

PresentationShiny

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```
library(gapminder)

## Warning: package 'gapminder' was built under R version 3.4.2

library(tibble)
library(stringr)
library(lubridate)

##
## Attaching package: 'lubridate'
## The following object is masked from 'package:base':
##
##      date

library(knitr)
library(forcats)
library(readxl)
library(tidyverse)

## Loading tidyverse: ggplot2
## Loading tidyverse: tidyr
## Loading tidyverse: readr
## Loading tidyverse: purrr
## Loading tidyverse: dplyr

## Warning: package 'tidyr' was built under R version 3.4.3
## Warning: package 'dplyr' was built under R version 3.4.2

## Conflicts with tidy packages -----
## as.difftime(): lubridate, base
## date():        lubridate, base
## filter():      dplyr, stats
## intersect():   lubridate, base
## lag():         dplyr, stats
## setdiff():     lubridate, base
## union():       lubridate, base

library(dplyr)
library(devtools)

## Warning: package 'devtools' was built under R version 3.4.3

library(pacman)
if(!file.exists("./data")) {dir.create("./data")}

# Import of Data and cleaning up of the Data
TourismData <- "http://api.worldbank.org/v2/en/indicator/ST.INT.ARVL?downloadformat=excel"
download.file(TourismData, destfile = "./data/tmp.xls", mode = "wb")
TourismData <- read_excel("./data/tmp.xls")
```



```
## # A tibble: 4 x 6
##       country year1995 year2000 year2005 year2010 year2016
##       <chr>      <dbl>      <dbl>      <dbl>      <dbl>      <dbl>
## 1   Bahamas, The 1598000  1544000  1608000  1370000  1482000
## 2      France 60033000 77190000 74988000 76647000 82570000
## 3 Syrian Arab Republic 815000  2100000  3571000  8546000      NA
## 4      Ukraine 3716000  6431000 17631000 21203000 13333000
```

```
MostVisited <- TourismData1 %>%
select(country,year2016) %>%
  arrange(desc(year2016))
print(MostVisited, n=218)
```

```
## # A tibble: 218 x 2
##       country      year2016
##       <chr>      <dbl>
## 1   World 1244960000
## 2 European Union 482410000
## 3   France 82570000
## 4 United States 75608000
## 5   Spain 75315000
## 6   China 59270000
## 7   Italy 52372000
## 8 United Kingdom 35814000
## 9   Germany 35555000
## 10  Mexico 35079000
## 11 Thailand 32530000
## 12 Turkey 30289000
## 13 Austria 28121000
## 14 Malaysia 26757000
## 15 Hong Kong SAR, China 26553000
## 16 Greece 24799000
## 17 Russian Federation 24571000
## 18 Japan 24040000
## 19 South Asia 21293000
## 20 Canada 19824000
## 21 Saudi Arabia 18049000
## 22 Poland 17471000
## 23 Korea, Rep. 17242000
## 24 Netherlands 15828000
## 25 Macao SAR, China 15703600
## 26 India 14569000
## 27 Croatia 13809000
## 28 Ukraine 13333000
## 29 Singapore 12914000
## 30 Indonesia 11519000
## 31 Portugal 11223000
## 32 Denmark 10781000
## 33 Morocco 10332000
## 34 Romania 10223000
## 35 Bahrain 10158000
## 36 Ireland 10100000
## 37 South Africa 10044000
## 38 Vietnam 10013000
## 39 Belarus 9423500
```

##	40	Czech Republic	9321000
##	41	Switzerland	9205000
##	42	Australia	8263000
##	43	Bulgaria	8252000
##	44	Belgium	7481000
##	45	Sweden	6782000
##	46	Brazil	6578000
##	47	Kazakhstan	6509000
##	48	Georgia	6361000
##	49	Philippines	5967000
##	50	Norway	5960000
##	51	Dominican Republic	5959300
##	52	Tunisia	5724000
##	53	Chile	5641000
##	54	Argentina	5559000
##	55	Hungary	5302000
##	56	Egypt, Arab Rep.	5258000
##	57	Cambodia	5012000
##	58	Iran, Islamic Rep.	4942000
##	59	Albania	4070000
##	60	Cuba	3968000
##	61	Jordan	3858000
##	62	Peru	3744000
##	63	Puerto Rico	3736000
##	64	New Zealand	3370000
##	65	Colombia	3317000
##	66	Lao PDR	3315000
##	67	Cyprus	3187000
##	68	Estonia	3147000
##	69	Uruguay	3037000
##	70	Slovenia	3032000
##	71	Qatar	2938200
##	72	Kyrgyz Republic	2930000
##	73	Costa Rica	2925000
##	74	Myanmar	2907000
##	75	Israel	2900000
##	76	Andorra	2831000
##	77	Finland	2789000
##	78	Lithuania	2296000
##	79	Oman	2292000
##	80	Jamaica	2182000
##	81	Zimbabwe	2168000
##	82	Sri Lanka	2051000
##	83	Azerbaijan	2044000
##	84	Algeria	2039000
##	85	Slovak Republic	2027000
##	86	Panama	2007000
##	87	Malta	1966000
##	88	Guatemala	1906000
##	89	Nigeria	1889000
##	90	Latvia	1793000
##	91	Iceland	1792000
##	92	Lebanon	1688000
##	93	Montenegro	1662000

##	94	Mozambique	1639000
##	95	Cote d'Ivoire	1583000
##	96	Guam	1535000
##	97	Nicaragua	1504000
##	98	Bahamas, The	1482000
##	99	Namibia	1469000
##	100	El Salvador	1434000
##	101	Ecuador	1418000
##	102	Uganda	1323000
##	103	Paraguay	1308000
##	104	Maldives	1286000
##	105	Serbia	1281000
##	106	Mauritius	1275000
##	107	Kenya	1268000
##	108	Armenia	1260000
##	109	Tanzania	1233000
##	110	Lesotho	1196000
##	111	Luxembourg	1054000
##	112	Bolivia	959000
##	113	Zambia	956000
##	114	Swaziland	947000
##	115	Rwanda	932000
##	116	Ethiopia	871000
##	117	Malawi	849000
##	118	Fiji	792000
##	119	Bosnia and Herzegovina	777000
##	120	Nepal	753000
##	121	Barbados	632000
##	122	Venezuela, RB	601000
##	123	Cabo Verde	598000
##	124	Northern Mariana Islands	531000
##	125	Sint Maarten (Dutch part)	528000
##	126	Macedonia, FYR	510000
##	127	Turks and Caicos Islands	454000
##	128	Curacao	441000
##	129	Trinidad and Tobago	410000
##	130	British Virgin Islands	408000
##	131	Mongolia	404000
##	132	West Bank and Gaza	400000
##	133	Angola	397000
##	134	Belize	386000
##	135	Cayman Islands	385000
##	136	St. Lucia	348000
##	137	Togo	338000
##	138	Monaco	336000
##	139	Seychelles	303000
##	140	Madagascar	293000
##	141	Benin	267000
##	142	Antigua and Barbuda	265000
##	143	Suriname	256000
##	144	Bermuda	244000
##	145	Guyana	235000
##	146	Congo, Rep.	224000
##	147	Brunei Darussalam	219000

## 148	Bhutan	210000
## 149	French Polynesia	192000
## 150	Burundi	187000
## 151	Mali	173200
## 152	Gambia, The	161000
## 153	Grenada	156000
## 154	Burkina Faso	152000
## 155	Niger	152000
## 156	Eritrea	142000
## 157	Palau	138000
## 158	Samoa	134000
## 159	Moldova	121000
## 160	New Caledonia	116000
## 161	Vanuatu	95100
## 162	St. Vincent and the Grenadines	79000
## 163	Dominica	78000
## 164	Timor-Leste	66000
## 165	Liechtenstein	60000
## 166	San Marino	60000
## 167	Tonga	59100
## 168	Sierra Leone	55000
## 169	Micronesia, Fed. Sts.	29600
## 170	Sao Tome and Principe	29000
## 171	Comoros	26800
## 172	Solomon Islands	23200
## 173	American Samoa	20100
## 174	Marshall Islands	9800
## 175	Kiribati	5700
## 176	Tuvalu	2500
## 177	Afghanistan	NA
## 178	United Arab Emirates	NA
## 179	Bangladesh	NA
## 180	Botswana	NA
## 181	Central African Republic	NA
## 182	Cameroon	NA
## 183	Congo, Dem. Rep.	NA
## 184	Djibouti	NA
## 185	Faroe Islands	NA
## 186	Gabon	NA
## 187	Ghana	NA
## 188	Gibraltar	NA
## 189	Guinea	NA
## 190	Guinea-Bissau	NA
## 191	Equatorial Guinea	NA
## 192	Greenland	NA
## 193	Honduras	NA
## 194	Haiti	NA
## 195	Isle of Man	NA
## 196	Iraq	NA
## 197	St. Kitts and Nevis	NA
## 198	Kuwait	NA
## 199	Liberia	NA
## 200	Libya	NA
## 201	St. Martin (French part)	NA

```
## 202                Mauritania          NA
## 203                Nauru                NA
## 204                Pakistan             NA
## 205                Papua New Guinea     NA
## 206                Korea, Dem. People's Rep. NA
## 207                Sudan               NA
## 208                Senegal              NA
## 209                Somalia              NA
## 210                South Sudan          NA
## 211                Syrian Arab Republic NA
## 212                Chad                NA
## 213                Tajikistan           NA
## 214                Turkmenistan         NA
## 215                Uzbekistan          NA
## 216                Virgin Islands (U.S.) NA
## 217                Kosovo              NA
## 218                Yemen, Rep.          NA
```

```
Graph <- TourismData1 %>%
  select(country, year2016) %>%
  arrange(desc(year2016)) %>%
  group_by(year2016)
```

```
LeastVisited <- TourismData1 %>%
  select(country, year2016) %>%
  arrange(year2016)
  print(LeastVisited, n=10)
```

```
## # A tibble: 218 x 2
##       country year2016
##       <chr>    <dbl>
## 1      Tuvalu    2500
## 2    Kiribati    5700
## 3 Marshall Islands 9800
## 4 American Samoa 20100
## 5 Solomon Islands 23200
## 6      Comoros   26800
## 7 Sao Tome and Principe 29000
## 8 Micronesia, Fed. Sts. 29600
## 9      Sierra Leone 55000
## 10     Tonga     59100
## # ... with 208 more rows
```

```
HighestOverallIncrease <- TourismData1 %>%
  select(country, year1995, year2016) %>%
  mutate(indec = year2016 - year1995) %>%
  arrange(desc(indec))
  print(HighestOverallIncrease, n=10)
```

```
## # A tibble: 218 x 4
##       country year1995 year2016 indec
##       <chr>    <dbl>    <dbl>  <dbl>
## 1      World 524006000 1244960000 720954000
## 2 European Union 258870000 482410000 223540000
```

```
## 3      Spain 32971000 75315000 42344000
## 4      China 20034000 59270000 39236000
## 5  United States 43318000 75608000 32290000
## 6      Thailand 6952000 32530000 25578000
## 7      Turkey 7083000 30289000 23206000
## 8      France 60033000 82570000 22537000
## 9      Italy 31052000 52372000 21320000
## 10     Germany 14847000 35555000 20708000
## # ... with 208 more rows
```

```
HighestOverallDecrease <- TourismData1 %>%
  select(country, year1995, year2016) %>%
  mutate(indec = year2016 - year1995) %>%
  arrange(indec)
print(HighestOverallDecrease, n=10)
```

```
## # A tibble: 218 x 4
##       country year1995 year2016   indec
##       <chr>      <dbl>    <dbl>   <dbl>
## 1      Poland 19215000 17471000 -1744000
## 2      Eritrea 315000    142000  -173000
## 3 Northern Mariana Islands 676000    531000  -145000
## 4      Bermuda 387000    244000  -143000
## 5      Bahamas, The 1598000 1482000  -116000
## 6      Venezuela, RB 700000    601000  -99000
## 7      American Samoa 34000     20100  -13900
## 8      Liechtenstein 59000     60000    1000
## 9      Tuvalu    900       2500    1600
## 10     Kiribati   3900     5700    1800
## # ... with 208 more rows
```

#What could be the reason behind this? eg. Venezuela: political/economic crisis in recent years

```
mean(TourismData1$year1995, na.rm=TRUE)
```

```
## [1] 7056151
```

```
mean(TourismData1$year2016, na.rm=TRUE)
```

```
## [1] 16726561
```

```
library(ggmap)
library(maptools)
```

```
## Loading required package: sp
```

```
## Warning: package 'sp' was built under R version 3.4.3
```

```
## Checking rgeos availability: TRUE
```

```
library(maps)
```

```
##
```

```
## Attaching package: 'maps'
```

```
## The following object is masked from 'package:purrr':
```

```
##
```

```
##      map
```



```

visited <- c("USA", "Austria", "Bahamas", "Costa Rica", "Jamaica", "Brazil", "Ireland", "UK", "France", "
ll.visited <- geocode(visited)

## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=USA&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Austria&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Bahamas&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Costa%20Rica&sensor=
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Jamaica&sensor=false
## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Jamaica"
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Brazil&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Ireland&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=UK&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=France&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Spain&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Germany&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Belgium&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Netherlands&sensor=
## Warning: geocode failed with status OVER_QUERY_LIMIT, location =
## "Netherlands"
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Luxemburg&sensor=fa
## Warning: geocode failed with status OVER_QUERY_LIMIT, location =
## "Luxemburg"
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Italy&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Switzerland&sensor=
## Warning: geocode failed with status OVER_QUERY_LIMIT, location =
## "Switzerland"
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Lichtenstein&sensor=
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Denmark&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Sweden&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Czech%20Republic&sen
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Croatia&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Hungary&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Slovenia&sensor=fal
## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Slovenia"
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Slovakia&sensor=fal
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Boasnia%20and%20Her
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Montenegro&sensor=fa
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Albania&sensor=false
## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Albania"
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Bulgaria&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Greece&sensor=false
## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Greece"

```

```

## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Cyprus&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Turkey&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=United%20Arab%20Emir
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Lebanon&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Syria&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Isreal&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Palestine&sensor=fa
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Sri%20Lanka&sensor=f
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Malaysia&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Indonesia&sensor=fal
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Taiwan&sensor=false

## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Taiwan"

## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Singapore&sensor=fal
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Thailand&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Mauritius&sensor=fa
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Kenya&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Tanzania&sensor=fal
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Australia&sensor=fa
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=New%20Zealand&senso
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Fiji&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Malta&sensor=false

## Warning: geocode failed with status OVER_QUERY_LIMIT, location = "Malta"

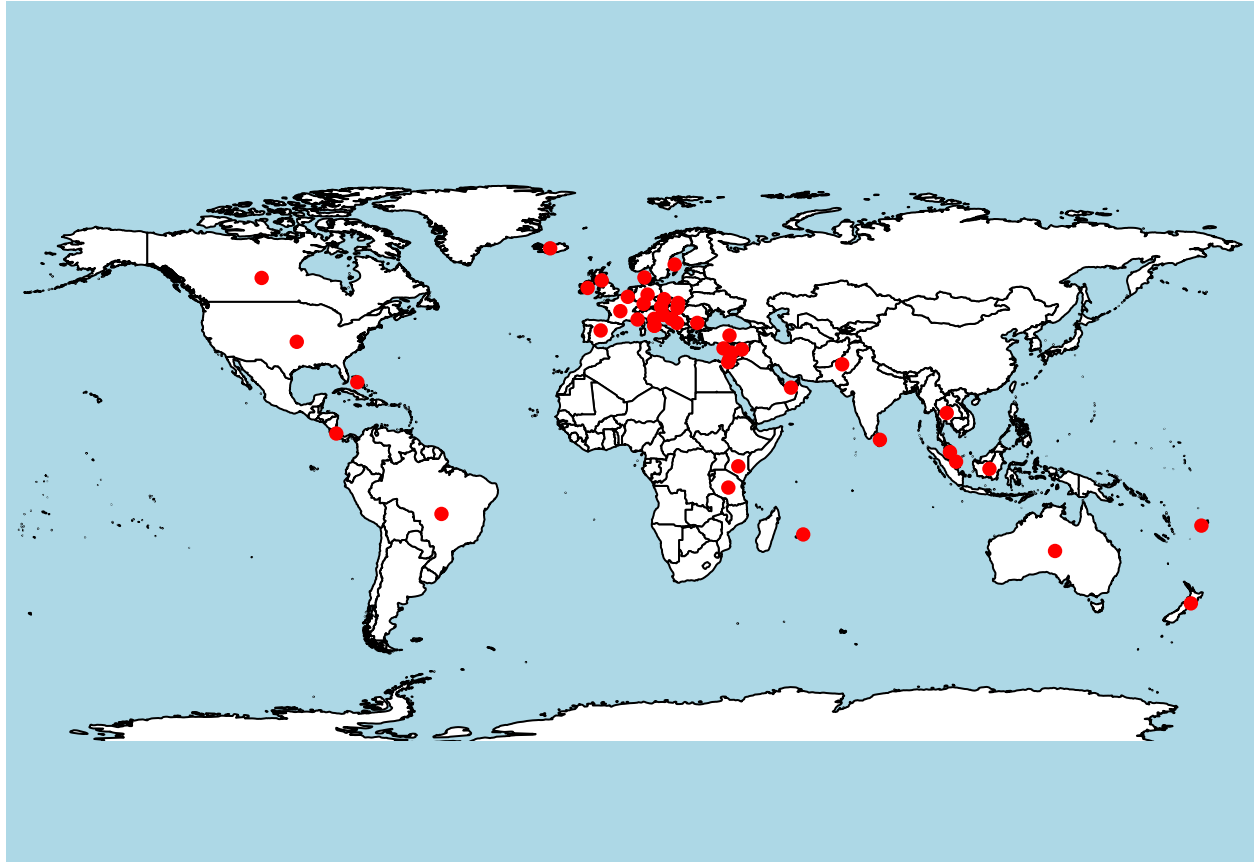
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Vatican%20City&sens
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=%20San%20Marino&sens
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Monaco&sensor=false
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Canada&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Iceland&sensor=false
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Pakistan&sensor=fal

# I created a map with all 55 countries that I have visited so far. The code is from https://www.r-blog
# I am also planning to use the code of the maps for something of the data above. Maybe show the top 10

visit.x <- ll.visited$lon
visit.y <- ll.visited$lat

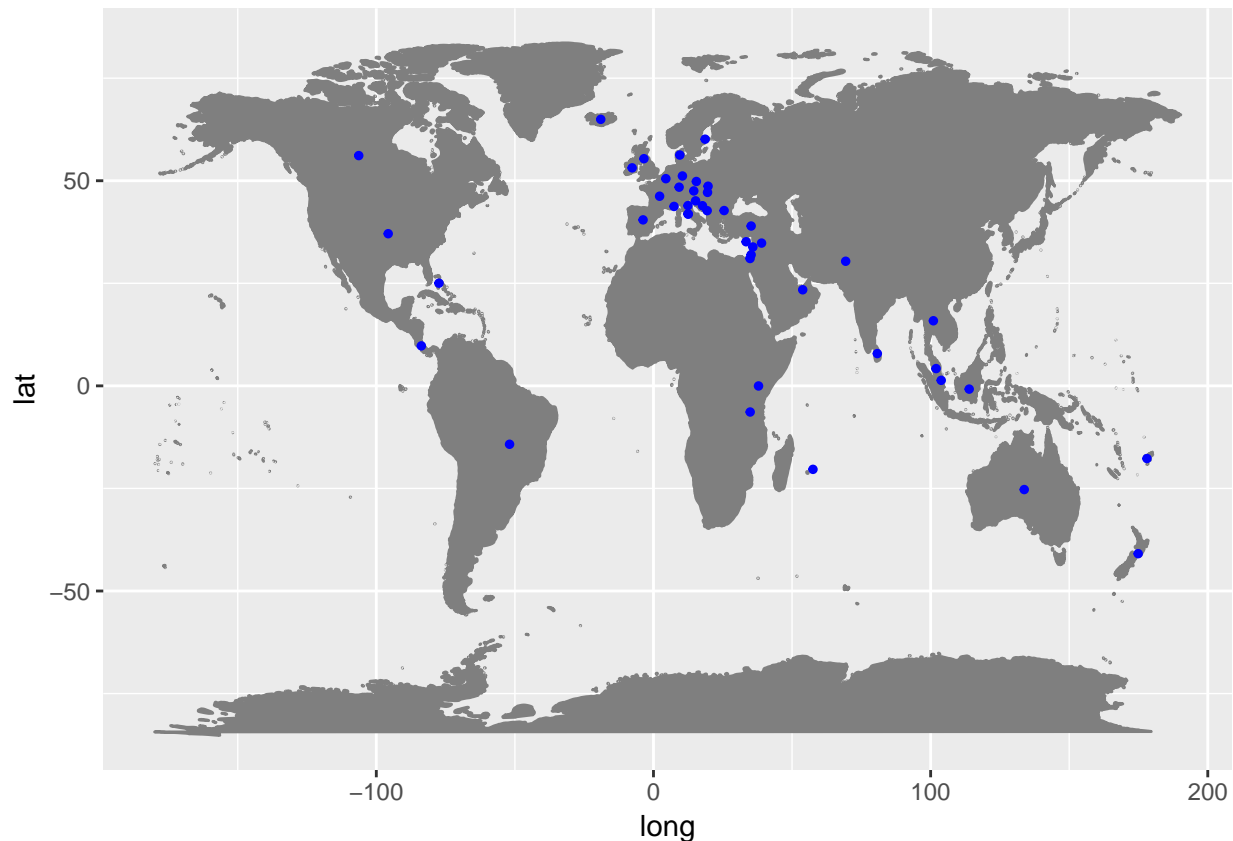
map("world", fill=TRUE, col="white", bg="lightblue", ylim=c(-80, 100), mar=c(0,0,0,0))
points(visit.x,visit.y, col="red", pch=16)

```



```
mp <- NULL
mapWorld <- borders("world", colour="gray50", fill="gray50")
mp <- ggplot() + mapWorld
mp <- mp+ geom_point(aes(x=visit.x, y=visit.y) ,color="blue", size=1)
mp
```

```
## Warning: Removed 9 rows containing missing values (geom_point).
```



#Just an idea: not sure if I will use it in the presentation because I have not completely figured it out

```
Data1 <- select(TourismData, "Data Source", "World Development Indicators", "X__38", "X__39", "X__40",
names(Data1) <- c("country", "country_code", "year1995", "year1996", "year1997", "year1998", "year1999")
Data1 = Data1 [-1:-4,]
```

```
Data1 <- Data1[-c(5, 34, 36, 47, 59, 60, 61, 62, 63, 66, 72, 93, 96, 100, 101, 102, 103, 105, 108, 126, ...
```

```
Data1$year1995 <- as.numeric(Data1$year1995)
Data1$year2000 <- as.numeric(Data1$year2000)
Data1$year2005 <- as.numeric(Data1$year2005)
Data1$year2010 <- as.numeric(Data1$year2010)
Data1$year2016 <- as.numeric(Data1$year2016)
```

```
gap <- gapminder
```

```
das <- gap %>%
  left_join(Data1,
            by = c("country")) %>%
  select(country, country_code, year1997, year2002, year2007, continent, year, lifeExp, pop, gdpPercap) %>%
  rename(visitors = year2007)%>%
  mutate(gdp = pop * gdpPercap) %>%
  filter(year > 1995)
```

```
## Warning: Column `country` joining factor and character vector, coercing
## into character vector
```

```

VisGdp <- das %>%
  select(country, visitors, continent, year, lifeExp, pop, gdpPercap, gdp) %>%
  filter(year == 2007) %>%
  arrange(visitors, gdp)
print(VisGdp, n=5)

```

```

## # A tibble: 142 x 8
##       country visitors continent  year lifeExp      pop gdpPercap
##       <chr>      <chr>      <fctr> <int>  <dbl>    <int>    <dbl>
## 1   Lebanon  1017000      Asia  2007  71.993  3921278 10461.059
## 2   Albania  1062000    Europe  2007  76.423  3600523  5937.030
## 3 Netherlands 11008000    Europe  2007  79.762 16570613 36797.933
## 4    Panama  1103000 Americas  2007  75.537  3242173  9809.186
## 5 Saudi Arabia 11531000      Asia  2007  72.777 27601038 21654.832
## # ... with 137 more rows, and 1 more variables: gdp <dbl>

```