Lab1_Falcone

Marcos Falcone (GIS 3)

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Checking version:

```
version
```

```
##                _
## platform       x86_64-pc-linux-gnu
## arch           x86_64
## os             linux-gnu
## system         x86_64, linux-gnu
## status
## major          3
## minor          6.0
## year           2019
## month          04
## day            26
## svn rev        76424
## language       R
## version.string R version 3.6.0 (2019-04-26)
## nickname       Planting of a Tree
```

Installing packages:

```
install.packages("sf")
```

```
## Installing package into '/home/rstudio-user/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

```
install.packages("sp")
```

```
## Installing package into '/home/rstudio-user/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

```
install.packages("spData")
```

```
## Installing package into '/home/rstudio-user/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

```
install.packages("spDataLarge")
```

```
## Installing package into '/home/rstudio-user/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

```
## Warning: package 'spDataLarge' is not available (for R version 3.6.0)
```

```
install.packages("lwgeom")
```

```
## Installing package into '/home/rstudio-user/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

Loading libraries:

```
library(sf)
library(sp)
library(spData)
library(spDataLarge)
library(lwgeom)
```

Code from the book showing information for a specific point:

```
library(sf)
```

```
## Linking to GEOS 3.5.1, GDAL 2.2.2, PROJ 4.9.2
```

```
lnd_point = st_point(c(0.1, 51.5))                # point creation, with  longitude and latitude
lnd_geom = st_sfc(lnd_point, crs = 4326)          # setting CRS
lnd_attrib = data.frame(                          # inputting information on point
  name = "London",
  temperature = 25,
  date = as.Date("2017-06-21")
)
lnd_sf = st_sf(lnd_attrib, geometry = lnd_geom)    # merging previous data
lnd_sf
```

```
## Simple feature collection with 1 feature and 3 fields
## geometry type:  POINT
## dimension:      XY
## bbox:           xmin: 0.1 ymin: 51.5 xmax: 0.1 ymax: 51.5
## CRS:            EPSG:4326
##     name temperature       date         geometry
## 1 London          25 2017-06-21 POINT (0.1 51.5)
```

Code from the book showing information of a country (polygon):

```
library(spData)
```

```
## To access larger datasets in this package, install the spDataLarge
## package with: `install.packages('spDataLarge',
## repos='https://nowosad.github.io/drat/', type='source')`
```

```
luxembourg = world[world$name_long == "Luxembourg", ]
units::set_units(st_area(luxembourg), km^2) # sets units to kilometers
```

```
## 2416.87 [km^2]
```

Adapted code used to map Nigeria in context:

```
world_africa = world[world$continent == "Africa", ]
nigeria = world[world$name_long == "Nigeria", ]
plot(st_geometry(nigeria), expandBB = c(0.1, 0.05, 0.1, 0.05), col = "orange", lwd = 1, main = "Nigeria
plot(world_africa[0], add = TRUE)
text(8.25, 9.25, labels="Nigeria")
```