Add images to a R markdown report

Learning Objectives

After completing this tutorial, you will be able to:

- Create a quick basemap using ggmap

What you need

You need `R` and `RStudio` to complete this tutorial. Also you should have an `earth-analytics` directory setup on your computer with a `/data` directory with it.

- install **ggmap**: 'install.packages('ggmap')
- How to Setup R / RStudio
- Setup your working directory

```
# install devtools
#install.packages("devtools")
# install ggmap from dev space
devtools::install_github("dkahle/ggmap")
## Skipping install of 'ggmap' from a github remote, the SHA1 (c6b75792) has not changed since last ins
##   Use `force = TRUE` to force installation

library(ggmap)
```

Create basemap

First, let's create a basemap that shows the location of our stream gage.

```
myMap <- get_map(location = "Boulder, Colorado",
          source="google",
          maptype="terrain", crop=FALSE,
          zoom=6)
## Source : https://maps.googleapis.com/maps/api/staticmap?center=Boulder,+Colorado&zoom=6&size=640x640
## Source : https://maps.googleapis.com/maps/api/geocode/json?address=Boulder%2C%20Colorado
# plot map
ggmap(myMap)
```

Next, let's add a point to our map representing the location of our actual stream gage data.

Latitude: 40.051667 Longitude: 105.178333

USGS gage 06730200 40°03'06" 105°10'42"

```
# add points to your map
# creating a sample data.frame with your lat/lon points
lon <- c(-105.178333)
lat <- c(40.051667)
df <- as.data.frame(cbind(lon,lat))

# create a map with a point location for boulder.
```

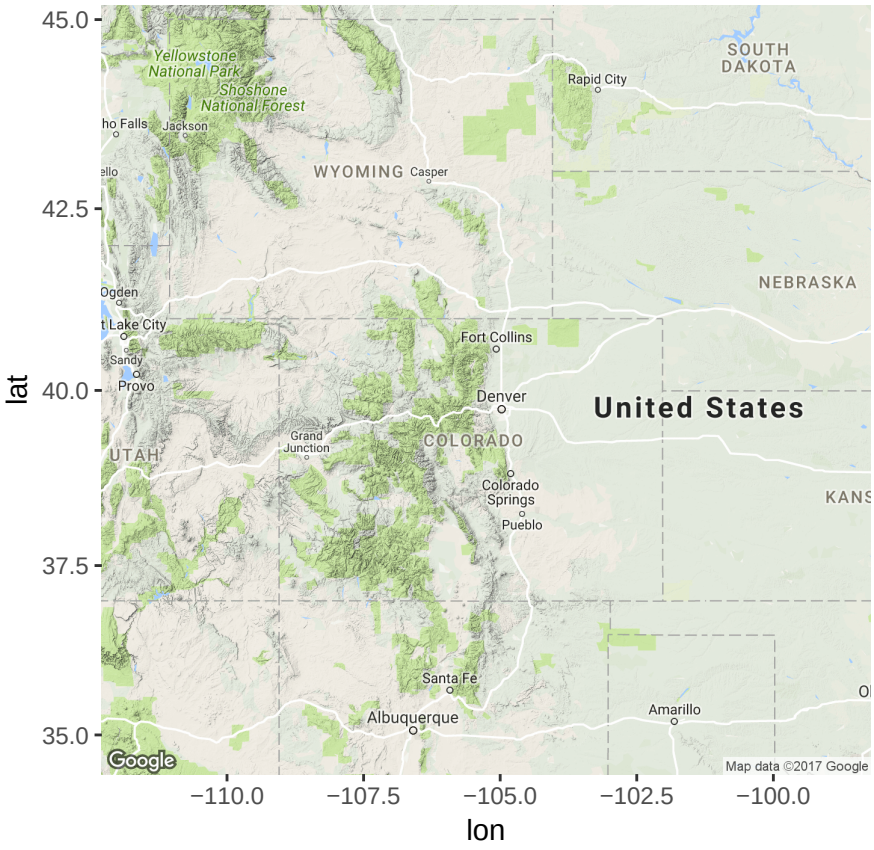
45.0
42.5
40.0
37.5
35.0
lat
−110.0
−107.5
−105.0
−102.5
−100.0
lon
Yellowstone National Park
Shoshone National Forest
Jackson
WYOMING
Casper
Rapid City
SOUTH DAKOTA
NEBRASKA
Ogden
Lake City
Sandy
Provo
Fort Collins
Denver
United States
Grand Junction
UTAH
COLORADO
Colorado Springs
Pueblo
Santa Fe
Albuquerque
Amarillo
Google
Map data ©2017 Google

Figure 1:

```
ggmap(myMap) + labs(x = "", y = "") +
  geom_point(data = df, aes(x = lon, y = lat, fill = "red", alpha = 0.2), size = 5, shape = 19) +
  guides(fill=FALSE, alpha=FALSE, size=FALSE)
```

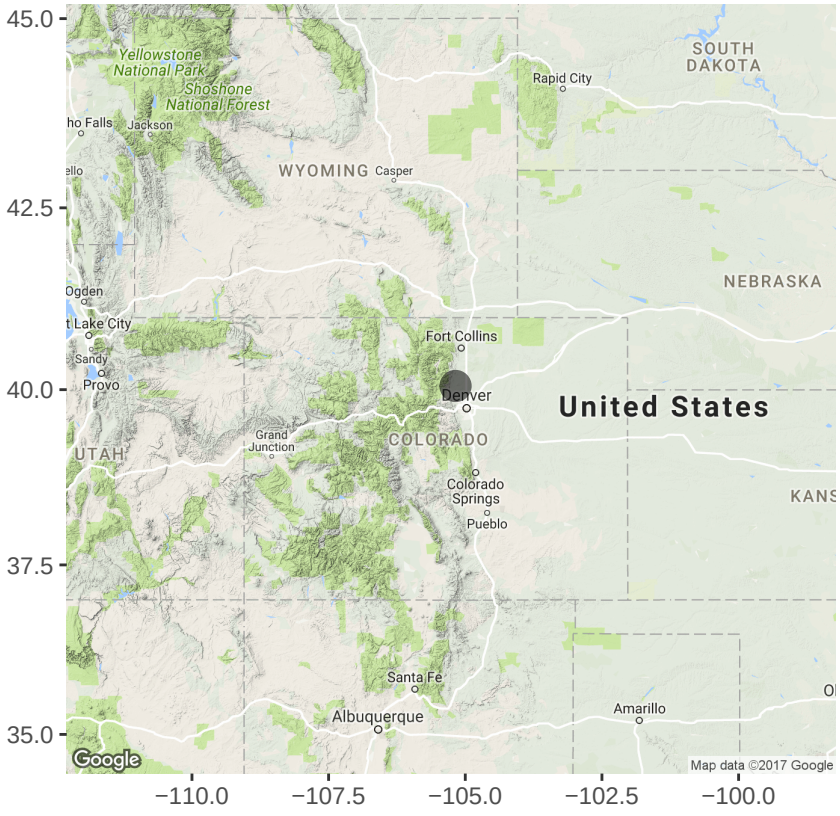

Figure 2: