install.packages(c("tidytext", "dplyr", "ggplot2", "readr", "lubridate", "stringr", "tidyr")) library(tidytext)

library(dplyr) library(ggplot2) library(readr) library(lubridate) library(stringr) library(tidyr)

reviews <- read\_csv("customer\_reviews.csv")

reviews$date <- ymd(reviews$date) # convert to Date format glimpse(reviews)

data("stop\_words")

tidy\_reviews <- reviews %>% unnest\_tokens(word, review\_text) %>% anti\_join(stop\_words)

sentiment\_words <- tidy\_reviews %>% inner\_join(get\_sentiments("bing"), by = "word")

product\_sentiment <- sentiment\_words %>% count(product, sentiment) %>%

pivot\_wider(names\_from = sentiment, values\_from = n, values\_fill = 0) %>% mutate(net\_sentiment = positive - negative)

sentiment\_words <- tidy\_reviews %>% inner\_join(get\_sentiments("bing"))

ggplot(product\_sentiment, aes(x = reorder(product, net\_sentiment), y = net\_sentiment, fill = net\_sentiment > 0)) +

geom\_col(show.legend = FALSE) + coord\_flip() +

labs(title = "Net Sentiment by Product", x = "Product", y = "Net Sentiment Score") + scale\_fill\_manual(values = c("FALSE" = "red", "TRUE" = "green"))

daily\_sentiment <- sentiment\_words %>% count(date, sentiment) %>%

pivot\_wider(names\_from = sentiment, values\_from = n, values\_fill = 0) %>% mutate(net\_sentiment = positive - negative)

ggplot(daily\_sentiment, aes(x = date, y = net\_sentiment)) + geom\_line(color = "steelblue") +

labs(title = "Daily Net Sentiment", x = "Date", y = "Net Sentiment")