Week 2

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3/1/2021

Task 2 - Exploratory Data Analysis

Exploratory Analysis and Word Frequencies

Based on tokenization, we can explore the words in the corpus. A possible function would be to create a clean tokenized list of vectors, unlist the contents, and return a frequency table as a data frame.

```
getTokens<-function(x){
      words<-cleanToken(x)
      wordslist<-unlist(words)
      as.data.frame(table(wordslist))
}

sample1<-sampleReader("blogs",5)
sample1[4]
```

```
[1] "so anyways, i am going to share some home decor inspiration that i have been storing in my folder o
```

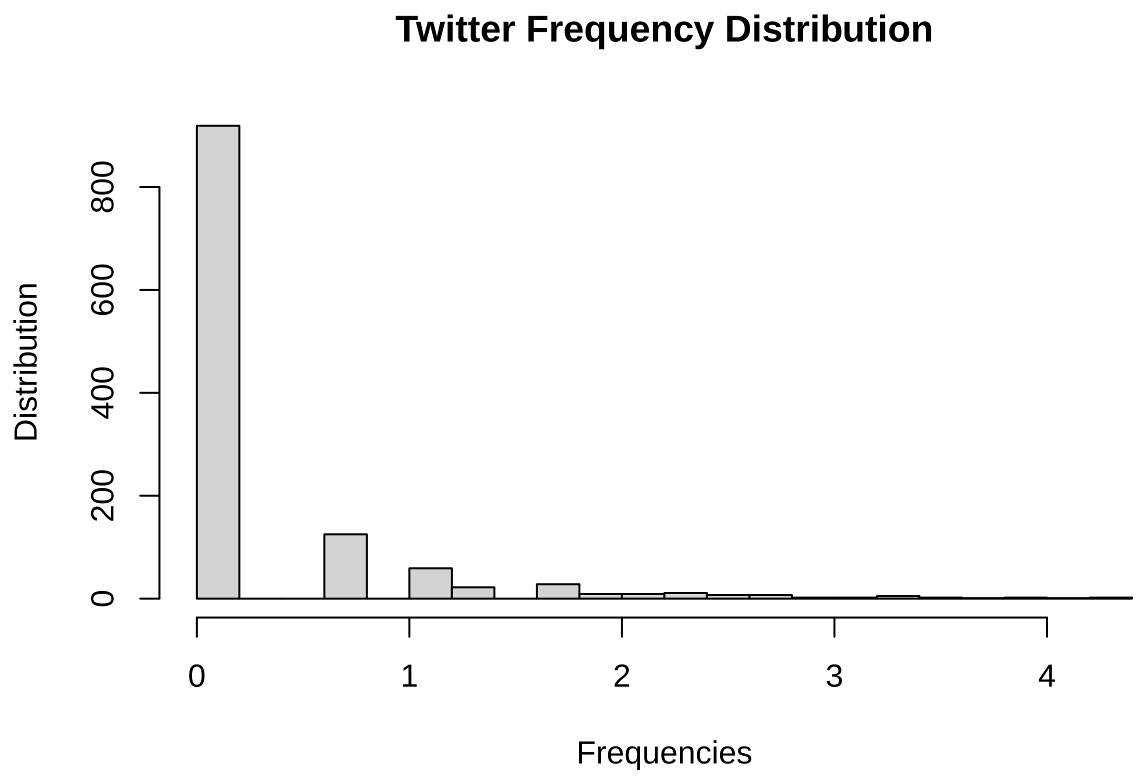
```
tokens1<-getTokens(sample1)
head(tokens1)
```

```
  wordslist Freq
1         a    3
2     after    2
3       all    3
4    almost    1
5      also    1
6        am    1
```

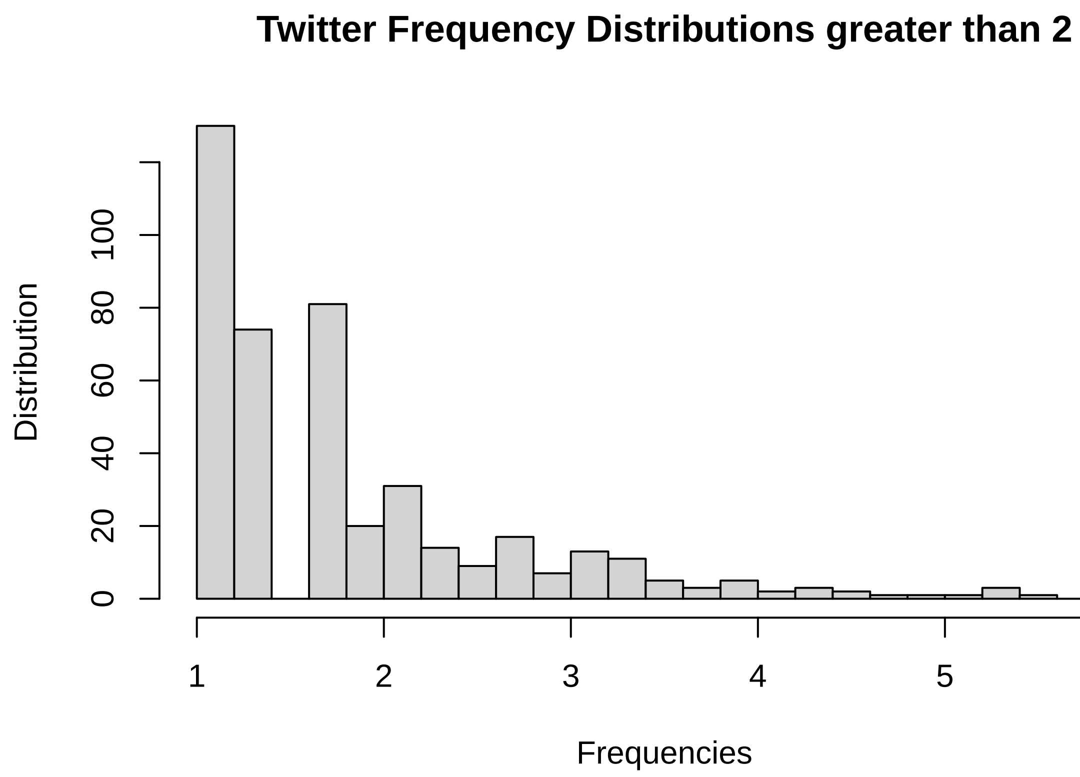
In each data set, a random sample of 200 lines has the following frequency distribution:

```
set.seed=322021
twitter<-sampleReader("twitter")
sampleTwitter<-sample(twitter,size=200,replace=F)
rm(twitter)
blog<-sampleReader("blogs")
sampleBlog<-sample(blog,size=200,replace=F)
rm(blog)
news<-sampleReader("news")
sampleNews<-sample(news,size=200,replace=F)
rm(news)
twitterToken<-getTokens(sampleTwitter)
blogToken<-getTokens(sampleBlog)
newsToken<-getTokens(sampleNews)
```

```r
hist(log(twitterToken$Freq),main="Twitter Frequency Distribution",xlab="Frequencies",
     ylab="Distribution",breaks=20)
```



```r
hist(log(subset(blogToken,Freq>2)$Freq),main="Twitter Frequency Distributions greater than 2",
     xlab="Frequencies",ylab="Distribution",breaks=20)
```



The words with the highest counts in each of the 3 English corpora are:

```
# BLOGS:
maxBlog<-subset(blogToken,Freq %in% head(sort(blogToken$Freq,decreasing=TRUE),10))
maxBlog[order(maxBlog$Freq,decreasing=TRUE),]
```

```
     wordslist Freq
2441       the  337
92         and  228
2490        to  209
1            a  189
1700        of  185
1178         I  161
1205        in  127
1250        is  114
2439      that   96
1255        it   94
```

```
# NEWS:
maxNews<-subset(newsToken,Freq %in% head(sort(newsToken$Freq,decreasing=TRUE),10))
maxNews[order(maxNews$Freq,decreasing=TRUE),]
```

```
     wordslist Freq
2349       the  307
1            a  162
2391        to  156
1612        of  147
101        and  139
```

```
1166        in  123
2030         s   81
914        for   73
2347      that   61
1222        is   57
```

```
# TWITTER:
maxTwitter<-subset(twitterToken,Freq %in% head(sort(twitterToken$Freq,decreasing=TRUE),10))
maxTwitter[order(maxTwitter$Freq,decreasing=TRUE),]
```

```
     wordslist Freq
1014       the   71
505          I   67
1052        to   64
40         and   48
1            a   47
1206       you   40
376        for   30
515         in   30
529         is   29
723         of   29
735         on   29
```

N-Gram Frequency

An easy way to create N-grams is to paste together token vectors.

```
ngrammer<-function(x,y){
   ngramMatrix<-NULL
   size<-length(x)
   if(size<=y){
      return()
   }
   ngramMatrix<-matrix(nrow=(size-y+1),ncol=0)
   for (i in (1:y)){
      tokenlist<-x[i:(size-y+i)]
      ngramMatrix<-cbind(ngramMatrix,tokenlist)
   }
   df_args <- c(as.data.frame(ngramMatrix), sep=" ")
   do.call(paste, df_args)
}

sample1[4]
```

```
[1] "so anyways, i am going to share some home decor inspiration that i have been storing in my folder
```

```
head(ngrammer(cleanToken(sample1[4]),4),10)
```

```
 [1] "so anyways i am"              "anyways i am going"
 [3] "i am going to"                "am going to share"
 [5] "going to share some"          "to share some home"
 [7] "share some home decor"        "some home decor inspiration"
 [9] "home decor inspiration that" "decor inspiration that i"
```

Task3 - Modeling