U.S. National Oceanic and Atmospheric Administration's (NOAA) data analize

Synopsis

TODO synopsis

Data Processing

Load necessary libraries.

```
library(ggplot2)
library(cowplot)
```

```
##
## *******************************************************
## Note: As of version 1.0.0, cowplot does not change the
##   default ggplot2 theme anymore. To recover the previous
##   behavior, execute:
##   theme_set(theme_cowplot())
## *******************************************************
```

Download and read csv file.

```
url = "https://d396qusza40orc.cloudfront.net/repdata%2Fdata%2FStormData.csv.bz2"
file = "Data/FStormData.csv.bz2"
if(!file.exists(file)){
  download.file(url,destfile = file)
}
data <- read.csv(file)
```

Create data set "fatalities", which is a subset of original data with events with number of fatalities greater than 99% of data.

```
fatalites <- subset(data, FATALITIES>0)
q_fatalites <-quantile(fatalites$FATALITIES, probs=c(.25,.50,0.95,0.99))
fatalites_99 <- subset(fatalites, FATALITIES>q_fatalites[4])
```

Create data set "injuries", which is a subset of original data with events with number of injuries greater than 99% of data.

```
injuries <- subset(data, INJURIES>0)
q_injuries <-quantile(injuries$INJURIES, probs=c(.25,.50,0.95,0.99))
injuries_99 <- subset(injuries, INJURIES>q_injuries[4])
```

##Results ### Witch events are most harmful.

```
f <- ggplot(fatalites_99, aes(x=log(FATALITIES),y=EVTYPE)) +
    geom_bar(fill="red",stat="identity" ) +
    ggtitle("Fatalities per event type") +
    xlab("log(Fatalities)") +
    ylab("Event type") +
    theme_dark()

i <- ggplot(injuries_99, aes(x=log(INJURIES),y=EVTYPE)) +
    geom_bar(fill="red",stat="identity" ) +
    ggtitle("Injuries per event type") +
    xlab("log(Injuries)") +
    ylab("Event type") +
    theme_dark()

plot_grid(f,i,nrow = 2, ncol = 1)
```
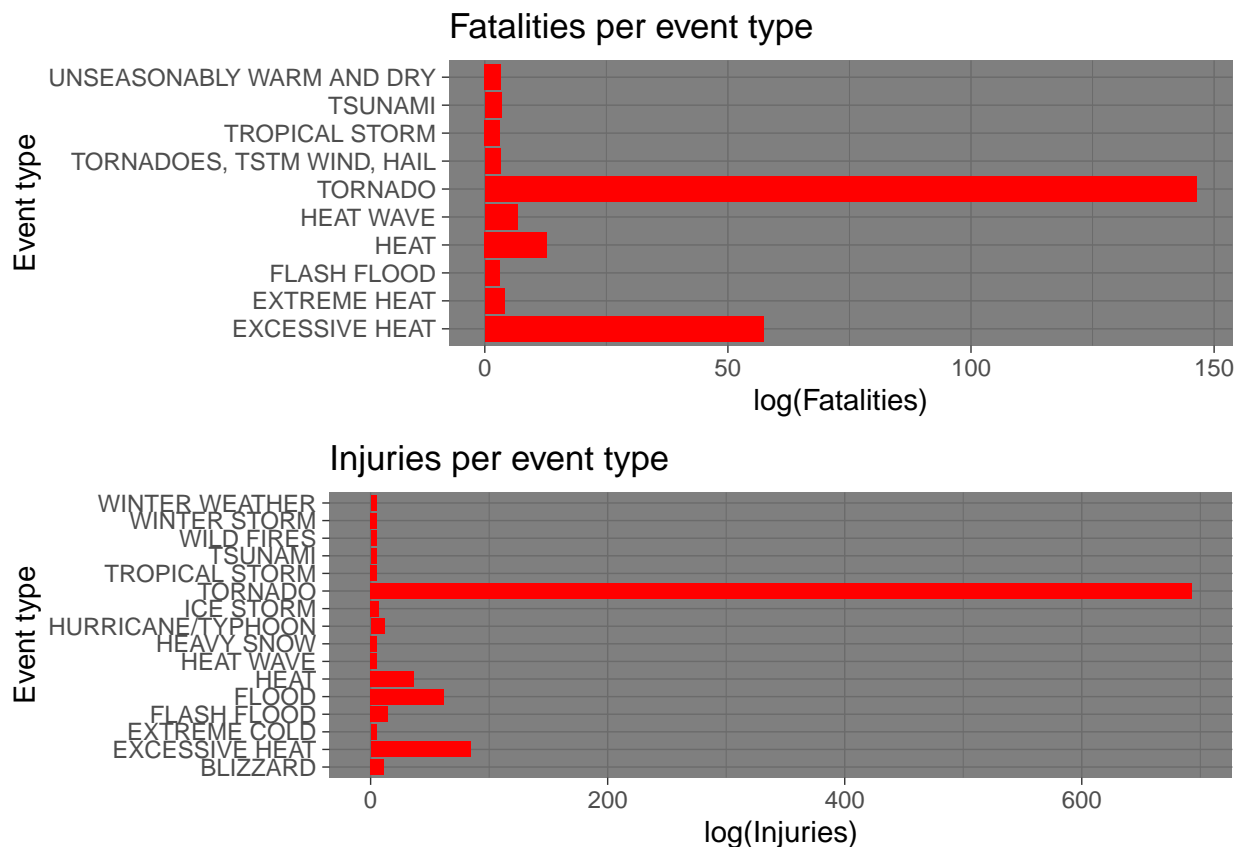

Fatalities

```
print(quantile(fatalites$FATALITIES))
```

```
##   0%  25%  50%  75% 100%
##    1    1    1    2  583
```

Injuries

```
print(quantile(injuries$INJURIES))
```

```
##   0%  25%  50%  75% 100%
```

2

```
##    1    1    2    4 1700
```

As we can see vast majority of fatalities and injures is caused by less than 1% of events.The most harmful ones are: tornadoes, floods, excessive and extreme heat and head in general. One interesting thing worth noting is that floods cause lots of the injures but almost non of the fatalities.

Witch events have the greatest economic consequences.

TODO