Wordcloud outputs

```
setwd("~/Documents/Amherst/STAT 231 DATA SCIENCE/blog_the-purple-tusks/blog-project")

word_cloud <- read_csv2("data/textual/senator_wordcloud.csv")
```

```
## i Using "','" as decimal and "'.'" as grouping mark. Use ‘read_delim()‘ for more control.

## Rows: 57291 Columns: 5

## -- Column specification --------------------------------------------------------
## Delimiter: ";"
## chr (2): tokens, state
## dbl (3): n, value, week

##
## i Use ‘spec()‘ to retrieve the full column specification for this data.
## i Specify the column types or set ‘show_col_types = FALSE‘ to quiet this message.
```

```
sentiments <- read_csv2("data/textual/twitter_sentiments.csv")
```

```
## i Using "','" as decimal and "'.'" as grouping mark. Use ‘read_delim()‘ for more control.

## Rows: 19730 Columns: 11

## -- Column specification --------------------------------------------------------
## Delimiter: ";"
## chr (3): state, sentiments, abv
## dbl (8): week, total_tweets, count, percentage, total_sentiment, percentage_...

##
## i Use ‘spec()‘ to retrieve the full column specification for this data.
## i Specify the column types or set ‘show_col_types = FALSE‘ to quiet this message.
```

```
tweets <- read_csv2("data/textual/senator_tweets_covid.csv")
```

```
## i Using "','" as decimal and "'.'" as grouping mark. Use ‘read_delim()‘ for more control.

## Warning: One or more parsing issues, see ‘problems()‘ for details

## Rows: 41510 Columns: 12
```

```
## -- Column specification --------------------------------------------------------
## Delimiter: ";"
## chr  (7): abv, state, name, text, source, screen_name, location
## dbl  (3): favorite_count, retweet_count, week
## lgl  (1): hashtags
## date (1): date

##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Considering the outliers we can look at the general response from US senators.

```
temp <- tweets %>%
  unnest_tokens(input = text, output = tokens) %>%
  anti_join(stop_words, by = c("tokens" = "word")) %>%
  select(state, week, tokens)

setwd("~/Documents/Amherst/STAT 231 DATA SCIENCE/blog_the-purple-tusks/blog-project")
write_csv2(temp, "data/textual/temp.csv")

#Z2 Week 2
set.seed(50)
word_cloud
```

```
## # A tibble: 57,291 x 5
##    tokens        n value  week state
##    <chr>     <dbl> <dbl> <dbl> <chr>
##  1 care          3     2     1 Alabama
##  2 proud         3     2     1 Alabama
##  3 combat        2    -1     1 Alabama
##  4 prevent       2    -1     1 Alabama
##  5 awarded       1     3     1 Alabama
##  6 commended     1     2     1 Alabama
##  7 crisis        1    -3     1 Alabama
##  8 cut           1    -1     1 Alabama
##  9 debt          1    -2     1 Alabama
## 10 dilemma       1    -1     1 Alabama
## # ... with 57,281 more rows
```

```
temp_wc <- temp %>%
  filter(week == 2) %>%
  anti_join(stop_words, by = c("tokens" = "word")) %>%
  count(tokens) %>%
  filter(!grepl(paste("https|t.co|amp|rt|health|coronavirus|pandemic|covid|19",sep = "", ignore.case = T
  arrange(desc(n))
pal <- brewer.pal(9, "Set1")
pal <- pal[-(1:2)]
wordcloud(words = temp_wc$tokens,
          freq = temp_wc$n,
          rot.per = .15,
          colors = pal,
          random.order = T,
          max.words = 150)
```

```
## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## workers could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
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## rotWord * : font metrics unknown for Unicode character U+2019
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## congress could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## president could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## testing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## care could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## proud could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## 19 could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## including could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
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## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
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## rotWord * : conversion failure on 'let's' in 'mbcsToSbcs': dot substituted for
## <99>

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## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economic could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## system could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## professionals could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## americans could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## realdonaldtrump could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economy could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## distancing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## contact could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
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## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## lives could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## justice could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## american could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## million could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## serve could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## stop could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## fighting could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## providers could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## safely could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## joined could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## u.s could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## keeping could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## equipment could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## mental could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## prevent could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## service could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## administration could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## nation could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## families could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## senate could not be fit on page. It will not be plotted.
```

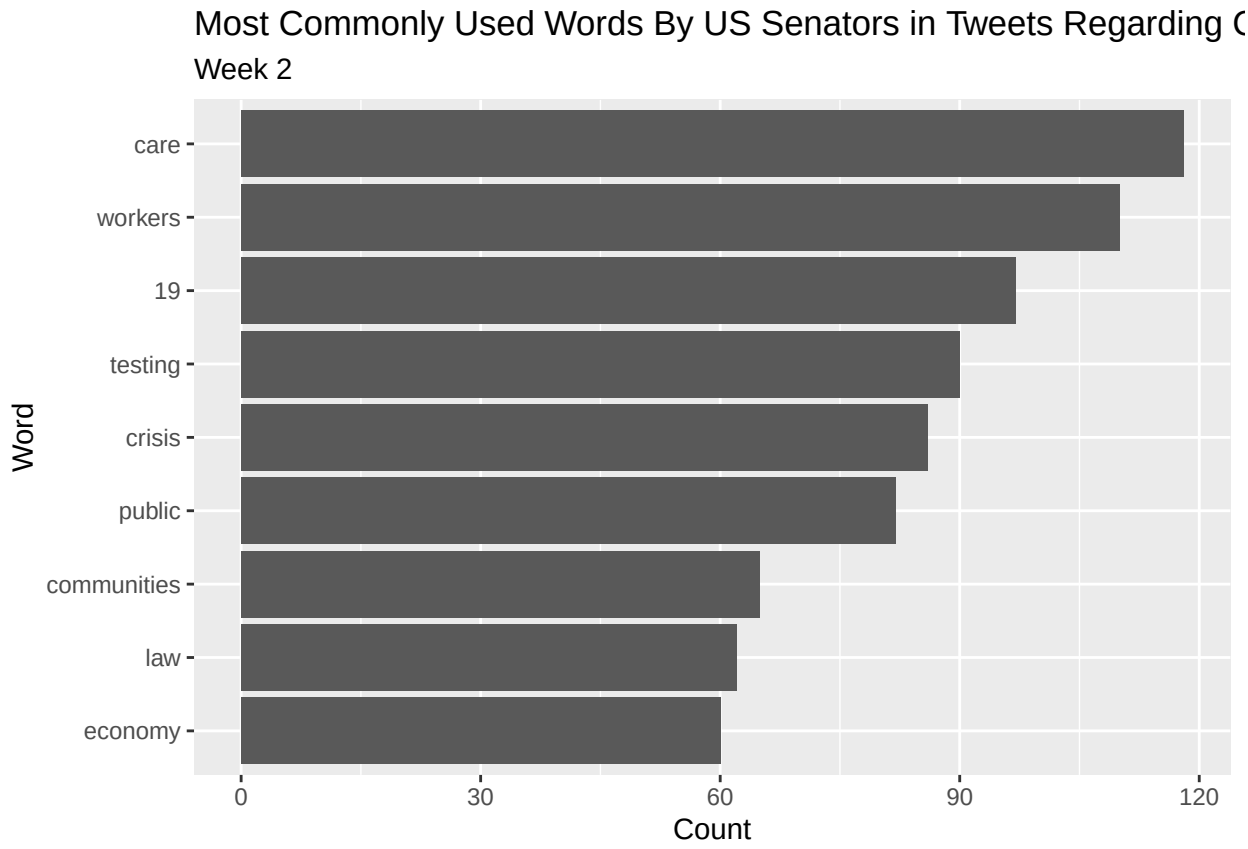
```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## challenges could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## patients could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## legislation could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## rural could not be fit on page. It will not be plotted.
```


```
temp_wc[1:9,] %>%
  ggplot(aes(x = reorder(tokens,n), y = n)) +
  geom_col() +
  scale_fill_brewer(type = "", palette = "Set1") +
  coord_flip() +
  labs(title = "Most Commonly Used Words By US Senators in Tweets Regarding COVID",
       subtitle = "Week 2",
       y = "Count",
       x = "Word")
```




```
#end
#Z3 Week 3
set.seed(50)
temp_wc <- temp %>%
  filter(week == 3) %>%
  anti_join(stop_words, by = c("tokens" = "word")) %>%
  count(tokens) %>%
  filter(!grepl(paste("https|t.co|amp|rt|health|coronavirus|pandemic|covid|19",sep = "", ignore.case = 
  arrange(desc(n))
pal <- brewer.pal(9, "Set1")
pal <- pal[-(1:2)]
wordcloud(words = temp_wc$tokens,
          freq = temp_wc$n,
          rot.per = .15,
          colors = pal,
          random.order = T,
          max.words = 150)
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## workers could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## americans could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## senate could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## crisis could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economy could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## government could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## trump could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## law could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## prevent could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## ensure could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economic could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## businesses could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## passed could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## funding could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## medical could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## testing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## families could not be fit on page. It will not be plotted.

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## services could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## federal could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## global could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## world could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'll'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'll'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'll'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'i'll' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'i'll' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'i'll' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## stay could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## plan could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## officers could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## critical could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## legislation could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## chinese could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## accountable could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## reopening could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## recovery could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## administration could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## including could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## provide could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## american could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## people could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## masks could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## calling could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## safe could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## resources could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## day could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## middle could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## fight could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## lives could not be fit on page. It will not be plotted.

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## in 'mbcsToSbcs': dot substituted for <99>
```
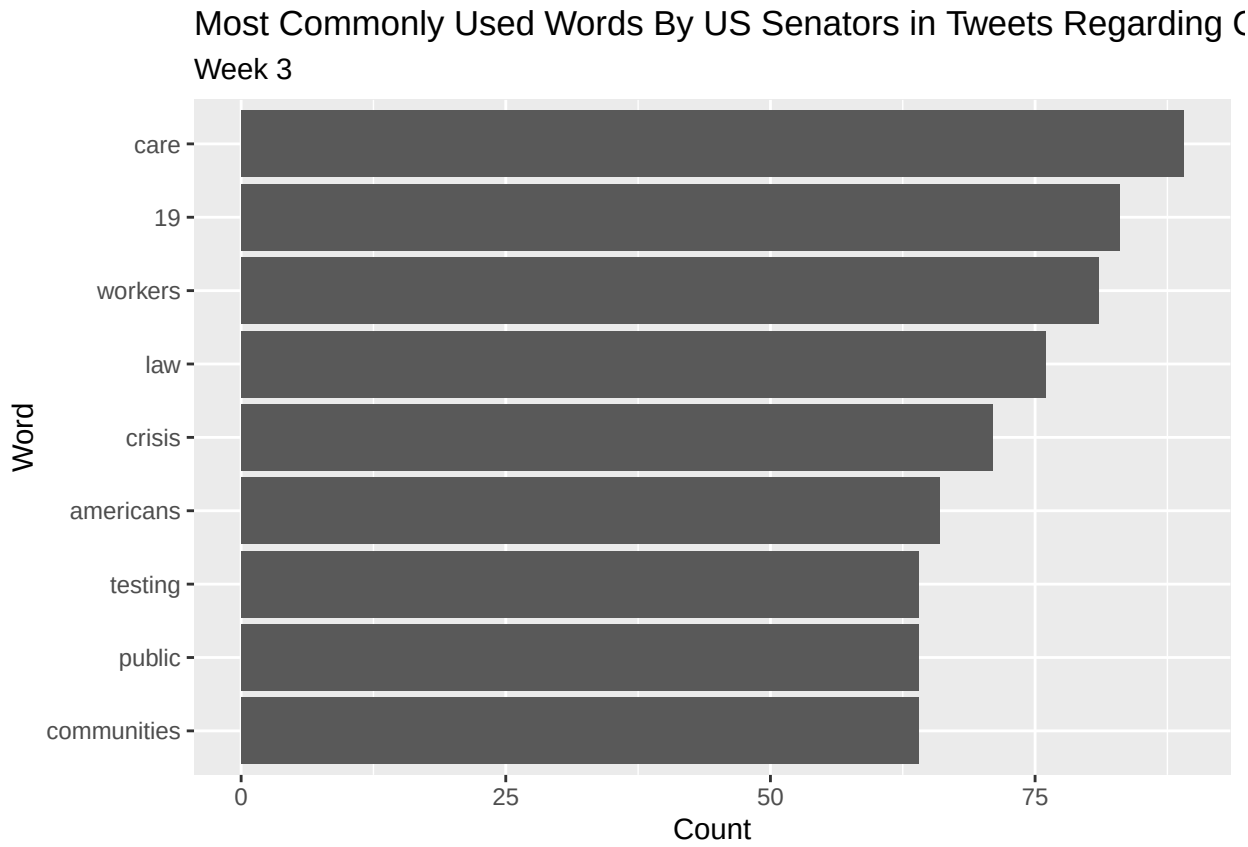

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## it's could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'that's' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## tracing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## safety could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## pass could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## vote could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## protect could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <99>
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## i'm could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## communities could not be fit on page. It will not be plotted.
```


```
temp_wc[1:9,] %>%
  ggplot(aes(x = reorder(tokens,n), y = n)) +
  geom_col() +
  scale_fill_brewer(type = "", palette = "Set1") +
  coord_flip() +
  labs(title = "Most Commonly Used Words By US Senators in Tweets Regarding COVID",
       subtitle = "Week 3",
       y = "Count",
       x = "Word")
```




```
#end
#Z4 Week
set.seed(50)
temp_wc <- temp %>%
  filter(week == 18) %>%
  anti_join(stop_words, by = c("tokens" = "word")) %>%
  count(tokens) %>%
  filter(!grepl(paste("https|t.co|amp|rt|health|coronavirus|pandemic|covid|19",sep = "", ignore.case = T
  arrange(desc(n))
pal <- brewer.pal(9, "Set1")
pal <- pal[-(1:2)]
par(mfrow=c(1,2))
wordcloud(words = temp_wc$tokens,
          freq = temp_wc$n,
          rot.per = .15,
          colors = pal,
          random.order = T,
          max.words = 150)
```

```
## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'trump's' in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'trump's' in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
```

```
## 'trump's' in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'trump's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'trump's' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'trump's' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## access could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## distancing could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## information could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## spread could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## care could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'let's'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'let's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'let's' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'let's' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## family could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <80>
```

```
## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## relief could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## supreme could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## including could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## political could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## republicans could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## action could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## protections could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economic could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## leaders could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## nation could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## trump could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## act could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## american could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## administration could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## affordable could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## wear could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## workers could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## coverage could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## enrollment could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## business could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## senator could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## families could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## president could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## vaccine could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## election could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## provide could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## sign could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## resources could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## congress could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## conditions could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## hearing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## leadership could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## companies could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## social could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## lawsuit could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## protect could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## crisis could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## white could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## i'm could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## future could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## stay could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## testing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## america could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## hands could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## mental could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## voting could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## hard could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## free could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## signed could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## fighting could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## media could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## county could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## law could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## medical could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## disease could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## listen could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## week could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## home could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## donald could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## critical could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## masks could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## ballots could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## vaccines could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## laws could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## local could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## insurance could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## system could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## time could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## 2021 could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## officials could not be fit on page. It will not be plotted.
```

```
temp_wc[1:9,] %>%
  ggplot(aes(x = reorder(tokens,n), y = n)) +
  geom_col() +
  scale_fill_brewer(type = "", palette = "Set1") +
  coord_flip() +
  labs(title = "Most Commonly Used Words By US Senators in Tweets Regarding COVID",
       subtitle = "Week 18",
       y = "Count",
       x = "Word")
#end

#Wordcloud total
set.seed(50)
temp_wc <- temp %>%
  anti_join(stop_words, by = c("tokens" = "word")) %>%
  count(tokens) %>%
  filter(!grepl(paste("https|t.co|amp|rt|health|coronavirus|pandemic|covid|19",sep = "", ignore.case = T
  arrange(desc(n))
pal <- brewer.pal(9, "Set1")
pal <- pal[-(1:2)]
wordcloud(words = temp_wc$tokens,
          freq = temp_wc$n,
          rot.per = .15,
          colors = pal,
          random.order = T,
          max.words = 150)
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## continue could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## communities could not be fit on page. It will not be plotted.
```

```
## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'we're'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'we're' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## women could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## access could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'it's'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'it's' in 'mbcsToSbcs': dot substituted for
## <99>
```

```
## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'don't'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'don't'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'don't'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'don't' in 'mbcsToSbcs': dot substituted for
## <e2>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'don't' in 'mbcsToSbcs': dot substituted for
## <80>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : conversion failure on 'don't' in 'mbcsToSbcs': dot substituted for
## <99>

## Warning in text.default(x1, y1, words[i], cex = size[i], offset = 0, srt =
## rotWord * : font metrics unknown for Unicode character U+2019

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## businesses could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## family could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## protections could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## congress could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## americans could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## fight could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## hearing could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## families could not be fit on page. It will not be plotted.
```

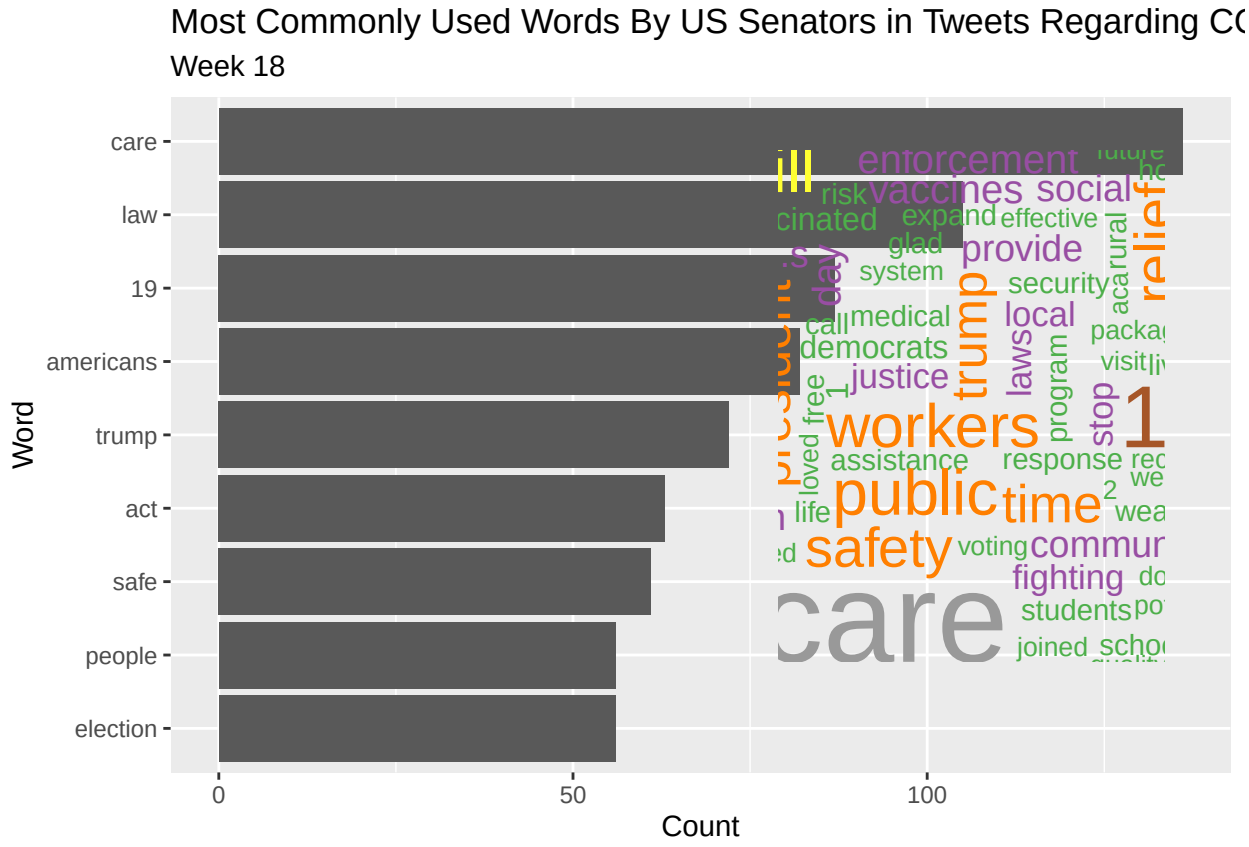
```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economic could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## affordable could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## helping could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## services could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## ensure could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## funding could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## pass could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## nation could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## save could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## infrastructure could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## law could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## safely could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## million could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## masks could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## rights could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## violence could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## testing could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## colleagues could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## virus could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## coverage could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## plan could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## critical could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## including could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## election could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## forward could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## safe could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## essential could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## proud could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## stay could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## administration could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## week could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## act could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## step could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## passed could not be fit on page. It will not be plotted.
```

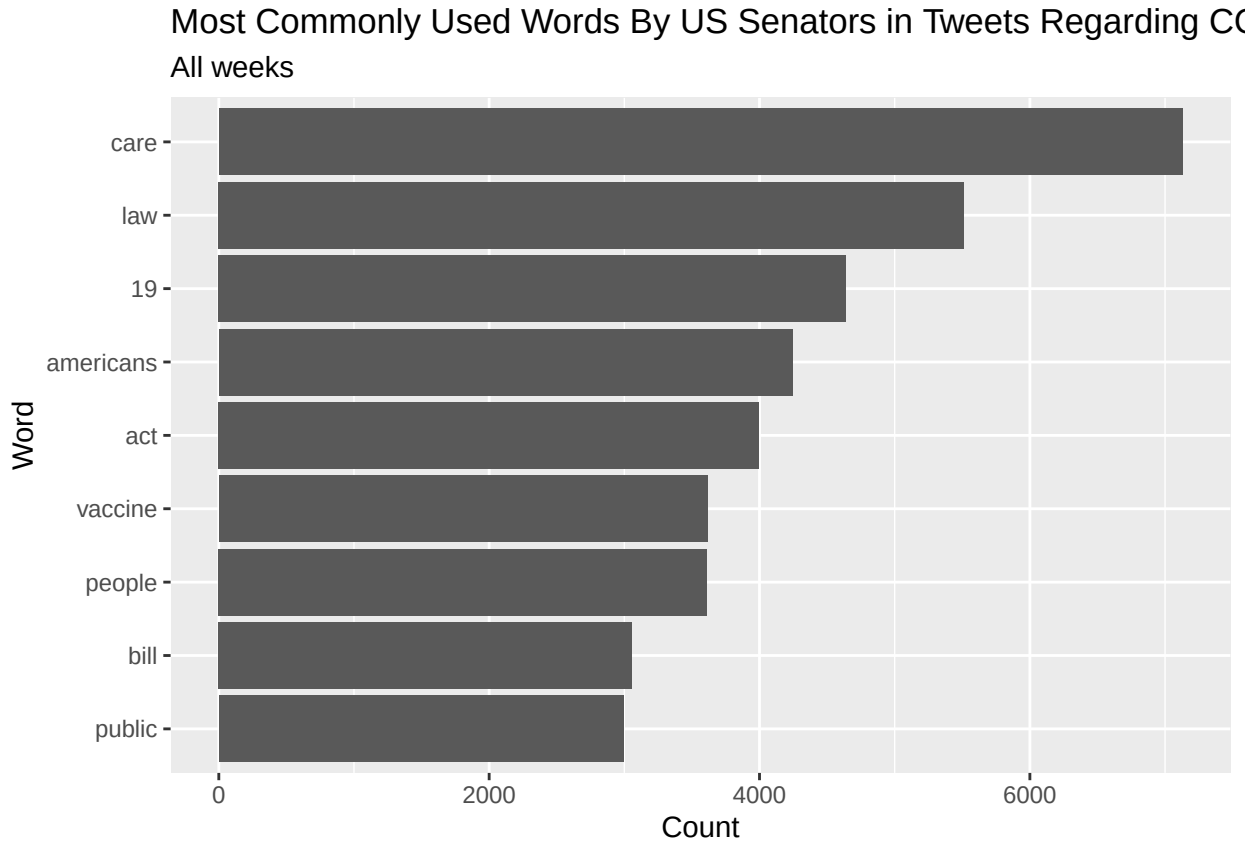
```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## mask could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## signed could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## people could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## child could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## economy could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## senate could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on 'i'm'
## in 'mbcsToSbcs': dot substituted for <99>

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## i'm could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## country could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## american could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## supreme could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## mental could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## hard could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## veterans could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## government could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## vaccine could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## home could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## jobs could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## crisis could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## lives could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## service could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## millions could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## america could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## spread could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## join could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## news could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## national could not be fit on page. It will not be plotted.

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## legislation could not be fit on page. It will not be plotted.

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <e2>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <80>

## Warning in strwidth(words[i], cex = size[i], ...): conversion failure on
## 'that's' in 'mbcsToSbcs': dot substituted for <99>

## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## that's could not be fit on page. It will not be plotted.
```

```
## Warning in wordcloud(words = temp_wc$tokens, freq = temp_wc$n, rot.per = 0.15, :
## watch could not be fit on page. It will not be plotted.
```




```
temp_wc[1:9,] %>%
  ggplot(aes(x = reorder(tokens,n), y = n)) +
  geom_col() +
  scale_fill_brewer(type = "", palette = "Set1") +
  coord_flip() +
  labs(title = "Most Commonly Used Words By US Senators in Tweets Regarding COVID",
       subtitle = "All weeks",
       y = "Count",
       x = "Word")
```

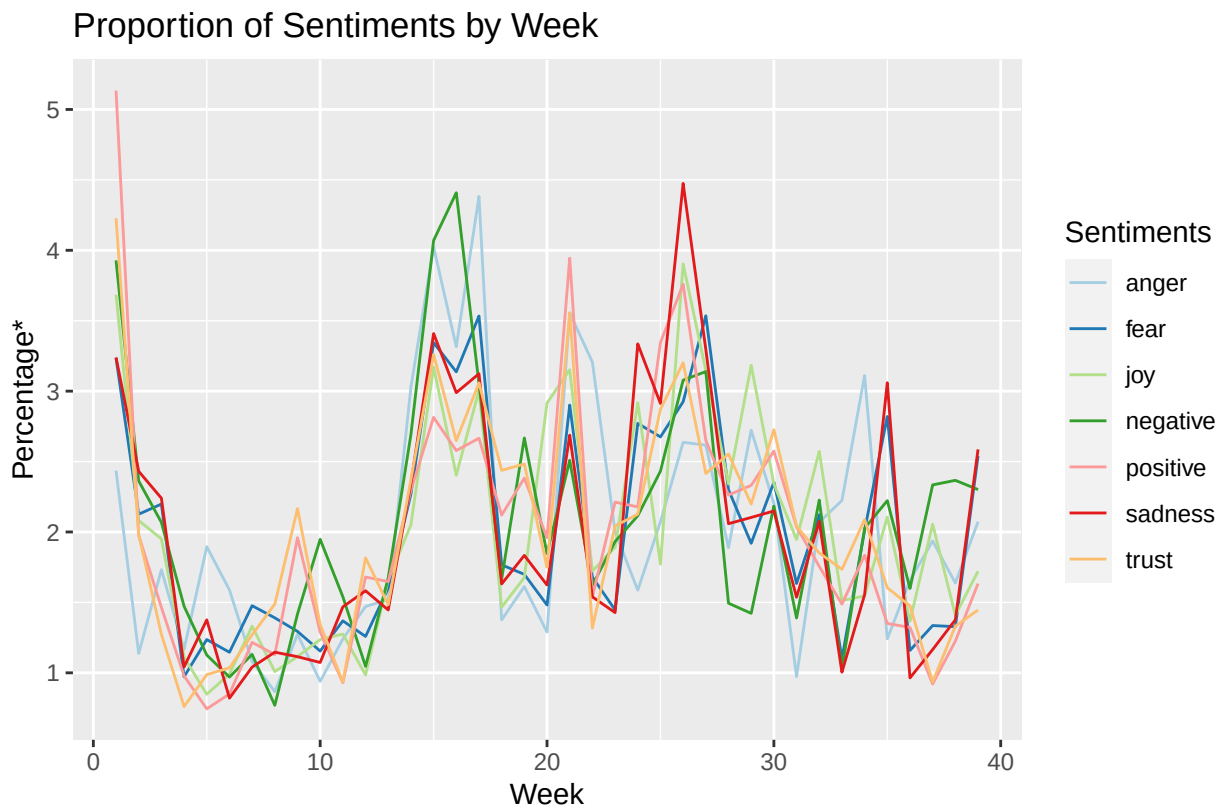



```
#end

#Z1
temp_s2 <- sentiments %>%
  filter(!week == 0,
         sentiments == c("anger","fear","joy","positive","negative","sadness","trust")) %>%
  group_by(week, sentiments) %>%
  summarise(count = sum(count), prc = mean(percentage_of_total_sentiment))
```

```
## Warning in sentiments == c("anger", "fear", "joy", "positive", "negative", :
## longer object length is not a multiple of shorter object length
```

```
## `summarise()` has grouped output by 'week'. You can override using the `.groups` argument.
```

```
ggplot(temp_s2, aes(x = week, y = prc)) +
  geom_line(aes(color = sentiments)) +
  scale_color_brewer(palette = "Paired") +
  labs(title = "Proportion of Sentiments by Week",
       color = "Sentiments",
       x = "Week",
       y = "Percentage*",
       caption = "*percentage is the number of words that week of each sentiment divided over total wor
```



ge is the number of words that week of each sentiment divided over total words of that sentiment

```
ggsave("z1.png")
```

```
## Saving 6.5 x 4.5 in image
```

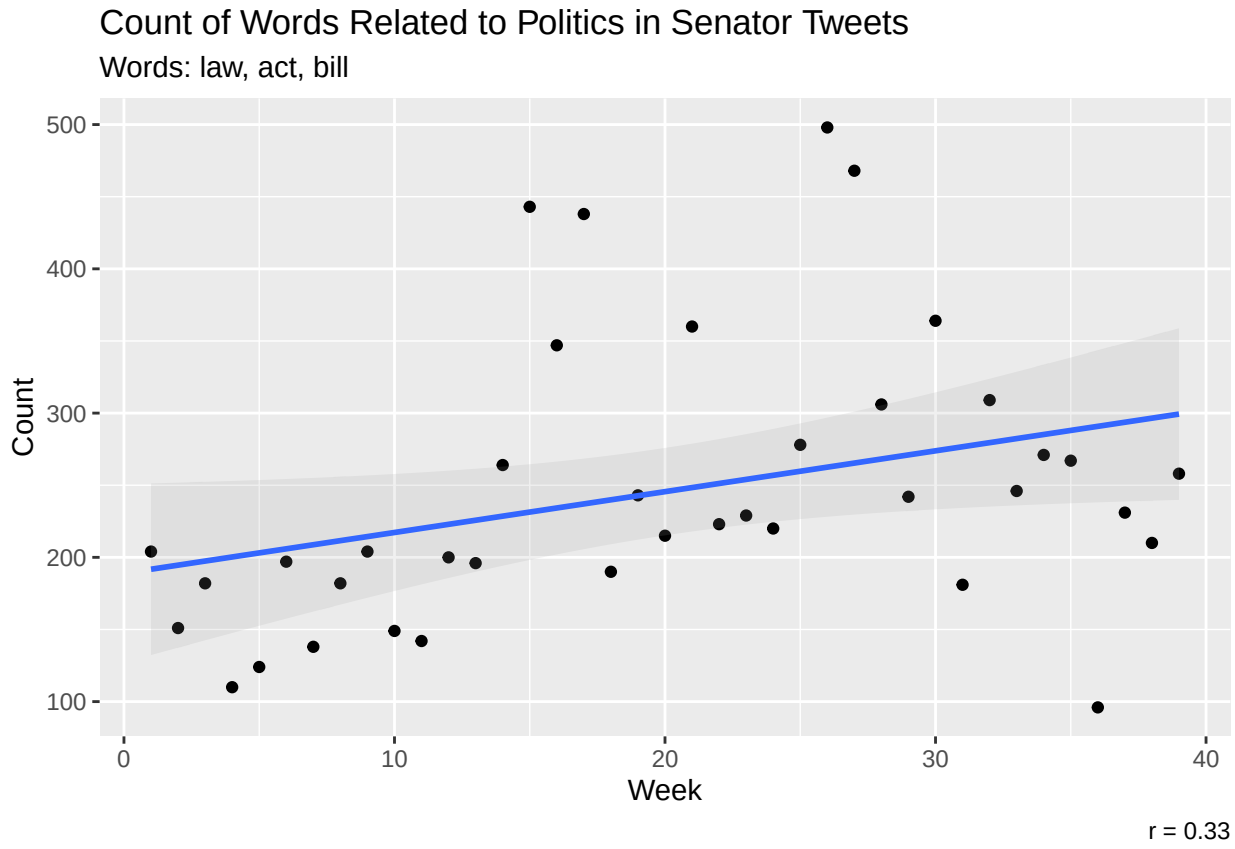
```
#end

#Trends of specific words
word_trend <-  temp %>%
  filter(week != 0) %>%
  group_by(tokens, week) %>%
  summarise(sum = n()) %>%
  arrange(week)
```

```
## `summarise()` has grouped output by 'tokens'. You can override using the `.groups` argument.
```

```
word_trend %>%
  filter(tokens %in% c("law","act","bill")) %>%
  group_by(week) %>%
  summarise(sum = sum(sum)) %>%
  ggplot(aes(x = week, y = sum)) +
  geom_point() +
  geom_smooth(method = "lm", alpha = .15) +
  labs(title = "Count of Words Related to Politics in Senator Tweets",
       subtitle = "Words: law, act, bill",
```

```
       x = "Week",
       y = "Count",
       caption = "r = 0.33")
```

```
## `geom_smooth()` using formula 'y ~ x'
```



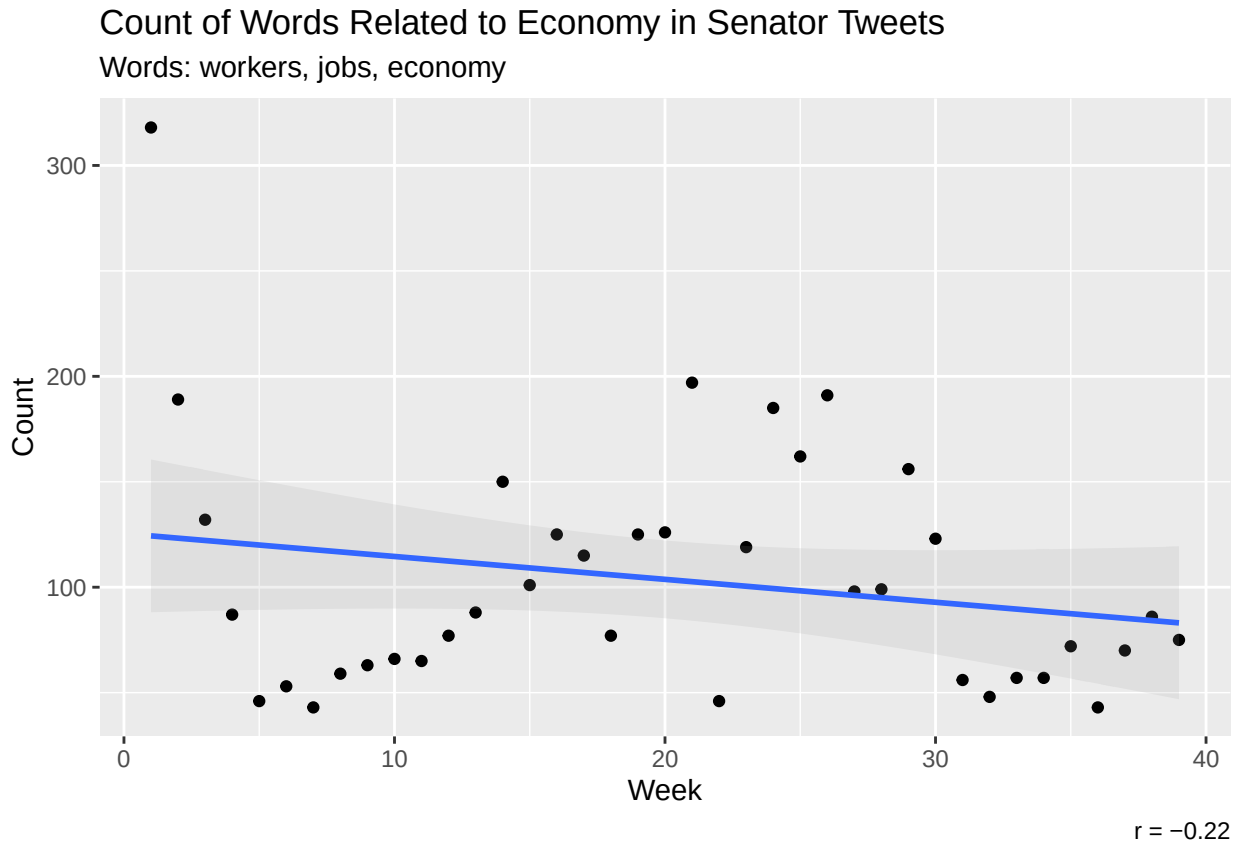

```
tempx <- word_trend %>%
  filter(tokens %in% c("law","act","bill")) %>%
  group_by(week) %>%
  summarise(sum = sum(sum))
cor(x = tempx$week,y = tempx$sum)
```

```
## [1] 0.3303663
```

```
word_trend %>%
  filter(tokens %in% c("workers","jobs","economy")) %>%
  group_by(week) %>%
  summarise(sum = sum(sum)) %>%
  ggplot(aes(x = week, y = sum)) +
  geom_point() +
  geom_smooth(method = "lm", alpha = .15) +
  labs(title = "Count of Words Related to Economy in Senator Tweets",
       subtitle = "Words: workers, jobs, economy",
```

```
       x = "Week",
       y = "Count",
       caption = "r = -0.22")
```

```
## `geom_smooth()` using formula 'y ~ x'
```

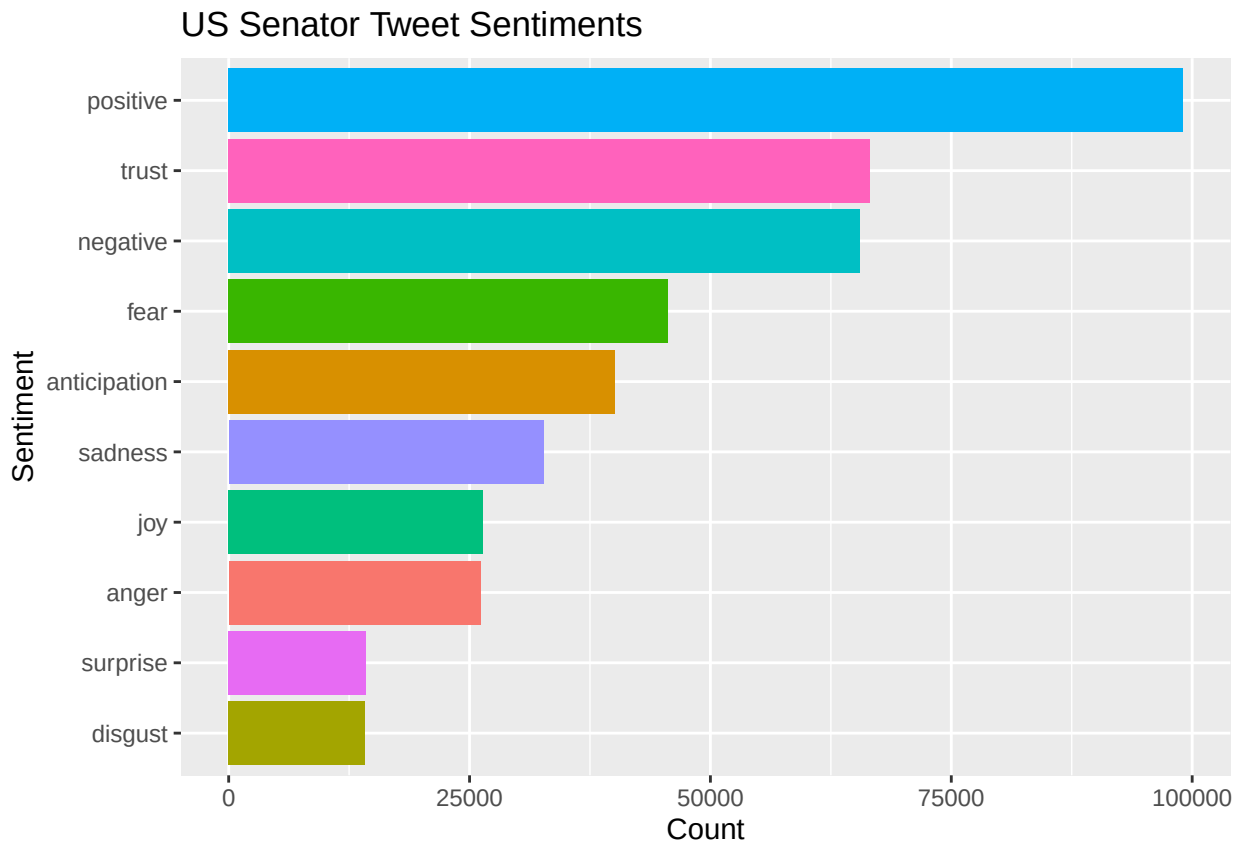



```
tempx <- word_trend %>%
  filter(tokens %in% c("workers","jobs","economy")) %>%
  group_by(week) %>%
  summarise(sum = sum(sum))
cor(x = tempx$week,y = tempx$sum)
```

```
## [1] -0.2153004
```

```
#trend of sentiments
temp_sent <- sentiments %>%
  group_by(sentiments) %>%
  summarize(sum = sum(count))

temp_sent %>%
  ggplot(aes(x = reorder(sentiments,sum), y = sum)) +
  geom_col(aes(fill = sentiments)) +
  scale_color_brewer(palette = "Set1") +
  coord_flip() +
```

```
  theme(legend.position = "none") +
  labs(title = "US Senator Tweet Sentiments",
       x = "Sentiment",
       y = "Count")
```



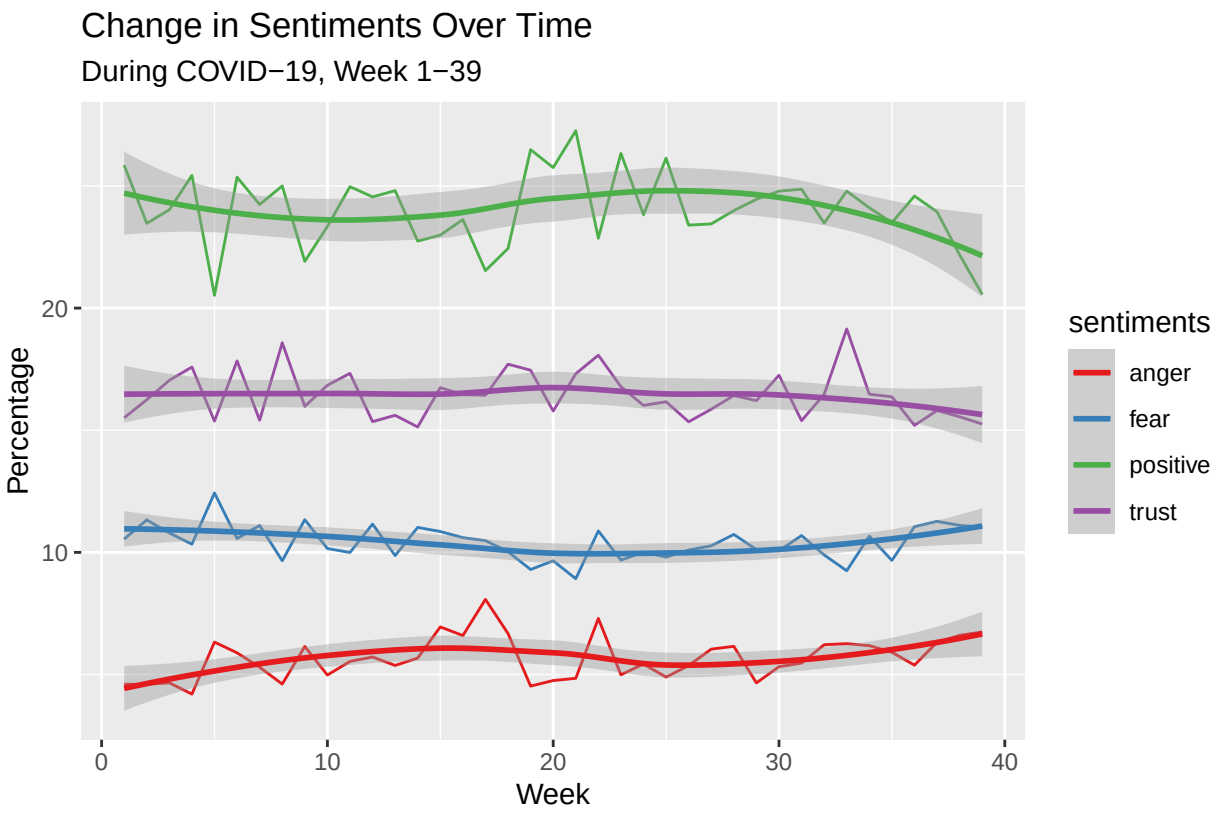

```
temp_sent <- sentiments %>%
  group_by(sentiments, week) %>%
  summarize(prc = mean(percentage)) %>%
  filter(week != 0)
```

```
## `summarise()` has grouped output by 'sentiments'. You can override using the `.groups` argument.
```

```
temp_sent %>%
  filter(sentiments %in% c("anger","fear","positive","trust")) %>%
ggplot(aes(x = week, y = prc)) +
  geom_line(aes(color = sentiments)) +
  scale_color_brewer(palette = "Set1") +
  geom_smooth(aes(color = sentiments)) +
  scale_color_brewer(palette = "Set1") +
  labs(title = "Change in Sentiments Over Time",
       subtitle = "During COVID-19, Week 1-39",
       x = "Week",
       y = "Percentage",
       caption = "*Percentage is number of each sentiment over total words for that week")
```

```
## Scale for 'colour' is already present. Adding another scale for 'colour',
## which will replace the existing scale.
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



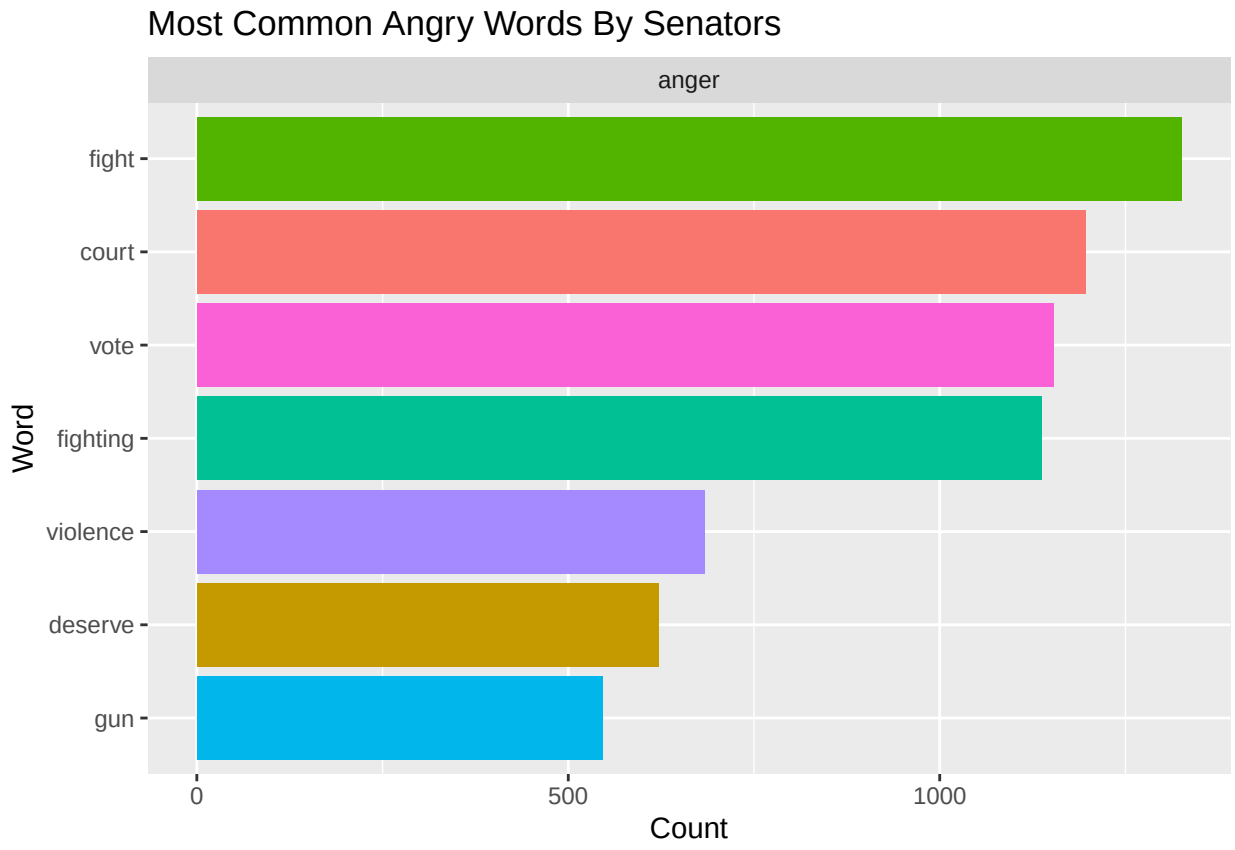
*Percentage is number of each sentiment over total words for that week

```
#top words for each sentiment
temp_word_bar <- temp %>%
  inner_join(get_sentiments(lexicon = "nrc"), by = c("tokens" = "word")) %>%
  group_by(tokens, sentiment) %>%
  summarize(count = n())
```

```
## `summarise()` has grouped output by 'tokens'. You can override using the `.groups` argument.
```

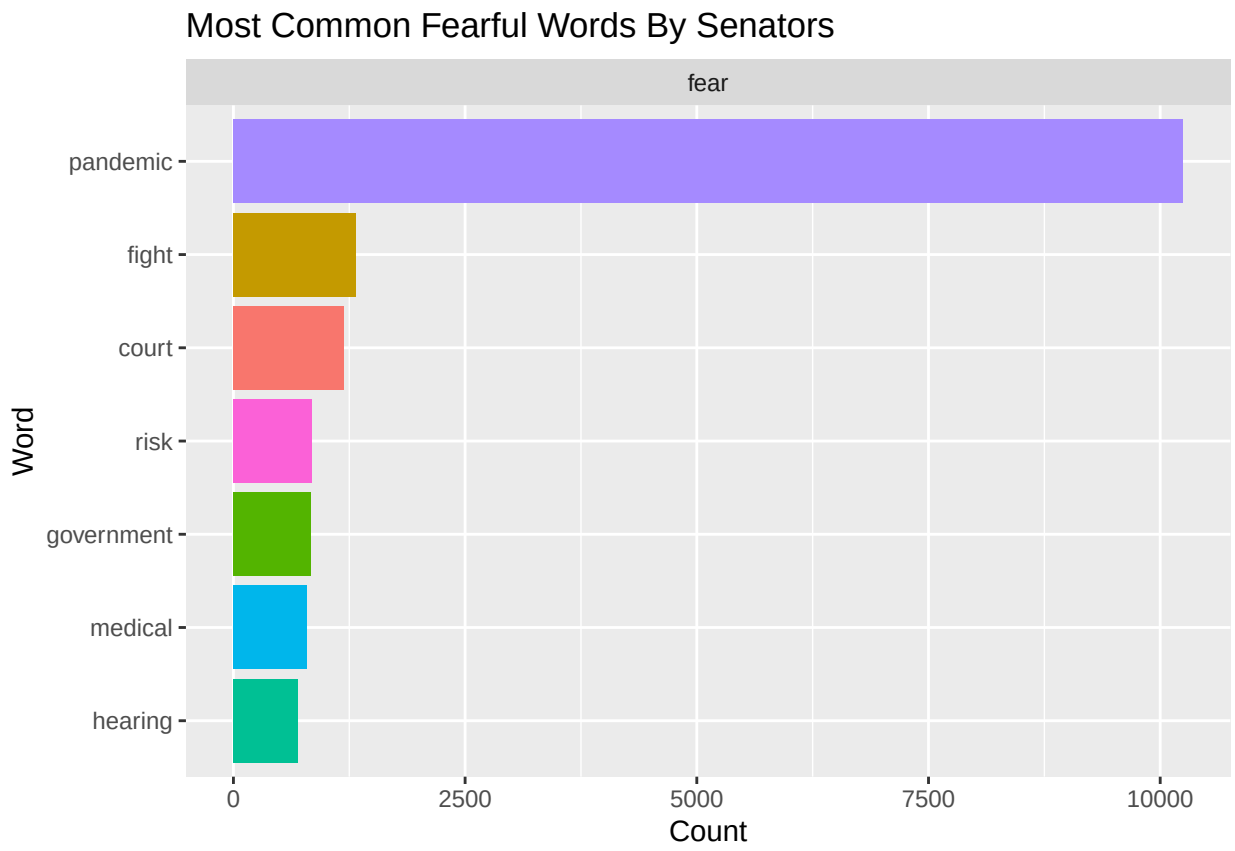
```
temp_a <- temp_word_bar %>%
  filter(sentiment == "anger") %>%
  arrange(desc(count)) %>%
  head(n = 7)
temp_f <- temp_word_bar %>%
  filter(sentiment == "fear") %>%
  arrange(desc(count)) %>%
  head(n = 7)
temp_p <- temp_word_bar %>%
  filter(sentiment == "positive") %>%
  arrange(desc(count)) %>%
```

```
  head(n = 7)
temp_t <- temp_word_bar %>%
  filter(sentiment == "trust") %>%
  arrange(desc(count)) %>%
  head(n = 7)


ggplot(temp_a, aes(x = reorder(tokens,count), y = count)) +
  geom_col(aes(fill = tokens)) +
  scale_color_brewer(palette = "Set1") +
  coord_flip() +
  facet_wrap(~sentiment, nrow = 4) +
  theme(legend.position = "none") +
  labs(title = "Most Common Angry Words By Senators",
       x = "Word",
       y = "Count")
```

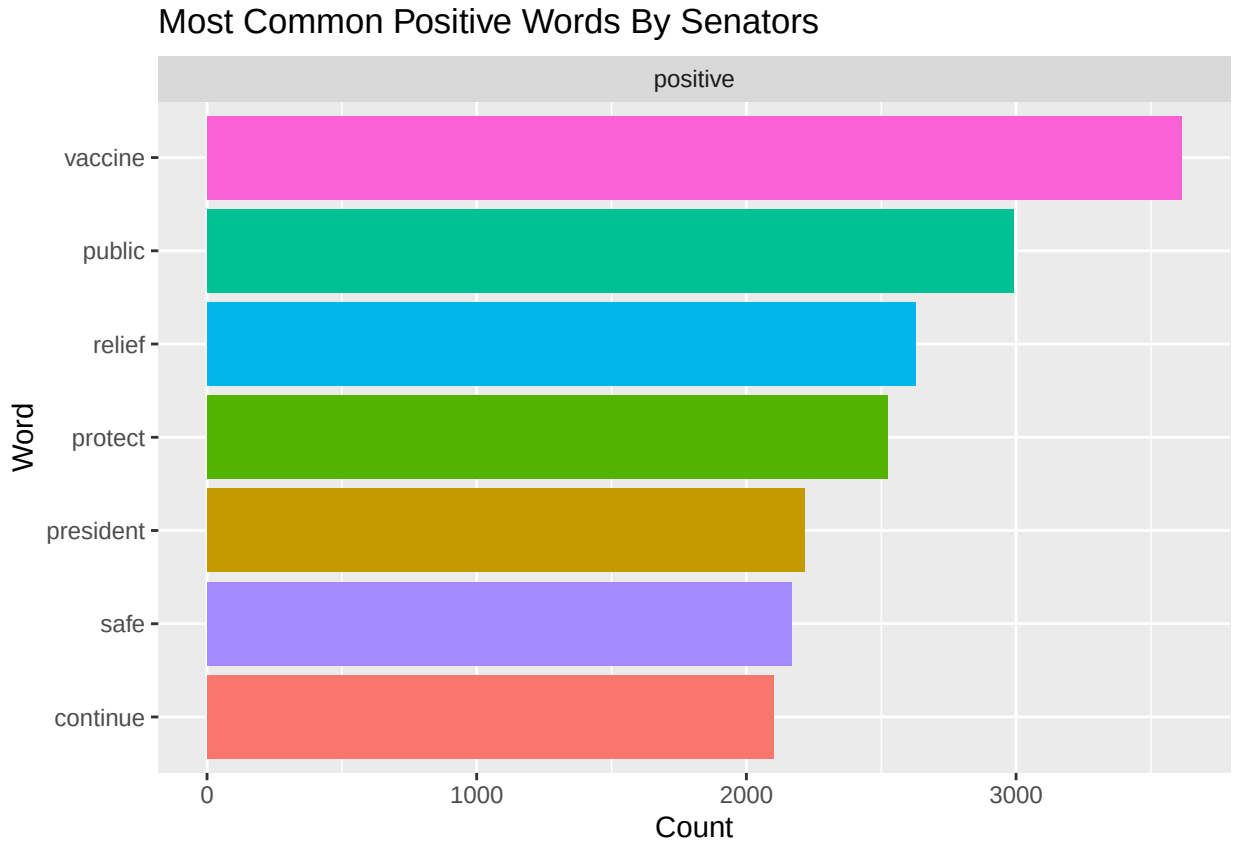



```
ggplot(temp_f, aes(x = reorder(tokens,count), y = count)) +
  geom_col(aes(fill = tokens)) +
  scale_color_brewer(palette = "Set1") +
  coord_flip() +
  facet_wrap(~sentiment, nrow = 4) +
  theme(legend.position = "none") +
  labs(title = "Most Common Fearful Words By Senators",
       x = "Word",
```

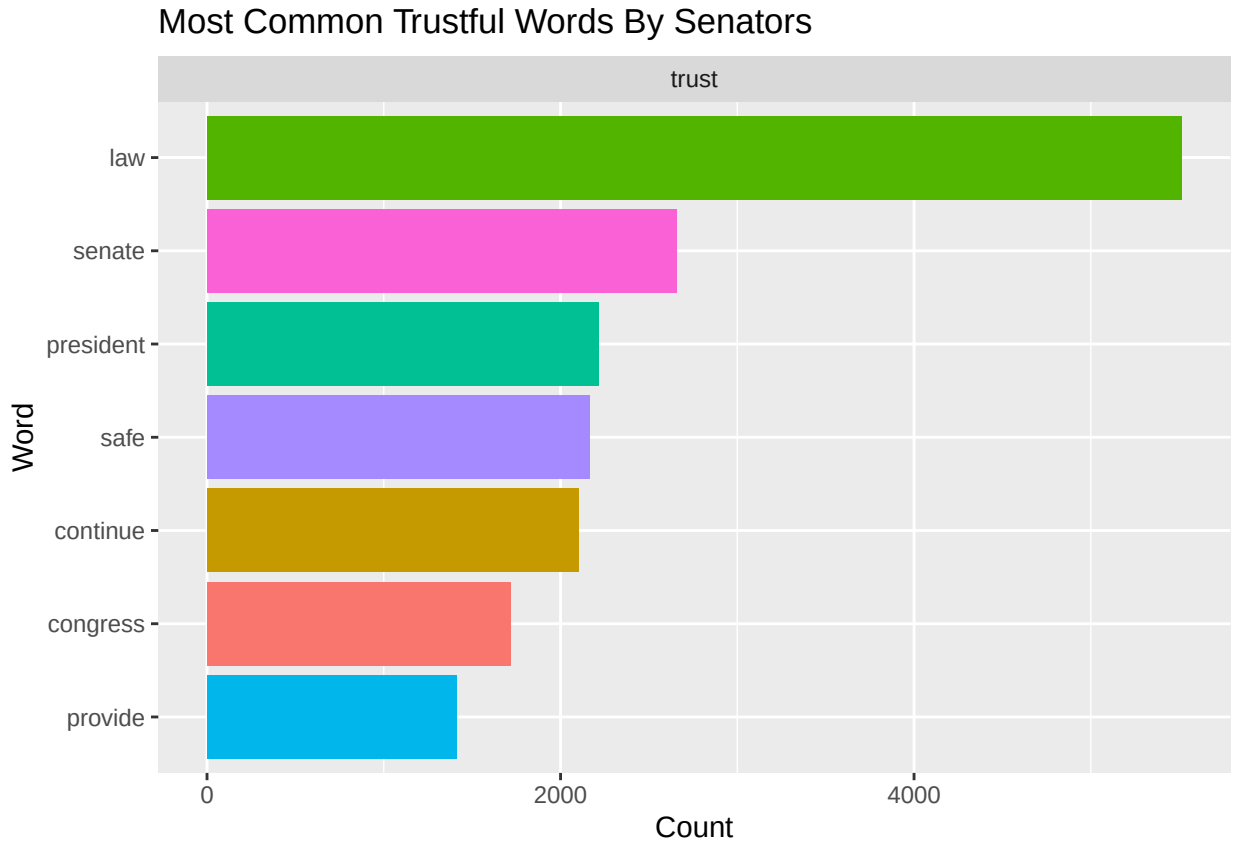
```
       y = "Count")
```




```
ggplot(temp_p, aes(x = reorder(tokens,count), y = count)) +
  geom_col(aes(fill = tokens)) +
  scale_color_brewer(palette = "Set1") +
  coord_flip() +
  facet_wrap(~sentiment, nrow = 4) +
  theme(legend.position = "none") +
  labs(title = "Most Common Positive Words By Senators",
       x = "Word",
       y = "Count")
```




```
ggplot(temp_t, aes(x = reorder(tokens,count), y = count)) +
  geom_col(aes(fill = tokens)) +
  scale_color_brewer(palette = "Set1") +
  coord_flip() +
  facet_wrap(~sentiment, nrow = 4) +
  theme(legend.position = "none") +
  labs(title = "Most Common Trustful Words By Senators",
       x = "Word",
       y = "Count")
```




```
setwd("~/Documents/Amherst/STAT 231 DATA SCIENCE/blog_the-purple-tusks/blog-project")
test <- read_csv2("data/textual/senator_tweets.csv")
```

```
## i Using "','" as decimal and "'.'" as grouping mark. Use `read_delim()` for more control.

## Warning: One or more parsing issues, see `problems()` for details

## Rows: 338015 Columns: 11

## -- Column specification --------------------------------------------------------
## Delimiter: ";"
## chr  (7): abv, state, name, text, source, screen_name, location
## dbl  (2): favorite_count, retweet_count
## lgl  (1): hashtags
## dttm (1): created_at

##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
test <- test %>%
  select(text,created_at)
setwd("~/Documents/Amherst/STAT 231 DATA SCIENCE/blog_the-purple-tusks/blog-project")
#test %>%
 # write_csv2("data/textual/wordcloud_data.csv")
```