

# Brian – PS 7 – 2025-02-11 – Solution

## EWL3 Sections 18 and 19

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### Exercises from EWL3 Section 18

```
In[12]:= options = GeoServer → {Automatic, "GlobalTimeout" → 180, "ConnectionRetryCount" → 6};
```

```
In[13]:= (* 18.1 *) GeoDistance[New York City CITY, London CITY]
```

```
Out[13]=
```

```
3453.71 mi
```

```
In[14]:= (* 18.2 *) GeoDistance[New York City CITY, London CITY] /
```

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

```
Out[14]=
```

```
1.35109
```

```
In[15]:= (* 18.3 *) UnitConvert[GeoDistance[Sydney CITY, Moscow CITY], km]
```

```
Out[15]=
```

```
14 387. km
```

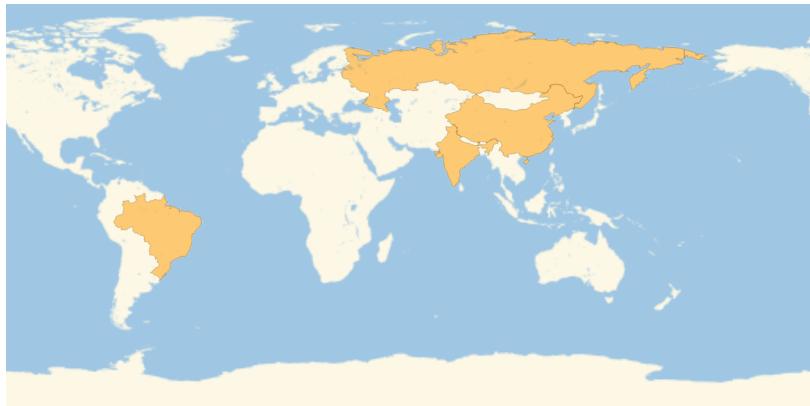
In[16]:= (\* 18.4 \*) GeoGraphics[{Luxembourg COUNTRY, options}]

Out[16]=



In[17]:= (\* 18.5 \*) GeoListPlot[{Brazil COUNTRY, Russia COUNTRY, India COUNTRY, China COUNTRY}]

Out[17]=



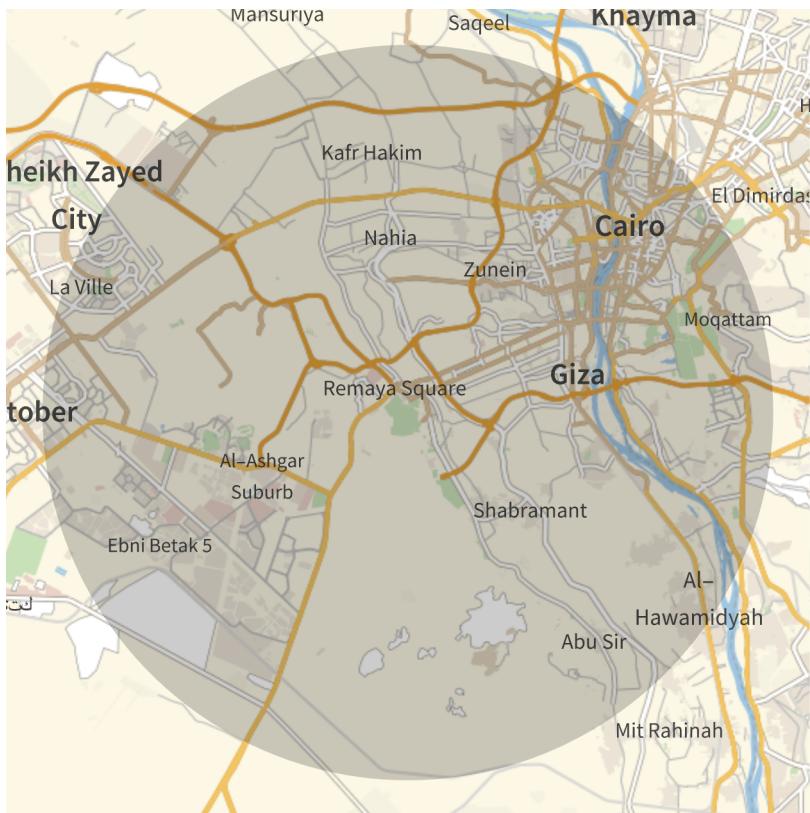
(\* 18.6 \*) `GeoGraphics[GeoPath[{New York City CITY, Boston CITY}], options]`

Out[18]=



In[19]:= (\* 18.7 \*) `GeoGraphics[GeoDisk[Great Pyramid of Giza HISTORIC SITE, 10 mi]]`

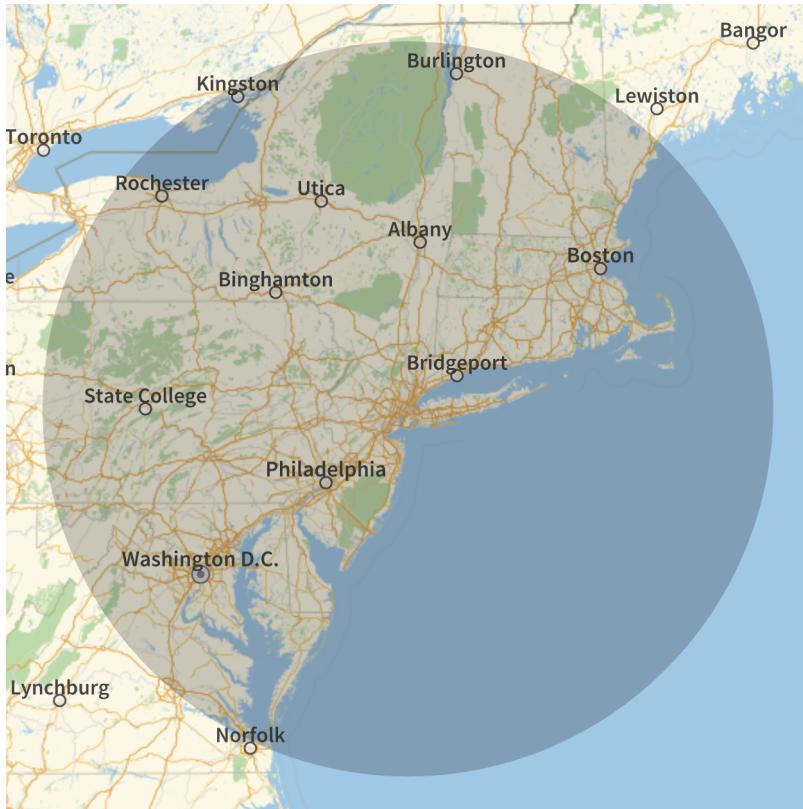
Out[19]=



(\* 18.8 \*) GeoGraphics[

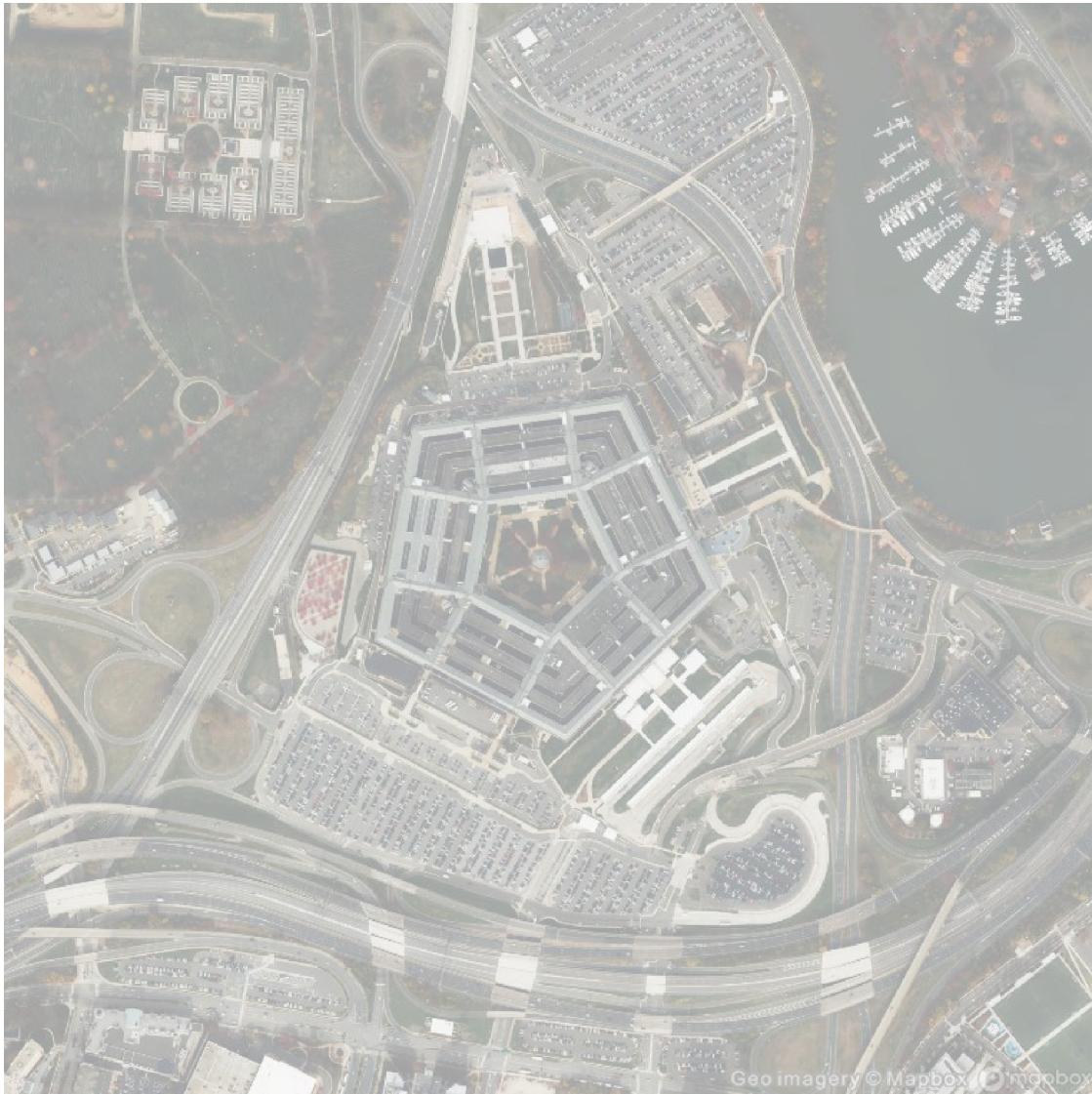
GeoDisk[ New York City CITY , GeoDistance[ New York City CITY , Amherst CITY ] ] , options ]

Out[20]=



(\* 18.9 \*) GeoImage[GeoDisk[The Pentagon BUILDING, 0.4 mi]]

Out[23]=



In[25]:= (\* 18.10 \*) GeoNearest["Country", GeoPosition["NorthPole"], 5]

Out[25]=

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

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

Out[31]=



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

Out[33]=



```
In[37]:= (* 18.13 *)
```

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

Out[37]=

6.64488°

## Exercises from EIWL3 Section 19

```
In[44]:= (* 19.1 *) Today - Mon 1 Jan 1900
```

Out[44]=

45 697 days

```
In[41]:= (* 19.2 *) DayName[Sat 1 Jan 2000]
```

Out[41]=

Saturday

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

Out[45]=

Thu 29 Apr 1751

In[46]:= (\* 19.4 \*) LocalTime[**Delhi CITY**]

Out[46]=

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

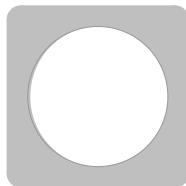
(\* 19.5 \*) Sunset[**Bishop CITY**, Today] - Sunrise[**Bishop CITY**, Today]

Out[47]=

10.7219 h

In[49]:= (\* 19.6 \*) MoonPhase[Today, "Icon"]

Out[49]=



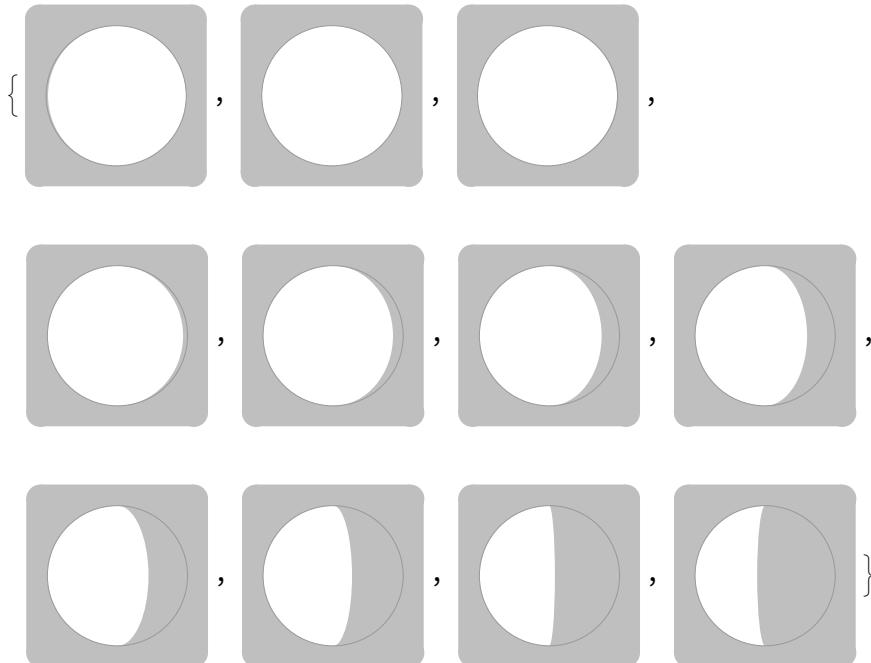
In[52]:= (\* 19.7 \*) Table[MoonPhase[Today + i days], {i, 10}]

Out[52]=

{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[51]=



```
(* 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[59]=

4.54772 h

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

Out[64]=

$$\frac{278}{5} \text{ yr}$$

(\* 19.11 \*)

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

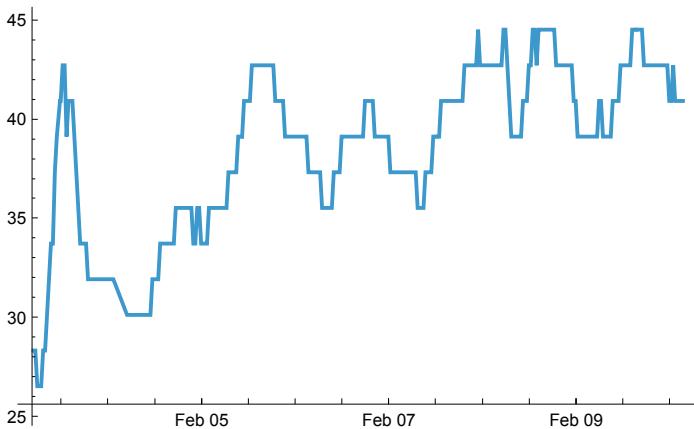
```
AirTemperatureData[Eiffel Tower BUILDING, yesterdayNoonInFrance]
```

Out[72]=

41. °F

In[76]:= (\* 19.12 \*) ListLinePlot[AirTemperatureData[Eiffel Tower BUILDING,
{yesterdayNoonInFrance - 7 days, yesterdayNoonInFrance}]]

Out[76]=



```
In[77]:= (* 19.13 *) AirTemperatureData[Los Angeles CITY, Now] -
```

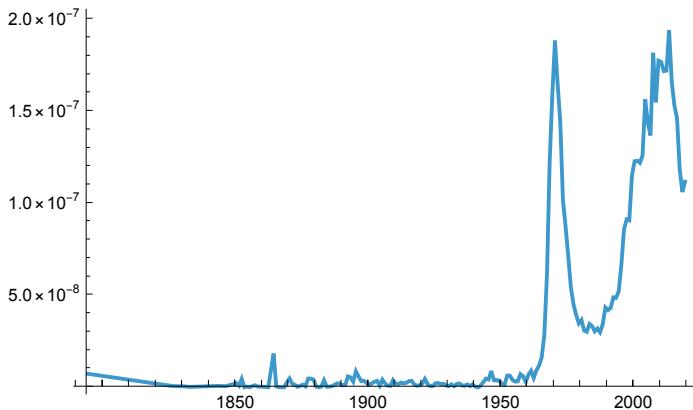
```
AirTemperatureData[New York City CITY, Now]
```

```
Out[77]=
```

```
20. ° F
```

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

```
Out[80]=
```



```
In[85]:= (* 19.15 *) United States COUNTRY [Dated["Population", 2000]] -
```

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

```
Out[85]=
```

```
2.04604 × 108 people
```