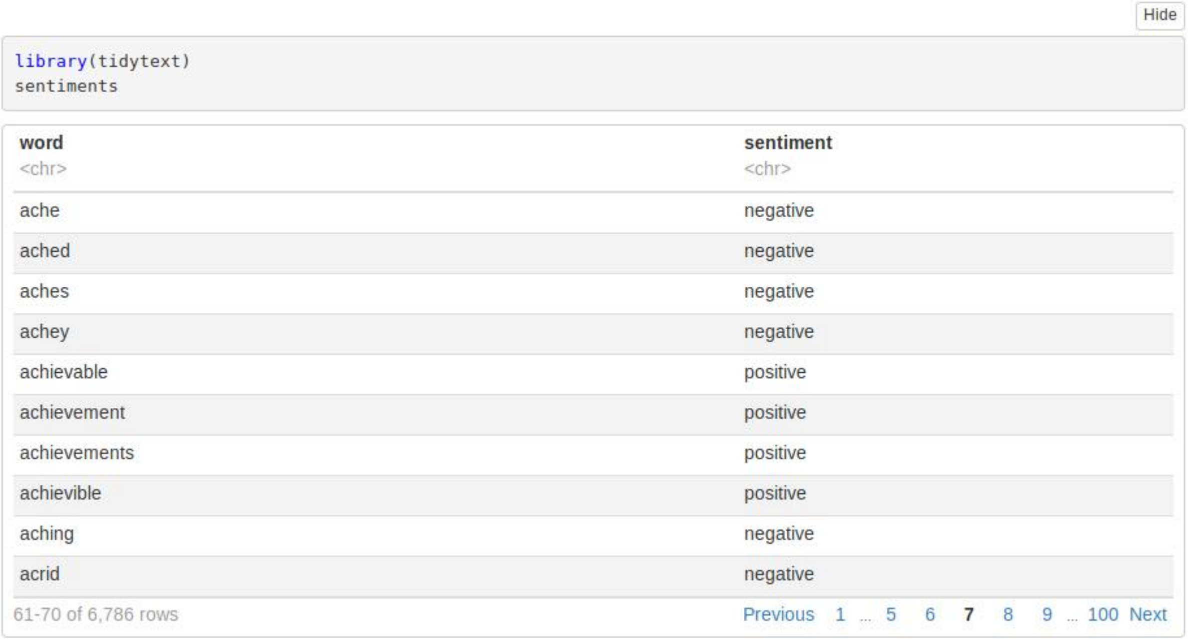
Sentiment Analysis in R

1. Developing Sentiment Analysis Model in R

```
library(tidytext)
Sentiments
```

Screenshot:



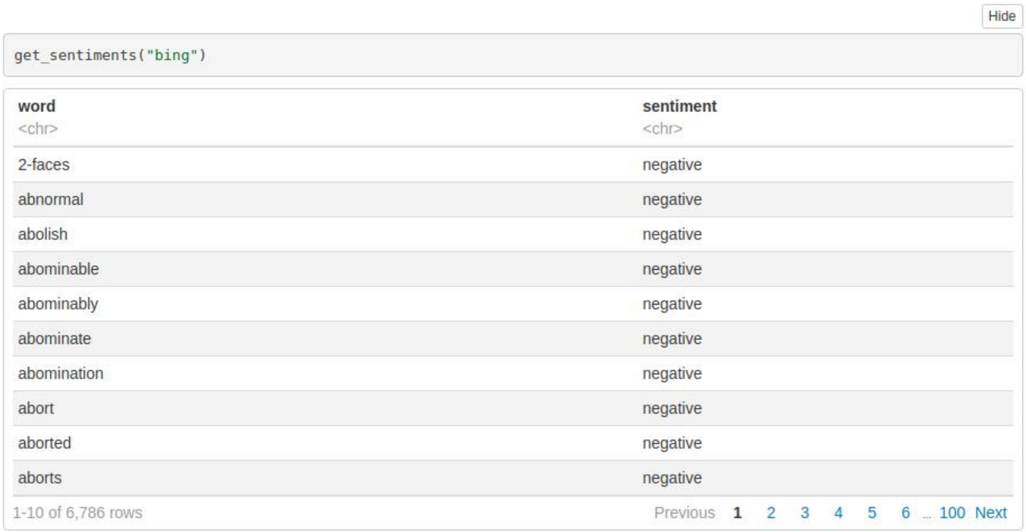
```
library(tidytext)
sentiments
```

word <chr>	sentiment <chr>
ache	negative
ached	negative
aches	negative
achey	negative
achievable	positive
achievement	positive
achievements	positive
achievible	positive
aching	negative
acrid	negative

61-70 of 6,786 rows

```
get_sentiments("bing")
```

Screenshot:



```
get_sentiments("bing")
```

word <chr>	sentiment <chr>
2-faces	negative
abnormal	negative
abolish	negative
abominable	negative
abominably	negative
abominate	negative
abomination	negative
abort	negative
aborted	negative
aborts	negative

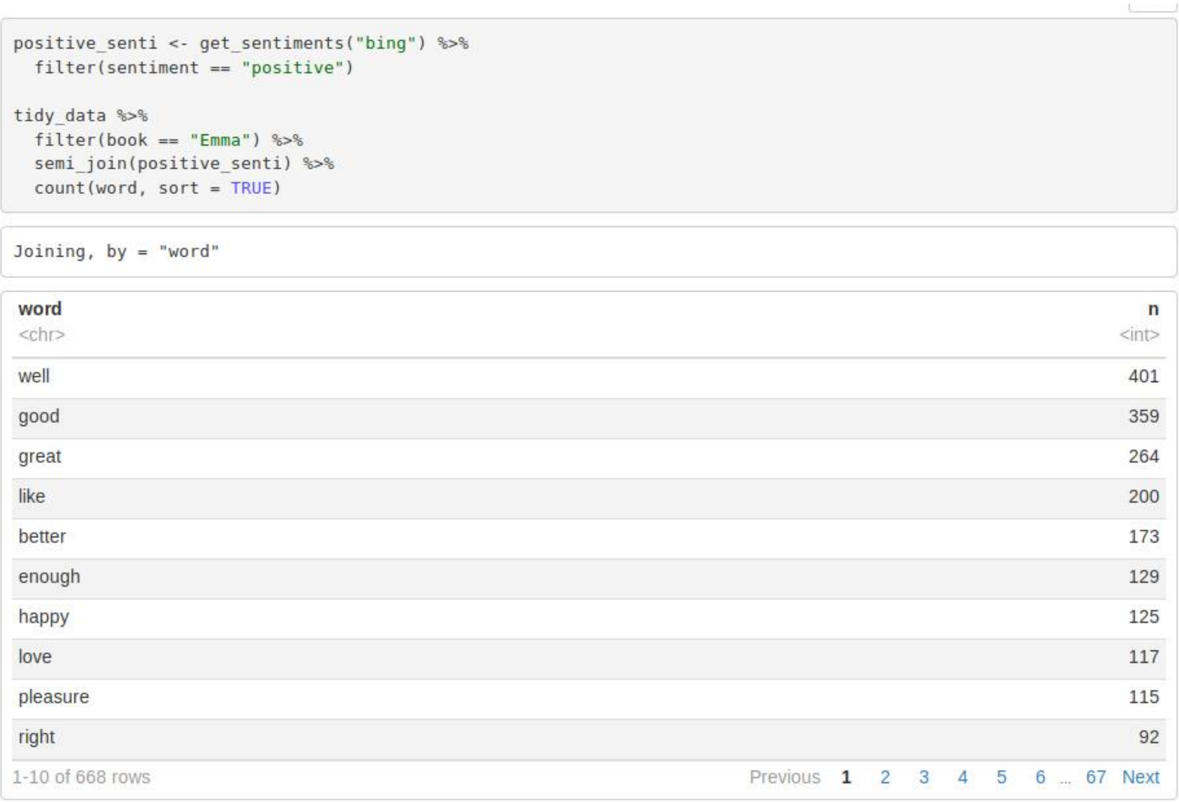
1-10 of 6,786 rows

2. R Sentiment Analysis

Sentiment Analysis with Inner Joint

```
library(janeaustenr)
library(stringr)
library(tidytext)

tidy_data <- austen_books() %>%
 group_by(book) %>%
 mutate(linenumber = row_number(),
   chapter = cumsum(str_detect(text, regex("^chapter [\\divxlc]",
                              ignore_case = TRUE)))) %>%
ungroup() %>%
unnest_tokens(word, text)


positive_senti <- get_sentiments("bing") %>%
 filter(sentiment == "positive")

tidy_data %>%
 filter(book == "Emma") %>%
 semi_join(positive_senti) %>%
 count(word, sort = TRUE)
```

Screenshot:



```
positive_senti <- get_sentiments("bing") %>%
  filter(sentiment == "positive")

tidy_data %>%
  filter(book == "Emma") %>%
  semi_join(positive_senti) %>%
  count(word, sort = TRUE)
```

```
Joining, by = "word"
```

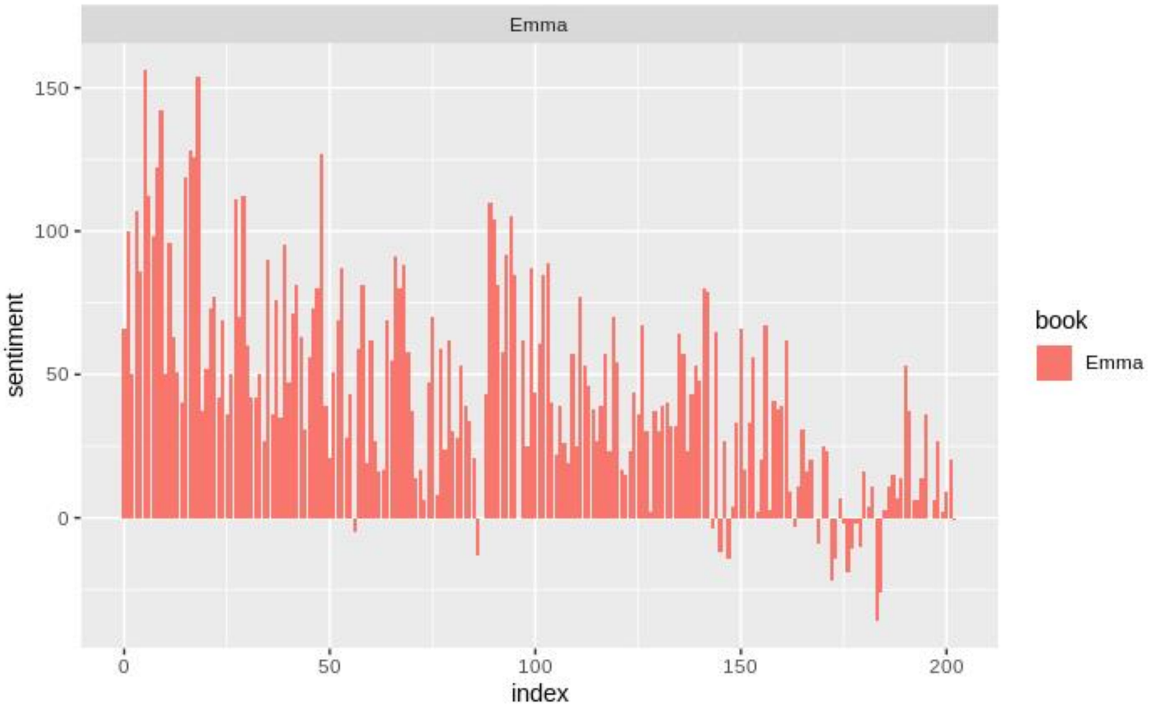
word	n
<chr>	<int>
well	401
good	359
great	264
like	200
better	173
enough	129
happy	125
love	117
pleasure	115
right	92

1-10 of 668 rows

```
library(tidyr)
bing <- get_sentiments("bing")
Emma_sentiment <- tidy_data %>%
 inner_join(bing) %>%
 count(book = "Emma" , index = linenumber %/% 80, sentiment) %>%
 spread(sentiment, n, fill = 0) %>%
 mutate(sentiment = positive - negative)
```

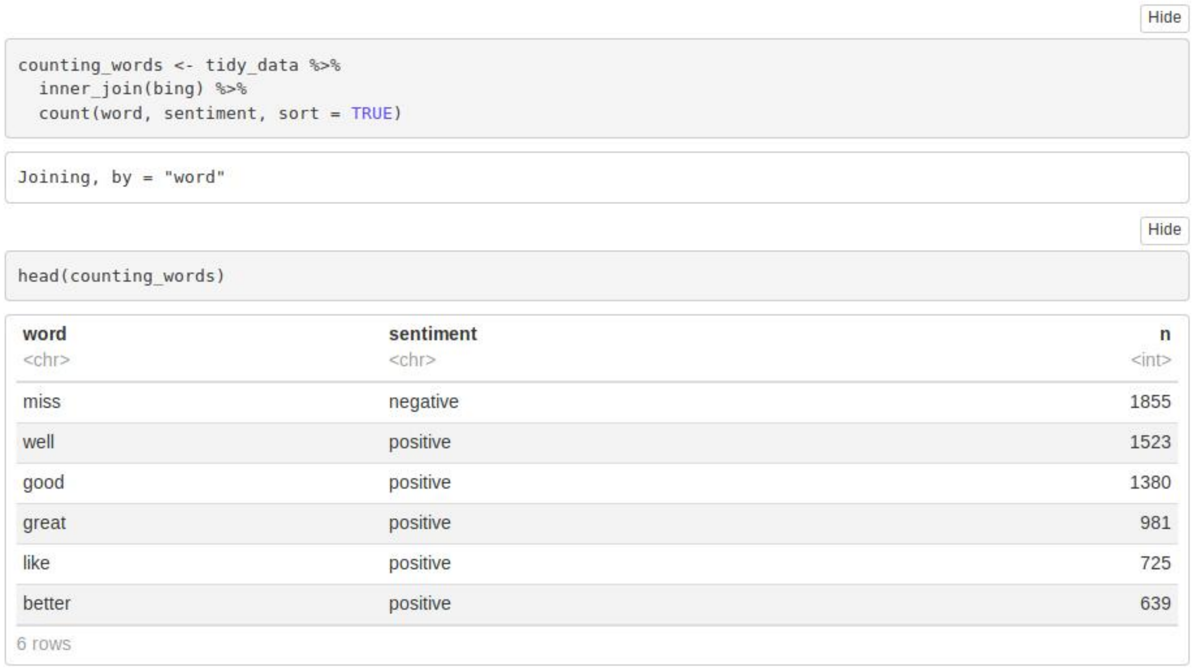
```
library(ggplot2)

ggplot(Emma_sentiment, aes(index, sentiment, fill = book)) +
 geom_bar(stat = "identity", show.legend = TRUE) +
 facet_wrap(~book, ncol = 2, scales = "free_x")
```

Screenshot:



```
counting_words <- tidy_data %>%
 inner_join(bing) %>%
 count(word, sentiment, sort = TRUE)
head(counting_words)
```

Screenshot



```
counting_words <- tidy_data %>%
  inner_join(bing) %>%
  count(word, sentiment, sort = TRUE)
```

```
Joining, by = "word"
```

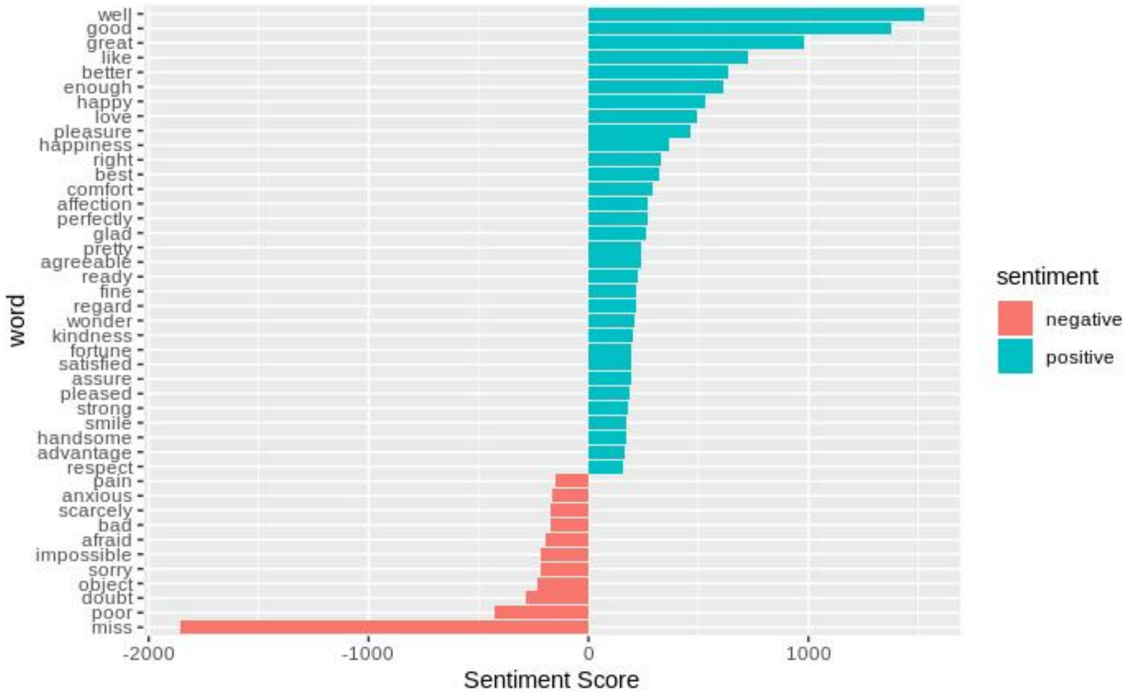
```
head(counting_words)
```

word	sentiment	n
<chr>	<chr>	<int>
miss	negative	1855
well	positive	1523
good	positive	1380
great	positive	981
like	positive	725
better	positive	639

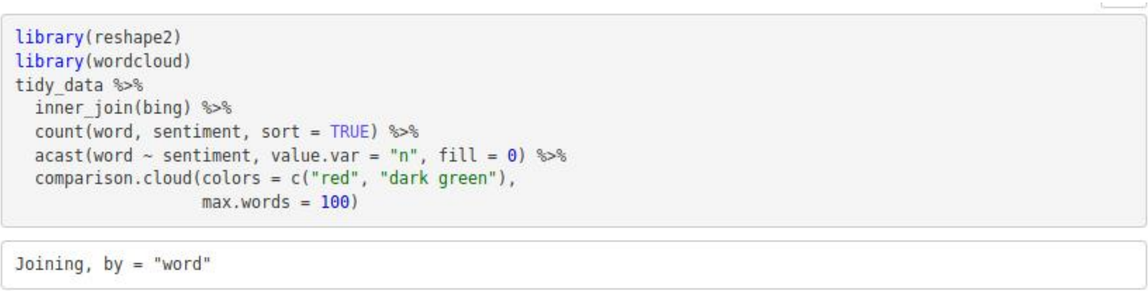
6 rows

```
counting_words %>%
 filter(n > 150) %>%
 mutate(n = ifelse(sentiment == "negative", -n, n)) %>%
 mutate(word = reorder(word, n)) %>%
 ggplot(aes(word, n, fill = sentiment))+
 geom_col() +
 coord_flip() +
 labs(y = "Sentiment Score")
```

Screenshot:

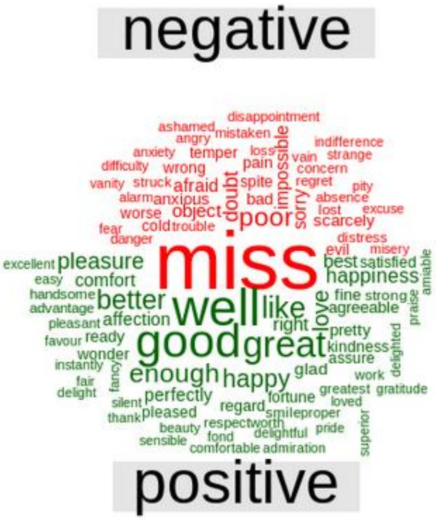


```
library(reshape2)
library(wordcloud)
tidy_data %>%
 inner_join(bing) %>%
 count(word, sentiment, sort = TRUE) %>%
 acast(word ~ sentiment, value.var = "n", fill = 0) %>%
 comparison.cloud(colors = c("red", "dark green"),
          max.words = 100)
```



```
library(reshape2)
library(wordcloud)
tidy_data %>%
  inner_join(bing) %>%
  count(word, sentiment, sort = TRUE) %>%
  acast(word ~ sentiment, value.var = "n", fill = 0) %>%
  comparison.cloud(colors = c("red", "dark green"),
                   max.words = 100)
```

```
Joining, by = "word"
```


negative
disappointment
ashamed
mistaken
angry
impossible
indifference
anxiety
temper
loss
vain
strange
difficulty
wrong
pain
concern
vanity
struck
afraid
doubt
spite
regret
pity
alarm
anxious
bad
sorry
absence
worse
object
poor
lost
excuse
fear
cold
trouble
scarcely
danger
distress
miss
evil
misery
excellent
pleasure
best
satisfied
amiable
easy
comfort
happiness
handsome
better
well
like
love
fine
strong
praise
advantage
agreeable
pleasant
affection
right
pretty
favour
ready
good
great
kindness
delighted
wonder
assure
instantly
fancy
enough
glad
fair
happy
work
delight
perfectly
greatest
gratitude
silent
fortune
loved
thank
pleased
regard
smile
proper
beauty
respect
worth
pride
superior
sensible
fond
delightful
comfortable
admiration
positive