

DataFest Germany 2015

Mini Workshop

Introduction to RgoogleMaps

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RgoogleMaps Package

- ▶ Easy to use R interface to query the Google server for static maps.
- ▶ Use the map as a background image to overlay plots within R.
- ▶ `library(RgoogleMaps)`
- ▶ Following packages should also be loaded:
 - ▶ `library(SpatialEpi)`
 - ▶ `library(PBSmapping)`
- ▶ Most important functions:
 - ▶ `GetMap()`
 - ▶ `qbbox()`
 - ▶ `GetMap.bbox()`
 - ▶ `PlotOnStaticMap()`
 - ▶ `bubbleMap()`

GetMap(): Get World Map With Specified Center, Zoom Level and Map Type

```
GetMap(center=c(0,0), zoom=1, destfile="", maptype="satellite")
```



GetMap(): Define Zoom Level

```
GetMap(center=c(0,0), zoom=2, destfile="", maptype="satellite")
```

```
GetMap(center=c(0,0), zoom=3, destfile="", maptype="satellite")
```



GetMap(): Define Paradeplatz in Mannheim as Center

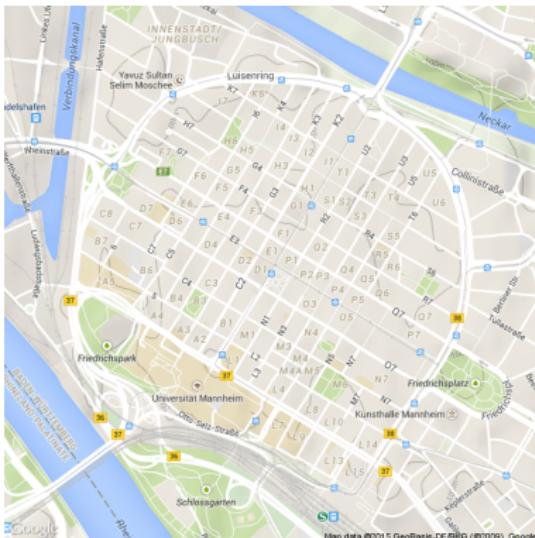
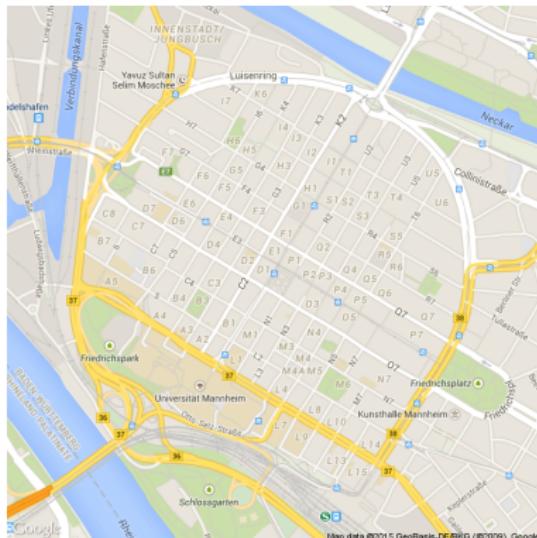
```
Mannheim.Map <- GetMap(center=c(49.48744,8.46604), zoom=15,  
destfile="", maptype="satellite")
```



GetMap(): Define Map Type

```
GetMap(center=c(49.48744,8.46604), zoom=15, destfile="",  
maptype="roadmap")
```

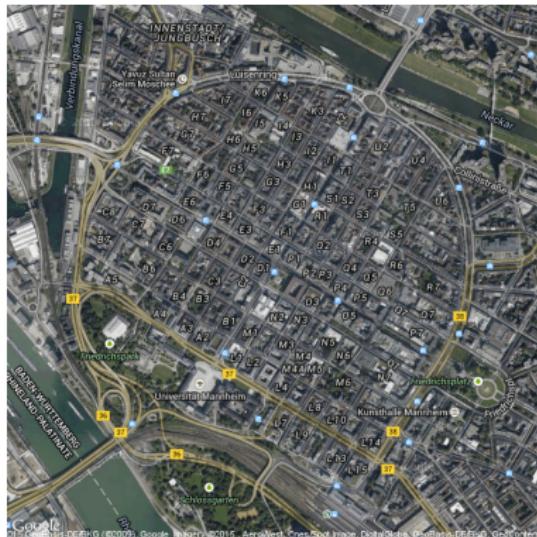
```
GetMap(center=c(49.48744,8.46604), zoom=15, destfil ="",  
maptype="terrain")
```



GetMap(): Define Map Type (cont.)

```
GetMap(center=c(49.48744,8.46604), zoom=15, destfile="",  
maptype="hybrid")
```

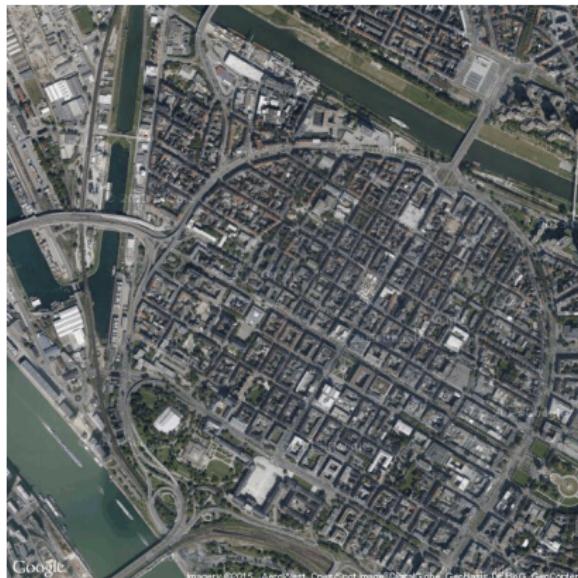
```
GetMap(center=c(49.48744,8.46604), zoom=15, destfile="",  
GREYSACLE=TRUE)
```



Alternative: qbbox() and GetMap.bbox()

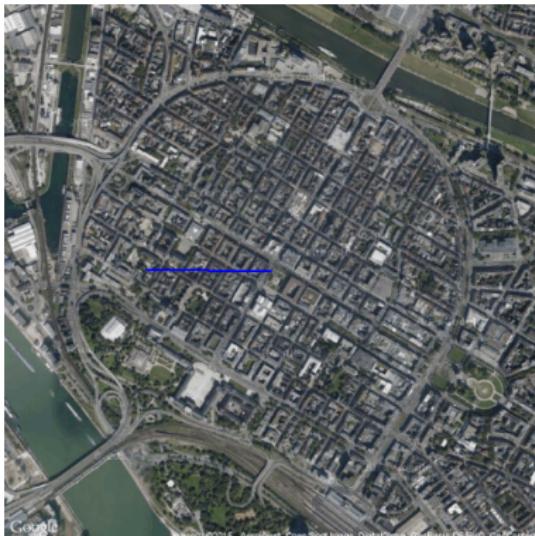
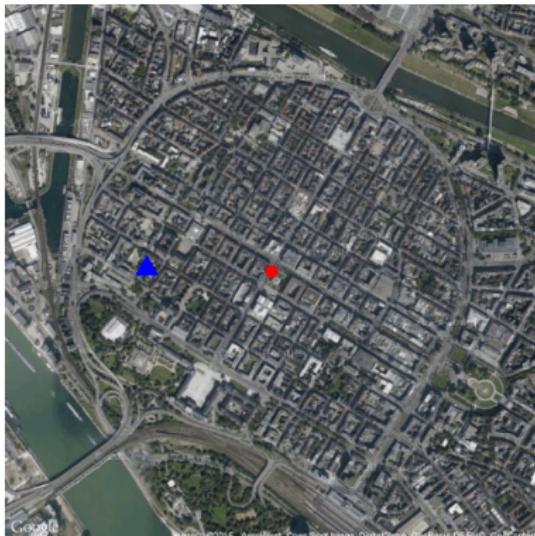
```
M.qb <- qbbox(lat=c(49.484, 49.495), lon=c(8.460, 8.468))
```

```
Mannheim.Map <- GetMap.bbox(M.qb$lonR, M.qb$latR,  
destfile="", maptype="satellite")
```

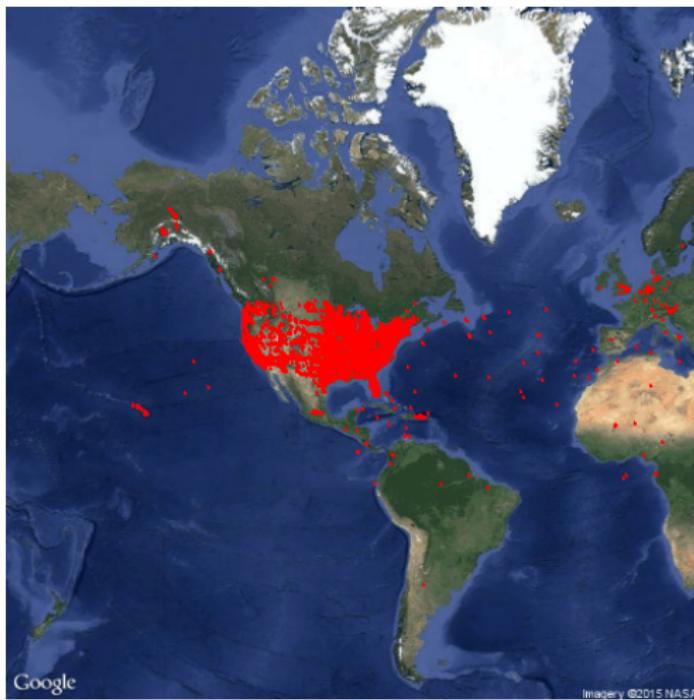


PlotOnStaticMap(): Insert Points and Lines

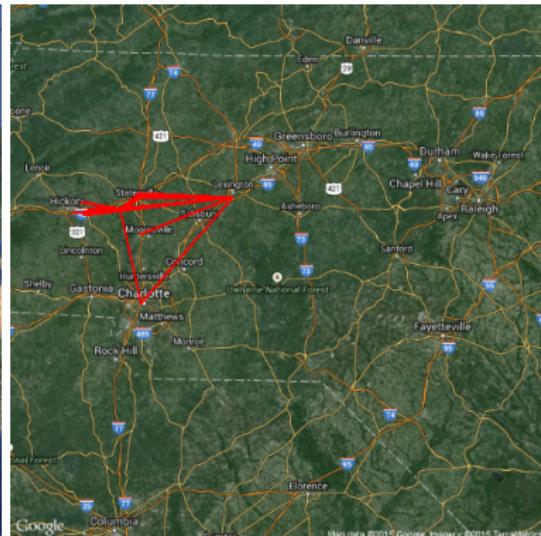
```
PlotOnStaticMap(Mannheim.Map, lon=c(8.46604, 8.45960),  
lat=c(49.48755, 49.48744 ), pch=c(17,16), cex=c(3,2), col=c(4,2), lwd=2,  
zoom=15, FUN=lines )
```



DataFest 2015 Example: Start Locations for App Usage (Data File "loc")



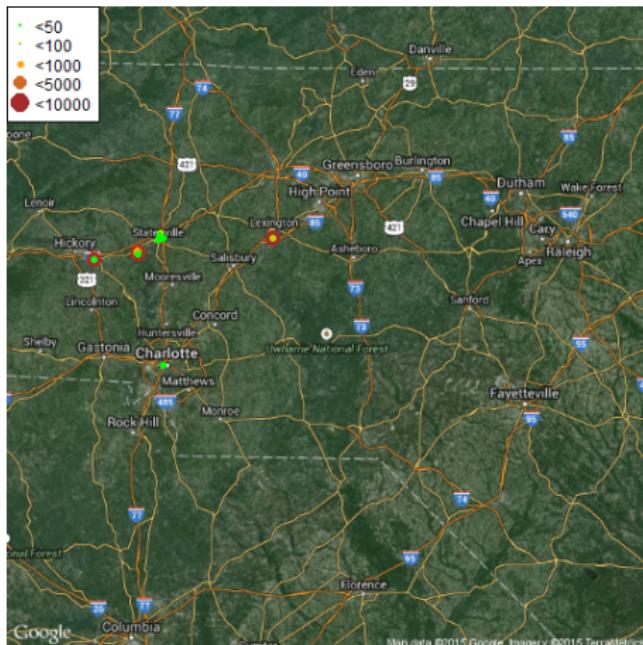
DataFest 2015 Example: Start Locations for App Usage For A Single Person



DataFest 2015 Example: bubbleMap()

Plot duration of App usage in different locations.

```
bubbleMap(data, map, coords=c("lon","lat"), zcol="duration", alpha=0.7,  
key.entries=c(50, 100, 1000, 5000, 10000)
```



RgoogleMaps

More functions available to be explored!

Including **GetMap.OSM()** making use of OpenStreetMap.

