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Class: M003
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Chapter Number: #13
Title of Chapter: Map Mashup

Module 7 Lectures (Part 1: Maps/Data Mashups)

We are looking into data mapping this week.
The feature of indicating public trafficking is really useful!
The good thing about mashup is that it is generating very good visualization information that is beautiful.
map_data
Get the data on the region to be mapped

geom_map
How to render the map(e.g., colors, heatmaps)

coord_map
make sure the map is not “stretched”

map.simple <- ggplot(dummyDF, aes(map_id=state))
map.simple<-map.simple+geom_map(map=us,fill=”white”,+color=”black”)
map.simple<-map.simple+expand_limits(x=us$long, y=us$lat)
map.simple<-map.simple+coor_map()+ggtitle(“basic map of USA”)
map.simple+geom_point(aes(x=-100,y=30))

Module 7 (Part 2: Adding Data to Maps)

dfStates<-readCensus()
dfStates$state<-tolower(dfStates$region)
map.popColor<-ggplot(dfStates,aes(map_id=state))
map.popColor<-map.popColor+geom_map(map=us,aes(fill=july11pop))
map.popColor <- map.popColor+expand_limits(x=us$long,y=us$lat)
map.popColor<-map.popColor+coord_map()+ggtitle(“state population”)
map.popColor+geom_point(aes(x=latlon$lon,y=latlon$lat),color=”darked”,size=3)
g+xlim(-85,-70)+ylim(35,45)+coord_map()

more filter—easier to understand

Module 7 (Part 3: R Coding)

```
Install.packages(“ggmap”)
us<-map_data(“state”)
dummyDF<-data.frame(state.name, stringAsFactor=FALSE)
dummyDF$state<-tolower(dummyOF$dstate.name)
```

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```
map.simple<-ggplot(dummyDF, aes(map_id=state))
map.simple<-map.simple+geom_map(map=us,fill=”white”,color=”black”)
map.simple<-map.simple+expand_limits(x=us$long,y=us$lat)
map.simple<-map.simple+coord_map()+ggtitle(“basic map of USA”)
dfStates<-readState()
dfState$state<-gsub(“\\”,” ”,dfStates$state)
dfStates$state<-tolower(dfState$state)
str(dfStates)

map.popColor <- ggplot(dfStates,aes(map_id=state))
map.popColor<- map.popColor+ geom_map(map=us, aes(fill=base2010))
map.popColor<- map.popColor+ expand_limits(x=us$long, y=us$lat)
map.popColor<-map.popColor+coord_map()+ggtitle(“state population”)
map.simple_geom_point(aes(x=-100,y=30))
map.simple+geom_point(aes(x=-100,y=30),color=”darked”,shape=1)

latlon<-geocode(“Syracuse University, Syracuse, ny”)
map.popColor+geom_point(aes(x=latlon$lon,y=latlon$lat),color=”darked”,size=3)
l<-data.frame(latlon)
latlon<-geocode(“colorado”)
l[2,]<-latlon
l[3,]<-geocode(“denver, colorado”)
map.simple+geom_point(data=1,aes(x=lon,y=lat))
l$state<-“?”
map.simple+geom_point(data=1,aes(x=lon,y=lat),alpha=.5,color”darked”,size=3)
```

Exercise Review
Read the dataset and put it into ggmap
Use map.popColor() to display population density

Question for Class
How are you? Please have a good day.