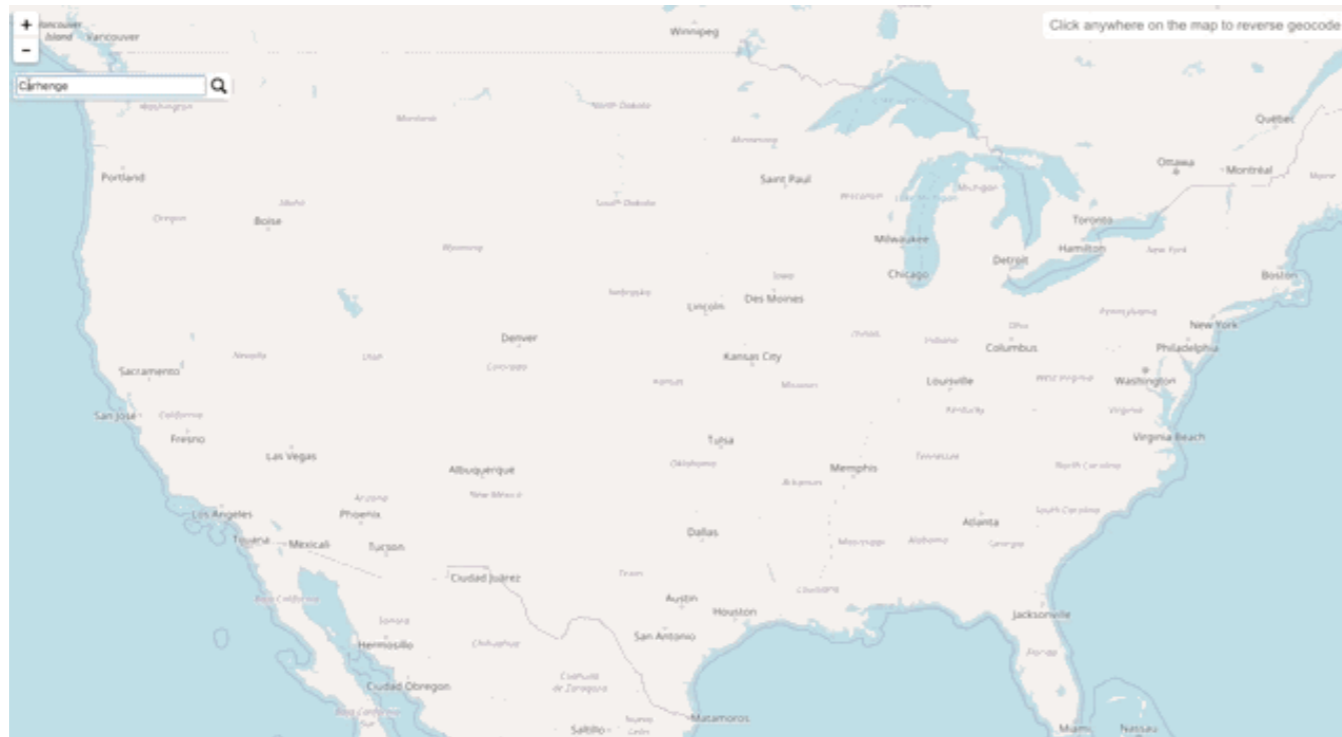
addReverseSearchOSM()

```
leaflet() %>%
```

```
  addTiles() %>%
```

```
  addSearchOSM() %>%
```

```
  addReverseSearchOSM()
```



addResetMapButton()

```
leaflet() %>%  
  addTiles() %>%  
  addSearchOSM() %>%  
  addReverseSearchOSM() %>%  
  addResetMapButton()
```



Let's practice!

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Overlay Groups

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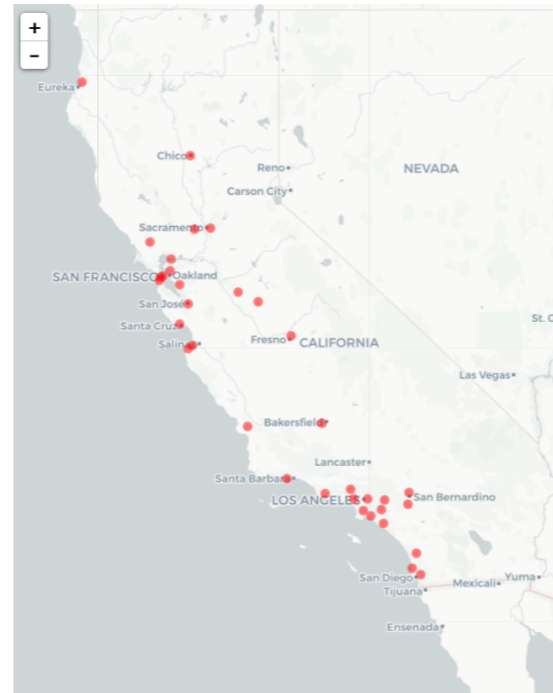
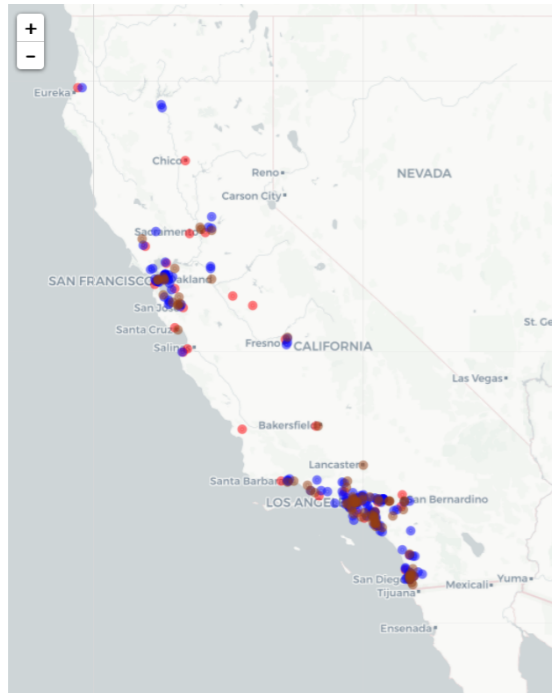
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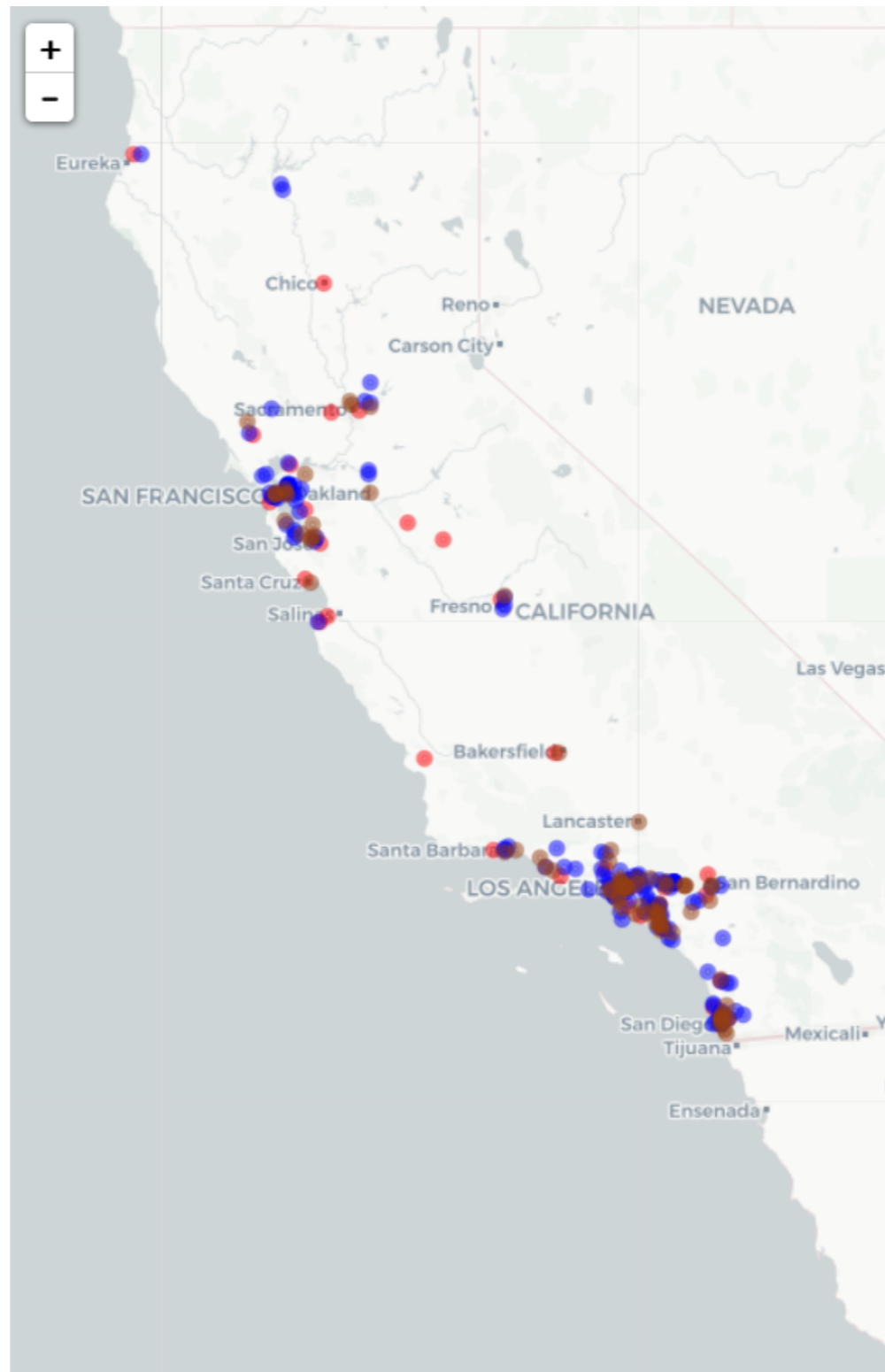
Grouping Colleges by Sector

```
m <- ca_colleges %>%  
  leaflet() %>%  
  addProviderTiles("CartoDB")  
m %>%  
  addCircleMarkers(  
    radius = 2,  
    label = ~name)
```

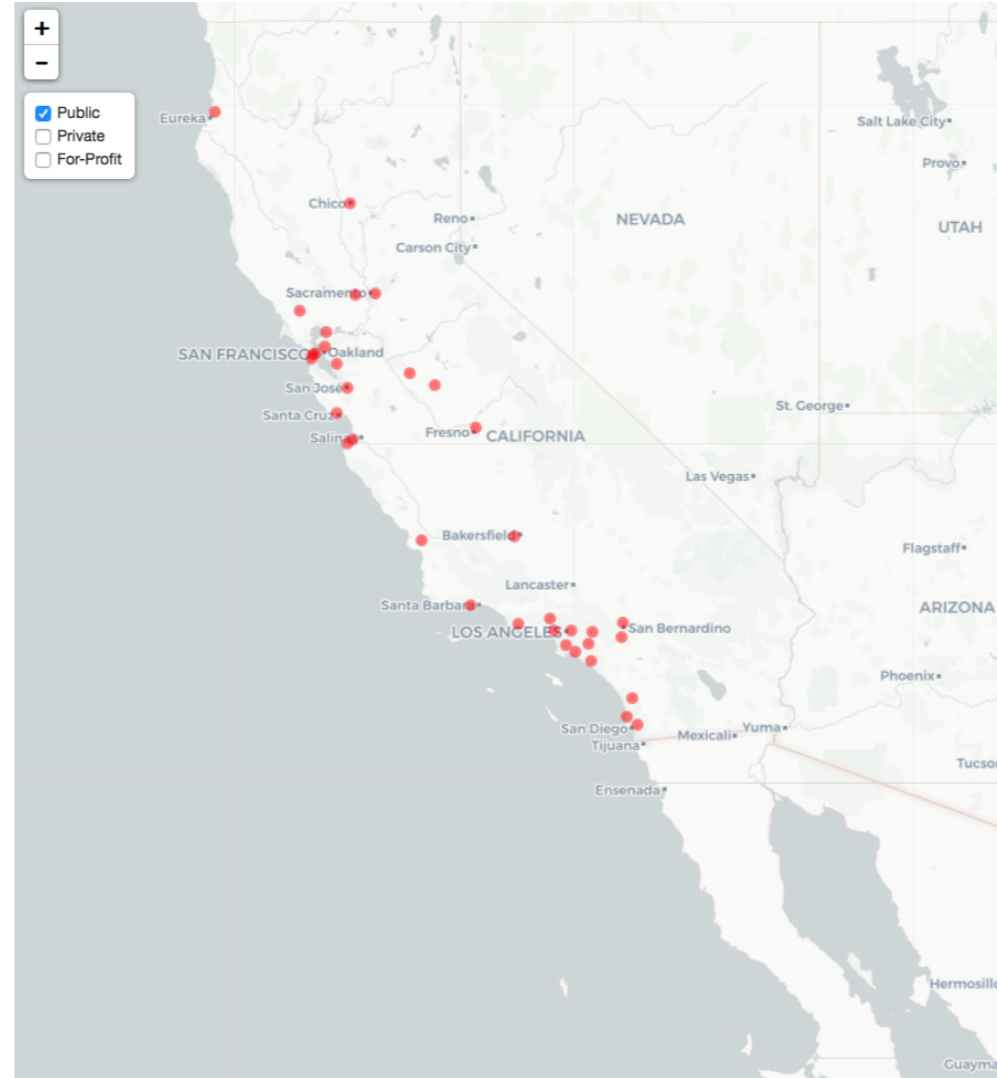
```
ca_public <- ipeds %>%  
  filter(sector == "Public",  
         state == "CA")  
m %>%  
  addCircleMarkers(  
    data = ca_public,  
    group = "Public")
```



```
m %>%  
  addCircleMarkers(  
    data = ca_public,  
    color = ~pal(sector_label),  
    group = "Public") %>%  
  addCircleMarkers(  
    data = ca_private,  
    color = ~pal(sector_label),  
    group = "Private") %>%  
  addCircleMarkers(  
    data = ca_profit,  
    color = ~pal(sector_label),  
    group = "For-Profit")
```



```
m %>%  
  addCircleMarkers(  
    data = ca_public,  
    color = ~pal(sector_label),  
    group = "Public") %>%  
  addCircleMarkers(  
    data = ca_private,  
    color = ~pal(sector_label),  
    group = "Private") %>%  
  addCircleMarkers(  
    data = ca_profit,  
    color = ~pal(sector_label),  
    group = "For-Profit") %>%  
  addLayersControl(  
    overlayGroups = c("Public",  
                      "Private",  
                      "For-Profit"))
```



What We are Working Toward



Let's practice!

INTERACTIVE MAPS WITH LEAFLET IN R

Base Groups

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Base Groups and Multiple Map Tiles

```
leaflet() %>%  
  addTiles(group = "OSM") %>%  
  addProviderTiles("CartoDB", group = "Carto") %>%  
  addProviderTiles("Esri", group = "Esri")
```



```
leaflet() %>%  
  addTiles(group = "OSM") %>%  
  addProviderTiles("CartoDB", group = "Carto") %>%  
  addProviderTiles("Esri", group = "Esri") %>%  
  addLayersControl(baseGroups = c("OSM", "Carto", "Esri"),  
    position = "topleft")
```



Exploring Esri Base Maps



Overlay and Base Groups

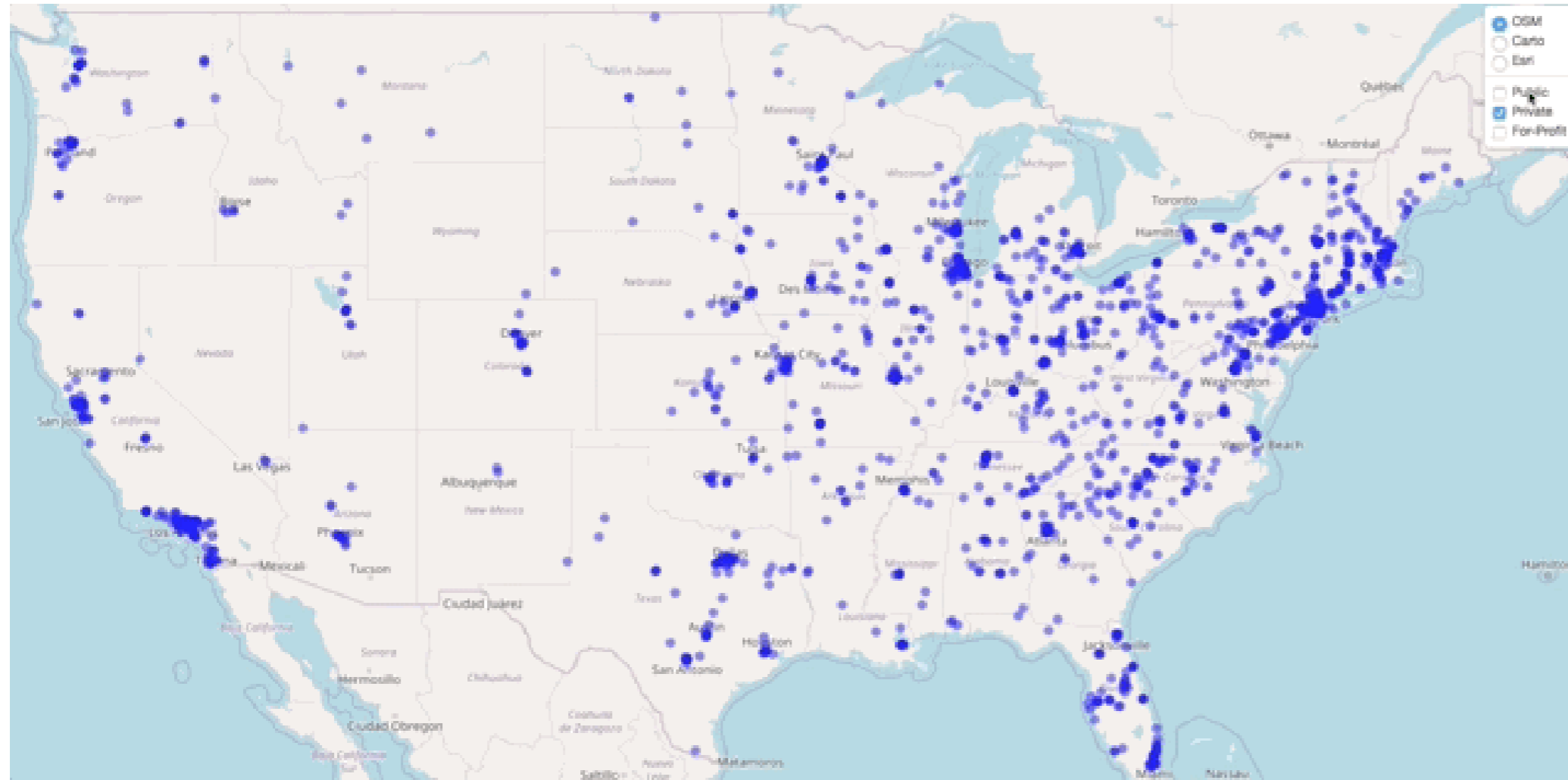
```
# initialize leaflet map
leaflet() %>%
# add basemaps with groups
  addTiles(group = "OSM") %>%
  addProviderTiles("CartoDB", group = "Carto") %>%
  addProviderTiles("Esri", group = "Esri") %>%
```

Overlay and Base Groups

```
# add marker layer for each sector with corresponding group name
addCircleMarkers(data = public, radius = 2,
                 label = ~htmlEscape(name),
                 color = ~pal(sector_label), group = "Public") %>%
addCircleMarkers(data = private, radius = 2,
                 label = ~htmlEscape(name),
                 color = ~pal(sector_label), group = "Private") %>%
addCircleMarkers(data = profit, radius = 2,
                 label = ~htmlEscape(name),
                 color = ~pal(sector_label), group = "For-Profit") %>%

# add layer controls for base and overlay groups
addLayersControl(baseGroups = c("OSM", "Carto", "Esri"),
                 overlayGroups = c("Public", "Private",
                                   "For-Profit"))
```

The Big Reveal



Let's practice!

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Pieces of Flair

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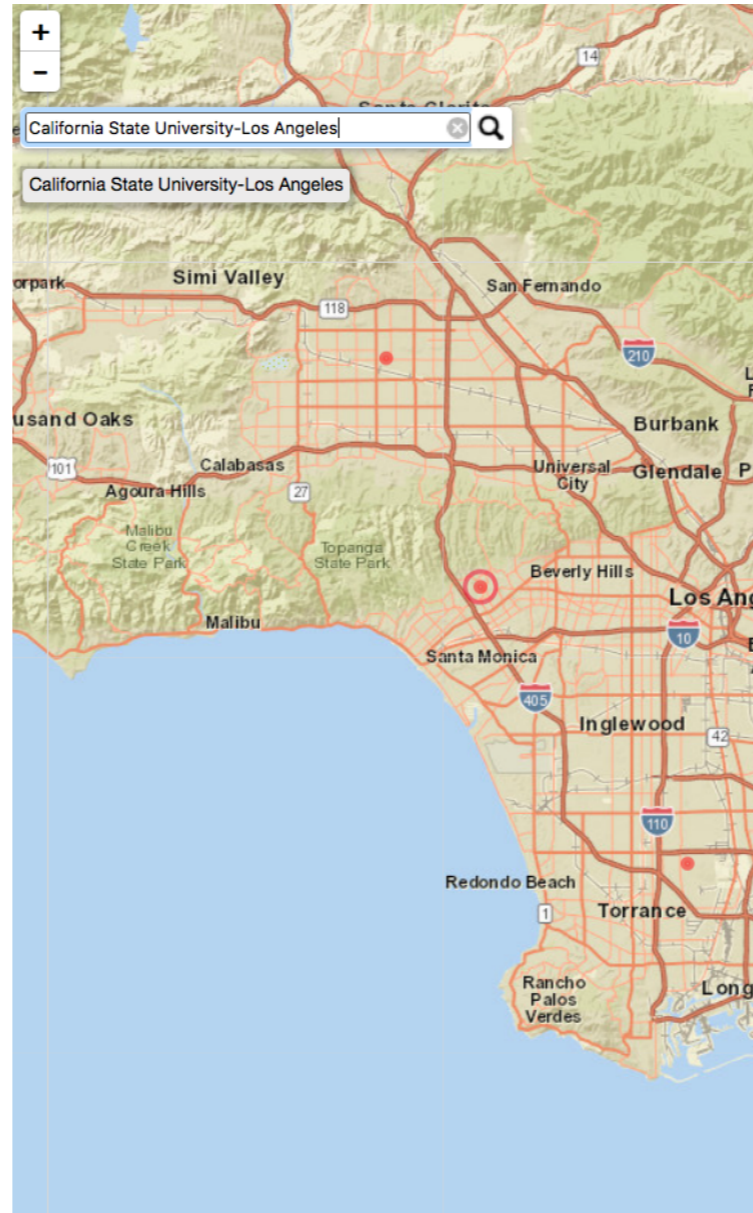
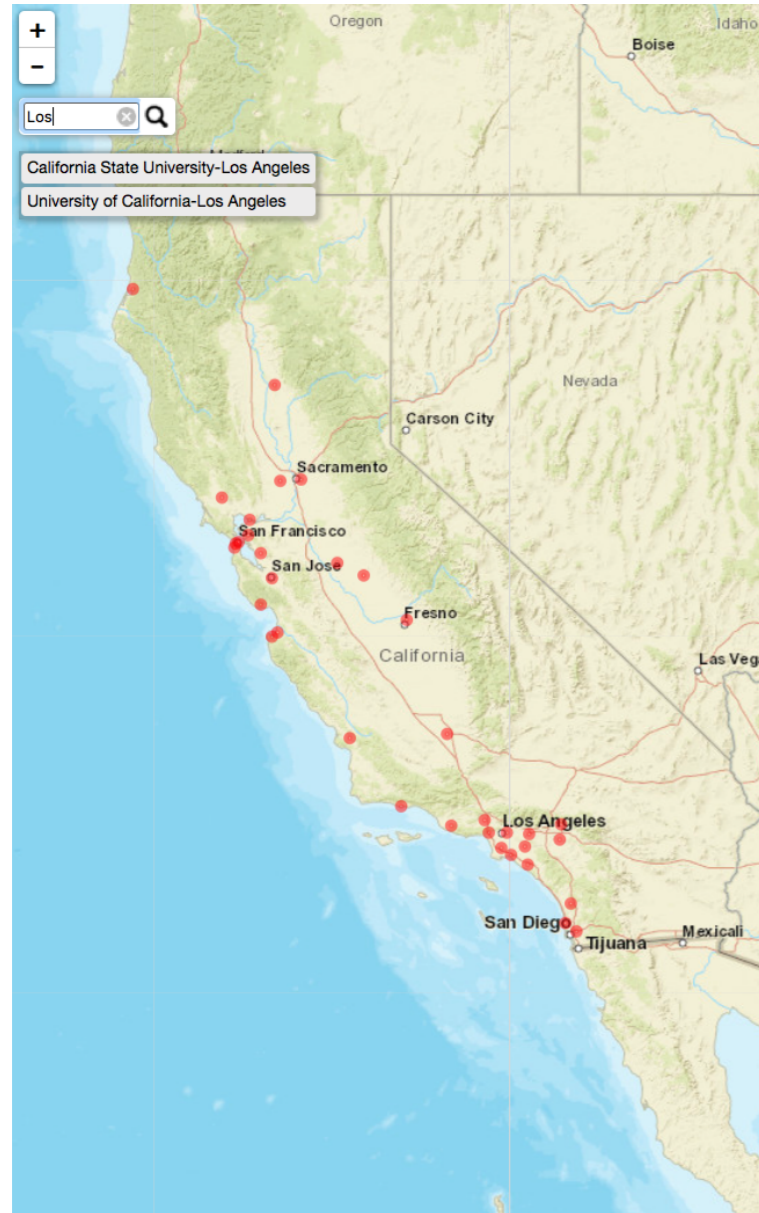
The College Search

```
ca_public <- ipeds %>%
  filter(sector_label == "Public", state == "CA")
ca_public %>%
  leaflet() %>%
  addProviderTiles("Esri") %>%
  addCircleMarkers(radius = 2,
                  label = ~htmlEscape(name),
                  color = ~pal(sector_label),
                  group = "Public") %>%
  addSearchFeatures(targetGroups = 'Public',
                   options = searchFeaturesOptions(zoom = 10))
```

```
# search for markers
```

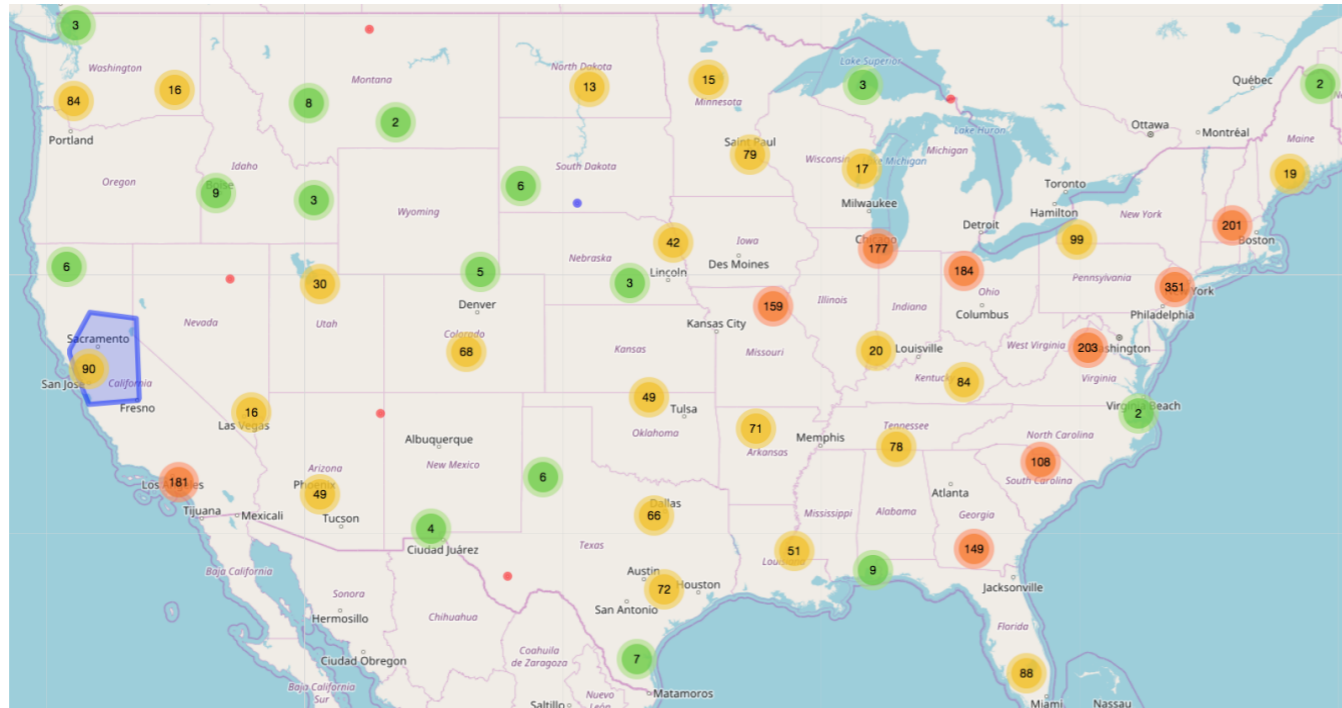
```
addSearchFeatures(  
  targetGroups = 'Public')
```

```
addSearchFeatures(options =  
  searchFeaturesOptions(zoom = 10),  
  targetGroups = 'Public')
```



Clustering Colleges

```
ipeds %>%  
  leaflet() %>%  
    addTiles() %>%  
    addCircleMarkers(radius = 2,  
                    color = ~pal(sector_label),  
                    clusterOptions = markerClusterOptions())
```



Clustering Colleges



Let's practice!

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