Lab 1

Xin Zhang

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Part 1: Building the Book

Deliverable (1): what is the last word in chapter 15? - You don't have to answer this question, if things don't work, but please answer the next one and see the next page.

The last word is 'pseudo-class'

Deliverable (2): Write a paragraph on the biggest problem you encountered when you were building the book, and how you managed to solve it.

The biggest problem is on the Condition section. There are severals lines, in which the package 'testthat' is used. Though I updated this package from Hadley's Github, the code can not be successfuly run. Susan helped me with this by commenting those lines.

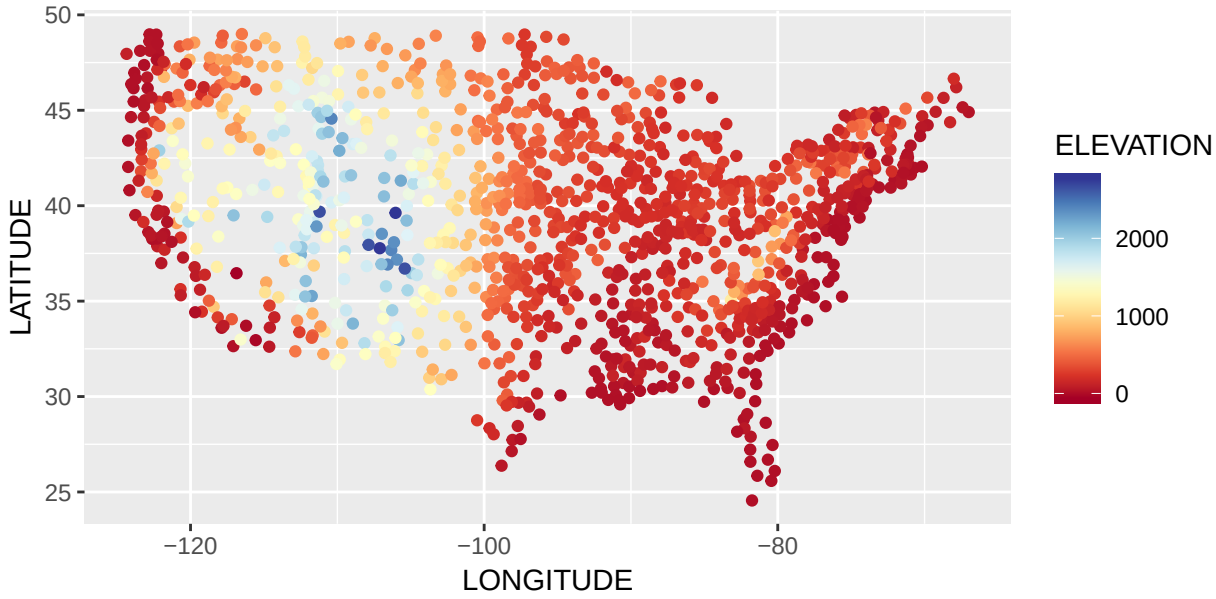
Part 2: Weather Station

```
library(readr)
weather <- read_fwf("ftp://ftp.ncdc.noaa.gov/pub/data/ushcn/v2.5/ushcn-v2.5-stations.txt",col_positions
```

```
## Parsed with column specification:
## cols(
##   `COUNTRY CODE ` = col_character(),
##   `NETWORK CODE` = col_character(),
##   `ID PLACEHOLDERS ("00")` = col_character(),
##   `COOP ID` = col_character(),
##   LATITUDE = col_double(),
##   LONGITUDE = col_double(),
##   ELEVATION = col_double(),
##   STATE = col_character(),
##   NAME = col_character(),
##   `COMPONENT 1 (COOP ID)` = col_character(),
##   `COMPONENT 2 (COOP ID)` = col_character(),
##   `COMPONENT 3 (COOP ID)` = col_character(),
##   UTC_OFFSET = col_double()
## )
```

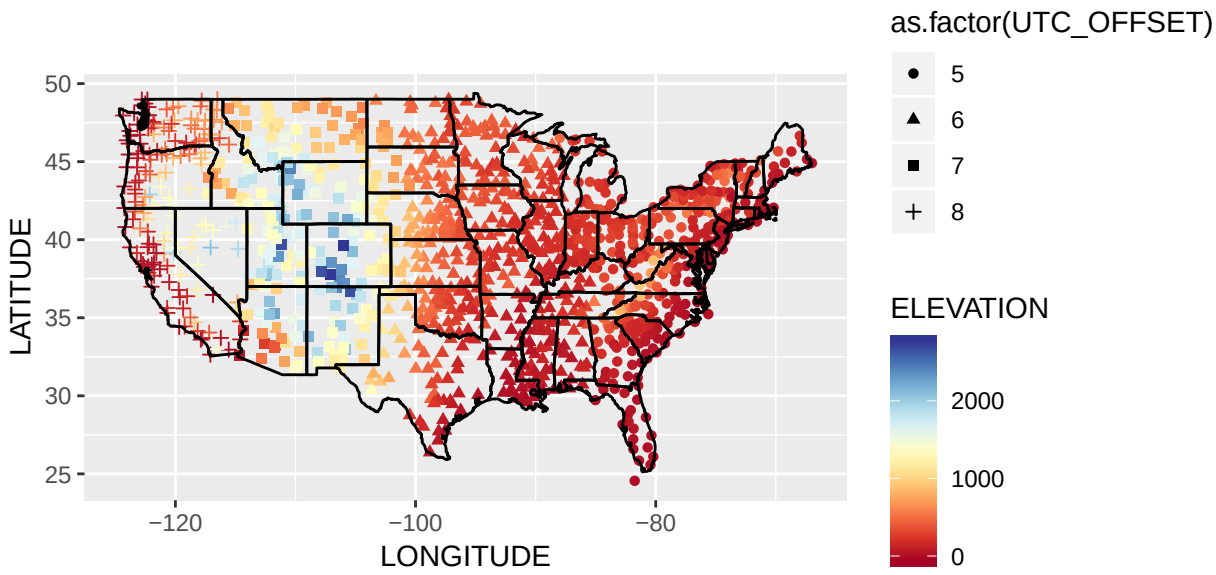
Creat the plot

```
library(ggplot2)
library(RColorBrewer)
p<-ggplot()+geom_point(data=weather,aes(y=LATITUDE,x=LONGITUDE,colour=ELEVATION))+scale_color_gradientn
p
```



Include the state information and time zone

```
library(ggmap)
library(maps)
library(mapdata)
states <- map_data("state")
p <- ggplot()+geom_point(data=weather,aes(y=LATITUDE,x=LONGITUDE,colour=ELEVATION,shape = as.factor(UTC
p + geom_path(data = states,aes(x = long, y = lat, group = group), color = "black")
```



Download .gz file and open with tools available in R.

```
download.file("ftp://ftp.ncdc.noaa.gov/pub/data/ushcn/v2.5/ushcn.tavg.latest.raw.tar.gz",destfile = "us
untar("ushcn.tavg.latest.raw.tar.gz")
```

Check the number of files inside the file ushcn.tavg.latest.raw.tar.gz and the name of the file containing the temperature data of your hometowns or Fort Dodge, IA (please specify).

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
files <- list.files("ushcn.v2.5.5.20190206")
cat('total number of files is', length(files))
```

```
## total number of files is 1218
```

```
weather %>% filter(grepl("FORT DODGE", weather$NAME)) %>% select(`COUNTRY CODE `,`NETWORK CODE`,`ID PLA
cat('The name of the file containing the temperature data of Fort Dodge, IA is',files[index])
```

```
## The name of the file containing the temperature data of Fort Dodge, IA is USH00132999.raw.tavg
```

```
weather %>% filter(grepl("AMES", weather$NAME)) %>% select(`COUNTRY CODE `,`NETWORK CODE`,`ID PLACEHOLD
cat('The name of the file containing the temperature data of Ames, IA is',files[index])
```

```
## The name of the file containing the temperature data of Ames, IA is USH00324418.raw.tavg
```