Préparation de données désordonnées

Importation et structure

```
# library(rstudioapi)

# current_path <- getActiveDocumentContext()$path
# setwd(dirname(current_path ))

setwd("C:/Users/Eric/Documents/Symposium/2019/data_workflow/")

raw <- read.csv("weather.csv", col.names=c("site_id", "year", "month", "element", paste("d", 1:31, sep =

library(knitr)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
# subset(raw, select=c("year","month","element",paste("d", 1:10, sep = "")))
# kable(subset(raw, select=c("year","month","element",paste("d", 1:10, sep = ""))))
# kable(raw)

library(tidyr)
library(stringr)
library(dplyr)

clean1 <- raw %>% gather(day, value, d1:d31, na.rm = TRUE)
clean1$day <- as.integer(str_replace(clean1$day, "d", ""))
clean1$date <- as.Date(ISOdate(clean1$year, clean1$month, clean1$day))
clean1 <- clean1[c("site_id", "date", "element", "value")]
clean1 <- arrange(clean1, date, element)
clean2 <- spread(clean1, element, value)

outclean <- cbind(id = as.integer(rownames(clean2)), clean2)

write.csv(outclean, "weatherclean.csv", row.names = FALSE)

# Changer les permissions du fichier csv pour son importation avec pgadmin
system("icacls sites.csv /grant Everyone:(r)")
```

Avant-après du nettoyage

```
## [1] "Données brutes désordonnées"
```

```
##   year month element d1   d2   d3 d4   d5 d6 d7 d8 d9  d10
```

```
## 1 2010     1    tmax NA   NA   NA NA   NA NA NA NA NA   NA
## 2 2010     1    tmin NA   NA   NA NA   NA NA NA NA NA   NA
## 3 2010     2    tmax NA 27.3 24.1 NA   NA NA NA NA NA   NA
## 4 2010     2    tmin NA 14.4 14.4 NA   NA NA NA NA NA   NA
## 5 2010     3    tmax NA   NA   NA NA 32.1 NA NA NA NA 34.5
## 6 2010     3    tmin NA   NA   NA NA 14.2 NA NA NA NA 16.8
```

```
## [1] "Premier passage de nettoyage"
```

```
##   site_id       date element value
## 1 MX17004 2010-01-30    tmax  27.8
## 2 MX17004 2010-01-30    tmin  14.5
## 3 MX17004 2010-02-02    tmax  27.3
## 4 MX17004 2010-02-02    tmin  14.4
## 5 MX17004 2010-02-03    tmax  24.1
## 6 MX17004 2010-02-03    tmin  14.4
```

```
## [1] "Deuxième passage de nettoyage"
```

```
##   site_id       date tmax tmin
## 1 MX17004 2010-01-30 27.8 14.5
## 2 MX17004 2010-02-02 27.3 14.4
## 3 MX17004 2010-02-03 24.1 14.4
## 4 MX17004 2010-02-11 29.7 13.4
## 5 MX17004 2010-02-23 29.9 10.7
## 6 MX17004 2010-03-05 32.1 14.2
```

```
#library(rstudioapi)
library(DBI)
library(RPostgreSQL)

# loads the PostgreSQL driver
drv <- dbDriver("PostgreSQL")

con <- dbConnect(drv, dbname = "postgres",
  host = "localhost", port = 5432,
# user = rstudioapi::askForPassword("Database user"),
  user = "postgres",
# password = rstudioapi::askForPassword("Database password"))
  password = "postgres")
```

```
DROP TABLE sites;

CREATE TABLE sites
(
  id integer NOT NULL,
  site_id character varying(50) NOT NULL,
  longitude real,
  latitude real,
  geom geometry,
  site_name character varying(255),
  CONSTRAINT sites_pkey PRIMARY KEY (id)
);

COPY sites(ID,site_id,longitude,latitude,site_name)
FROM 'C:/Users/Eric/Documents/Symposium/2019/data_workflow/sites.csv' DELIMITER ',' CSV HEADER;
```

```
UPDATE sites SET geom = ST_MakePoint(longitude,latitude);
```

Exécuter une requête

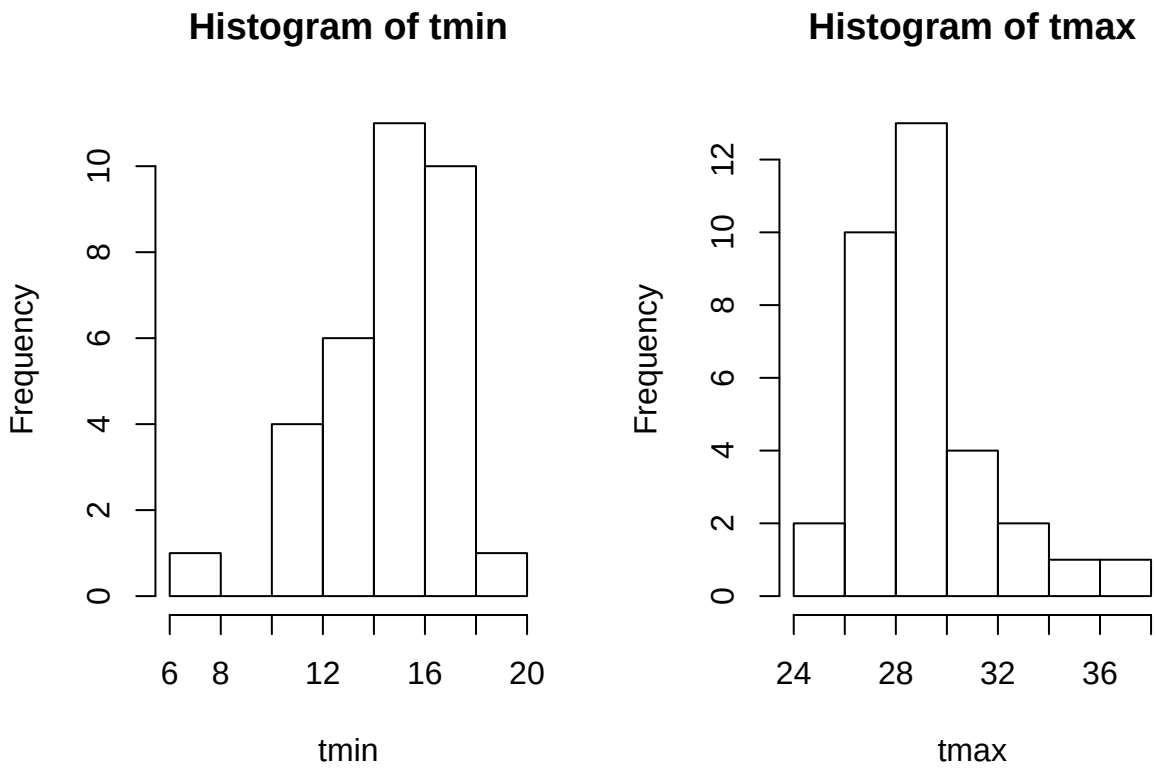
```
select id, site_id, longitude, latitude, site_name from sites where site_id = 'MX17004';
```

Table 1: 1 records

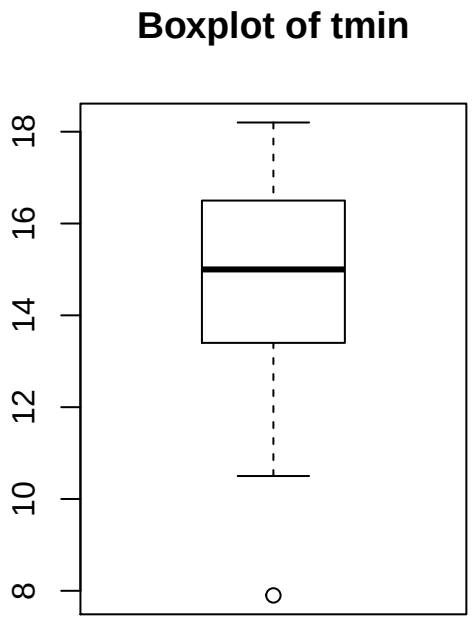
id	site_id	longitude	latitude	site_name
1	MX17004	-71.1043	42.3151	Mexico

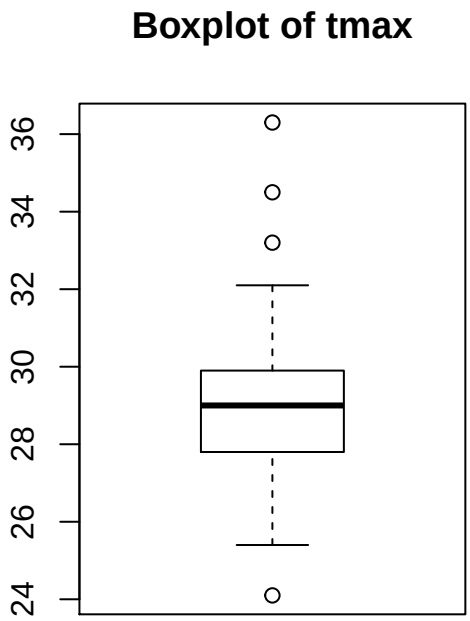
Exploration

```
attach(clean2)

par(mfrow=c(1,2))
hist(tmin)
hist(tmax)
```

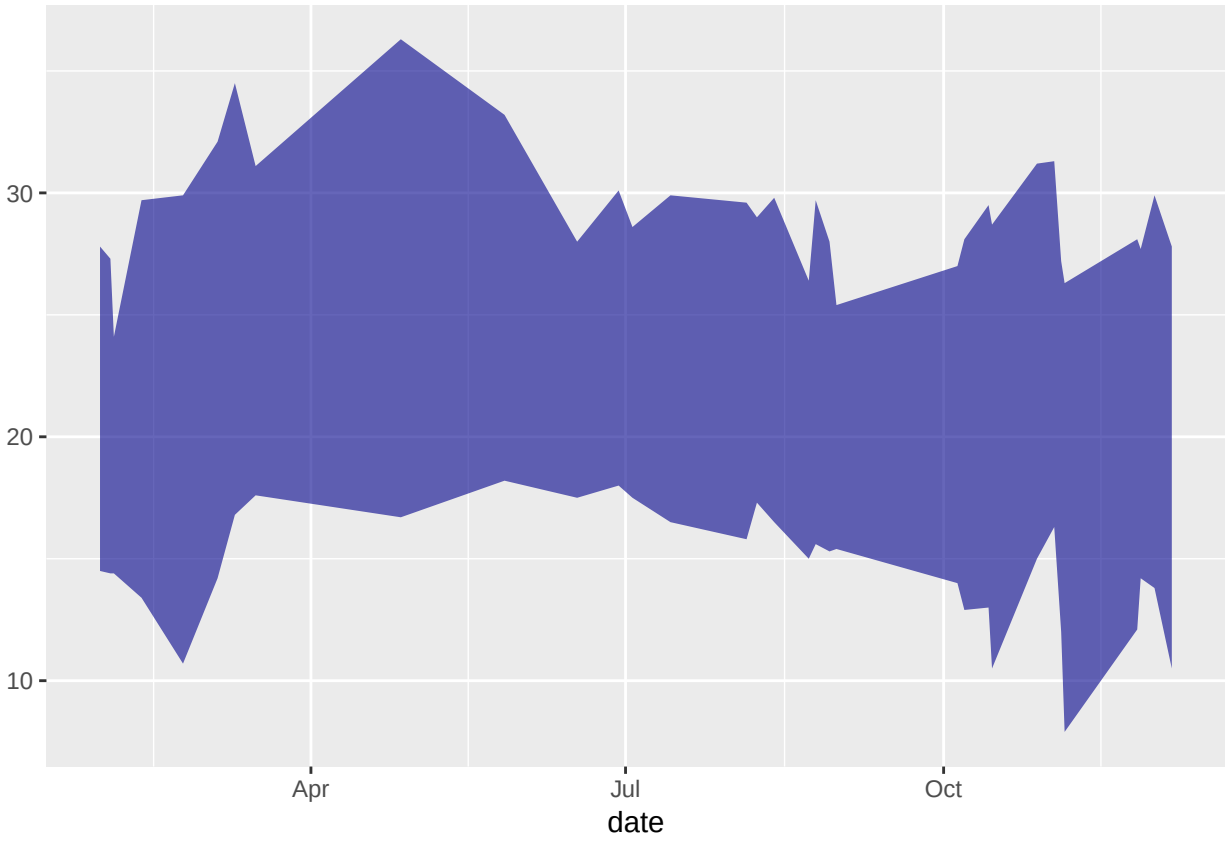



```
par(mfrow=c(1,2))
boxplot(tmin, main = "Boxplot of tmin")
boxplot(tmax, main = "Boxplot of tmax")

library(ggplot2)
```






```
ggplot(clean2) + geom_ribbon(aes(x = date, ymax = tmax, ymin = tmin), alpha = 0.6, fill = "darkblue")
```




```
detach(clean2)
```

Version Control

Mise en place :

git config –global user.name ebeaulieu git config –global user.email e_beaulieu@hotmail.com

R Studio Menu Global Options. . .

Restart RStudio Onglet Git/SVN : Git executable : C:/Program Files/Git/bin/git.exe