#30DMC_15Nov_MyData

Clémentine Cottineau-Mugadza

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15 November. Data: my data.

“Map something personal. Map data from your own life—this could be places you’ve traveled, your daily routine, or any other personal touch.”

1. Package Installation and Loading

```r
# Define the packages to be used
packages <- c("tidyverse", "sf", "osmdata",
              "geojsonR", "httr2", "stringr",
              "lubridate", "magick", "magrittr",
              "grid", "extrafont")

# Function to check if packages are installed and load them
load_packages <- function(pkgs) {
  # Check for missing packages
  missing_pkgs <- pkgs[!(pkgs %in% installed.packages()[, "Package"])]

  # Install missing packages
  if (length(missing_pkgs)) {
    install.packages(missing_pkgs)
  }

  # Load all packages
  lapply(pkgs, library, character.only = TRUE)
}

# Load the packages
load_packages(packages)
```

```r
loadfonts(device = "postscript")
```

2. Import personal data, city backgrounds & Rbanism logo

```r
# Personal data
# https://www.google.com/maps/d/edit?mid=1u_XNZO2eSg8vmpIPjjkHy2nDyPEiuhGa&usp=sharing
mydata <- read_csv("MyData.csv") %>%
  mutate(long =  word(word(word(geometry, 2, sep="\\("), 1,  sep="\\)"), 1, sep="\\ "),
         lat =  word(word(word(geometry, 2, sep="\\("), 1,  sep="\\)"), 2, sep="\\ "),
         date = dmy(time))
```

```
Rows: 45 Columns: 2
-- Column specification --------------------------------------------------------
Delimiter: ","
chr (2): geometry, time

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
# Direction de l'Urbanisme - Ville de Paris, Opendata Paris, Open Database License (ODbL)
paris_WGS84 <- st_read("quartier_paris.geojson")
```

```
Reading layer `quartier_paris' from data source
  `/Users/ccottineau/GitHub/30DayMapChallenge2024/15Nov_MyData/quartier_paris.geojson'
  using driver `GeoJSON'
Simple feature collection with 80 features and 11 fields
Geometry type: POLYGON
Dimension:     XY
Bounding box:  xmin: 2.224078 ymin: 48.81558 xmax: 2.469761 ymax: 48.90216
Geodetic CRS:  WGS 84
```

```r
paris_crs <- 27572

paris_metric <- paris_WGS84 %>%
  st_transform(.,crs=paris_crs)

# Greater London Authority, Ordnance Survey data with © Crown copyright https://data.londo
london_metric <- st_read("London_Ward.shp")
```

```
Reading layer `London_Ward' from data source
  `/Users/ccottineau/GitHub/30DayMapChallenge2024/15Nov_MyData/London_Ward.shp'
  using driver `ESRI Shapefile'
Simple feature collection with 657 features and 6 fields
Geometry type: POLYGON
Dimension:     XY
Bounding box:  xmin: 503568.2 ymin: 155850.8 xmax: 561957.5 ymax: 200933.9
Projected CRS: OSGB36 / British National Grid
```

```r
london_crs <- 27700

london_WGS84 <- london_metric  %>%
  st_transform(.,crs=4326)

# Download Rbanism logo
rbanism_logo <- image_read('https://rbanism.org/assets/imgs/about/vi_l.jpg')
```

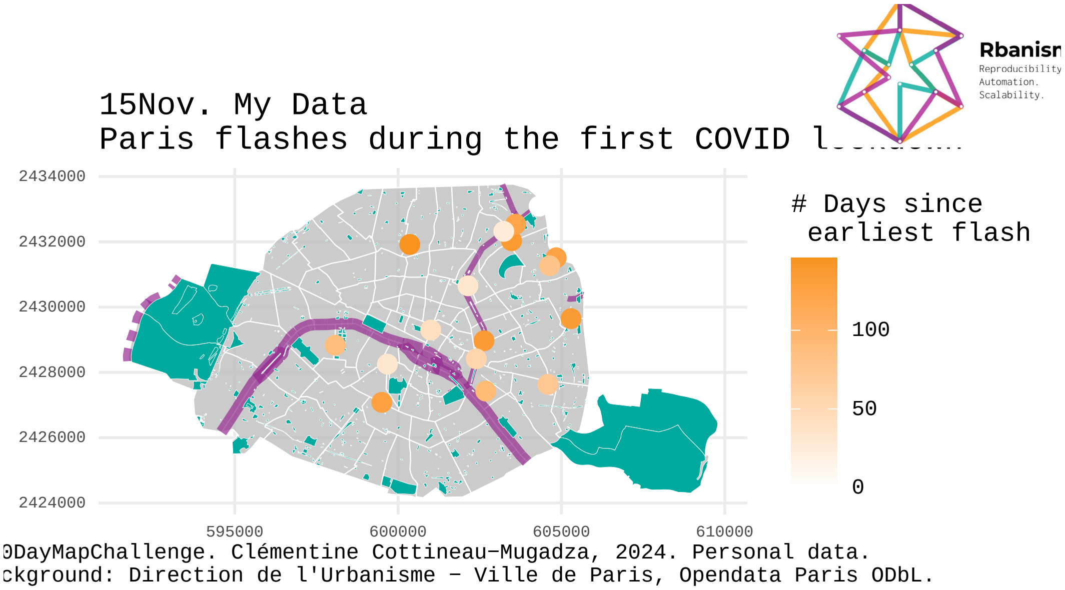
3. One function to filter, crop and map data

```r
city_flash_map <- function(city){

if(city == "Paris"){
city_metric <- paris_metric
city_WGS84 <- paris_WGS84
city_crs <- paris_crs
source <- "Direction de l'Urbanisme - Ville de Paris, Opendata Paris ODbL"
}

if(city == "London"){
city_metric <- london_metric
city_WGS84 <- london_WGS84
city_crs <- london_crs
source <- "Greater London Authority, Ordnance Survey w/ © Crown copyright"
}

bbWGS <- sf::st_bbox(city_WGS84)

### Filter my data to city

mydata_sf <- st_as_sf(mydata, coords = c("long","lat")) %>%
  st_set_crs(4326) %>%
  st_transform(.,crs=city_crs) %>%
  st_intersection(city_metric, .)

mydata_sf <- mydata_sf %>%
  mutate(days = as.numeric(max(mydata_sf$date) - date))

### Import OSM data
# Metro
x <- opq(bbox = bbWGS) %>%
   add_osm_feature(key = 'railway', value = "subway") %>%
    osmdata_sf()

# Waterways
y <- opq(bbox = bbWGS) %>%
   add_osm_feature(key = 'waterway') %>%
    osmdata_sf()

# Green spaces
z <- opq(bbox = bbWGS) %>%
   add_osm_feature(key = 'leisure', value="park") %>%
    osmdata_sf()

### Crop OSM features to city extent
metrolines <- x$osm_lines %>%
  st_transform(.,crs=city_crs) %>%
  st_intersection(city_metric, .)

water <- y$osm_lines %>%
  st_transform(.,crs=city_crs) %>%
  st_intersection(city_metric, .) %>%
  filter(waterway %in% c("canal", "river"))

green <- z$osm_polygons %>%
  st_transform(.,crs=city_crs) %>%
  st_intersection(city_metric, .)


## Plot the result
ggplot() +
   geom_sf(data = city_metric, fill=alpha("grey", 0.8), colour = "white") +
  geom_sf(data = water, colour=alpha("#93278F",0.7), aes(linewidth=waterway)) +
  scale_discrete_manual("linewidth", values = c(1,2))+
 # geom_sf(data = metrolines, aes(colour=ref)) +
  geom_sf(data = green, fill="#00A99D", colour = "white", linewidth = 0) +
  geom_sf(data = mydata_sf, aes(colour = days), size=3) +
  coord_sf(datum = st_crs(city_crs)) +
  scale_colour_gradient(low = "white", high = "#F7931E",
                      na.value = NA, name="# Days since \n earliest flash") +
  ggtitle(paste0("15Nov. My Data \n",
                 city, " flashes during the first COVID lockdown")) +
  xlab(paste0("#30DayMapChallenge. Clémentine Cottineau-Mugadza, 2024. Personal data.\n Ma
  guides(linewidth  = "none") +
  theme_minimal() +
  theme(axis.text=element_text(size=6, family="Courier"),
       plot.title=element_text(size=12, family="Courier"),
        axis.title=element_text(size=8, family="Courier"),
       legend.text=element_text(size=8, family="Courier"),
       legend.title=element_text(size=10, family="Courier"))

}
```

4. Pick a city and make a map

Paris

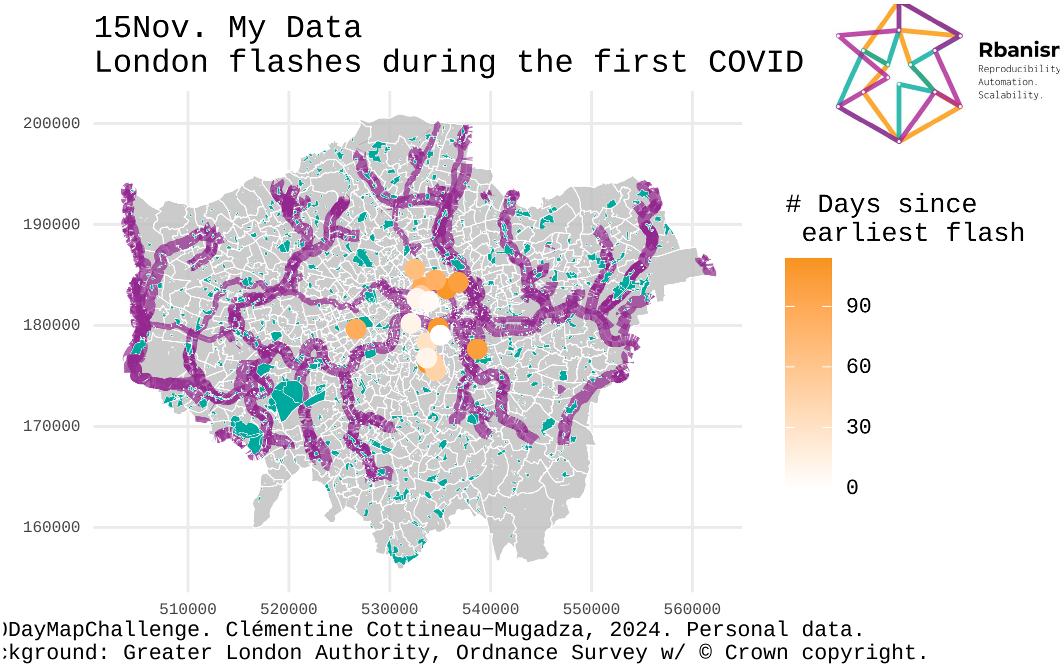
```
city_flash_map("Paris")
grid.raster(rbanism_logo,
            x = 0.9, y=0.9,
            width = unit(100, "points"))
```


Rbanism
Reproducibility.
Automation.
Scalability.
15Nov. My Data
Paris flashes during the first COVID l
2434000
2432000
2430000
2428000
2426000
2424000
595000
600000
605000
610000
# Days since
earliest flash
100
50
0
0DayMapChallenge. Clémentine Cottineau-Mugadza, 2024. Personal data.
ckground: Direction de l'Urbanisme - Ville de Paris, Opendata Paris ODbL.

```
    ggsave(filename = "Paris.png",
           width = 8, height = 8, dpi = 300)
```

London

```
city_flash_map("London")
grid.raster(rbanism_logo,
            x = 0.9, y=0.9,
            width = unit(100, "points"))
```


15Nov. My Data
London flashes during the first COVID
Rbanisr
Reproducibility
Automation.
Scalability.
# Days since
earliest flash
90
60
30
0
200000
190000
180000
170000
160000
510000
520000
530000
540000
550000
560000
DayMapChallenge. Clémentine Cottineau–Mugadza, 2024. Personal data.
kground: Greater London Authority, Ordnance Survey w/ © Crown copyright.

```r
ggsave(filename = "London.png",
       width = 8, height = 8, dpi = 300)
```