Reproducible Research

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library(data.table)
library(ggplot2)

## downloading the file
download.file("https://d396qusza40orc.cloudfront.net/repdata%2Fdata%2FStormData.csv.bz2", "storm
data.csv.bz2")

## reading in the data
data <- read.csv(bzfile("stormdata.csv.bz2"))

## adding up injuries, fatalities, property damagea and crop damage according to event types
aggregatedInjuriesDT <- aggregate(INJURIES~EVTYPE, data, sum)
aggregatedFatalitiesDT <- aggregate(FATALITIES~EVTYPE, data, sum)
aggregatedPropDmgDT <- aggregate(PROPDMG~EVTYPE, data, sum)
aggregatedCropDmgDT <- aggregate(CROPDMG~EVTYPE, data, sum)

## sorting aggregated data sets
sortedInjuriesDT <- aggregatedInjuriesDT[order(aggregatedInjuriesDT$INJURIES , aggregatedInjurie
sDT$EVTYPE, decreasing = TRUE), ]
sortedFatalitiesDT <- aggregatedFatalitiesDT[order(aggregatedFatalitiesDT$FATALITIES , aggregate
dFatalitiesDT$EVTYPE, decreasing = TRUE), ]
sortedPropDmgDT <- aggregatedPropDmgDT[order(aggregatedPropDmgDT$PROPDMG , aggregatedPropDmgDT$E
VTYPE, decreasing = TRUE), ]
sortedCropDmgDT <- aggregatedCropDmgDT[order(aggregatedCropDmgDT$CROPDMG , aggregatedCropDmgDT$E
VTYPE, decreasing = TRUE), ]

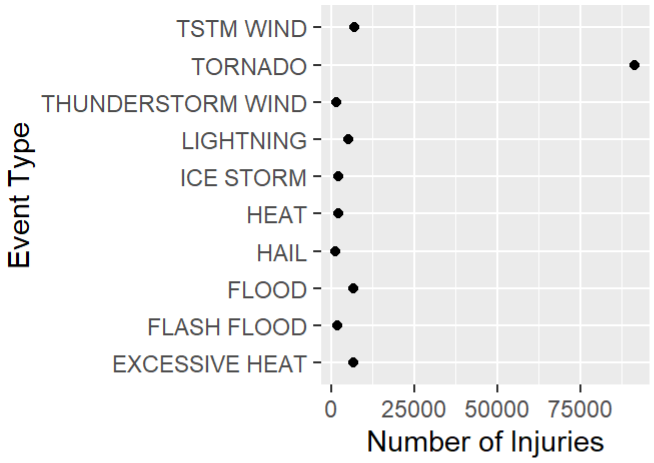
## grabbing most harmful events, i decided to just take the top 10
mostHarmfulInjuriesEvents <- head(sortedInjuriesDT, n = 10)
mostHarmfulFatalitiesEvents <- head(sortedFatalitiesDT, n = 10)
mostHarmfulPropDmgEvents <- head(sortedPropDmgDT, n = 10)
mostHarmfulCropDmgEvents <- head(sortedCropDmgDT, n = 10)

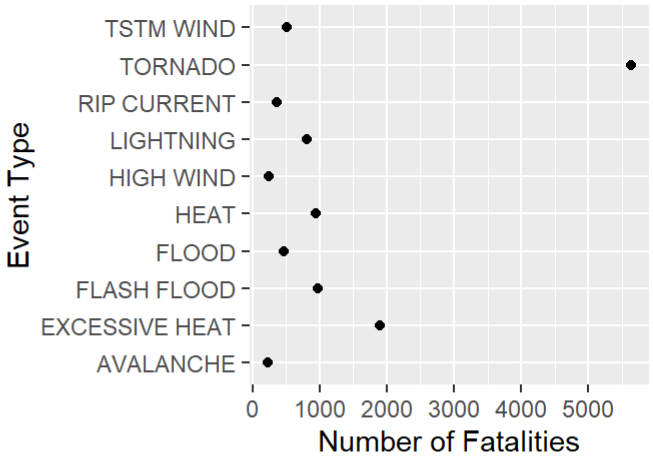
library(gridExtra)

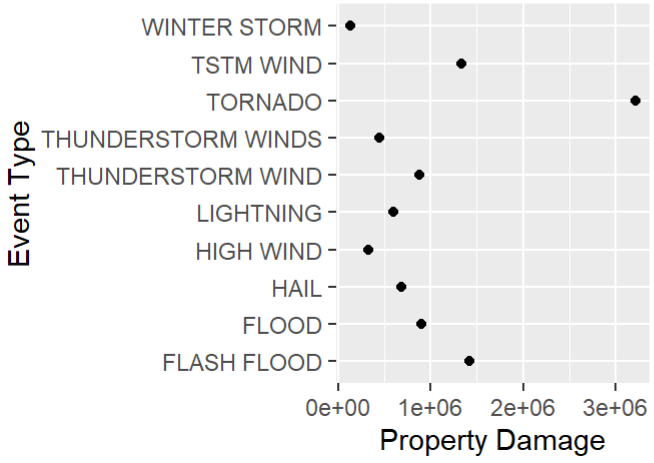
## plotting injuries, fatalities, property damage and crop damage related events on a graph

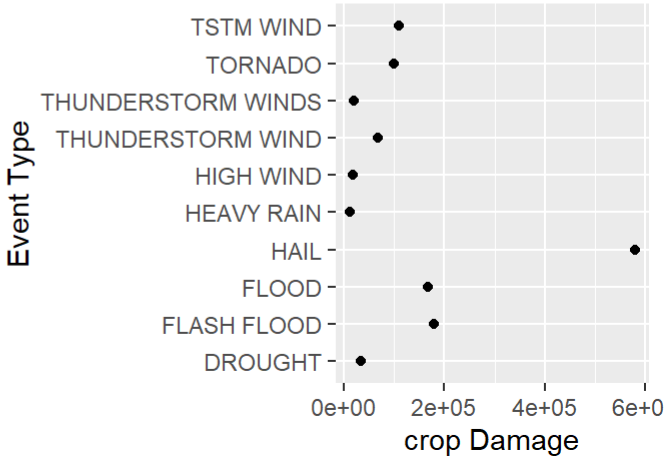
p1 <- qplot(INJURIES, EVTYPE, data = mostHarmfulInjuriesEvents , xlab="Number of Injuries", ylab
="Event Type")
p2 <- qplot(FATALITIES, EVTYPE, data = mostHarmfulFatalitiesEvents , xlab="Number of Fatalities"
, ylab="Event Type")
p3 <- qplot(PROPDMG, EVTYPE, data = mostHarmfulPropDmgEvents, xlab="Property Damage", ylab="Even
t Type")
p4 <- qplot(CROPDMG, EVTYPE, data = mostHarmfulCropDmgEvents, xlab="crop Damage", ylab="Event Ty
pe")

grid.arrange(p1, p2, p3, p4, ncol = 2, nrow = 2)
```


TSTM WIND
TORNADO
THUNDERSTORM WIND
LIGHTNING
ICE STORM
HEAT
HAIL
FLOOD
FLASH FLOOD
EXCESSIVE HEAT
Event Type
0
25000
50000
75000
Number of Injuries


TSTM WIND
TORNADO
RIP CURRENT
LIGHTNING
HIGH WIND
HEAT
FLOOD
FLASH FLOOD
EXCESSIVE HEAT
AVALANCHE
Event Type
0
1000
2000
3000
4000
5000
Number of Fatalities


WINTER STORM
TSTM WIND
TORNADO
THUNDERSTORM WINDS
THUNDERSTORM WIND
LIGHTNING
HIGH WIND
HAIL
FLOOD
FLASH FLOOD
Event Type
0e+00
1e+06
2e+06
3e+06
Property Damage


TSTM WIND
TORNADO
THUNDERSTORM WINDS
THUNDERSTORM WIND
HIGH WIND
HEAVY RAIN
HAIL
FLOOD
FLASH FLOOD
DROUGHT
Event Type
0e+00
2e+05
4e+05
6e+0
crop Damage