algeria_sig

load library

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

```
str(data)
```

```
## 'data.frame':    13946 obs. of  10 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 ...
##  $ 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 ...
##  $ 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 ...
```

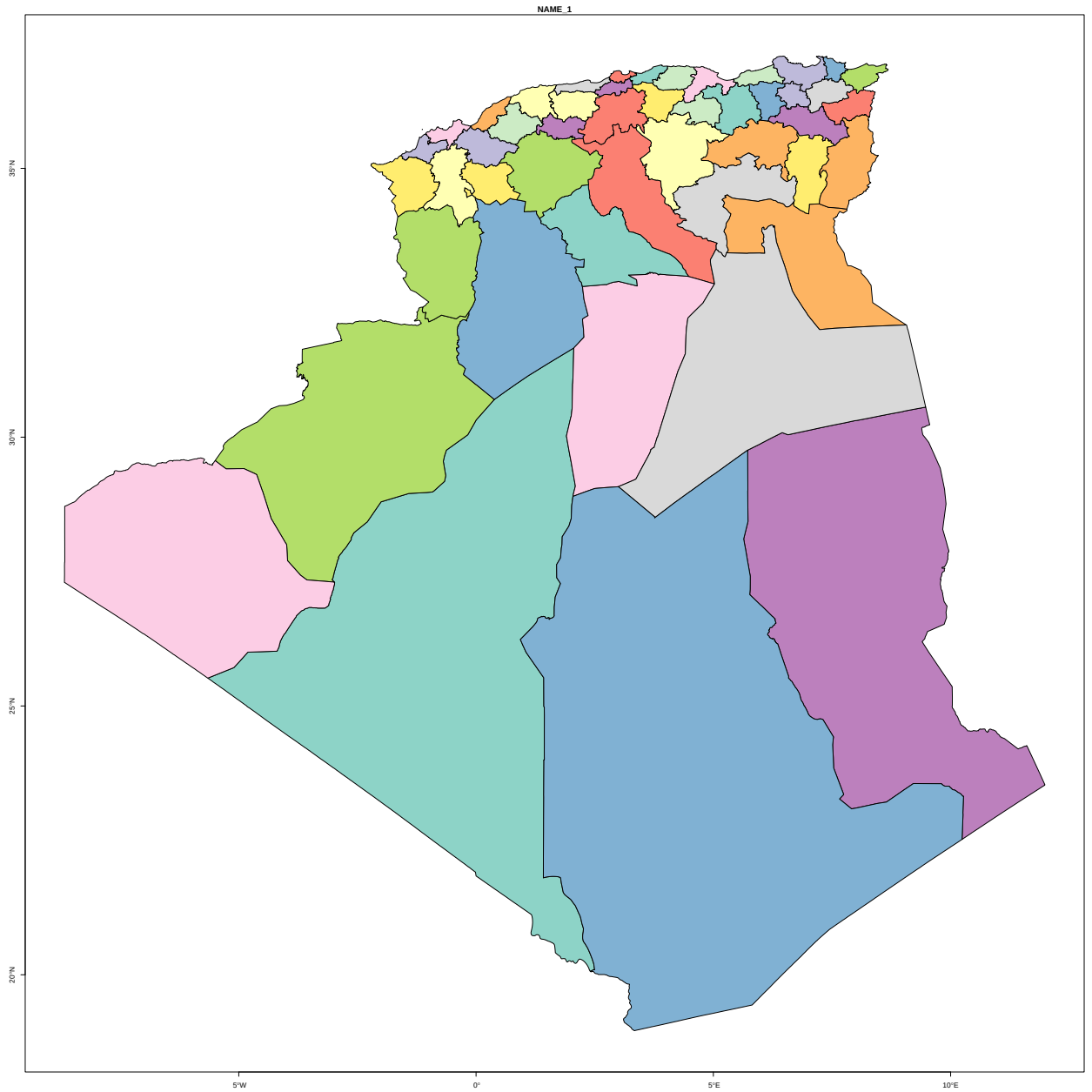
```
library(sf)
```

```
## Warning: le package 'sf' a été compilé avec la version R 4.1.3
```

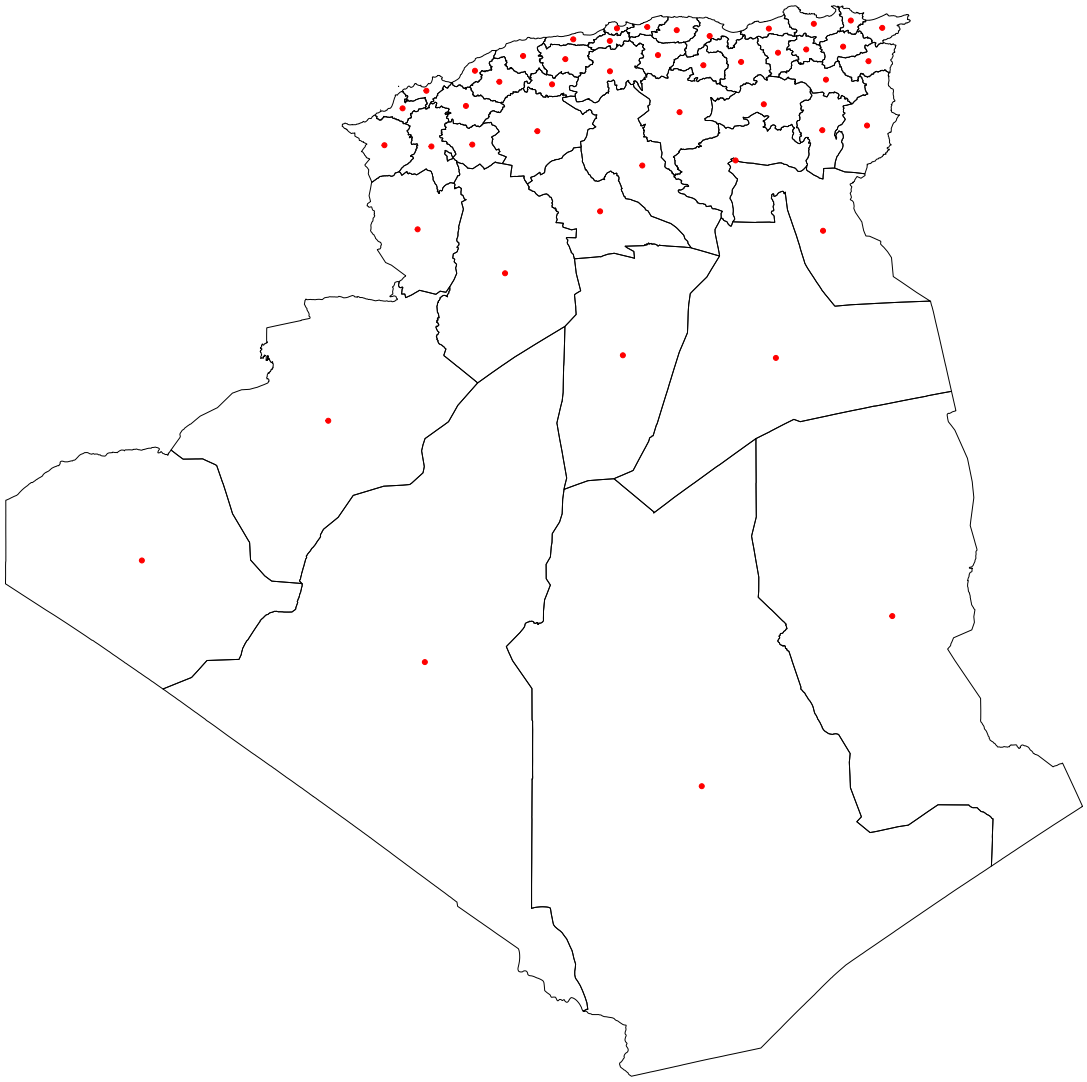
```
## Linking to GEOS 3.9.1, GDAL 3.2.1, PROJ 7.2.1; sf_use_s2() is TRUE
```

create w_algerie

```
w_algeria <- read_sf("../gadm41_DZA_shp/gadm41_DZA_1.shp",stringsAsFactors = TRUE)
plot(w_algeria["NAME_1"], axes = TRUE)
```




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

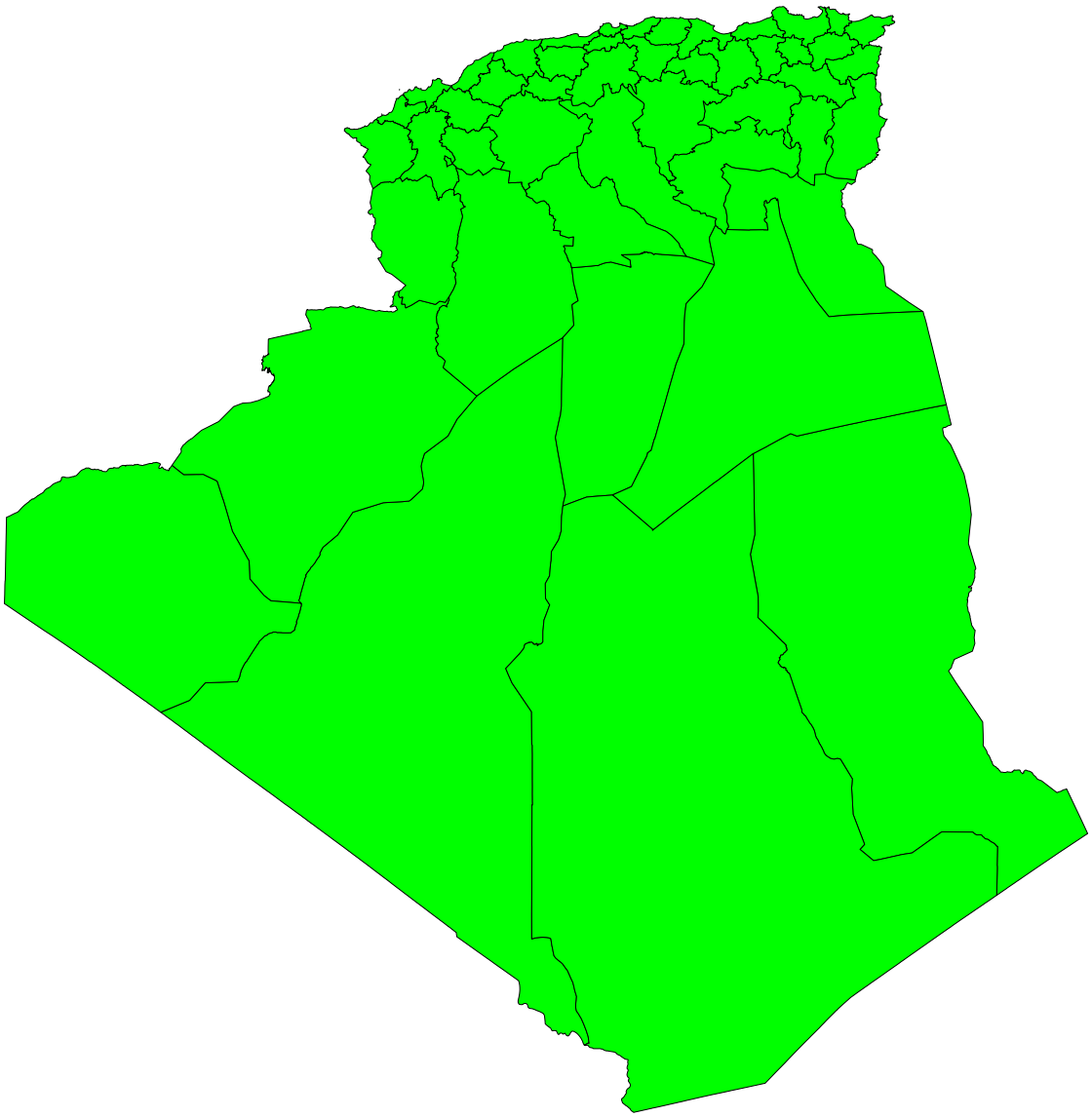


crs

```
#st_crs(w_algeria)
```

plot

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

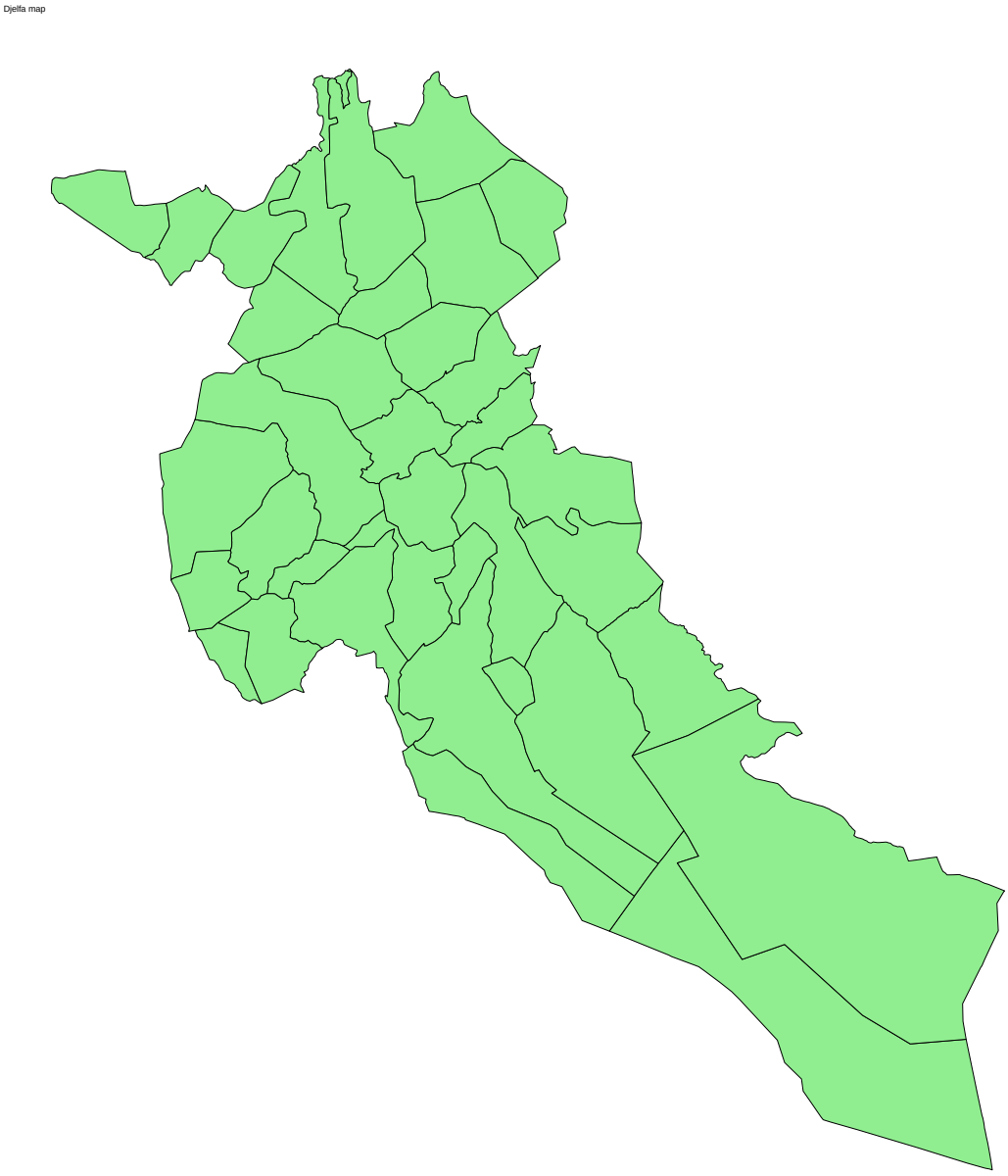


```
wc_algeria <- read_sf("../gadm41_DZA_shp/gadm41_DZA_2.shp")
```

```
#st_crs(w_algeria)
```

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

ggplot()+
  geom_sf(data = djelfa,fill="green",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")
```



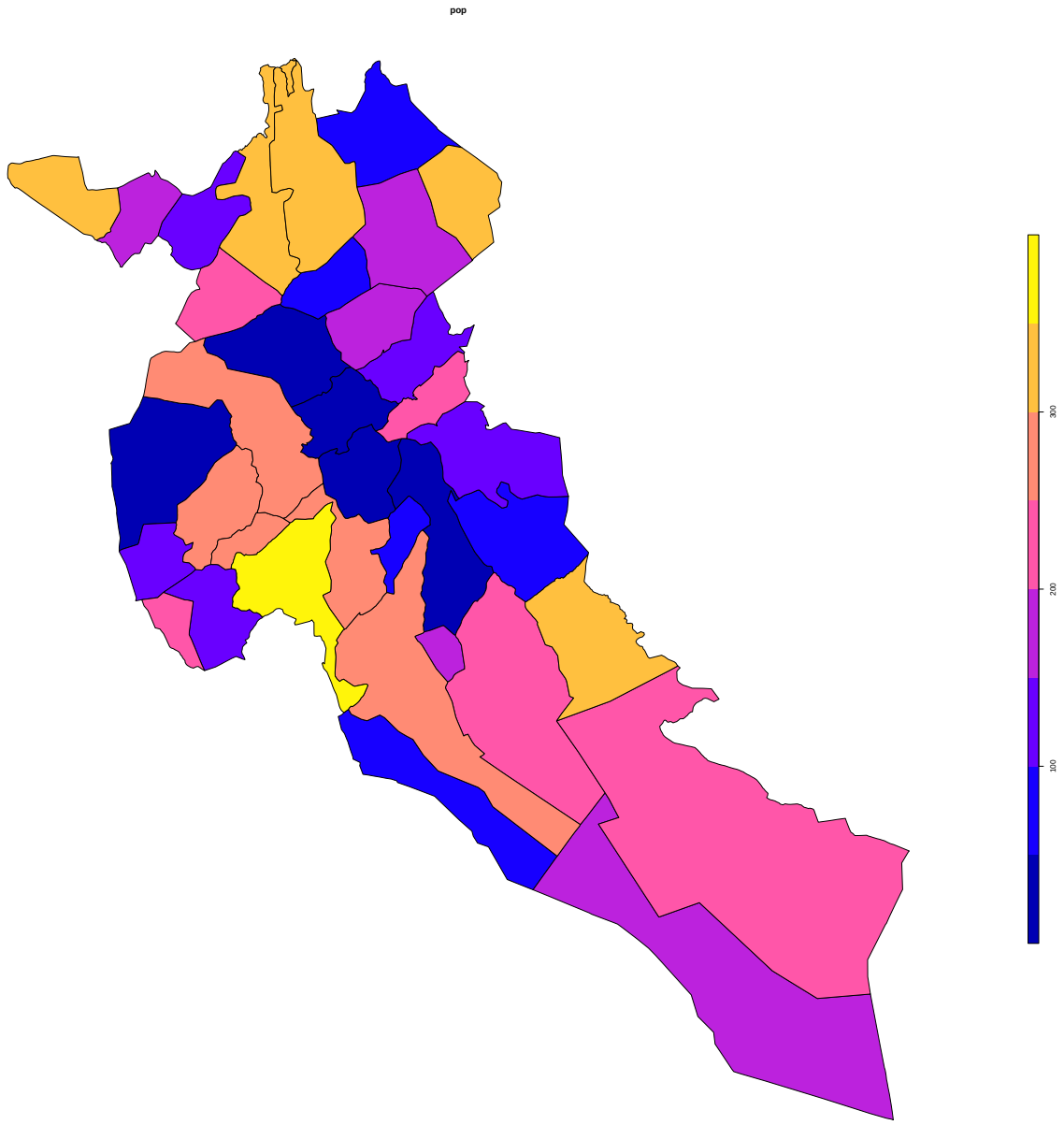

```
#ggsave("djelfa.pdf")
```

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

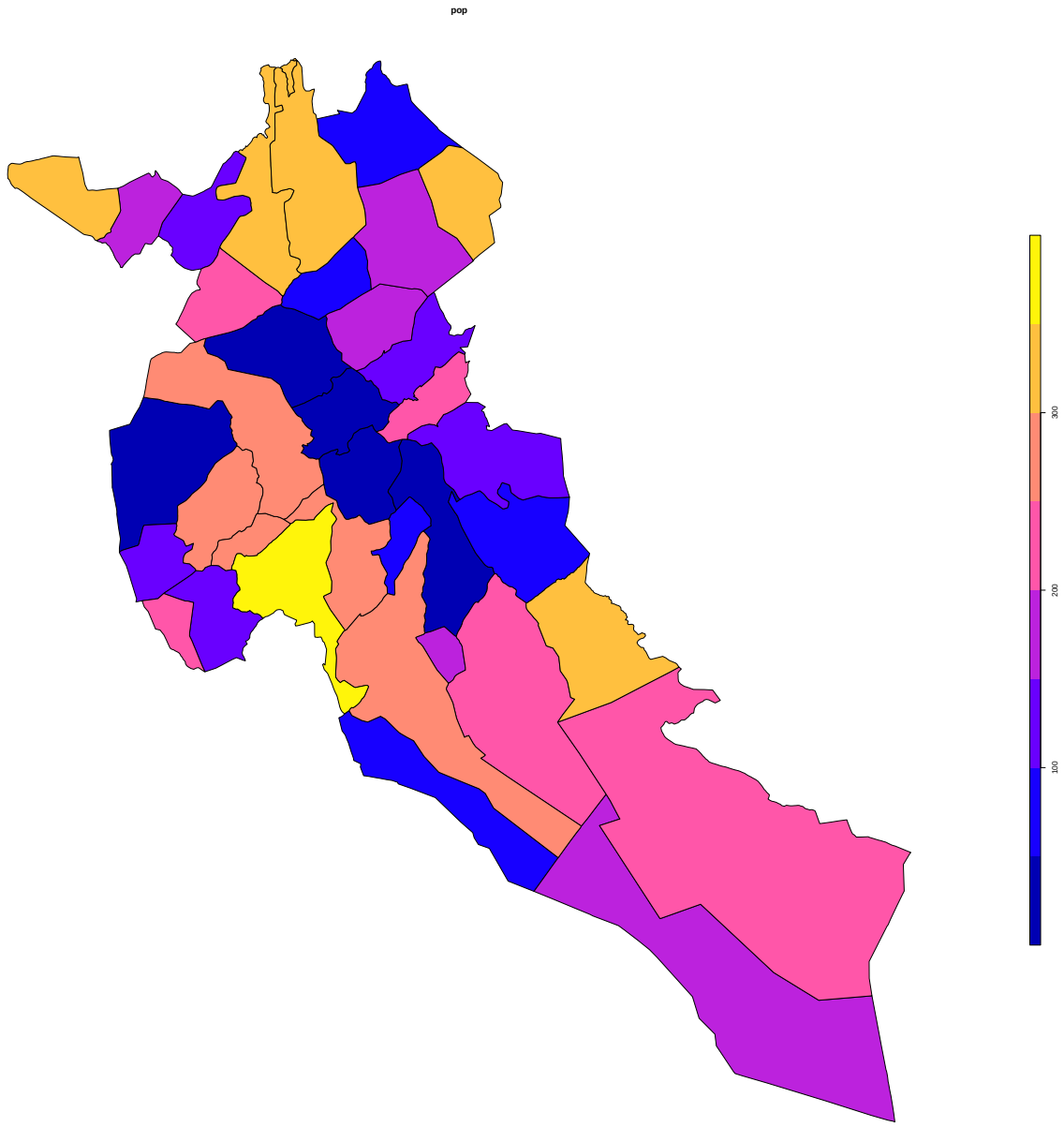
```
pop <- read.csv(file = "djelfa.csv")
#head(pop)
```

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

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

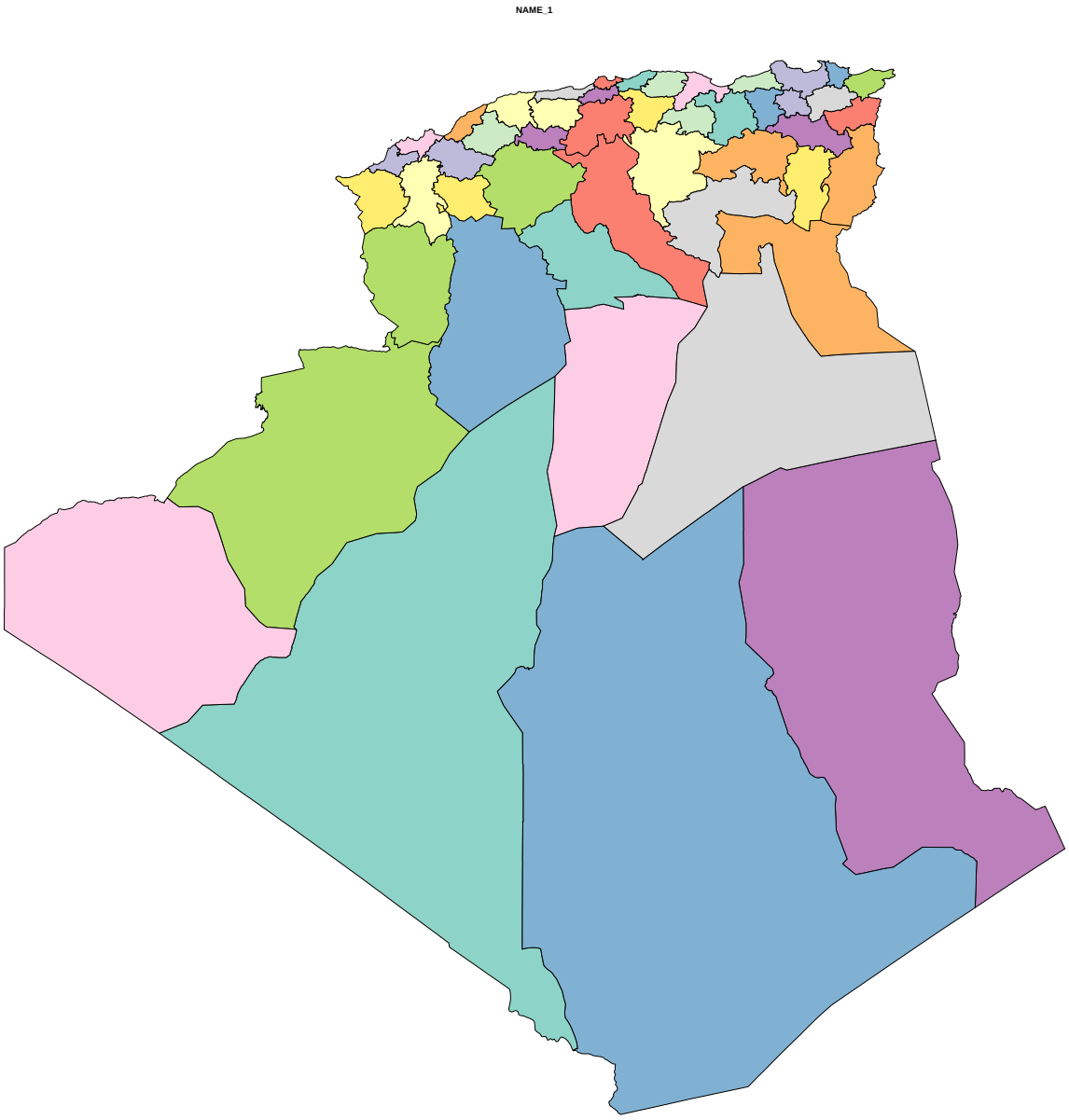



```
y <- pop_djelfa[,c("pop","NAME_2")]
plot(y["pop"])
```




```
#head(y)
```

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




```
w_algeria
```

```
## Simple feature collection with 48 features and 11 fields
## Geometry type: MULTIPOLYGON
## Dimension:     XY
## Bounding box:  xmin: -8.673868 ymin: 18.96023 xmax: 11.98737 ymax: 37.0887
## Geodetic CRS:  WGS 84
## # A tibble: 48 x 12
##    GID_1  GID_0 COUNTRY NAME_1 VARNAME_1 NL_NAME_1 TYPE_1 ENGTYPE_1 CC_1  HASC_1
##    <fct>  <fct> <fct>   <fct>  <fct>     <fct>     <fct>  <fct>     <fct> <fct>
##  1 DZA.1~ DZA   Algeria Adrar  Duperré   <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0623><U+062F>~ W
##  2 DZA.2~ DZA   Algeria Aïn D~ Ain Dafla <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0639><U+064A>~ W
##  3 DZA.3~ DZA   Algeria Aïn T~ Ain Tamo~ <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0639><U+064A>~ W
##  4 DZA.4~ DZA   Algeria Alger  Algeri|A~ <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0627><U+0644>~ W
```

```
##  5 DZA.5~ DZA   Algeria Annaba Anaba|Bo~ <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0639><U+0646><U+0627><U+0628><U+0629>
##  6 DZA.6~ DZA   Algeria Batna  NA        <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0628><U+0627><U+062A><U+0646><U+0629>
##  7 DZA.7~ DZA   Algeria Béchar Colomb-B~ <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0628><U+0634><U+0627><U+0631>
##  8 DZA.8~ DZA   Algeria Béjaïa Bougie|B~ <U+0628><U+062C><U+0627><U+064A><U+0629>     Wilaya Provinc
##  9 DZA.9~ DZA   Algeria Biskra Beskra    <U+0648><U+0644><U+0627><U+064A><U+0629> <U+0628><U+0633><U+0643><U+0631><U+0629>
## 10 DZA.1~ DZA   Algeria Blida  El Boula~ <U+0627><U+0644><U+0628><U+0644><U+064A><U+062F><U+0629>   W
## # ... with 38 more rows, and 2 more variables: ISO_1 <fct>,
## #   geometry <MULTIPOLYGON [°]>
```

```
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
```

```
str(df)
```

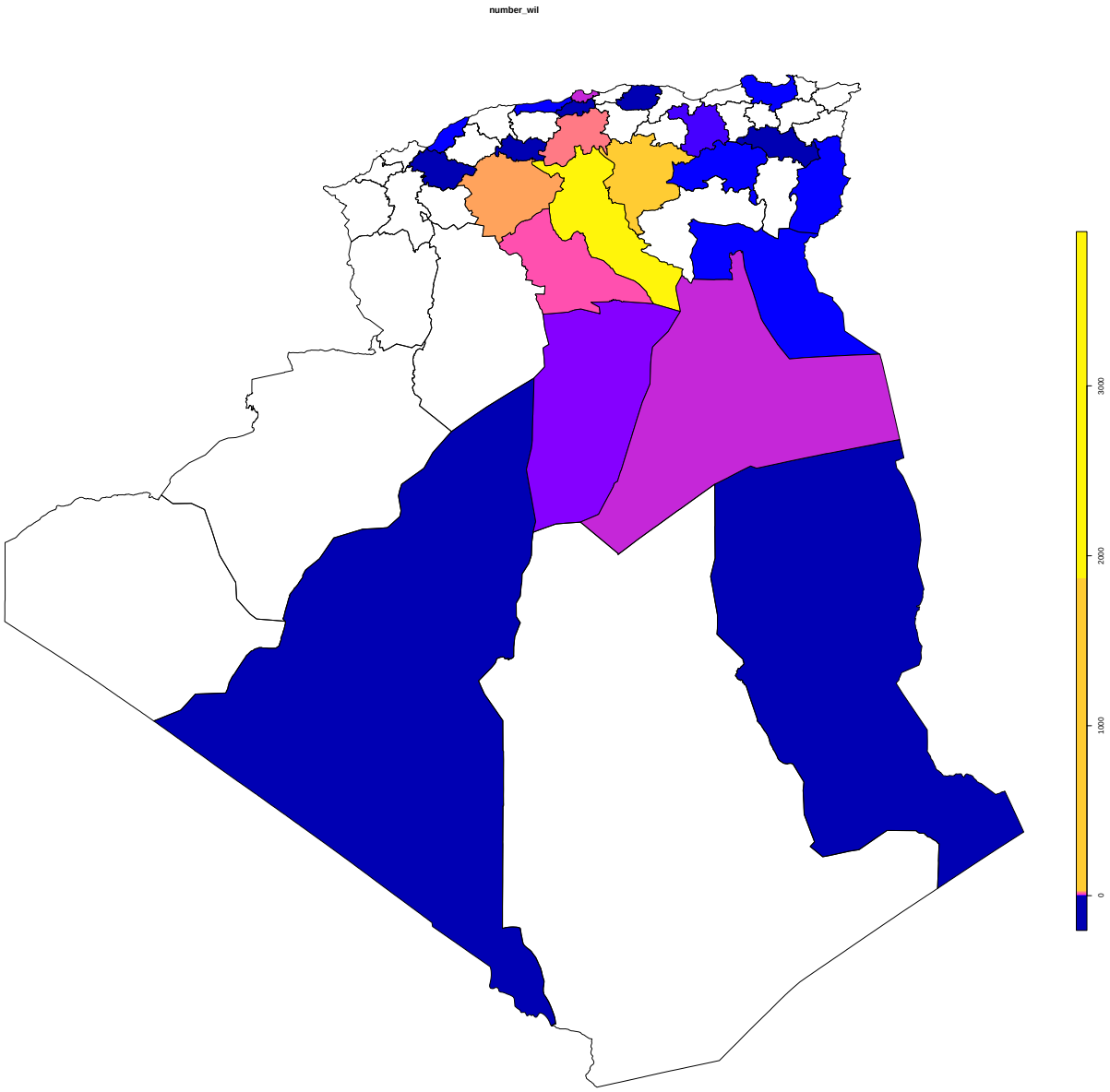
```
## tibble [22 x 3] (S3: tbl_df/tbl/data.frame)
##  $ WILAYAR   : int [1:22] 17000 28000 14000 26000 3000 16000 30000 47000 19000 5000 ...
##  $ number_wil: int [1:22] 3702 35 25 23 8 7 7 5 4 2 ...
##  $ CC_1      : chr [1:22] "17" "28" "14" "26" ...
```

```
#head(df)
```

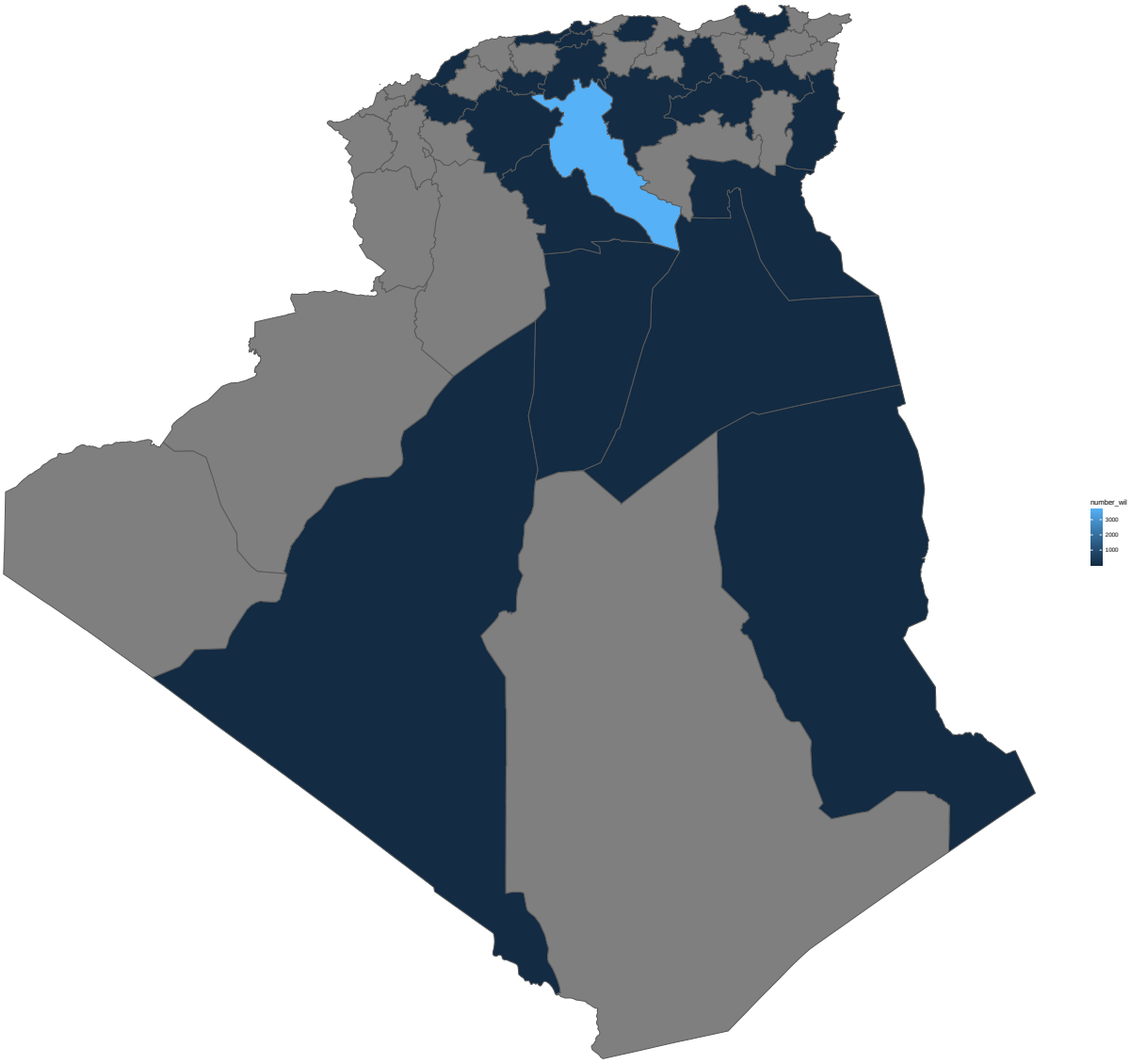
```
#deces_djelfa <- merge(x = w_algeria, y = dff, by.x = "CC_1", by.y = "CC_1")

deces_djelfa <-left_join(w_algeria, df, by='CC_1')
```

```
#deces_djelfa
```

```
plot(deces_djelfa["number_wil"])
```




```
ggplot()+
  geom_sf(data = deces_djelfa,size=0.25,aes(fill=number_wil))+  ##
  theme_void()+
  coord_sf(crs = "+proj=robin")
```


number_wil
3000
2000
1000