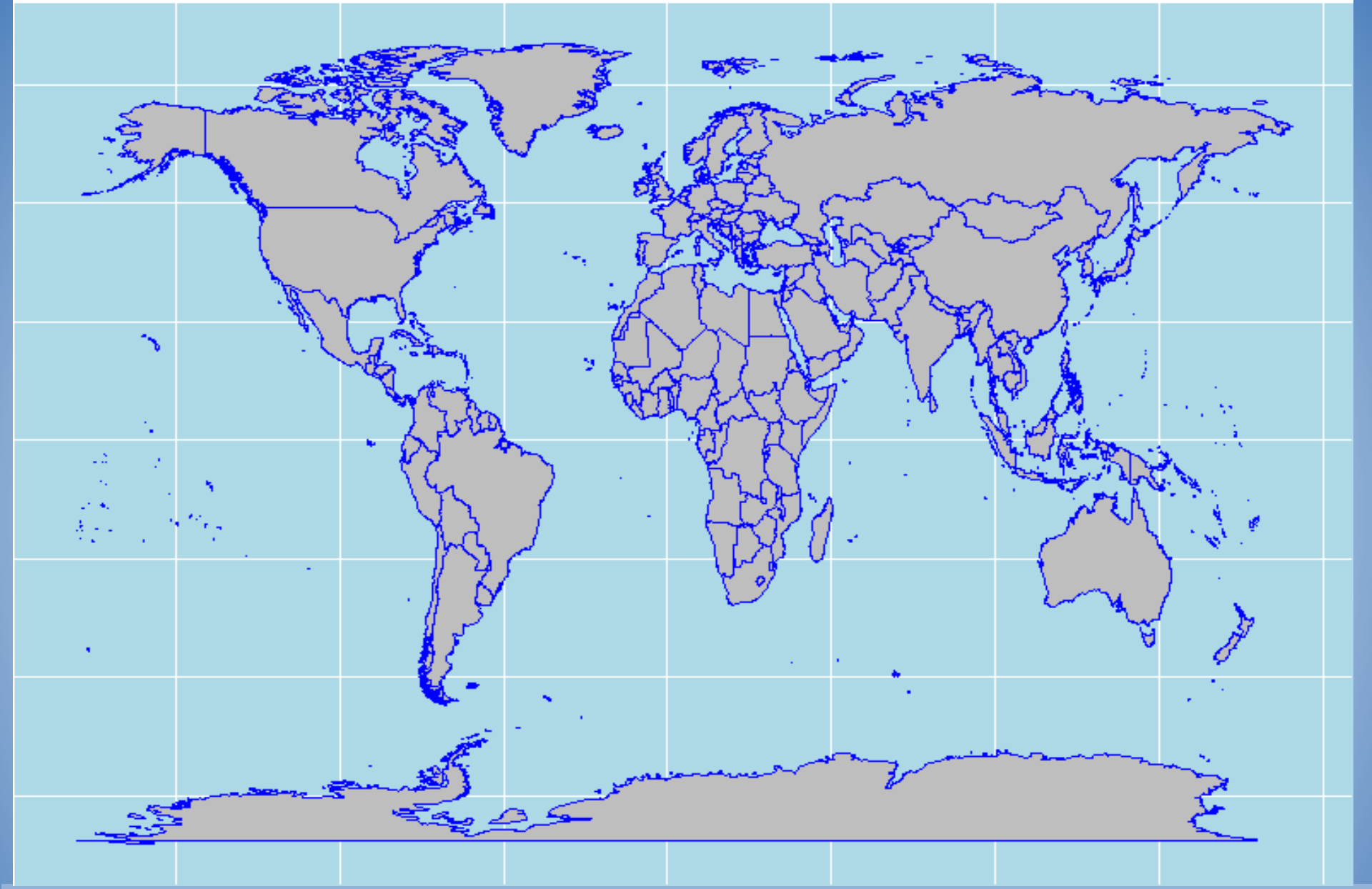


Geo-spatial Data Visualization

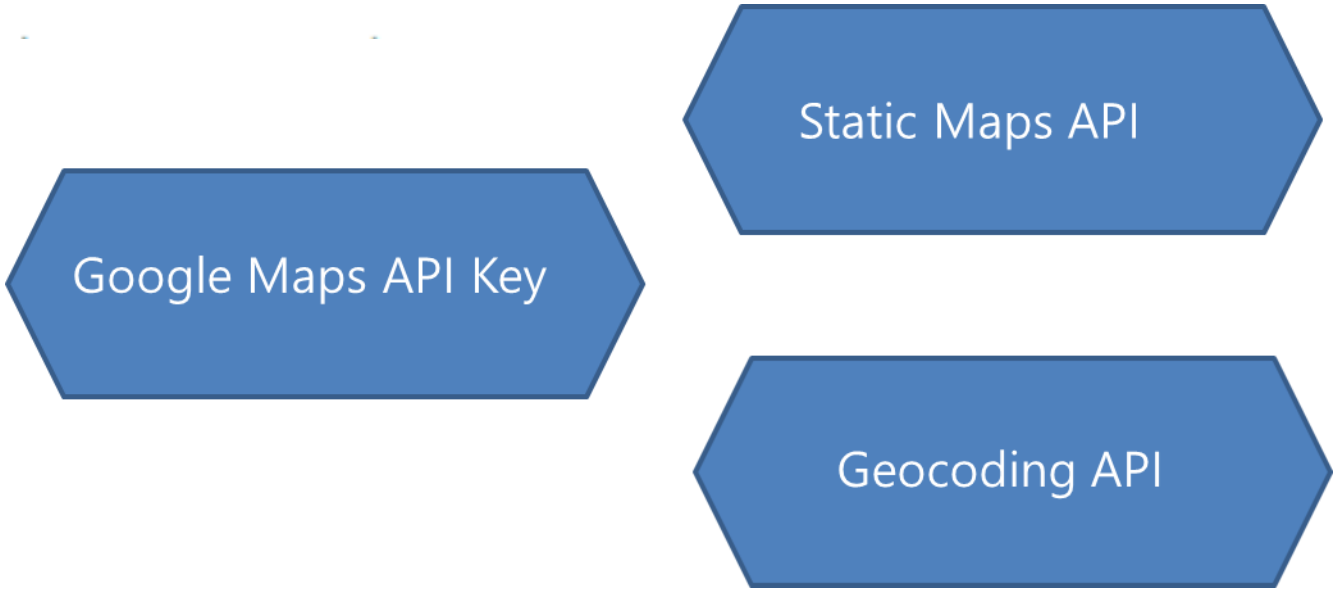
NATASHA SING

DERIVCO

Exploring the interest of veganism

GGMAP + GGPLOT2 = Powerful Combination

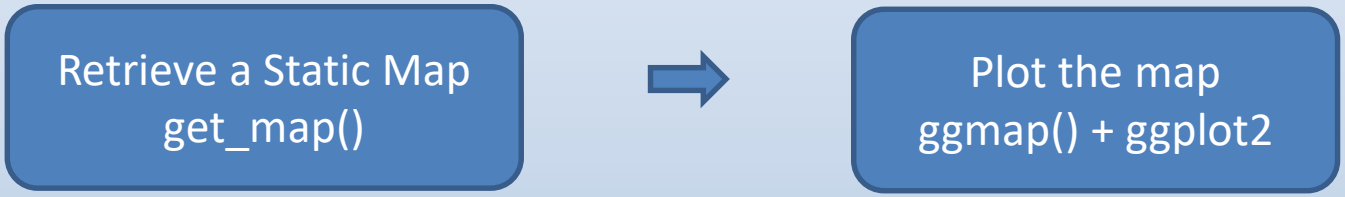
```
library(tidyr)
library(ggplot2)
library(ggmap)
library(plotly)

#Register your unique Google API Key
register_google(key="AIzaSyBweXKGlOuNTBIJd3e8XNiFBEeV7OUeuYA")
```



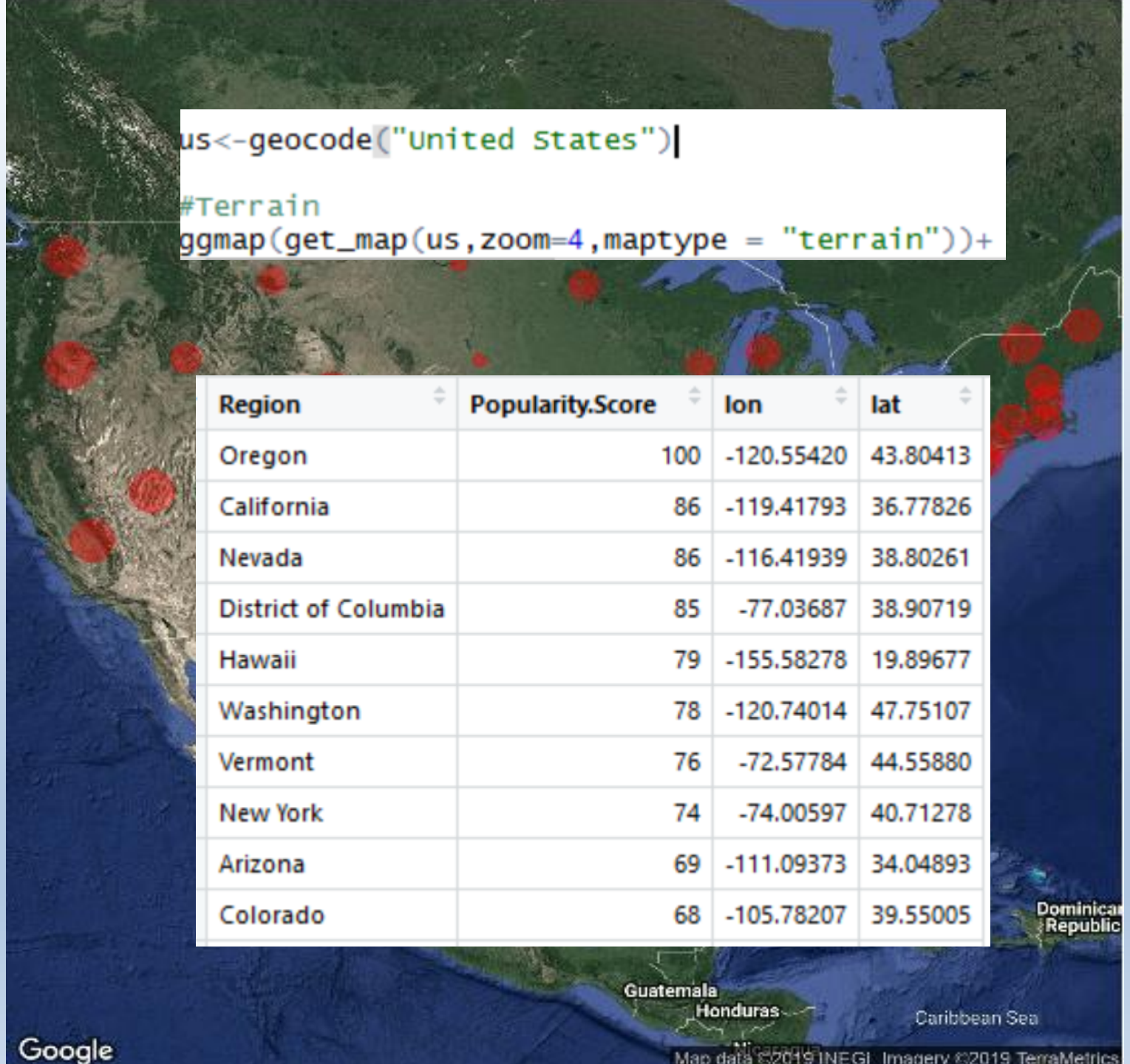
hhtps://console.developers.googlemapsapi/dashboard
https://developers.google.com/maps/documentation/embed/get-api-key

Plotting a map with library GGMAP

The Process



geocode()
get_map()
qmap()
get_googlemap()
ggmap()

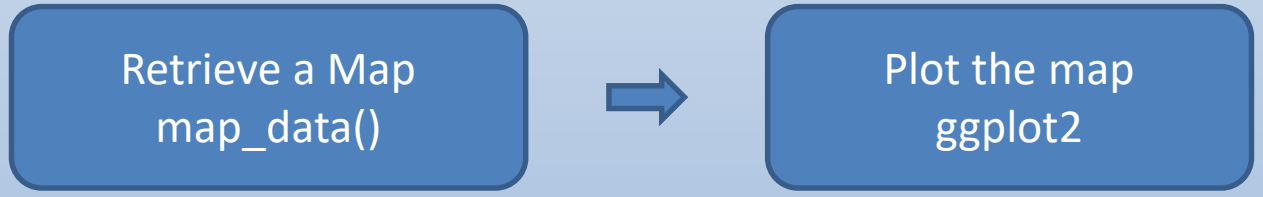


Region	Popularity.Score	lon	lat
Oregon	100	-120.55420	43.80413
California	86	-119.41793	36.77826
Nevada	86	-116.41939	38.80261
District of Columbia	85	-77.03687	38.90719
Hawaii	79	-155.58278	19.89677
Washington	78	-120.74014	47.75107
Vermont	76	-72.57784	44.55880
New York	74	-74.00597	40.71278
Arizona	69	-111.09373	34.04893
Colorado	68	-105.78207	39.55005

Plotting a map with library GGPLOT2

- **map_data() -** defines boundaries of countries, states and cities
- **geom_polygon ()** – plot the geometries of the borders
- Color each polygon with a fill

The Process



Creating a Chloropleth map using GGPLOT2

Merged data

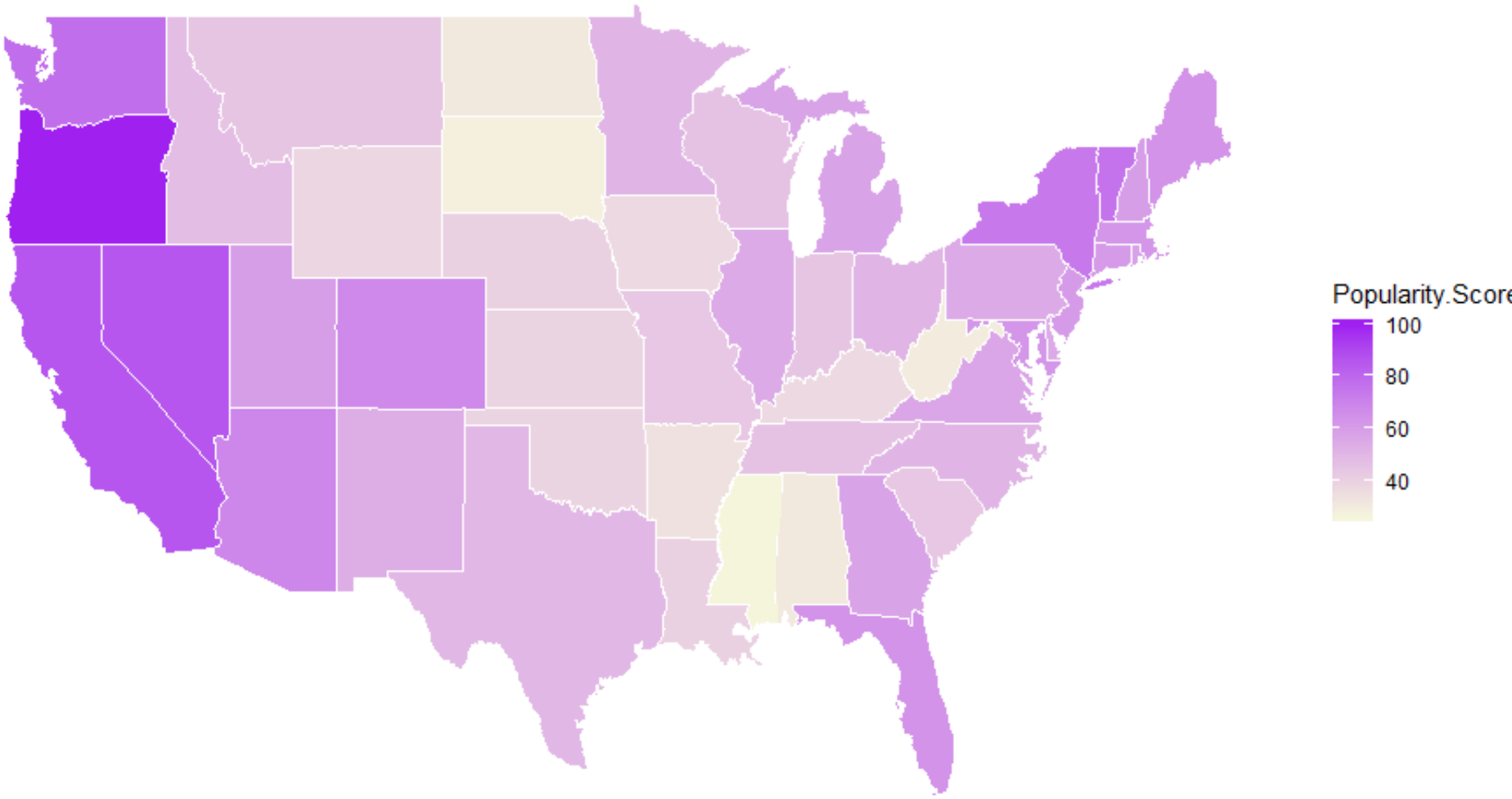
Filter

	region	long	lat	group	order	subregion	Popularity.Score
1	alabama	-87.46201	30.38968	1	1	NA	31
2	alabama	-87.48493	30.37249	1	2	NA	31
3	alabama	-87.52503	30.37249	1	3	NA	31
4	alabama	-87.53076	30.33239	1	4	NA	31
5	alabama	-87.57087	30.32665	1	5	NA	31
6	alabama	-87.58806	30.32665	1	6	NA	31
7	alabama	-87.59379	30.30947	1	7	NA	31

```
plot<-ggplot(data=data) +
  ggtitle("Google search interest on the word 'vegan' in US",subtitle="Data Source:Google
  geom_polygon(mapping=aes(x=long,y=lat,group=group,fill=Popularity.Score,label=region))+
  theme(axis.ticks=element_blank()
        ,panel.background = element_blank()
        ,axis.title = element_blank()
        ,axis.text=element_blank())+
  scale_fill_gradient(low="beige",high="purple")
```

Google search interest on the word 'vegan' in US

Data Source:Google Trends

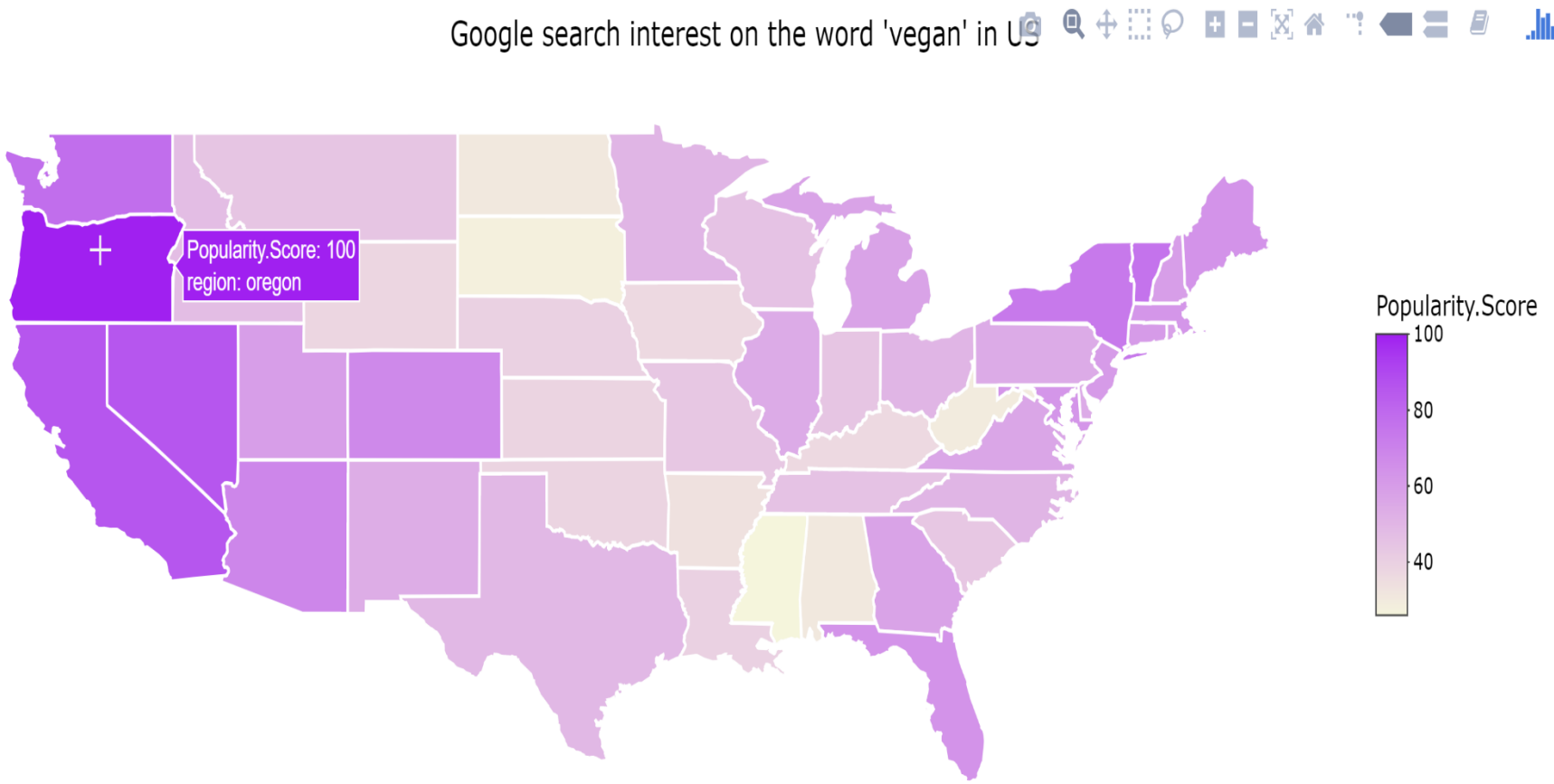


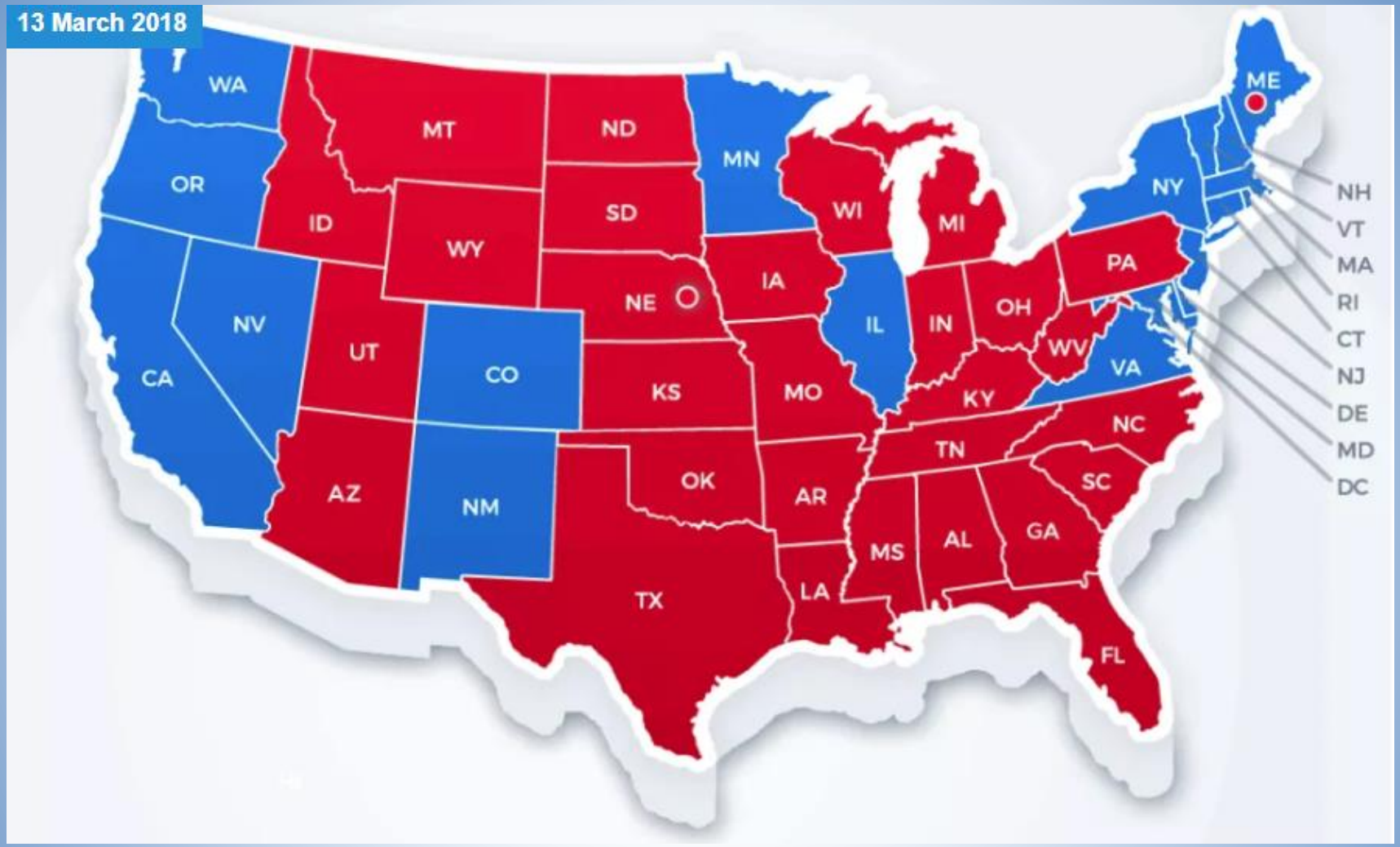
Creating a Chloropleth map using GGPLOT2

Creating an interactive plot

```
#create an interactive map using library plotly
plot<-ggplotly(plot)
```

http://rpubs.com/natashasing/482496




13 March 2018
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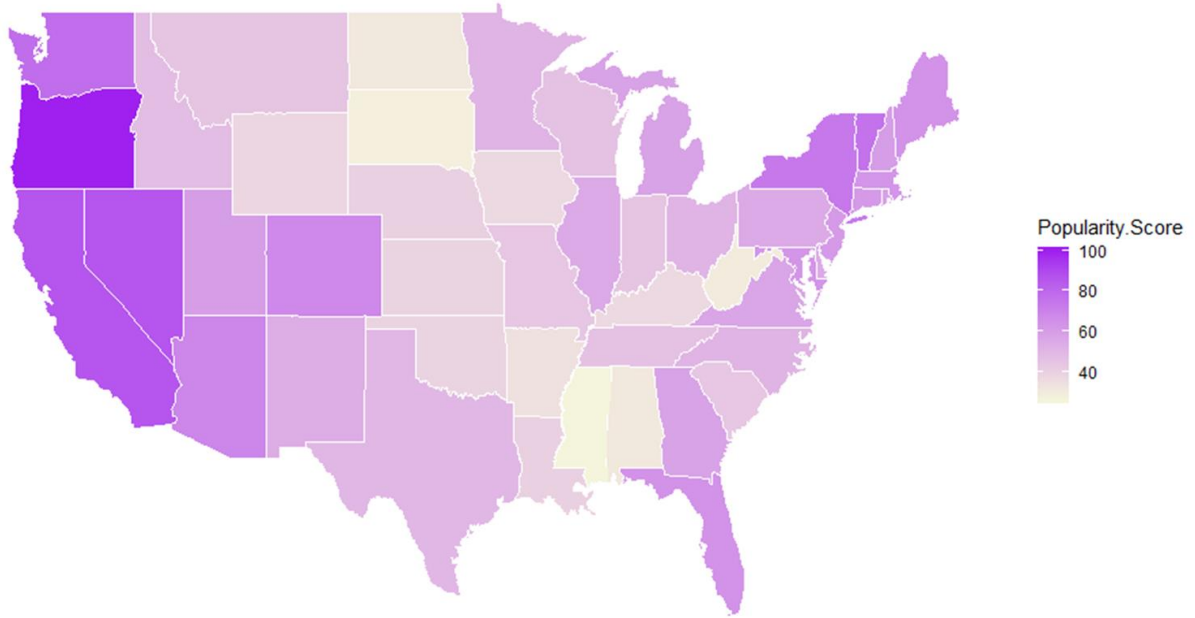
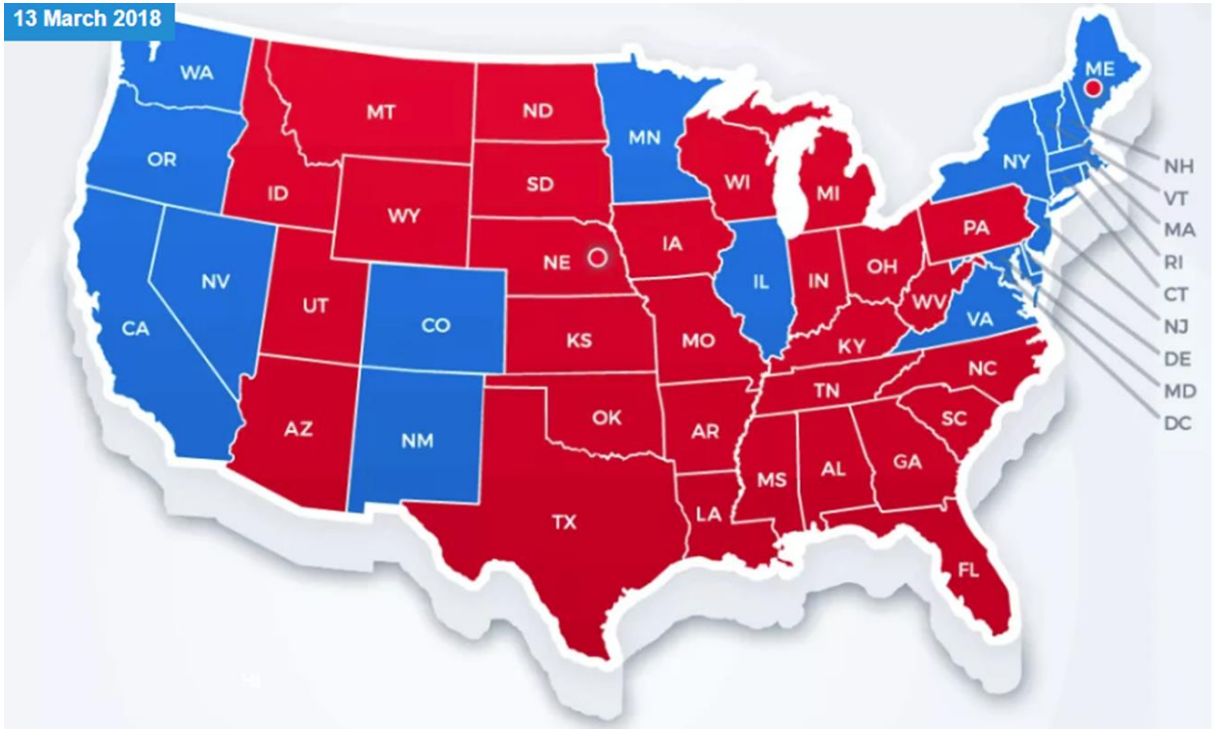
RI
CT
NJ
DE
MD
DC

Google search interest on the word 'vegan' in US

Data Source:Google Trends





Trump

Pumpkin

RISE OF THE VEGAN