Tutorial - Text data

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Load R packages.

```
library(corrplot)
```

```
## corrplot 0.92 loaded
```

```
library(RColorBrewer)
library(tm)
```

```
## Loading required package: NLP
```

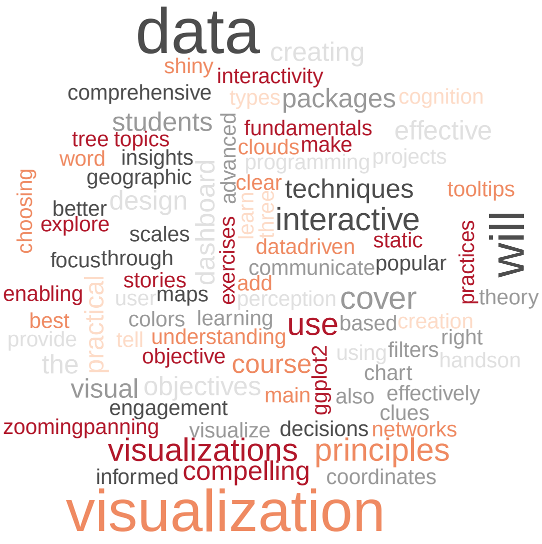
```
library(wordcloud)
```

Make a word cloud

```
# Set number of colors and palette
pal = brewer.pal(6, "RdGy")

# Choose minimum frequency and the range of the size of the words
wordcloud("The objective of this course is to provide students with a comprehensive understanding of da
```

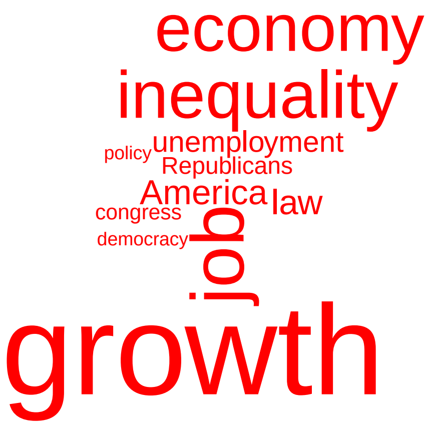
```
## Warning in tm_map.SimpleCorpus(corpus, tm::removePunctuation): transformation
## drops documents
```

```
## Warning in tm_map.SimpleCorpus(corpus, function(x) tm::removeWords(x,
## tm::stopwords())): transformation drops documents
```



To use a list of words and their frequencies.

```
wordcloud(c("inequality", "law", "policy", "unemployment", "job", "economy", "democracy", "Republicans"
            freq=c(26, 9, 2, 7, 30, 26, 1, 4, 3, 9, 57, 9), min.freq=0, color="red")
```



To read a text file and preprocess it, before doing the word cloud.

```
file = readLines("../data/syllabus.txt")
doc = Corpus(VectorSource(file))
doc = tm_map(doc, tolower)
```

```
## Warning in tm_map.SimpleCorpus(doc, tolower): transformation drops documents
```

```
doc = tm_map(doc, removePunctuation)
```

```
## Warning in tm_map.SimpleCorpus(doc, removePunctuation): transformation drops
## documents
```

```
doc = tm_map(doc, removeNumbers)
```

```
## Warning in tm_map.SimpleCorpus(doc, removeNumbers): transformation drops
## documents
```

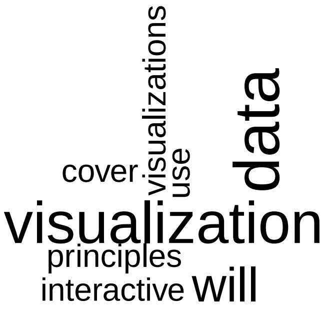
```
doc = tm_map(doc, removeWords, stopwords("english"))
```

```
## Warning in tm_map.SimpleCorpus(doc, removeWords, stopwords("english")):
## transformation drops documents
```

```
wordcloud(as.character(doc), scale=c(2, 0.5))
```

```
## Warning in tm_map.SimpleCorpus(corpus, tm::removePunctuation): transformation
## drops documents
```

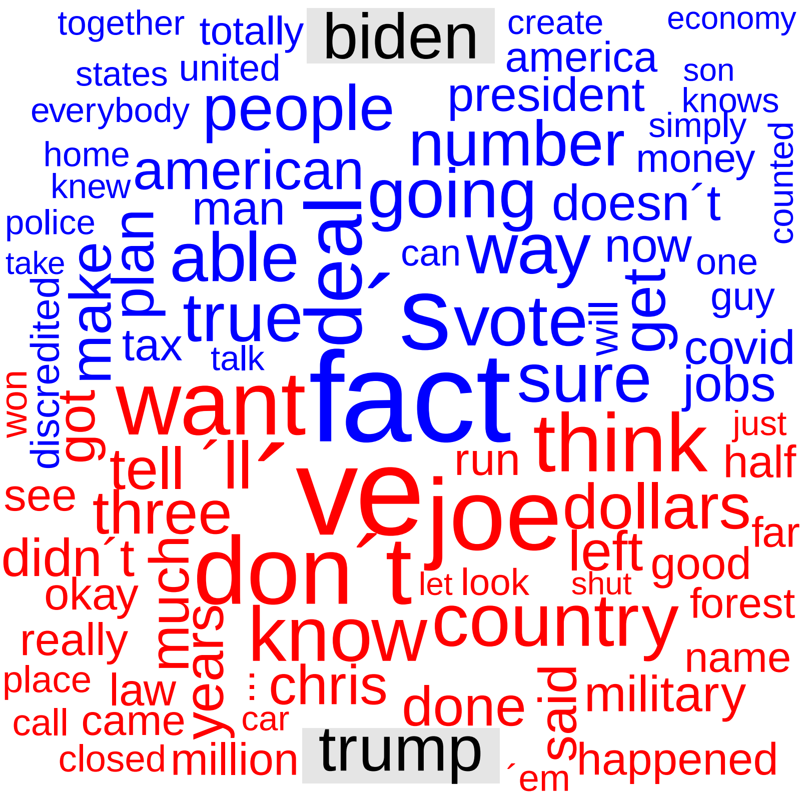
```
## Warning in tm_map.SimpleCorpus(corpus, function(x) tm::removeWords(x,
## tm::stopwords())): transformation drops documents
```



Make two word clouds

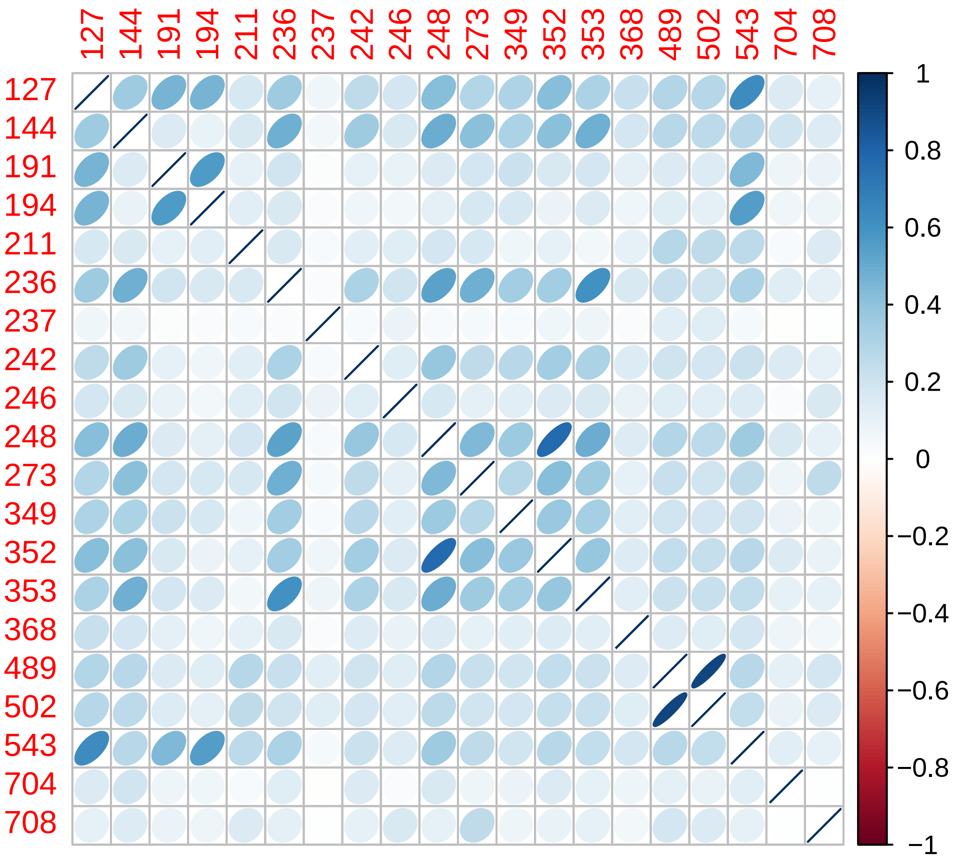
```r
files = DirSource("../data/debate/")
data = Corpus(DirSource("../data/debate/"))
data = tm_map(data, tolower)
data = tm_map(data, removePunctuation)
data = tm_map(data, removeNumbers)
data = tm_map(data, removeWords, c(stopwords("english"), "biden", "trump"))
data = TermDocumentMatrix(data)
data = as.matrix(data)
colnames(data) = c("biden", "trump")
comparison.cloud(data, max.words=100, title.size=2, colors=c("blue", "red"))
```

```
## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2026

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : obamacare could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : judges could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : november could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : places could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : radical could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : never could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : also could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : ever could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : thing could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : gave could not be fit on page. It will not be plotted.

## Warning in comparison.cloud(data, max.words = 100, title.size = 2, colors =
## c("blue", : statement could not be fit on page. It will not be plotted.
```



Plot correlations between texts

```
data(crude)
data = tm_map(crude, content_transformer(tolower))
data = tm_map(data, removePunctuation)
data = tm_map(data, removeNumbers)
data = tm_map(data, removeWords, stopwords("english"))
data = TermDocumentMatrix(data)
data = as.matrix(data)
crf = cor(data)
corrplot(crf, method = c("ellipse"))
```


127
144
191
194
211
236
237
242
246
248
273
349
352
353
368
489
502
543
704
708
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1