COVID-19 Choropleth Map of Nepal

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Introduction

We are going to construct a choropleth map showing the confirmed cases of coronavirus in Nepal. If you have any question or suggestion, do not hesitate to email me.

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Loading the libraries

```
library(rgdal) # For reading the shapefile
library(ggplot2) # For Visualization
library(dplyr) # Data Wrangling
```

Download the shapefile

You can download the shapefile ("Nepal_Districts") and data (csv file) from my github link. https://github.com/sulovek/Data-Analysis-Projects/tree/master/COVID-19%20in%20Nepal

Importing the shapefile and data

```
setwd("R:/Datasets") # Here "R" is my drive name. I am setting working directory and adding the shapefi
Nepal_shp = readOGR(dsn = "Nepal_Districts", layer = "Nepal_Districts", stringsAsFactors = FALSE) # Rem
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "R:\Datasets\Nepal_Districts", layer: "Nepal_Districts"
## with 77 features
## It has 2 fields
## Integer64 fields read as strings:  OBJECTID
```

```
Nepal_corona = read.csv("https://raw.githubusercontent.com/sulovek/Data-Analysis-Projects/master/COVID-
Nepal_corona[Nepal_corona == 0] <- NA   # Replacing Zero with NA
```

Merge Cases in the Map

```
Nepal_shp$CASES = Nepal_corona$Cases
```

Fortify

We will fortify the shape file because ggplot will only read the fortified data.

```
Nepal_df = fortify(Nepal_shp, region = "DISTRICT")
```

Chloreopleth map

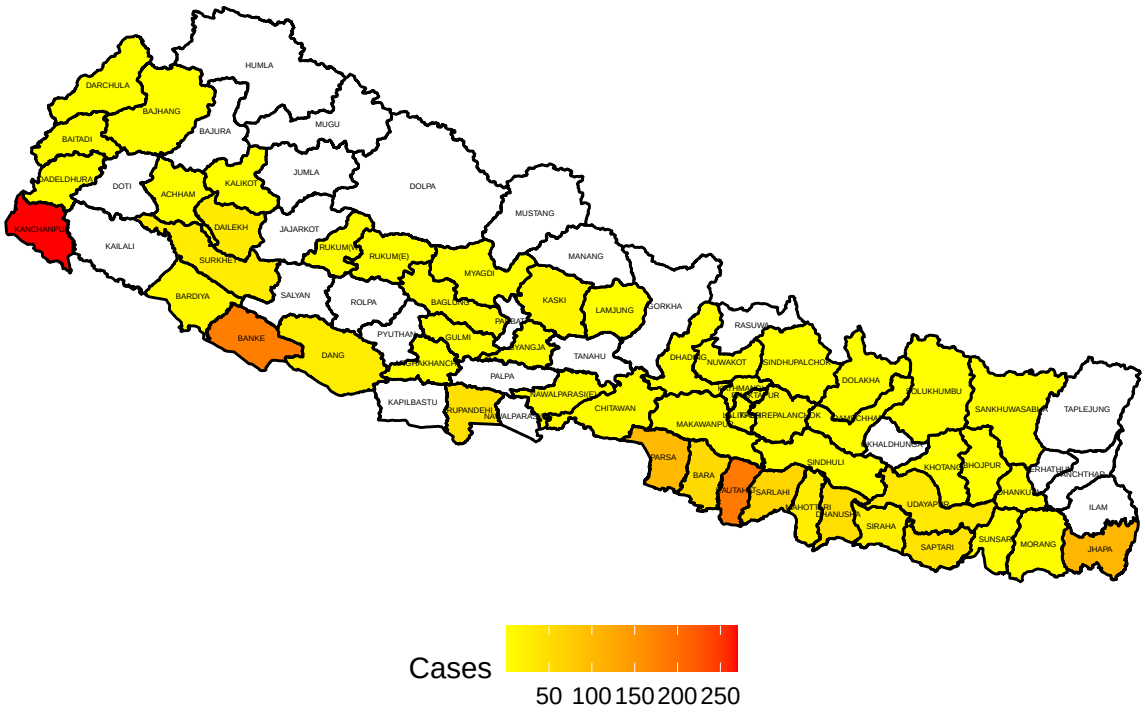
```
choro_dat <- data.frame(region=Nepal_shp@data$DISTRICT,
                        value=Nepal_shp@data$CASES,
                        stringsAsFactors=FALSE)
```

For Labelling

```
centroids = setNames(do.call("rbind.data.frame", by(Nepal_df, Nepal_df$group, function(x) {Polygon(x[c(
district = data.frame(choro_dat$region)
district = district[order(district$choro_dat.region),] # Arranging the district name in ascending order
centroids$label = district
```

Plot

```
Nepal_df = rename(Nepal_df, region = id)
corona_map <- left_join(Nepal_df, choro_dat, by = "region")
ggplot(corona_map, aes(long, lat, group = group))+
  geom_polygon(aes(fill = value), color = "black")+
  scale_fill_continuous(name = "Cases", low="yellow", high="red",
                        guide="colorbar",na.value="white")+
  theme_void()+
  labs(title = "COVID-19 Cases in Nepal (District wise)", subtitle = "May 31, 2020", caption = "Data So
  with(centroids, annotate(geom="text", x = long, y = lat, label=label, size=1)) +
  theme(
    plot.title = element_text(size = 16, face = "bold", hjust = 0.5),
    plot.subtitle = element_text(color = "blue", hjust = 0.5),
    plot.caption = element_text(face = "italic", hjust = 0.9, vjust = 1.5),
    legend.position = "bottom"
)
```



The plot in PDF file may not be clearly displayed.

Bibiliography

1. Tuladhar, A. (2017, April 30). Step-by-Step Choropleth Map in R: A case of mapping Nepal. Retrieved March 28, 2020, from https://medium.com/@anjesh/step-by-step-choropleth-map-in-r-a-case-of-mapping-nepal-7f62a84078d9