

Brian – PS 7 – 2025-02-11 – Solution

EWL3 Sections 18 and 19

Exercises from EWL3 Section 18

```
In[1]:= options = GeoServer → {Automatic, "GlobalTimeout" → 180, "ConnectionRetryCount" → 6};
```

```
In[2]:= (* 18.1 *) GeoDistance[New York City CITY, London CITY]
```

```
Out[2]= 3453.71 mi
```

```
In[3]:= (* 18.2 *) GeoDistance[New York City CITY, London CITY] /
```

```
GeoDistance[New York City CITY, San Francisco CITY]
```

```
Out[3]= 1.35109
```

```
In[4]:= (* 18.3 *) UnitConvert[GeoDistance[Sydney CITY, Moscow CITY], km]
```

```
Out[4]= 14 387. km
```

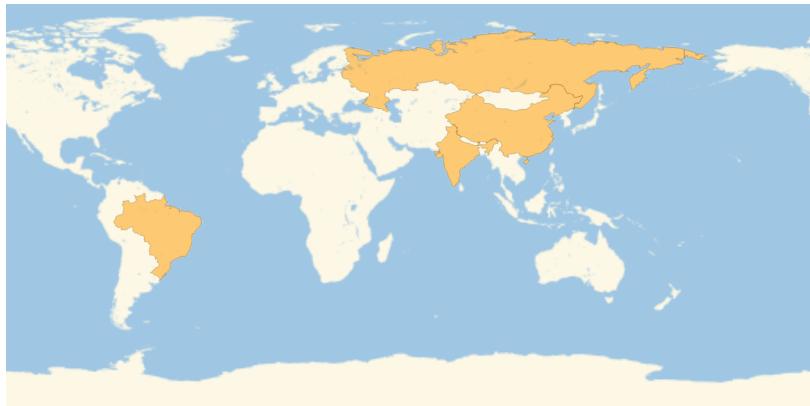
In[•]:= (* 18.4 *) GeoGraphics[Luxembourg COUNTRY, options]

Out[•]=



In[•]:= (* 18.5 *) GeoListPlot[{Brazil COUNTRY, Russia COUNTRY, India COUNTRY, China COUNTRY}]]

Out[•]=



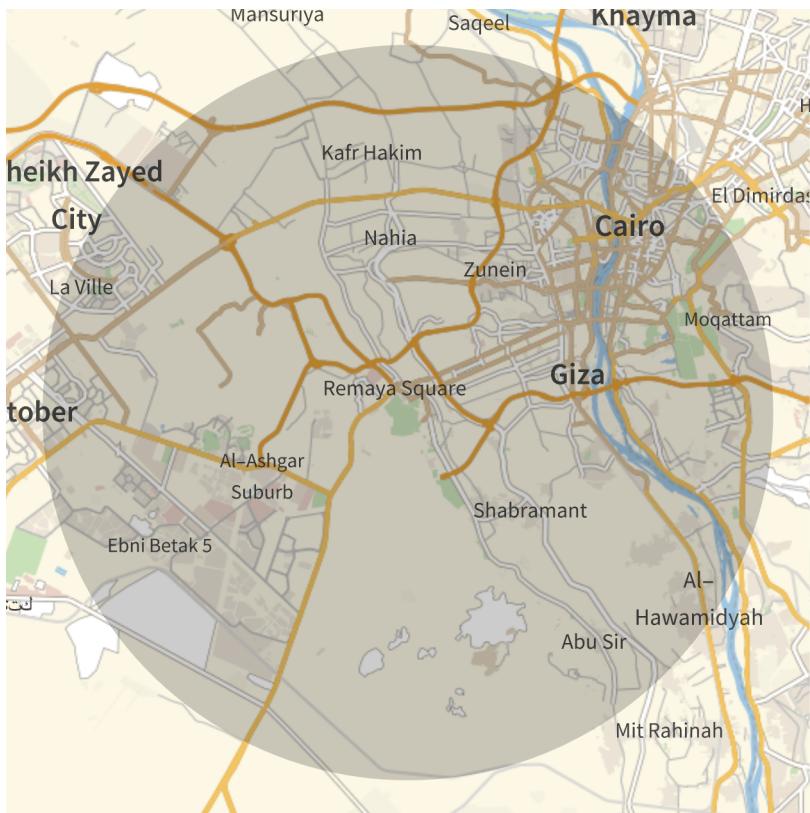
In[•]:= (* 18.6 *) GeoGraphics[GeoPath[{New York City CITY, Boston CITY}], options]

Out[•]=



In[•]:= (* 18.7 *) GeoGraphics[GeoDisk[Great Pyramid of Giza HISTORIC SITE, 10 mi]]

Out[•]=



(* 18.8 *) GeoGraphics[

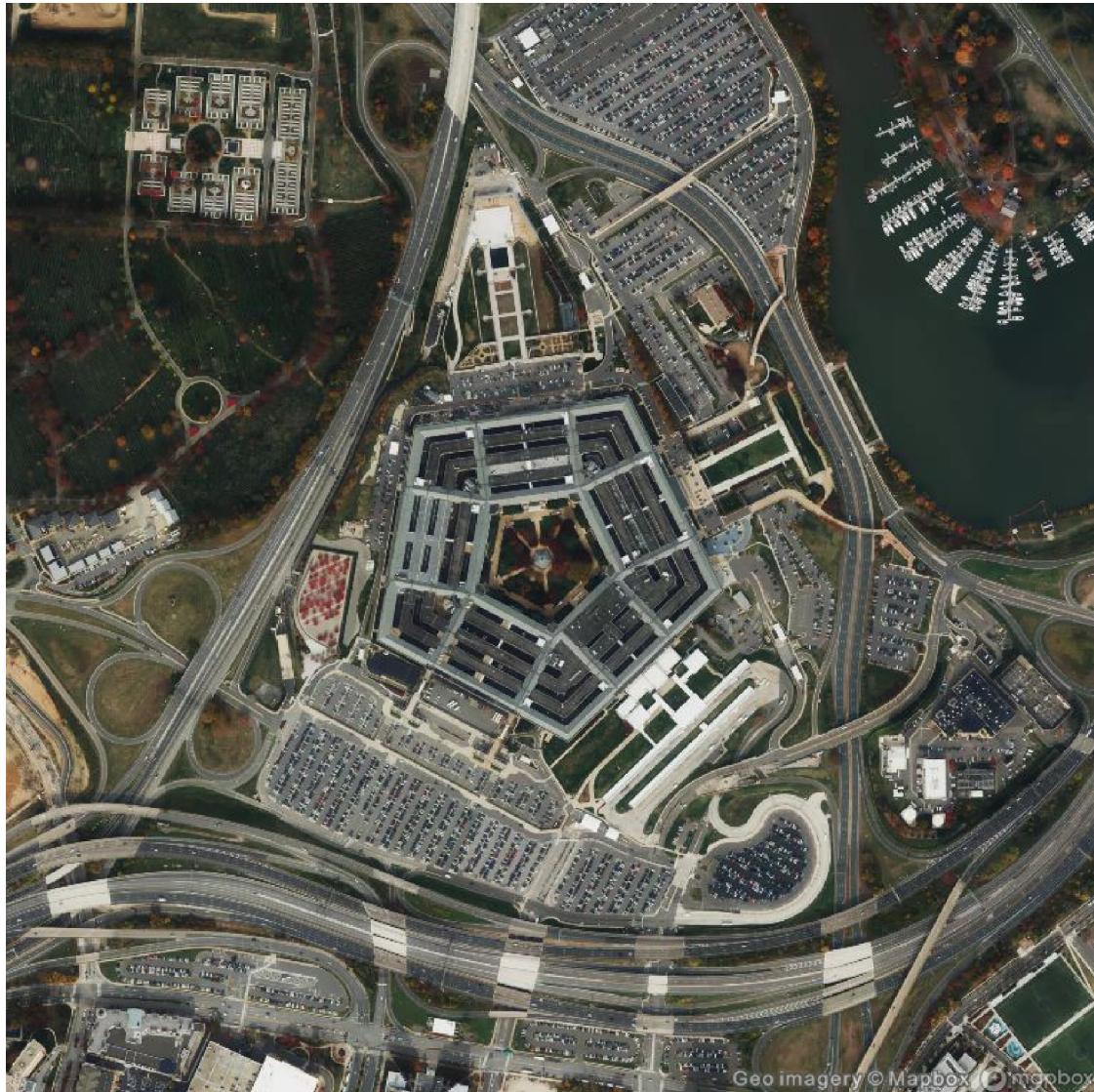
GeoDisk[New York City CITY , GeoDistance[New York City CITY , Amherst CITY]] , options]

Out[•]=



```
In[•]:= (* 18.9 *) GeoImage[GeoDisk["The Pentagon BUILDING", 0.4 mi]]
```

Out[•]=



```
In[•]:= (* 18.10 *) GeoNearest["Country", GeoPosition["NorthPole"], 5]
```

Out[•]=

```
{Greenland, Canada, Russia, Svalbard, United States}
```

```
(* 18.11 *) EntityValue[GeoNearest["Country", GeoPosition[{45, 0}], 3], "Flag"]
```

Out[•]=



```
(* 18.12 *) GeoListPlot[GeoNearest["Volcano", Rome CITY, 25]]
```

Out[•]=



```
In[•]:= (* 18.13 *)
```

```
EntityValue[New York City CITY, "Latitude"] - EntityValue[Los Angeles CITY, "Latitude"]
```

Out[•]=

6.64488°

Exercises from EIWL3 Section 19

```
In[•]:= (* 19.1 *) Today - Mon 1 Jan 1900
```

Out[•]=

45 697 days

```
In[•]:= (* 19.2 *) DayName[Sat 1 Jan 2000]
```

Out[•]=

Saturday

```
(* 19.3 *) Today - 100 000 days
```

Out[•]=

Thu 29 Apr 1751

In[1]:= (* 19.4 *) LocalTime[Delhi CITY]

Out[1]=

Tue 11 Feb 2025 19:47:14 GMT+5.5

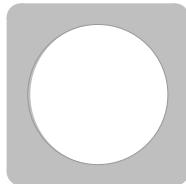
(* 19.5 *) Sunset[Bishop CITY, Today] - Sunrise[Bishop CITY, Today]

Out[2]=

10.7219 h

In[3]:= (* 19.6 *) MoonPhase[Today, "Icon"]

Out[3]=



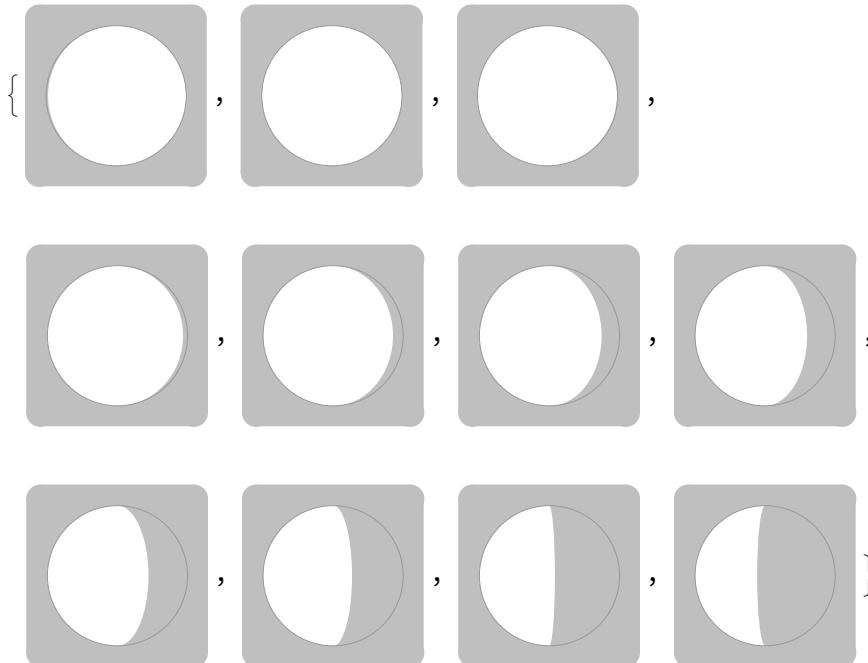
In[4]:= (* 19.7 *) Table[MoonPhase[Today + i days], {i, 10}]

Out[4]=

{0.998647, 0.993907, 0.969673, 0.927894,
0.870882, 0.801093, 0.720987, 0.632977, 0.539487, 0.443082}

(* 19.8 *) Table[MoonPhase[Today + i days, "Icon"], {i, 0, 10}]

Out[5]=



```
(* The next one gave an annoyingly wrong answer until I *)
(* forced it to do something better by changing the date *)
(* for London. Until I did that, it was *)
(* getting tomorrow's sunrise in London, *)
(* because tomorrow's sunrise in London occurs just *)
(* before midnight in California. *)
(* Ptoeey. *)
```

(* 19.9 *)

```
Sunrise[ New York City CITY , Tue 11 Feb 2025 ] - Sunrise[ London CITY , Mon 10 Feb 2025 ]
```

Out[]=

4.54772 h

(* 19.10 *) UnitConvert[Today - Apollo 11 MANNED SPACE MISSION [lunar landing date], yr]

Out[]=

$\frac{278}{5}$ yr

In[]:= (* 19.11 *)

```
yesterdayNoonInFrance = LocalTime[ France COUNTRY , Mon 10 Feb 2025 12:00:00 CET ];
```

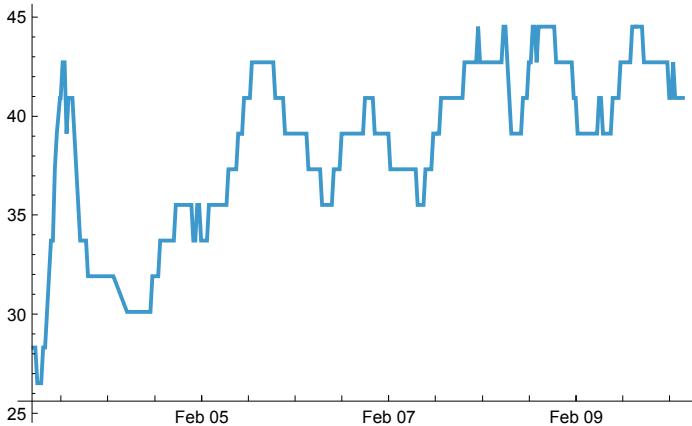
```
AirTemperatureData[ Eiffel Tower BUILDING , yesterdayNoonInFrance ]
```

Out[]=

41. °F

In[]:= (* 19.12 *) ListLinePlot[AirTemperatureData[Eiffel Tower BUILDING ,
{yesterdayNoonInFrance - 7 days , yesterdayNoonInFrance}]]

Out[]=



In[1]:= (* 19.13 *) AirTemperatureData[Los Angeles CITY, Now] -

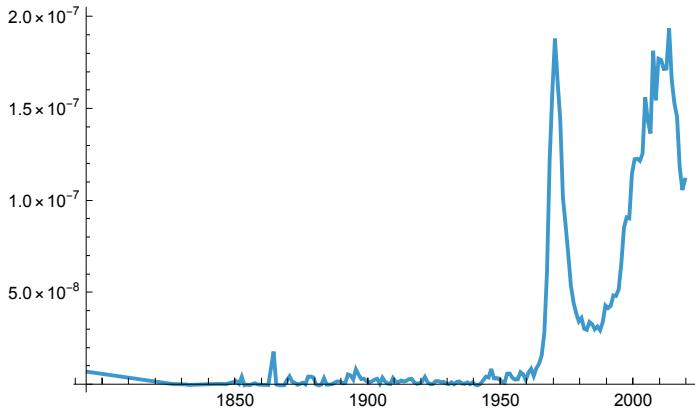
AirTemperatureData[New York City CITY, Now]

Out[1]=

20. ° F

(* 19.14 *) ListLinePlot[WordFrequencyData["groovy", "TimeSeries"]]

Out[1]=



In[1]:= (* 19.15 *) United States COUNTRY [Dated["Population", 2000]] -

United States COUNTRY [Dated["Population", 1900]]

Out[1]=

2.04604 × 10⁸ people