Happy holiday! Remember to take care of yourself and your loved ones!

```
using Pkg
```

```
using Interact
```

```
url =
"https://raw.githubusercontent.com/CSSEGISandData/COVID-19/master/csse_covid_19_data
```

```
url ="https://raw.githubusercontent.com/CSSEGISandData/COVID-
19/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_confi
rmed_global.csv"
```

String

```
typeof(url)
```

"covid_data.csv"

```
download(url, "covid_data.csv")
```

["Fun notes.jl", "Groundbreaking science.jl", "Tiny notebook.jl", "Wonderful notebo

```
readdir()
```

```
using CSV
```

```
using DataFrames
```

	Province/State	Country/Region	Lat	Long	1/2
1	missing	"Afghanistan"	33.9391	67.71	0
2	missing	"Albania"	41.1533	20.1683	0
3	missing	"Algeria"	28.0339	1.6596	0
4	missing	"Andorra"	42.5063	1.5218	0
5	missing	"Angola"	-11.2027	17.8739	0
6	missing	"Antigua and Barbuda"	17.0608	-61.7964	0
7	missing	"Argentina"	-38.4161	-63.6167	0
8	missing	"Armenia"	40.0691	45.0382	0
9	"Australian Capital Territory"	"Australia"	-35.4735	149.012	0
10	"New South Wales"	"Australia"	-33.8688	151.209	0
more					
280	missing	"Zimbabwe"	-19.0154	29.1549	0

```
CSV.read("covid_data.csv", DataFrame)
```

```
data = CSV.read("covid_data.csv", DataFrame);
```

	Province/State	Country/Region	Lat	Long	1/2
1	missing	"Afghanistan"	33.9391	67.71	0
2	missing	"Albania"	41.1533	20.1683	0
3	missing	"Algeria"	28.0339	1.6596	0
4	missing	"Andorra"	42.5063	1.5218	0
5	missing	"Angola"	-11.2027	17.8739	0
6	missing	"Antigua and Barbuda"	17.0608	-61.7964	0
7	missing	"Argentina"	-38.4161	-63.6167	0
8	missing	"Armenia"	40.0691	45.0382	0
9	"Australian Capital Territory"	"Australia"	-35.4735	149.012	0
10	"New South Wales"	"Australia"	-33.8688	151.209	0
more					
280	missing	"Zimbabwe"	-19.0154	29.1549	0

```
data
```

DataFrame

```
typeof(data)
```

data_2 =

	province	country	Lat	Long	1/2
1	missing	"Afghanistan"	33.9391	67.71	0
2	missing	"Albania"	41.1533	20.1683	0
3	missing	"Algeria"	28.0339	1.6596	0
4	missing	"Andorra"	42.5063	1.5218	0
5	missing	"Angola"	-11.2027	17.8739	0
6	missing	"Antigua and Barbuda"	17.0608	-61.7964	0
7	missing	"Argentina"	-38.4161	-63.6167	0
8	missing	"Armenia"	40.0691	45.0382	0
9	"Australian Capital Territory"	"Australia"	-35.4735	149.012	0
10	"New South Wales"	"Australia"	-33.8688	151.209	0
more					
280	missing	"Zimbabwe"	-19.0154	29.1549	0

```
data_2 = rename(data, 1 => "province", 2 => "country" )
```

countries =
["Afghanistan", "Albania", "Algeria", "Andorra", "Angola", "Antigua and Barbuda", "A

```
countries = collect(data[:,2])
```

unique_countries =
["Afghanistan", "Albania", "Algeria", "Andorra", "Angola", "Antigua and Barbuda", "A

```
unique_countries = unique(countries)
```

```
using WebIO
```

```
@manipulate for i in 1:length(countries)
    countries[i]
end
```

(::Base.Fix2{typeof(startswith), String}) (generic function with 1 method)

```
startswith("A")
```

```
A_countries = [startswith(country,"A") for country in countries];
```

	Province/State	Country/Region	Lat	Long	1/22
1	missing	"Afghanistan"	33.9391	67.71	0
2	missing	"Albania"	41.1533	20.1683	0
3	missing	"Algeria"	28.0339	1.6596	0
4	missing	"Andorra"	42.5063	1.5218	0
5	missing	"Angola"	-11.2027	17.8739	0
6	missing	"Antigua and Barbuda"	17.0608	-61.7964	0
7	missing	"Argentina"	-38.4161	-63.6167	0
8	missing	"Armenia"	40.0691	45.0382	0
9	"Australian Capital Territory"	"Australia"	-35.4735	149.012	0
10	"New South Wales"	"Australia"	-33.8688	151.209	0
	more				
18	missing	"Azerbaijan"	40.1431	47.5769	0

```
data[A_countries, :]
```

```
BitVector: [false, false, false, false, false, false, false, false, true, true, true
```

```
countries .== "Australia"
```

```
AUS_row = 9
```

```
AUS_row = findfirst(countries .== "Australia")
```

```
AUS_data_row =
```

DataFrameRow (719 columns)

	Province/State String63	Country/Region String63	Lat Float64?	Long Float64?	1/22/20 Int64	1/23/20 Int64	1/24/20 Int64
9	Australian Capital Territory	Australia	-35.4735	149.012	0	0	0

```
AUS_data_row = data[AUS_row, :]
```

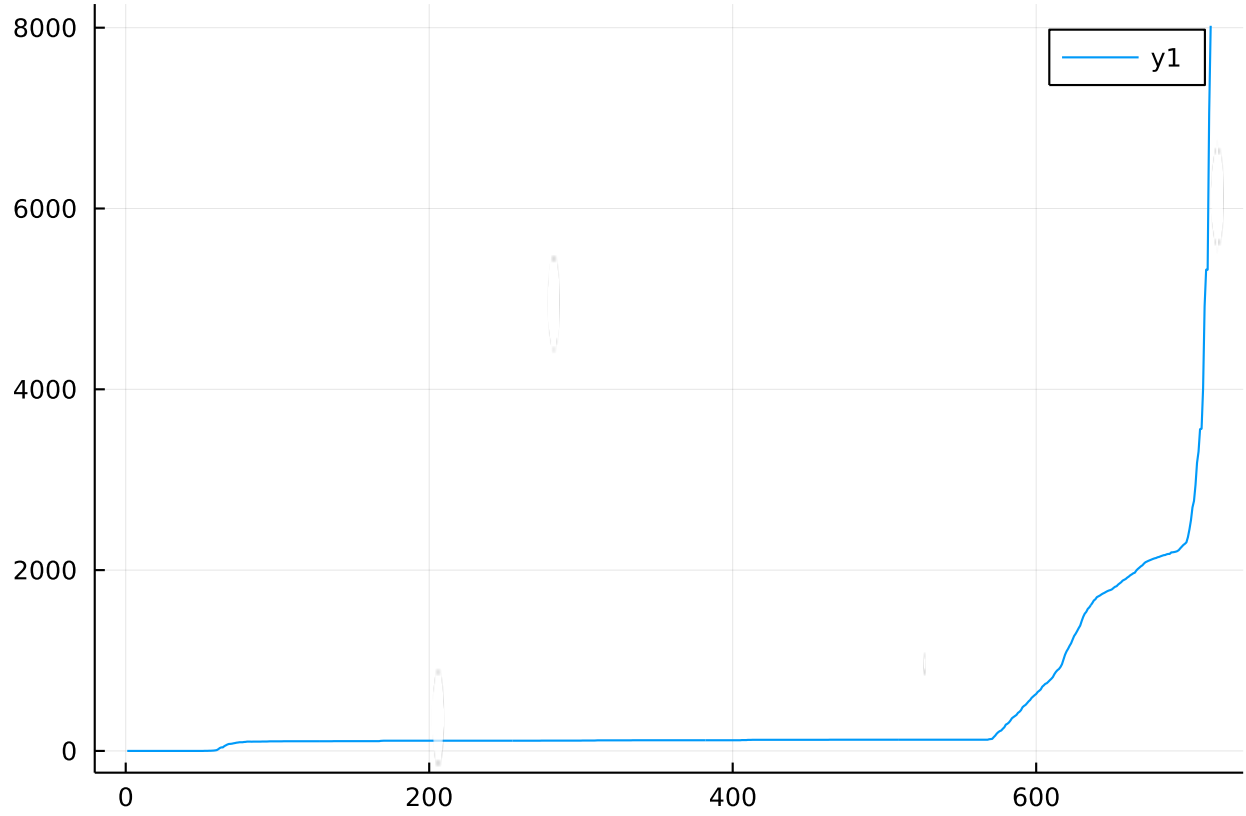
```
AUS_data =
  [0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,    more ,3186, 3311, 3559,
```

```
AUS_data = collect(AUS_data_row[5:end])
```

```
Vector{Int64} (alias for Array{Int64, 1})
```

```
typeof(AUS_data)
```

```
using Plots
```




```
plot(AUS_data)
```

```
date_strings =
  ["1/22/20", "1/23/20", "1/24/20", "1/25/20", "1/26/20", "1/27/20", "1/28/20", "1/29/
```

```
date_strings = String.(names(data))[5:end]
```

```
Vector{String} (alias for Array{String, 1})
```

```
typeof(date_strings)
```

```
using Dates
```

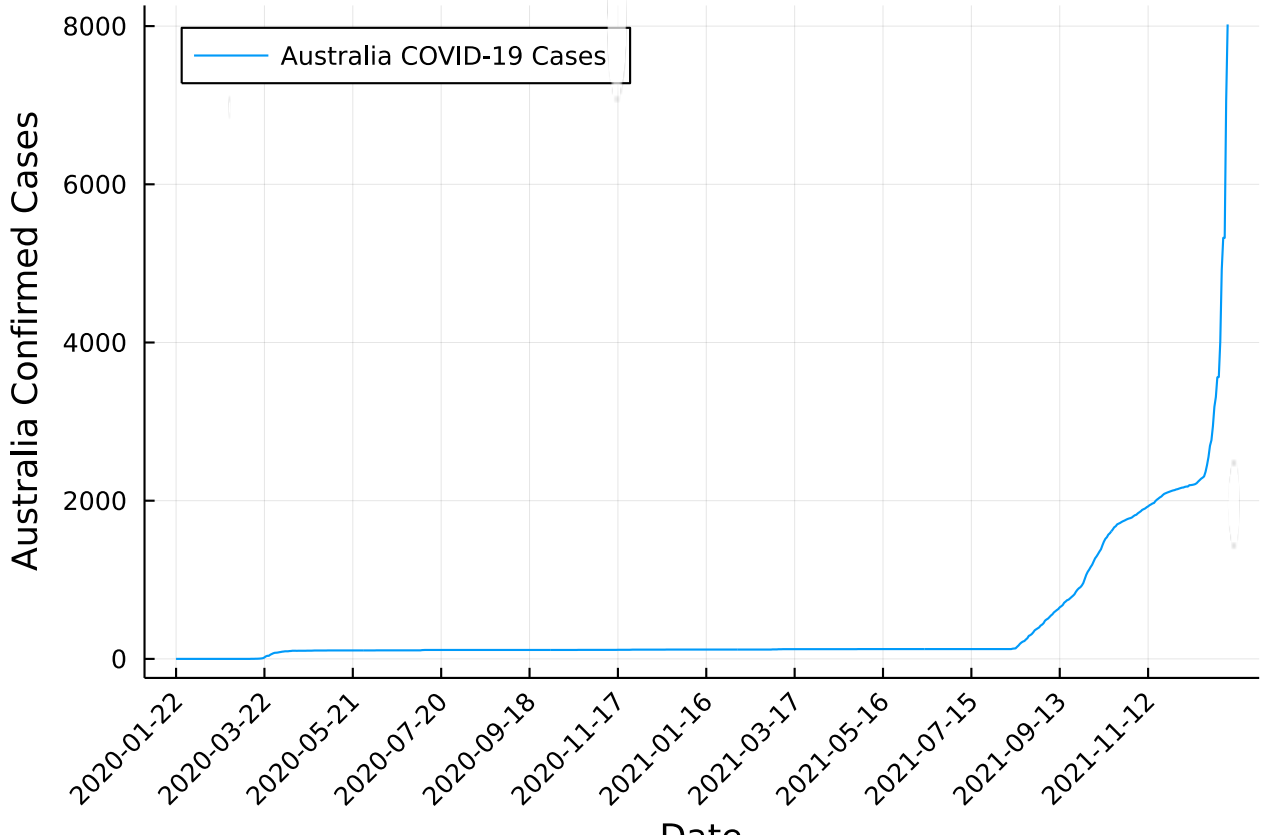
```
format = dateformat"m/d/Y"
```

```
format = Dates.DateFormat("m/d/Y")
```

```
dates = parse.(Date, date_strings, format) + Year(2000);
```

```
plot(dates,AUS_data, xticks=dates[1:60:end], xrotation=45, leg=:topleft,
label="Australia COVID-19 Cases");
```

```
xlabel!("Date");
```




```
ylabel!("Australia Confirmed Cases")
```