Vizualisation using Map

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```
library("zipcode")

library("ggplot2")

library("ggmap")
```

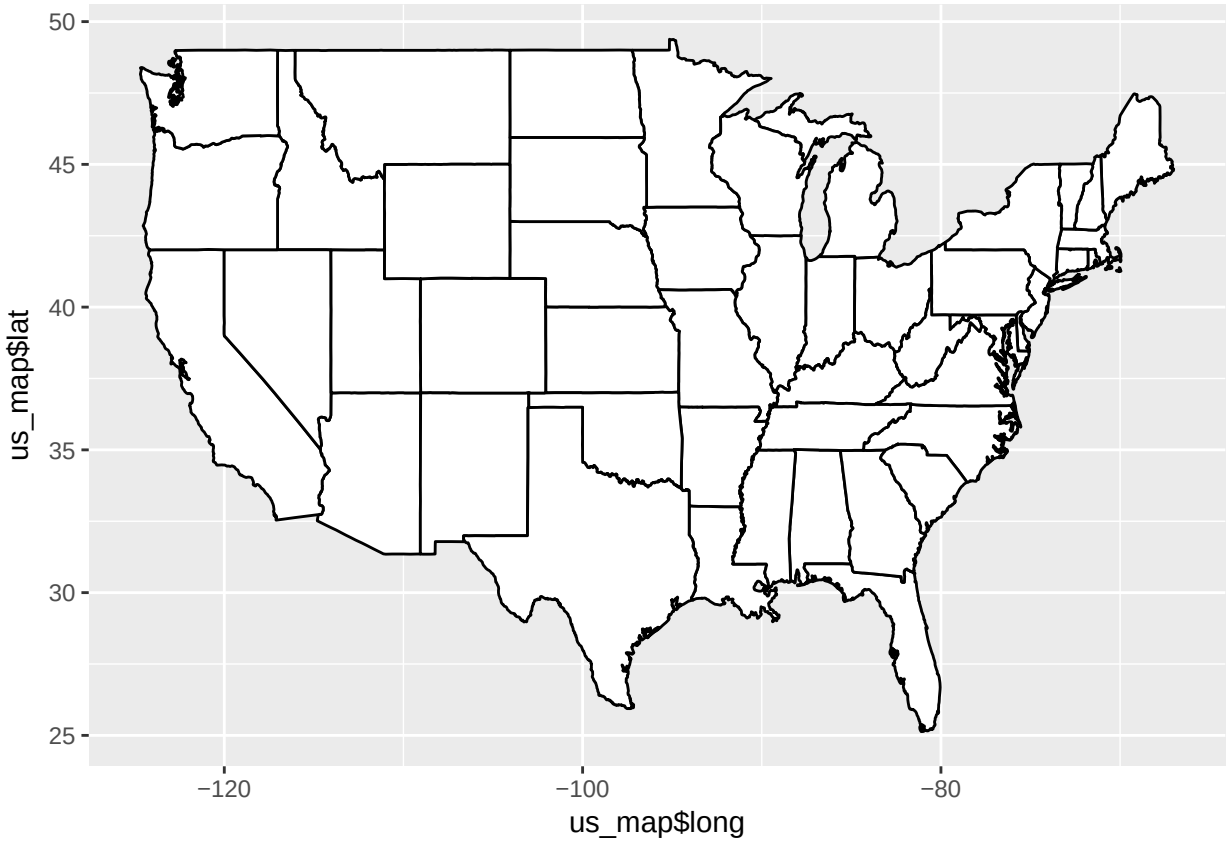
```
#reading the data set
incomeDf <- read.csv("D:/Surabhi docs/portfolio/MedianZIP-3.csv")

#renaming the column names
colnames(incomeDf) <- c("zip","median","mean","population")

#importing the zipcode package
data("zipcode")

#removing the states Alaska and Hawaii
newZip <- subset(zipcode,zipcode$state != "AK")
finalZip <- subset(newZip,newZip$state != "HI")
```

```
#Step 2

#Combining the data frames incomeDf and finalZip using the common sttribute zip between them
mergedDf <- merge(x=incomeDf,y=finalZip,by="zip")

#sorting the state abbreviations in mergedDf to put into the final dataframe
stateAbb <- sort(unique(mergedDf$state))

#finding out the average median income and sum of population in mergedDf
avgmedianDf <- tapply(as.numeric(mergedDf$median),mergedDf$state,mean)
sumPop <- tapply(as.numeric(mergedDf$population),mergedDf$state,sum)

#creating a datframe with average median income, total population and states
custDf <- data.frame(avgmedianDf,sumPop,stateAbb)

#mathing and putting the name of states in the final dataframe
custDf$stateNames <- state.name[match(custDf$stateAbb,state.abb)]
```

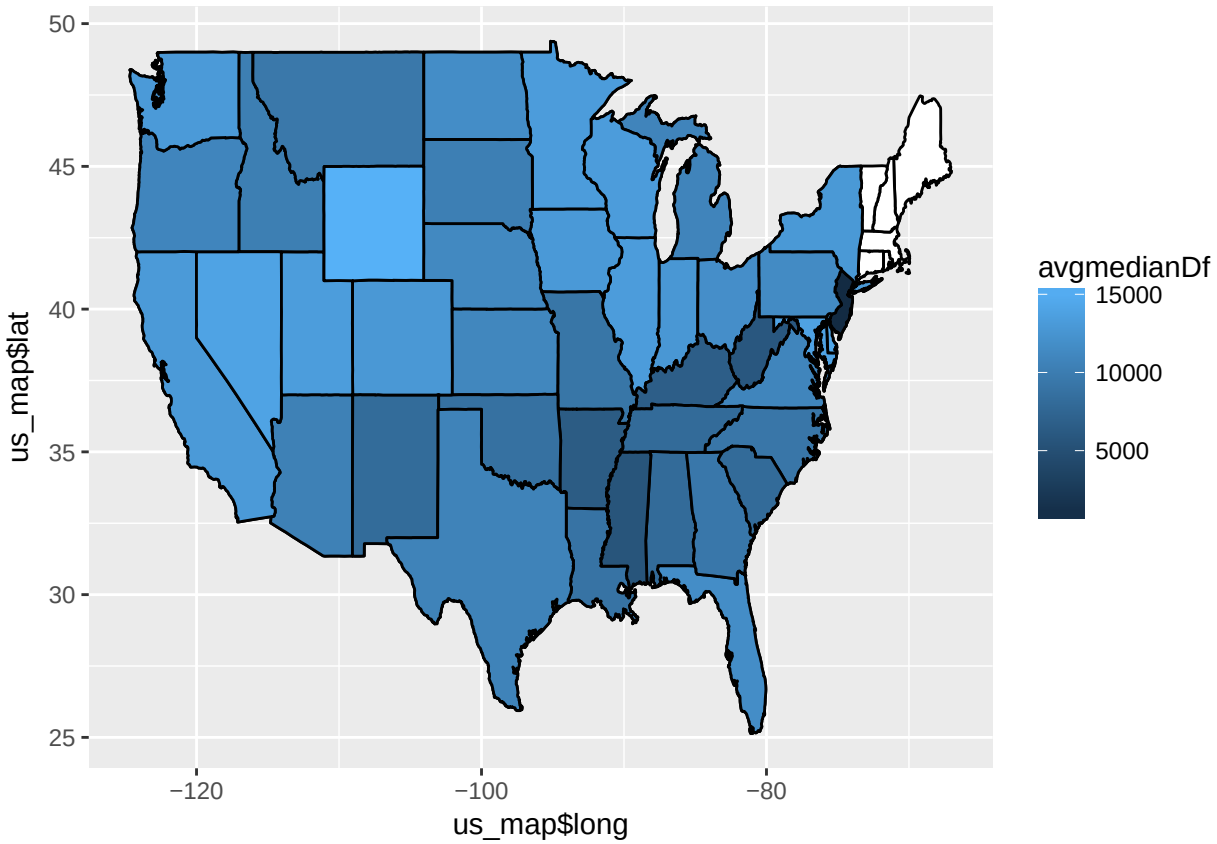
```
#finding out the map data for us from the inbuilt dataset
us_map <- map_data("state")

#creating a simple map
map.simple  <- ggplot()
map.simple  <- map.simple + geom_map(data=us_map,aes(x=us_map$long,y=us_map$lat,map_id=region),map=us_ma
```

```
## Warning: Ignoring unknown aesthetics: x, y
```

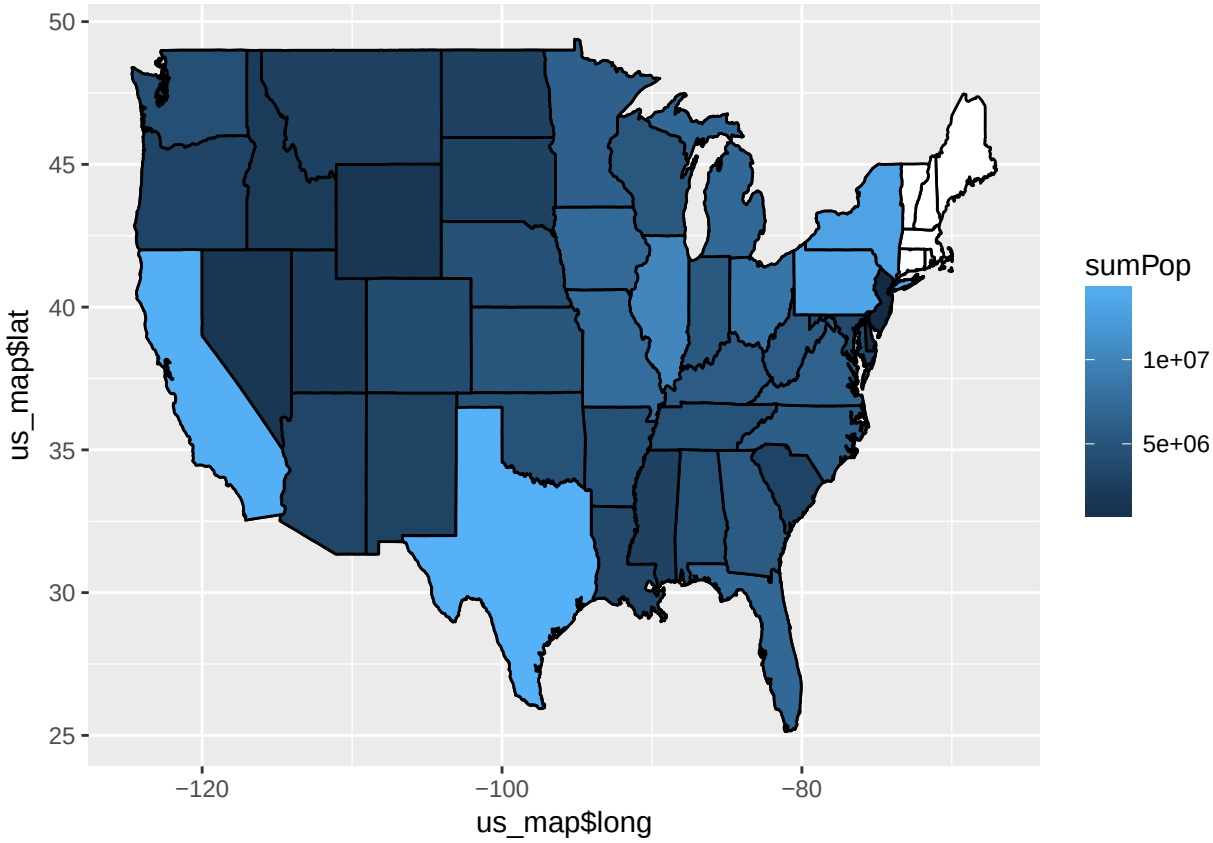
```
map.simple
```



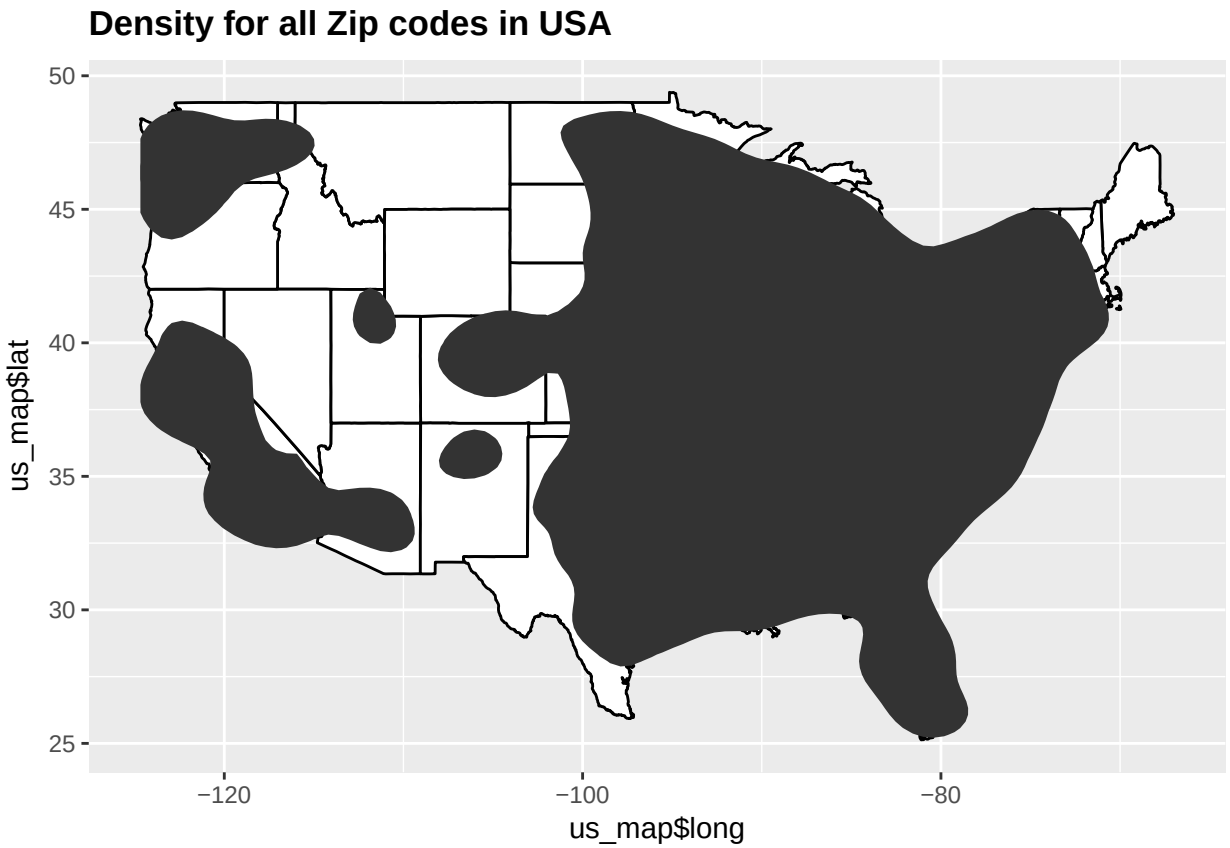

```
#Map showing color with the average median income of each state
custDf$stateNames <- tolower(custDf$stateNames)
map.income  <- map.simple + geom_map(data=custDf,map=us_map,aes(fill=avgmedianDf,map_id=stateNames),col
map.income
```




```
#Map with color representing the population of each state
map.pop <- map.simple + geom_map(data=custDf,map=us_map,aes(fill=sumPop,map_id=stateNames),color="black
map.pop
```




```
#Step 3

#map showing density distribution of zipcodes
map.density <- map.simple + stat_density2d(aes(x=mergedDf$longitude, y=mergedDf$latitude), data=mergedDf
                          scale_fill_gradient(low="black",high="green")+
                          scale_alpha(range=c(0.00,0.25))+
                          ggtitle("Density for all Zip codes in USA")+
                          theme (plot.title=element_text(lineheight=3.5,face="bold"))

map.density
```

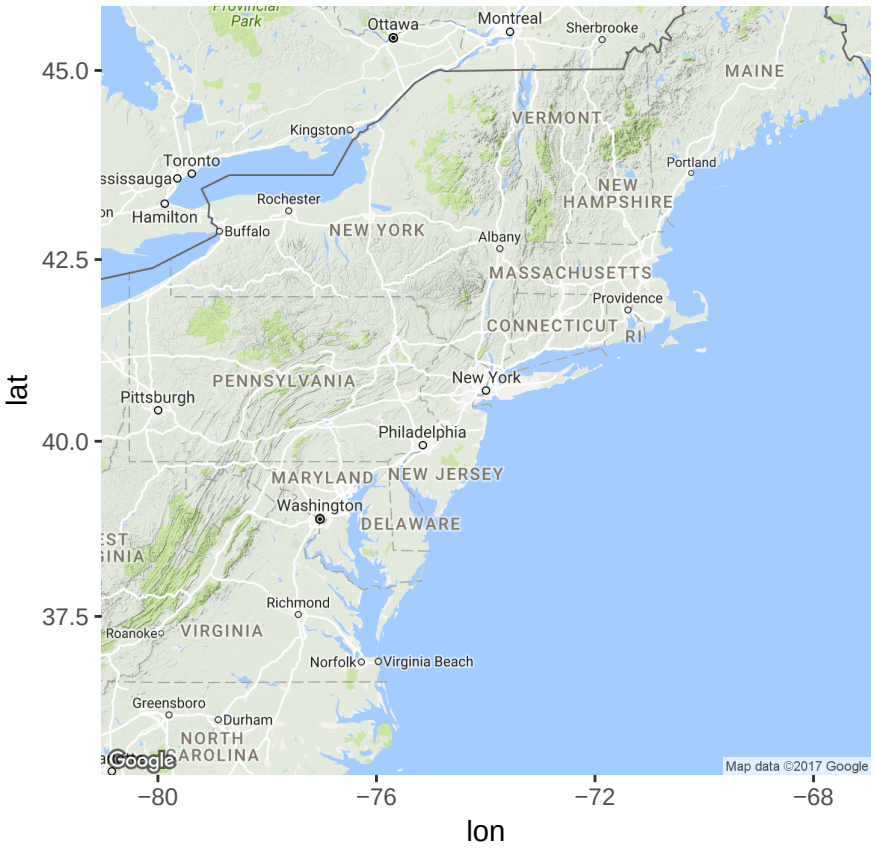



```
#Step 4

# Get New york coordinates from geocode
nyMap <- get_map(location='New York',zoom=6)
```

```
## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=New+York&zoom=6&size=640x640&scal
```

```
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=New%20York&sensor=fal
```

```
map.ny<-ggmap(nyMap)
map.ny
```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VERMONT
Kingston
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Rochester
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