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## Administrative regions map of a country with ggmap and ggplot2

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I can make USA state level unemployment graph with the following code.

```
library(XML)
library(ggplot2)
library(plyr)
library(maps)

unemp <-
  readHTMLTable('http://www.bls.gov/web/laus/laumstrk.htm',
    colClasses = c('character', 'character', 'numeric'))[[2]]

names(unemp) <- c('rank', 'region', 'rate')
unemp$region <- tolower(unemp$region)

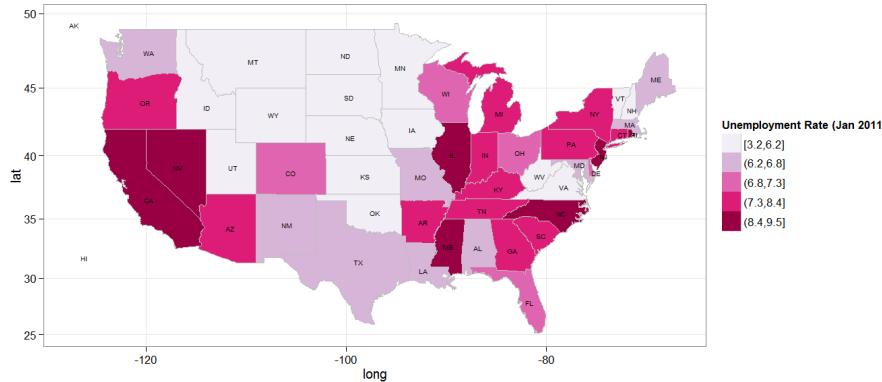
us_state_map <- map_data('state')
map_data <- merge(unemp, us_state_map, by = 'region')

map_data <- arrange(map_data, order)

states <- data.frame(state.center, state.abb)

p1 <- ggplot(data = map_data, aes(x = long, y = lat, group = group))
p1 <- p1 + geom_polygon(aes(fill = cut_number(rate, 5)))
p1 <- p1 + geom_path(colour = 'gray', linestyle = 2)
p1 <- p1 + scale_fill_brewer('Unemployment Rate (Jan 2011)', palette = 'PuRd')
p1 <- p1 + coord_map()
p1 <- p1 + geom_text(data = states, aes(x = x, y = y, label = state.abb, group = N
p1 <- p1 + theme_bw()
p1
```

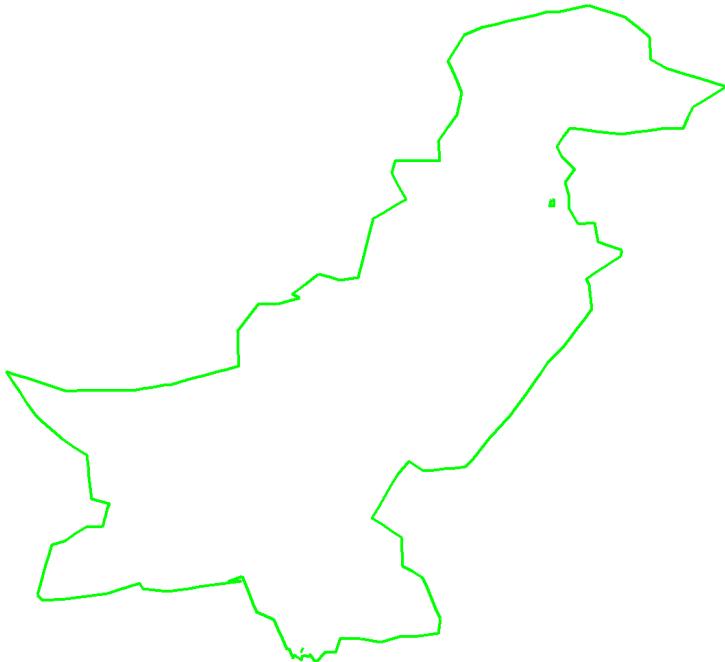
◀ ▶



Now I want to similar kind of graph for Pakistan. My few attempts results are below:

```
data(world.cities)
Pakistan <- data.frame(map("world", "Pakistan", plot=FALSE)[c("x","y")])

p <- ggplot(Pakistan, aes(x=x, y=y)) +
  geom_path(colour = 'green', linestyle = 2) +
  coord_map() + theme_bw()
p <- p + labs(x=" ", y=" ")
p <- p + theme(panel.grid.minor=element_blank(), panel.grid.major=element_blank())
p <- p + theme(axis.ticks = element_blank(), axis.text.x = element_blank(), axis.t
p <- p + theme(panel.border = element_blank())
print(p)
```



and

```

library(mapproj)

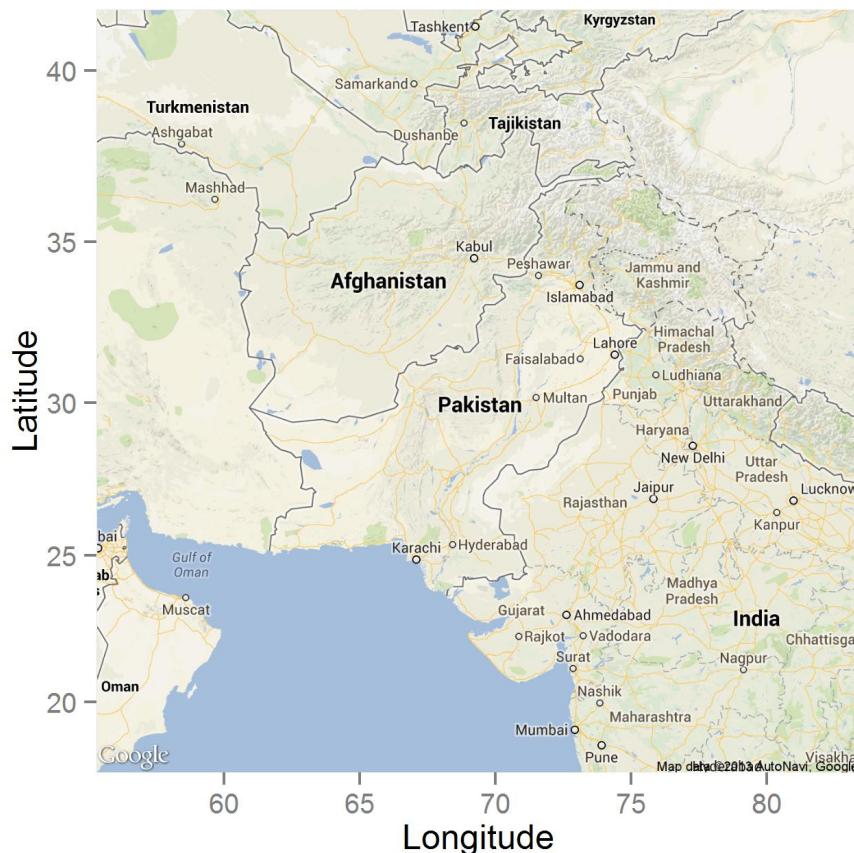
Country <- "Pakistan"

Get_Map_Country <-
  get_map(
    location = Country
    , zoom = 5
    , scale = "auto"
    , maptype = "roadmap"
    , messaging = FALSE
    , urlonly = FALSE
    , filename = "ggmapTemp"
    , crop = TRUE
    , color = "color"
    , source = "google"
    , api_key
  )

Country1 <-
  ggmap(
    ggmap = Get_Map_Country
    , extent = "panel"
    # , base_layer
    , maprange = FALSE
    , legend = "right"
    , padding = 0.02
    , darken = c(0, "black")
  )

Country1 <- Country1 + labs(x="Longitude", y="Latitude")
print(Country1)

```

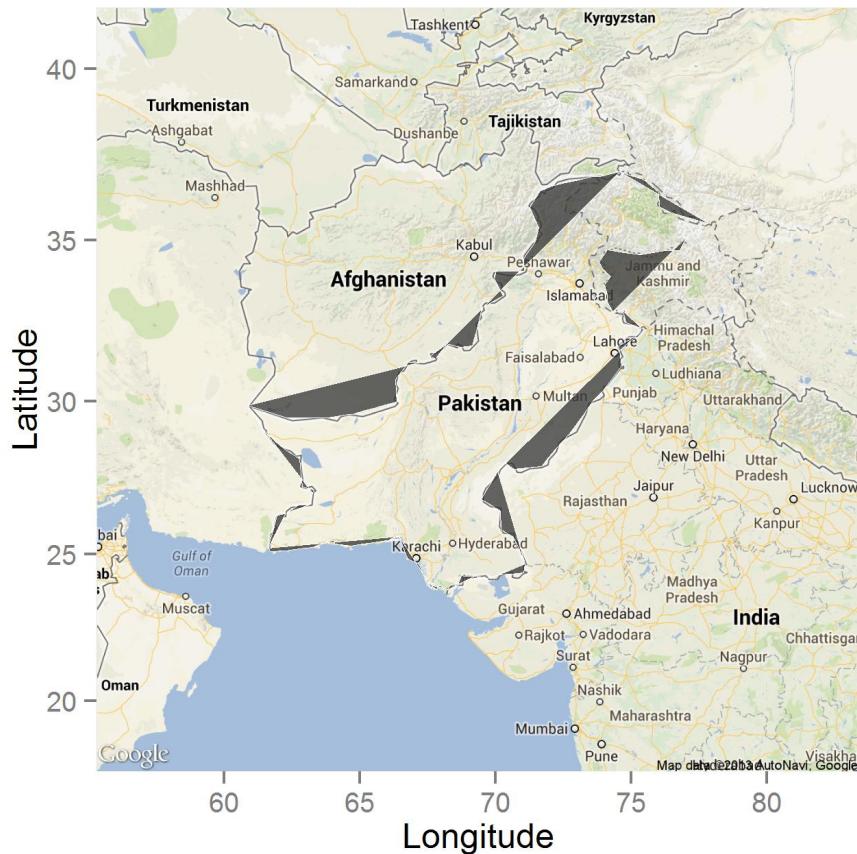


```

Country2 <- Country1 + geom_polygon(data = Pakistan
                                      , aes(x=x, y=y)
                                      , color = 'white', alpha = .75, size = .2)

print(Country2)

```



### Questions

I wonder how to get map of administrative regions of Pakistan as of USA. I know for this we need longitude and latitude of administrative boundaries. I'm wondering how to get longitude and latitude of administrative boundaries for a country. I tried [Global Administrative Areas](#) but without success. Any help in this regard will be highly appreciated. Thanks

[r](#) [ggplot2](#) [ggmap](#)

asked Jul 18 '13 at 12:45

 MYaseen208  
3,451 3 27 78

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You had mentioned that you were unable to use the Global Administrative Areas data. Is it a matter that the data is not what you need, or is it the case that you're having difficulty importing it into R? – [Jim M.](#) Jul 18 '13

at 17:25

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## 2 Answers

I don't know the spatial level of administrative areas you require, but here's two ways to read in shapefile data and .RData formats from [Global Administrative Areas \(gadm.org\)](#), and converting them into data frames for use in ggplot2. Also, in order to replicate the U.S. map, you will need to plot the administrative area names located at the polygon centroids.

```
library(ggplot2)
library(rgdal)
```

### Method 1. SpatialPolygonDataFrames stored as .RData format

```
# Data from the Global Administrative Areas
# 1) Read in administrative area Level 2 data

load("/Users/jmuirhead/Downloads/PAK_adm2.RData")
pakistan.adm2.spdf <- get("gadm")
```

### Method2. Shapefile format read in with rgdal::readOGR

```
pakistan.adm2.spdf <- readOGR("/Users/jmuirhead/Downloads/PAK_adm", "PAK_adm2",
  verbose = TRUE, stringsAsFactors = FALSE)
```

**Creating a data.frame from the spatialPolygonDataframes and merging with a data.frame containing the information on unemployment, for example.**

```
tan.adm2.df <- fortify(pakistan.adm2.spdf, region = "NAME_2")

# ple dataframe of unemployment info
employment.df <- data.frame(id= unique(pakistan.adm2.df[, 'id']),
  mployment = runif(n = length(unique(pakistan.adm2.df[, 'id'])), min = 0, max = 25))

tan.adm2.df <- merge(pakistan.adm2.df, employment.df, by.y = 'id', all.x = TRUE)
```

### Extracting names and centoids of administrative areas for plotting

```
# Get centroids of spatialPolygonDataFrame and convert to dataframe
# for use in plotting area names.

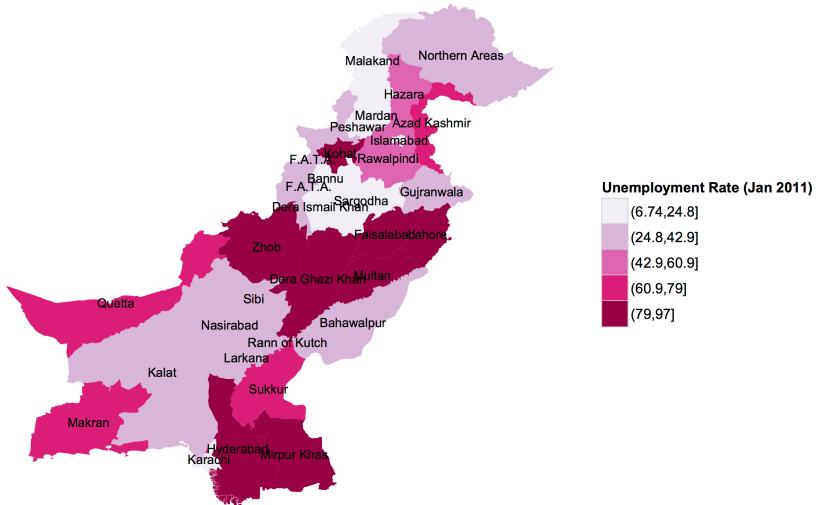
pakistan.adm2.centroids.df <- data.frame(long = coordinates(pakistan.adm2.spdf)[,
  lat = coordinates(pakistan.adm2.spdf)[, 2]]

# Get names and id numbers corresponding to administrative areas
pakistan.adm2.centroids.df[, 'ID_2'] <- pakistan.adm2.spdf@data[, 'ID_2']
pakistan.adm2.centroids.df[, 'NAME_2'] <- pakistan.adm2.spdf@data[, 'NAME_2']
```

### Create ggplot with labels for administrative areas

```
p <- ggplot(pakistan.adm2.df, aes(x = long, y = lat, group = group)) + geom_polygon()
geom_text(data = pakistan.adm2.centroids.df, aes(label = NAME_2, x = long, y = lat,
  labs(x=" ", y=" ") +
  theme_bw() + scale_fill_brewer('Unemployment Rate (Jan 2011)', palette = 'PuRd')
  coord_map() +
  theme(panel.grid.minor=element_blank(), panel.grid.major=element_blank()) +
  theme(axis.ticks = element_blank(), axis.text.x = element_blank(), axis.text.y = e
  theme(panel.border = element_blank())

print(p)
```



edited Jul 18 '13 at 22:46

answered Jul 18 '13 at 19:49


**Jim M.**  
 1,648 3 12
Thanks a lot @Jim M. for your nice answer. – [MYaseen208](#) Jul 19 '13 at 1:49[add comment](#)

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Have you tried <http://www.diva-gis.org/gdata>? That should give you Shapefiles with state/district boundaries for Pakistan.

The [maptools](#) package has functions that let you read and convert Shapefiles to a dataframe that can be used to lay out the boundary polygons.

answered Jul 18 '13 at 16:34


**JConnor**  
 41 4
Thanks @JConnor for your answer. Would you mind to give more detail how to read Shapefiles in R? Thanks – [MYaseen208](#) Jul 18 '13 at 16:43I haven't had much experience with maptools so I'd rather point you to this question on [gis.stackexchange](#) and also to hadley's github page on using [ggplot with Shapefiles](#) – [JConnor](#) Jul 18 '13 at 20:07[add comment](#)

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