algeria_sig

load data deces

```
source("connection_db.R")
```

view data deces

```
str(data)
```

```
## 'data.frame':    13946 obs. of  14 variables:
##  $ DINS         : Date, format: "2020-01-27" "2019-08-10" ...
##  $ WILAYAR      : int  17000 17000 17000 17000 17000 17000 17000 17000 17000 17000 ...
##  $ COMMUNER     : int  935 917 935 947 920 935 935 935 917 917 ...
##  $ LD           : Factor w/ 5 levels "AAP","DOM","SSP",..: 3 3 2 3 3 3 3 3 2 3 ...
##  $ STRUCTURED   : Factor w/ 10 levels "1","2","3","4",..: 3 6 3 3 3 3 3 3 6 6 ...
##  $ SERVICEHOSPIT: Factor w/ 23 levels "0","1","2","3",..: 8 20 20 20 11 20 20 11 21 20 ...
##  $ DUREEHOSPIT  : int  0 1 0 4 5 1 0 1 0 1 ...
##  $ SEX          : Factor w/ 2 levels "F","M": 2 2 2 2 1 1 2 1 1 1 ...
##  $ Years        : int  71 56 85 77 0 84 80 0 88 36 ...
##  $ Days         : int  26100 20517 31101 28125 5 31044 29454 1 32391 13366 ...
##  $ Profession   : Factor w/ 16 levels "0","1","3","4",..: 1 1 1 1 10 11 1 10 1 1 ...
##  $ CD           : Factor w/ 3 levels "CI","CN","CV": 2 2 1 2 2 2 2 2 1 2 ...
##  $ CODECIM0     : int  10 9 18 10 16 9 1 17 0 10 ...
##  $ CODECIM      : int  751 690 1370 751 1145 675 10 1271 0 751 ...
```

load data sig

```
source("sig.R")
```

view data sig

```
str(w_algeria)
```

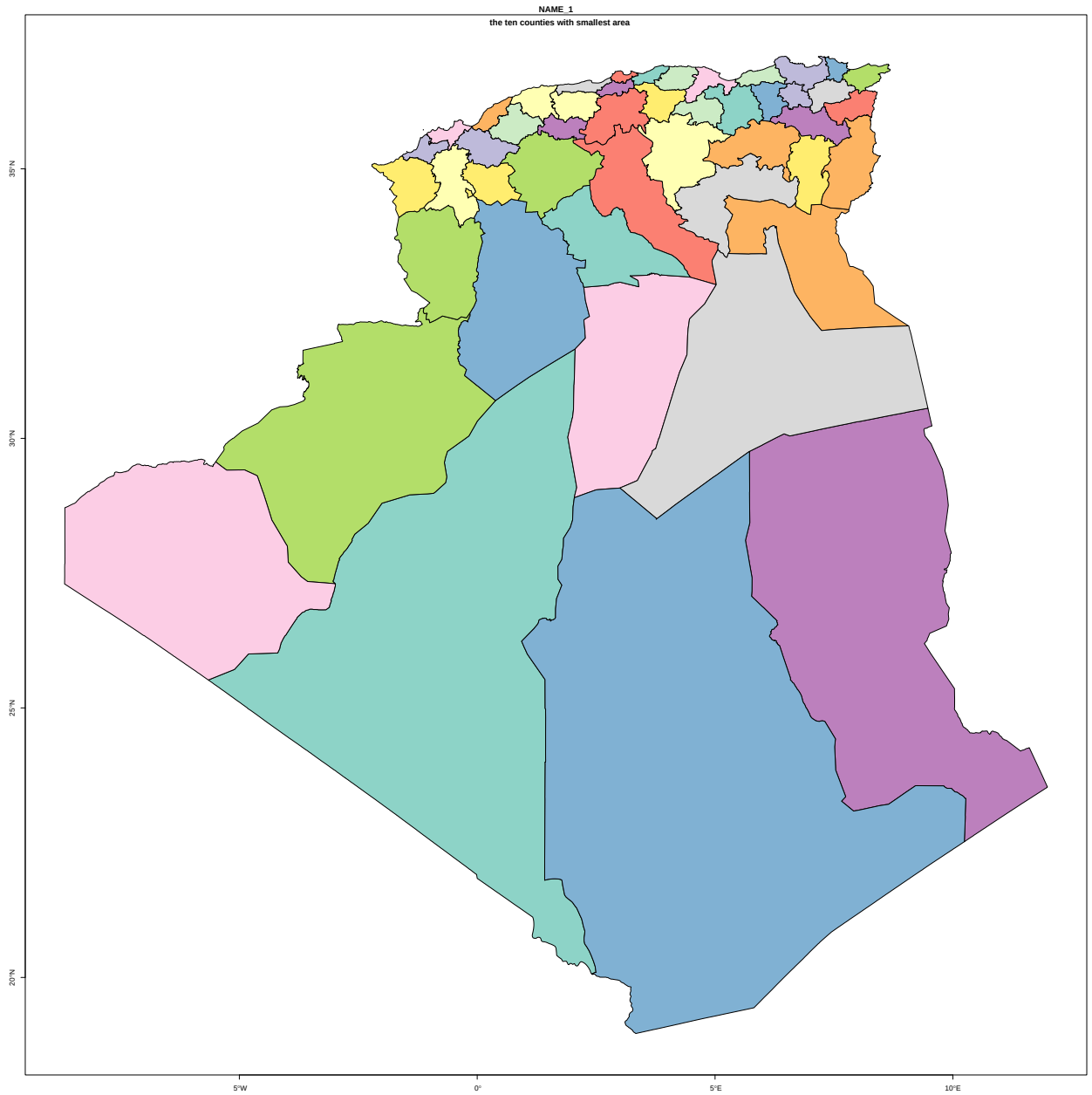
```
## sf [48 x 12] (S3: sf/tbl_df/tbl/data.frame)
##  $ GID_1    : Factor w/ 48 levels "DZA.1_1","DZA.10_1",..: 1 12 23 34 44 45 46 47 48 2 ...
##  $ GID_0    : Factor w/ 1 level "DZA": 1 1 1 1 1 1 1 1 1 1 ...
##  $ COUNTRY  : Factor w/ 1 level "Algeria": 1 1 1 1 1 1 1 1 1 1 ...
##  $ NAME_1   : Factor w/ 48 levels "Adrar","Aïn Defla",..: 1 2 3 4 5 6 7 8 9 10 ...
##  $ VARNAME_1: Factor w/ 43 levels "Ain Dafla","Ain Tamouchent",..: 12 1 2 3 4 26 9 7 5 15 ...
##  $ NL_NAME_1: Factor w/ 47 levels "<U+0627><U+0644><U+0628><U+0644><U+064A><U+062F><U+0629>","<U+0628
##  $ TYPE_1   : Factor w/ 1 level "Wilaya": 1 1 1 1 1 1 1 1 1 1 ...
##  $ ENGTYPE_1: Factor w/ 1 level "Province": 1 1 1 1 1 1 1 1 1 1 ...
##  $ CC_1     : Factor w/ 48 levels "1","10","11",..: 1 39 41 8 16 44 47 45 46 48 ...
##  $ HASC_1   : Factor w/ 48 levels "DZ.AD","DZ.AL",..: 4 1 5 2 3 12 7 8 11 9 ...
##  $ ISO_1    : Factor w/ 34 levels "DZ-01","DZ-02",..: 1 34 34 12 16 5 34 34 6 7 ...
```

```
##  $ geometry :sfc_MULTIPOLYGON of length 48; first list element: List of 1
##   ..$ :List of 1
##   .. ..$ : num [1:1218, 1:2] 1.43 1.42 1.42 1.43 1.43 ...
##   ..- attr(*, "class")= chr [1:3] "XY" "MULTIPOLYGON" "sfg"
##  - attr(*, "sf_column")= chr "geometry"
##  - attr(*, "agr")= Factor w/ 3 levels "constant","aggregate",..: NA NA NA NA NA NA NA NA NA NA ...
##   ..- attr(*, "names")= chr [1:11] "GID_1" "GID_0" "COUNTRY" "NAME_1" ...
```

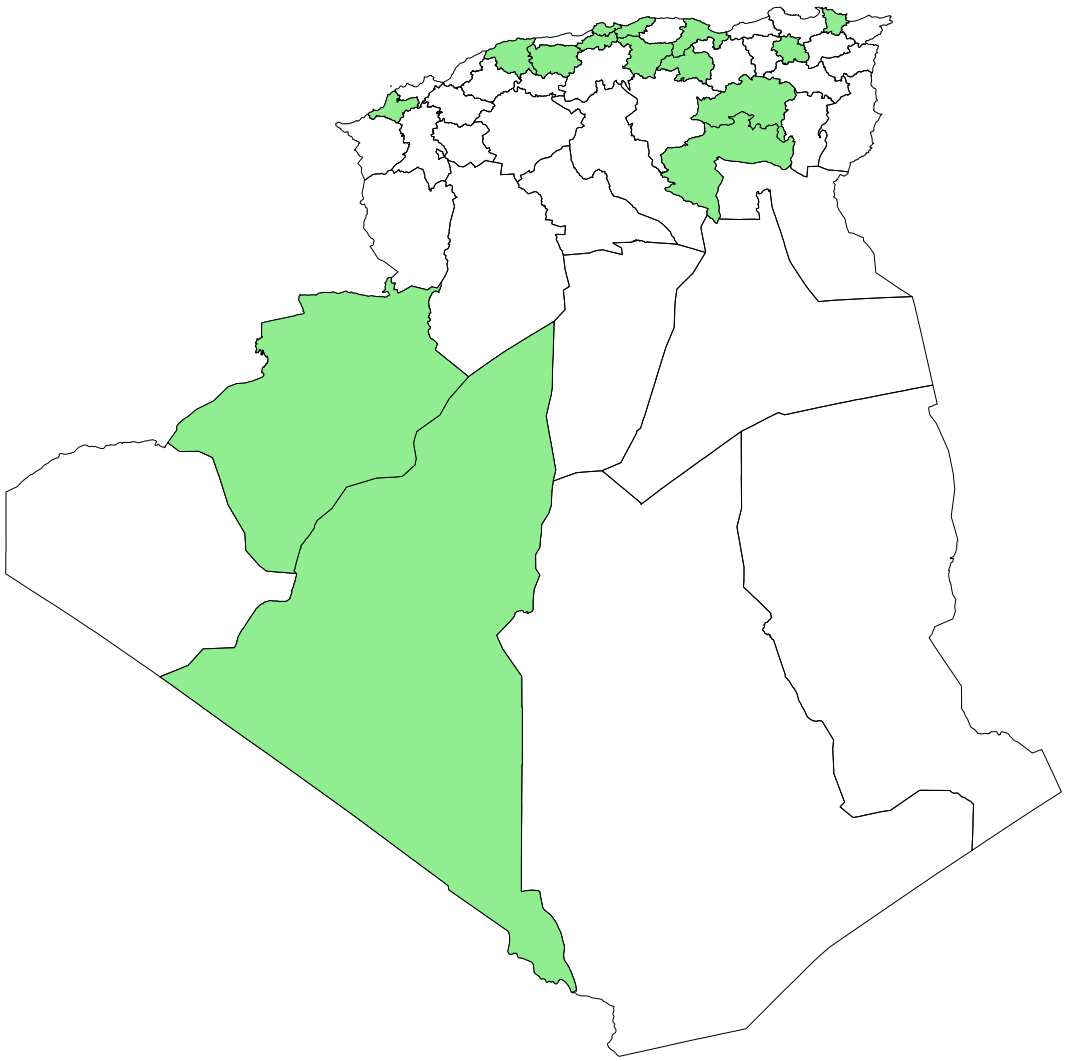
```
w_algeria_m <- w_algeria %>%
  select(NAME_1,CC_1) %>%
  rename(wilaya=NAME_1,
         idwilaya=CC_1) %>%
  mutate(idwilaya=as.numeric(idwilaya)*1000)
```

create w_algerie

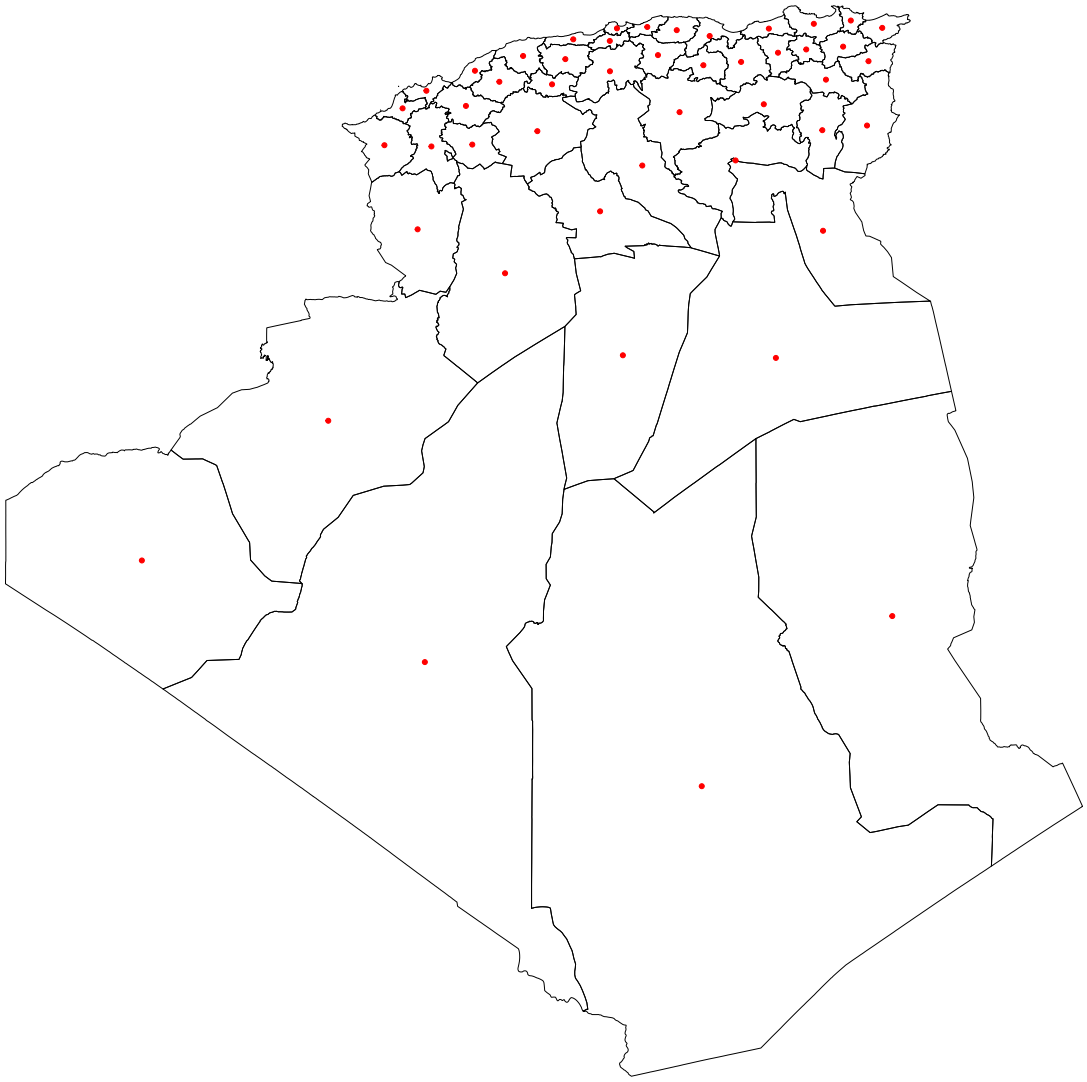
```
plot(w_algeria["NAME_1"], axes = TRUE)
title("the ten counties with smallest area")
```




```
st_geometry(w_algeria) %>%
   plot()
w_algeria %>%
  select(NAME_1) %>%
  arrange(NAME_1) %>%
  slice(1:15) %>%
  plot(add = TRUE, col = 'lightgreen')
  title("the ten counties with smallest area")
```




```
mtq_c <- st_centroid(w_algeria)
plot(st_geometry(w_algeria))
plot(st_geometry(mtq_c), add=TRUE, cex=2, col="red", pch=20)
```

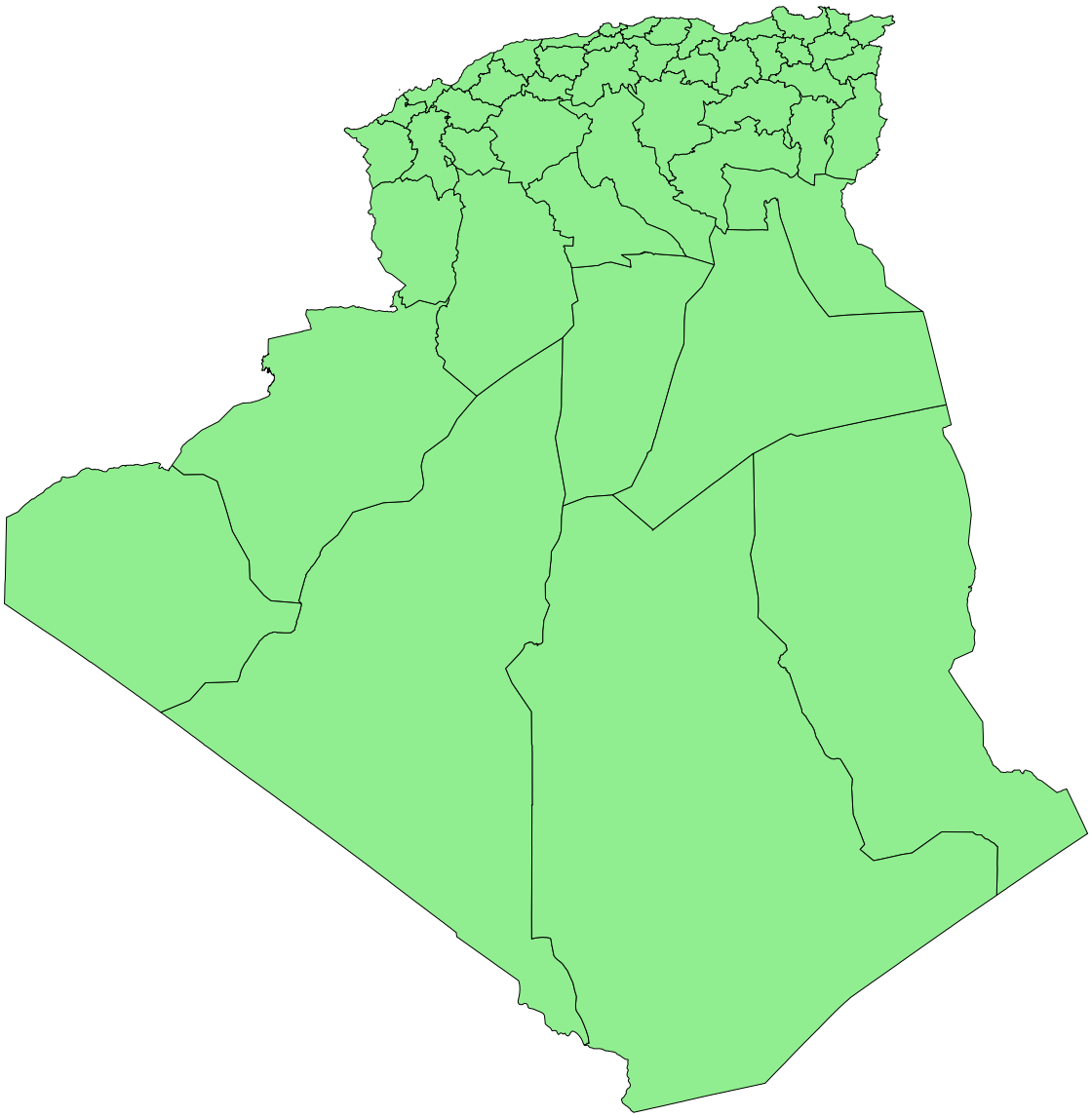


crs

```
#st_crs(w_algeria)
```

plot

```
ggplot()+
  geom_sf(data = w_algeria,fill="lightgreen",color="black",size=0.25)+
  theme_void()+
  coord_sf(crs = "+proj=robin")
```

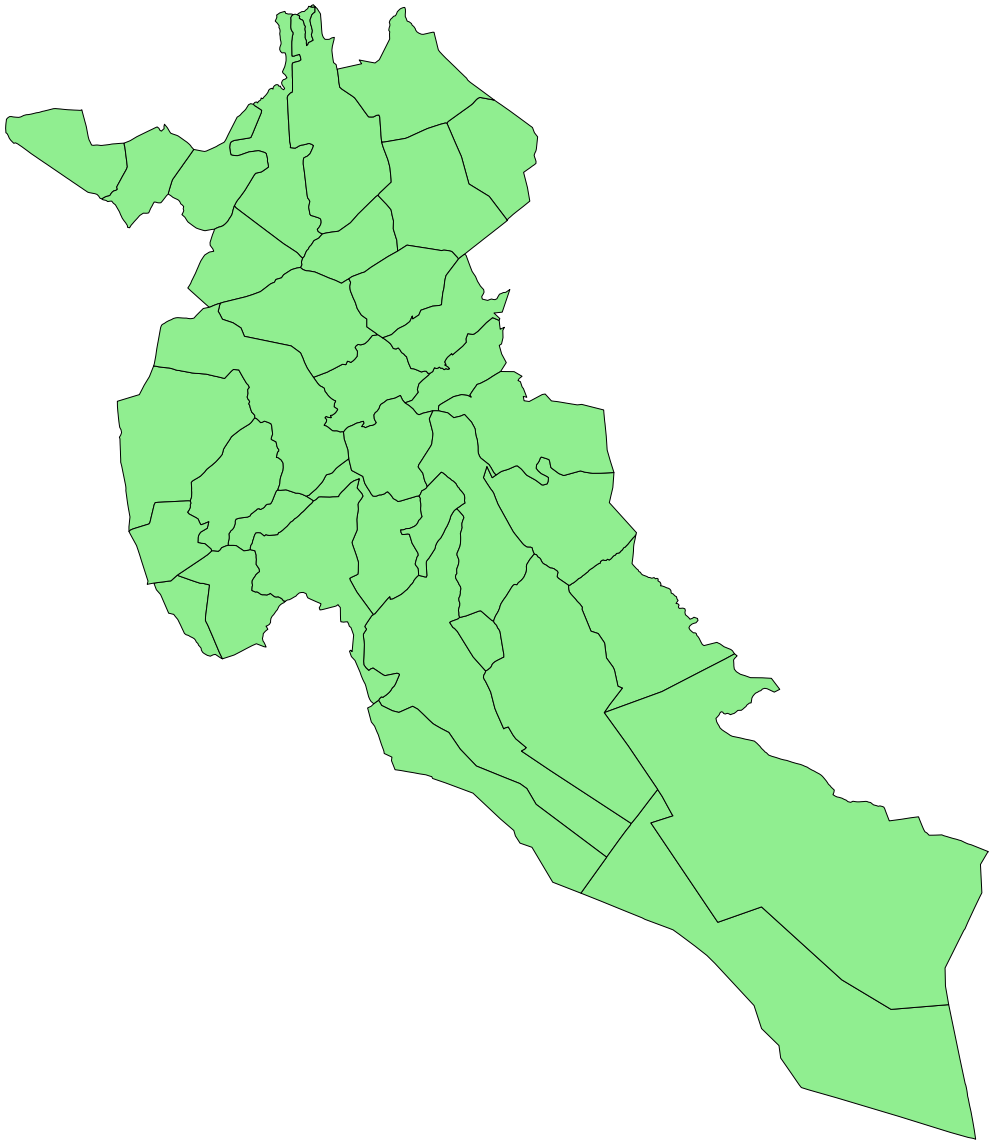


```
#wilaya_x("Djelfa")
```

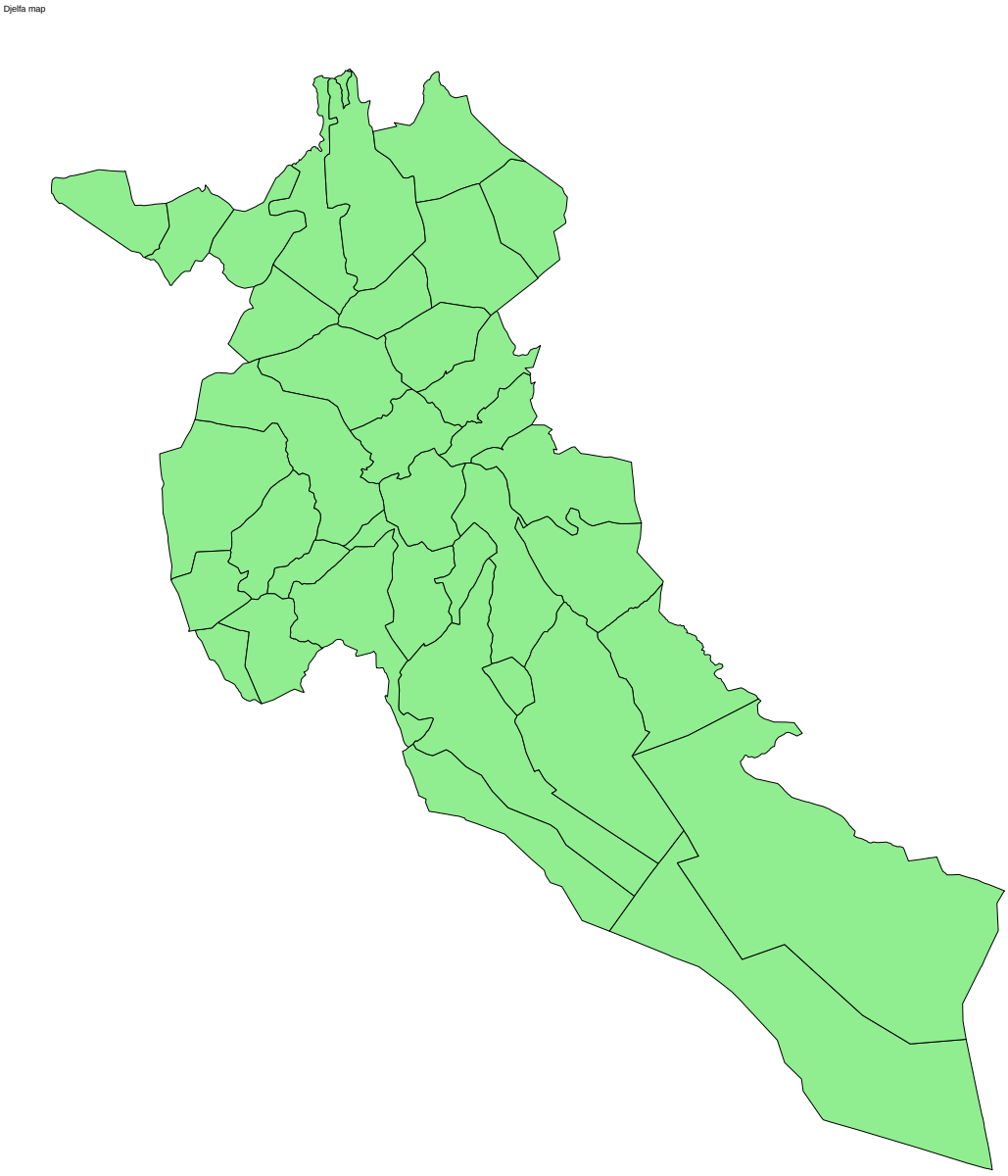
```
#st_crs(w_algeria)
```

```
djelfa <- wc_algeria %>%
  filter(NAME_1=="Djelfa")#Djelfa Médéa

ggplot()+
  geom_sf(data = djelfa,fill="lightgreen",color="black",size=0.25)+  ##,aes(fill=CC_2)
  theme_void()+
  coord_sf(crs = "+proj=robin")
```



```
ggplot(djelfa)+
  geom_sf(color = "black", fill = "lightgreen")+
  xlab("Longitude") + ylab("Latitude") +
  ggtitle("Djelfa map")+
  theme_void()+
  coord_sf(crs = "+proj=robin")
```



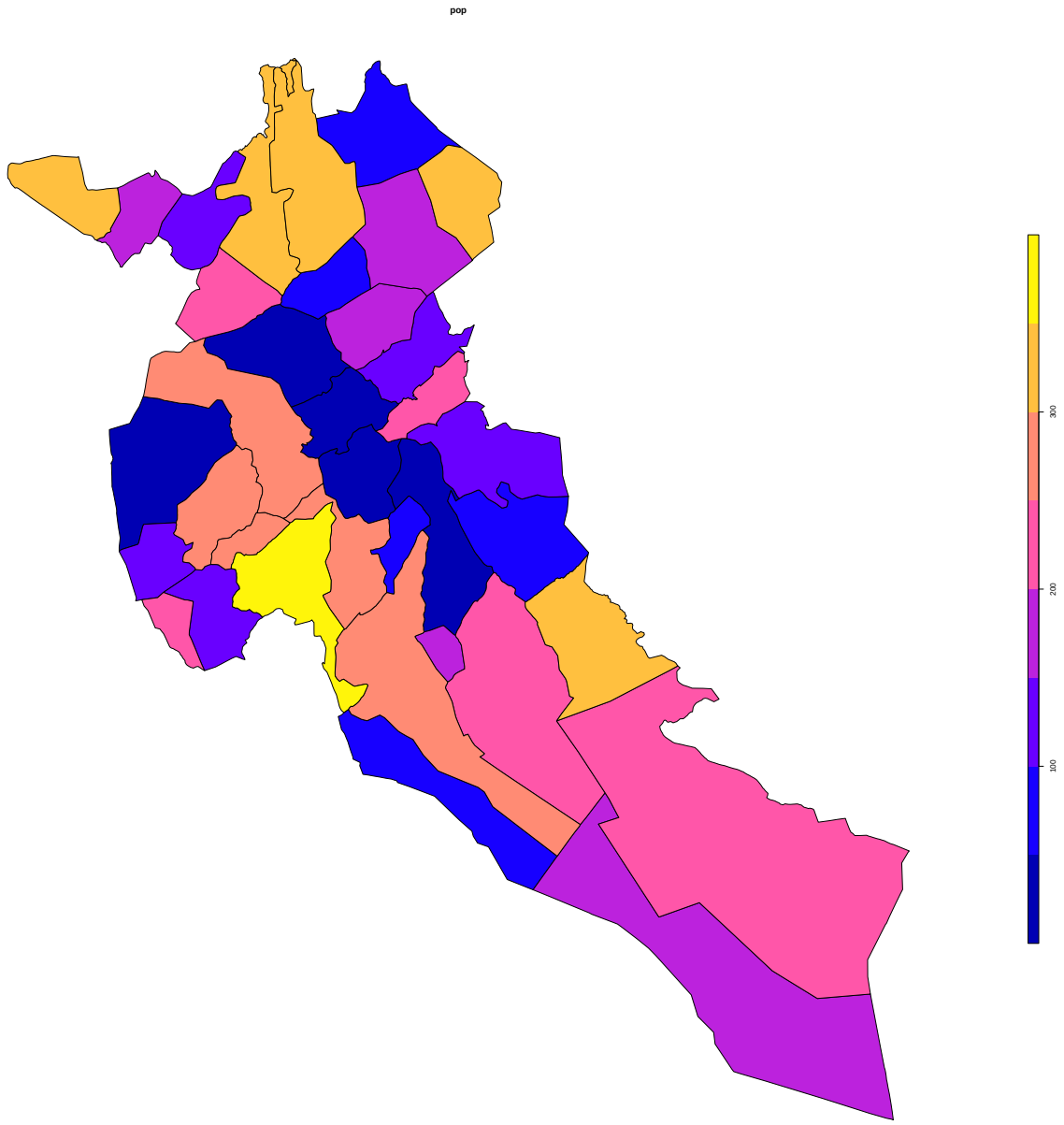

```
#ggsave("djelfa.pdf")
```

```
#plot(st_geometry(djelfa))
```

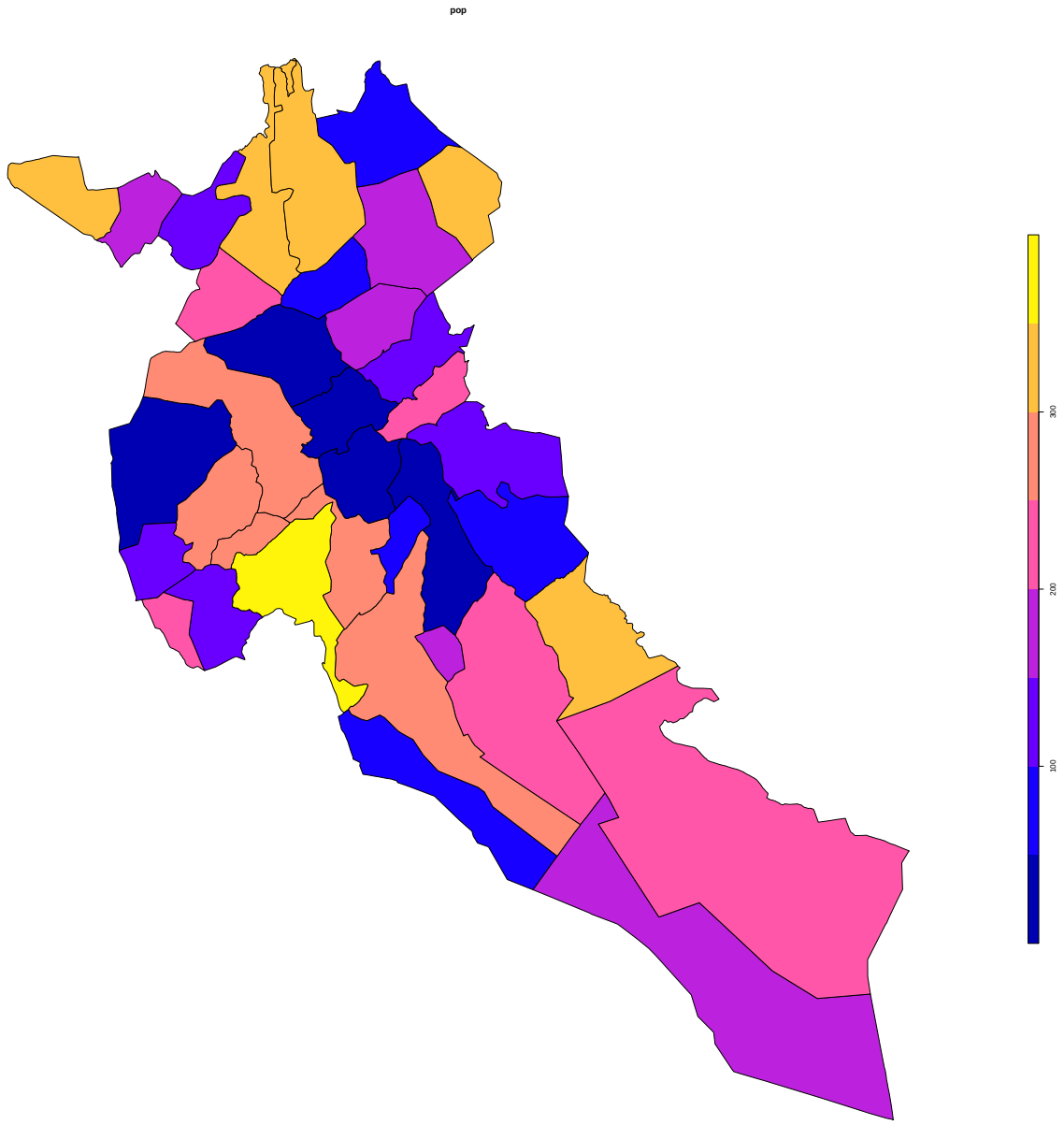
```
pop <- read.csv(file = "djelfa.csv")
#head(pop)
```

```
pop_djelfa <- merge(x = djelfa, y = pop, by.x = "CC_2", by.y = "ID")
#head(mtq)
```

```
plot(pop_djelfa["pop"])
```

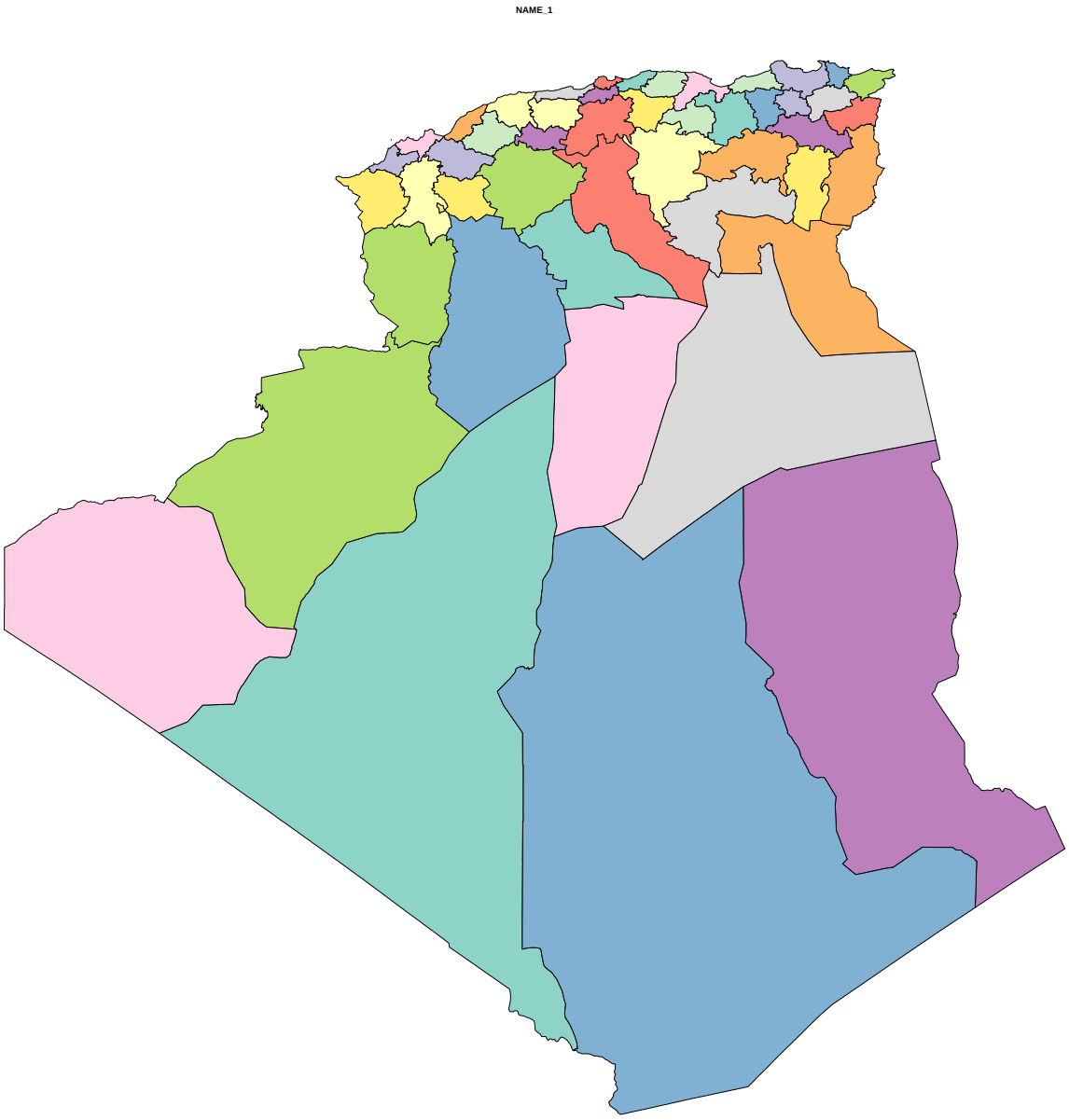



```
y <- pop_djelfa[,c("pop","NAME_2")]
plot(y["pop"])
```




```
#head(y)
```

```
plot(w_algeria["NAME_1"])
```




```
library(ggthemes)
#library(RColorBrewer) # ColorBrewer Palettes
#library(ggrepel) ## For displaying labels on ggplot2 object
```

Décès par wilaya

préprocessing data

```
data %>%
  select(DINS,WILAYAR) %>%
  filter(DINS >= dt1 & DINS >= dt2 )  %>%
  group_by(WILAYAR) %>%
  summarise(number_wil = n()) %>%
```

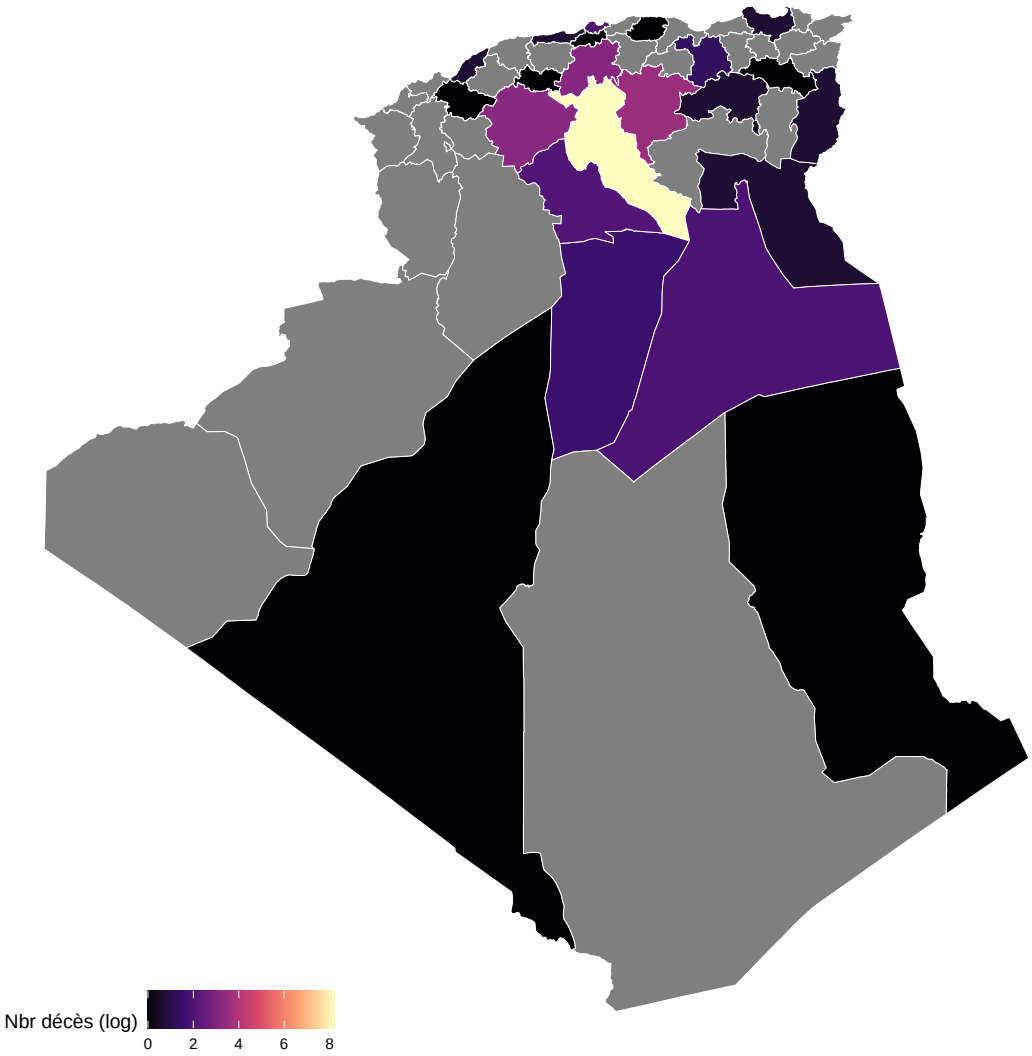
```
arrange(desc(number_wil)) %>%
mutate(CC_1=recode(WILAYAR,
                   "1000" = "1",
                   "2000" = "2",
                   "3000" = "3",
                   "4000" = "4",
                   "5000" = "5",
                   "6000" = "6",
                   "7000" = "7",
                   "8000" = "8",
                   "9000" = "9",
                   "10000" = "10",
                   "11000" = "11",
                   "12000" = "12",
                   "13000" = "13",
                   "14000" = "14",
                   "15000" = "15",
                   "16000" = "16",
                   "17000" = "17",
                   "18000" = "18",
                   "19000" = "19",
                   "20000" = "20",
                   "21000" = "21",
                   "22000" = "22",
                   "23000" = "23",
                   "24000" = "24",
                   "25000" = "25",
                   "26000" = "26",
                   "27000" = "27",
                   "28000" = "28",
                   "29000" = "29",
                   "30000" = "30",
                   "31000" = "31",
                   "32000" = "32",
                   "33000" = "33",
                   "34000" = "34",
                   "35000" = "35",
                   "36000" = "36",
                   "37000" = "37",
                   "38000" = "38",
                   "39000" = "39",
                   "40000" = "40",
                   "41000" = "41",
                   "42000" = "42",
                   "43000" = "43",
                   "44000" = "44",
                   "45000" = "45",
                   "46000" = "46",
                   "47000" = "47",
                   "48000" = "48"
                   ))-> df
```

display carte

```
deces_w_djelfa <-left_join(w_algeria, df, by='CC_1')
wdjelfa <- deces_w_djelfa %>%
  select(NAME_1,CC_1,number_wil) %>%
  mutate(number_wil = log(number_wil))

ggplot()+
  geom_sf(data=wdjelfa,aes(fill=number_wil), color = "white", lwd = 0.05) +
    scale_fill_viridis_c(option = "magma", name = "Nbr décès (log)") +
    theme_map() +
    theme(legend.direction="horizontal") +
     labs(title = "Répartition des décès hospitalier par wilayas",
          subtitle = "Wilayas algerie année 2020",
          caption = "Source: Dr R.TIBA \n Praticien inspecteur santé publique \n DSP Wilaya de Djelfa")+
  coord_sf(crs = "+proj=robin")
```

Répartition des décès hospitalier par wilayas
Wilayas algerie année 2020



Source: Dr R.TIBA
Praticien inspecteur santé publique
DSP Wilaya de Djelfa

Décès par communes wilaya de Djelfa

préprocessing data

```
data %>%
  select(DINS,WILAYAR,COMMUNER) %>%
  filter(DINS >= dt1 & DINS >= dt2 & WILAYAR == 17000)  %>%
  group_by(COMMUNER) %>%
  summarise(number_com = n()) %>%
  arrange(desc(number_com)) %>%
  mutate(CC_2=recode(COMMUNER,
                     "916" = "1701",#djelfa
                     "917" = "1714",#el idrissia
```

```
                    "919" = "1703",#919 El Guedid
                    "920" = "1726",#920 Charef
                    "923" = "1727",#923 Beni Yacoub
                    "924" = "1731",#924 Ain Oussera
                    "925" = "1721",#925 Guernini
                    "926" = "1719",#926 Sidi Ladjel
                    "927" = "1733",#927 Hassi Fedoul
                    "928" = "1711",#928 El Khemis
                    "929" = "1708",#929 Birine
                    "931" = "1732",#931 Benhar
                    "932" = "1720",#932 Had-Sahary
                    "933" = "1709",#933 Bouira Lahdab
                    "934" = "1735",#934 Ain Fekka
                    "935" = "1704",#935 Hassi Bahbah
                    "939" = "1728",#939 Zaafrane
                    "940" = "1716",#940 Hassi el Euch
                    "941" = "1705",#941 Ain Maabed
                    "942" = "1725",#942 Dar Chioukh
                    "946" = "1713",#946 MLiliha
                    "947" = "1712",#947 Sidi Baizid
                    "948" = "1717",#948 Messad
                    "951" = "1718",#951 Guettara
                    "952" = "1729",#952 Deldoul
                    "953" = "1706",#953 Sed Rahal
                    "954" = "1722",#954 Selmana
                    "956" = "1724",#956 Oum Laadham
                    "957" = "1702",#957 Mouadjebar
                    "958" = "1730",#958 Ain el Ibel
                    "962" = "1710",#962 Zaccar
                    "963" = "1715",#963 Douis
                    "964" = "1723",#964 Ain Chouhada
                    "965" = "1736",#965 Tadmit
                    "967" = "1707",#967 Faidh el Botma
                    "968" = "1734" #968 Amourah
                    ))-> dfc
```

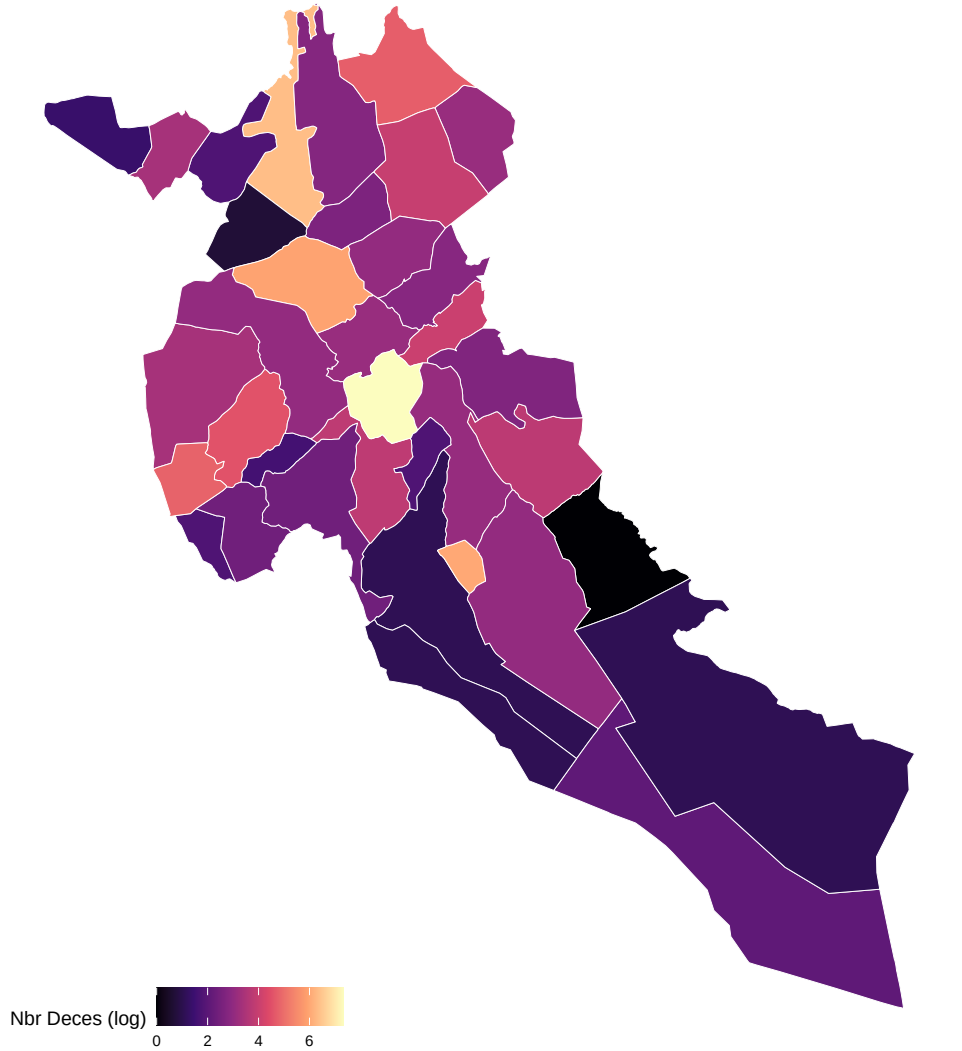
display carte

```
deces_c_djelfa <-left_join(wc_algeria, dfc, by='CC_2')
cdjelfa <- deces_c_djelfa %>%
  filter(NAME_1=="Djelfa") %>%
  select(NAME_1,CC_2,number_com) %>%
  mutate(number_com = log(number_com))

ggplot()+
  geom_sf(data=cdjelfa,aes(fill=number_com), color = "white", lwd = 0.05) +
    scale_fill_viridis_c(option = "magma", name = "Nbr Deces (log)") +
    theme_map() +
    theme(legend.direction="horizontal") +
     labs(title = "Répartition des décès hospitalier par communes",
          subtitle = "Communes Wilaya de djelfa année 2020",
          caption = "Source: Dr R.TIBA \n Praticien inspecteur santé publique \n DSP Wilaya de Djelfa")+
  coord_sf(crs = "+proj=robin")
```

Répartition des décès hospitalier par communes

Communes Wilaya de djelfa année 2020



Source: Dr R.TIBA
Praticien inspecteur santé publique
DSP Wilaya de Djelfa