Deflategate

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This is an text analysis of the 'Deflategate' report where is accused of deflating balls to have an game advantage see http://en.wikipedia.org/wiki/Deflategate

```r
rm(list=ls(all=TRUE)) #start with empty workspace
startTime <- Sys.time()

library(knitr)
opts_chunk$set(echo = TRUE, cache= TRUE, results = 'hold', warning=FALSE, message=FALSE )
```

```r
setInternet2(TRUE)

url <- "https://nfllabor.files.wordpress.com/2015/05/investigative-and-expert-reports-re-footballs-used

dest <- tempfile(fileext = ".pdf")
download.file(url, dest, mode = "wb")

# set path to pdftotxt.exe and convert pdf to text
exe <- "C:\\Program Files\\xpdfbin-win-3.04\\bin32\\pdftotext.exe"
system(paste("\"", exe, "\" \"", dest, "\"", sep = ""), wait = F)

# get txt-file name and open it
filetxt <- sub(".pdf", ".txt", dest)
#shell.exec(filetxt)
```

```r
doInstall <- FALSE # Change to TRUE if you do want packages installed.
toInstall <- c("tm", "wordcloud", "Rstem","koRpus", "xtable")
if(doInstall){install.packages(toInstall, repos = "http://cran.us.r-project.org")}
lapply(toInstall, library, character.only = TRUE)

txt <- readLines(filetxt) #

txt <- tolower(txt)
# get readibilty stats

tagged.text <- tokenize(filetxt, lang="en")
str(describe(tagged.text))

hyph.txt.en <- hyphen(tagged.text, quiet = TRUE)

readbl.txt <- readability(tagged.text, hyphen=hyph.txt.en, index="all")

dfReadTxt <- as.data.frame(summary(readbl.txt))

(method.Type <- dfReadTxt[18,1])

(method.Grade <- dfReadTxt[18,4])
```

```r
(method.Age <- dfReadTxt[18,5])

corpus <- Corpus(VectorSource(txt))
corpus <- tm_map(corpus, removePunctuation)
corpus <- tm_map(corpus, removeNumbers)
corpus <- tm_map(corpus, removeWords, stopwords ("english"))
#corpus <- tm_map(corpus, removeWords, c("year", "attachment"))
corpus <- tm_map(corpus, stripWhitespace)
tdm <- TermDocumentMatrix(corpus)
m <- as.matrix(tdm)
d <- data.frame(freq = sort(rowSums(m), decreasing = TRUE))

# find frequent terms
(findFreqTerms(tdm, lowfreq = 14 ))

# following plot idea is from here
#  http://stackoverflow.com/questions/23766124/colors-and-a-plotting-term-document-matrix

freqterms <- findFreqTerms(tdm, lowfreq = 14)[1:28]

vtxcnt <- rowSums(cor(as.matrix(t(tdm[freqterms,])))>.3)-1

mycols<-c("#f7fbff","#deebf7","#c6dbef",
    "#9ecae1","#6baed6","#4292c6",
    "#2171b5", "#084594")
vc <- mycols[vtxcnt+1]
names(vc) <- names(vtxcnt)
```

```
## [[1]]
##  [1] "tm"        "NLP"       "knitr"     "stats"     "graphics"
##  [6] "grDevices" "utils"     "datasets"  "methods"   "base"
##
## [[2]]
##  [1] "wordcloud"    "RColorBrewer" "tm"           "NLP"
##  [5] "knitr"        "stats"        "graphics"     "grDevices"
##  [9] "utils"        "datasets"     "methods"      "base"
##
## [[3]]
##  [1] "Rstem"        "wordcloud"    "RColorBrewer" "tm"
##  [5] "NLP"          "knitr"        "stats"        "graphics"
##  [9] "grDevices"    "utils"        "datasets"     "methods"
## [13] "base"
##
## [[4]]
##  [1] "koRpus"       "Rstem"        "wordcloud"    "RColorBrewer"
##  [5] "tm"           "NLP"          "knitr"        "stats"
##  [9] "graphics"     "grDevices"    "utils"        "datasets"
## [13] "methods"      "base"
##
## [[5]]
##  [1] "xtable"       "koRpus"       "Rstem"        "wordcloud"
##  [5] "RColorBrewer" "tm"           "NLP"          "knitr"
##  [9] "stats"        "graphics"     "grDevices"    "utils"
```

```
## [13] "datasets"      "methods"      "base"
##
## List of 14
##  $ all.chars       : int 512692
##  $ lines           : int 5017
##  $ normalized.space: int 510576
##  $ chars.no.space  : int 427968
##  $ punct           : int 17153
##  $ digits          : int 12465
##  $ letters         : Named num [1:80] 410815 3311 15290 16685 13112 ...
##   ..- attr(*, "names")= chr [1:80] "all" "l1" "l2" "l3" ...
##  $ letters.only    : int 398350
##  $ char.distrib    : num [1:6, 1:109] 14720 14720 81829 15.2 15.2 ...
##   ..- attr(*, "dimnames")=List of 2
##   .. ..$ : chr [1:6] "num" "cum.sum" "cum.inv" "pct" ...
##   .. ..$ : chr [1:109] "1" "2" "3" "4" ...
##  $ lttr.distrib    : num [1:6, 1:79] 3311 3311 81633 3.9 3.9 ...
##   ..- attr(*, "dimnames")=List of 2
##   .. ..$ : chr [1:6] "num" "cum.sum" "cum.inv" "pct" ...
##   .. ..$ : chr [1:79] "1" "2" "3" "4" ...
##  $ words           : int 84944
##  $ sentences       : int 4936
##  $ avg.sentc.length: num 17.2
##  $ avg.word.length : num 4.84
## Text language: en
## [1] "Flesch-Kincaid"
## [1] "10.4"
## [1] "15.4"
##   [1] "according"       "account"        "accuracy"
##   [4] "acknowledged"    "activities"     "actual"
##   [7] "actually"        "addition"       "additional"
##  [10] "adjusted"        "afc"            "affected"
##  [13] "agreed"          "air"            "allowed"
##  [16] "alone"           "also"           "although"
##  [19] "among"           "amount"         "analyses"
##  [22] "analysis"        "anderson"       "andersons"
##  [25] "another"         "anything"       "appear"
##  [28] "appears"         "appendix"       "applying"
##  [31] "approximately"   "area"           "around"
##  [34] "arrived"         "asked"          "associated"
##  [37] "assuming"        "assumption"     "assumptions"
##  [40] "attached"        "attendant"      "autograph"
##  [43] "autographed"     "available"      "average"
##  [46] "averages"        "back"           "backup"
##  [49] "bag"             "bags"           "ball"
##  [52] "balls"           "band"           "based"
##  [55] "basis"           "bathroom"       "battery"
##  [58] "began"           "belichick"      "believe"
##  [61] "believed"        "bird"           "bladder"
##  [64] "blakeman"        "bowl"           "boy"
##  [67] "boys"            "brady"          "bradys"
##  [70] "brought"         "calculated"     "call"
##  [73] "called"          "calls"          "can"
##  [76] "cell"            "certain"        "championship"
```

3

```
##  [79] "change"          "changes"          "checked"
##  [82] "circumstances"   "claimed"          "close"
##  [85] "coach"            "colder"           "collected"
##  [88] "colts"            "come"             "communications"
##  [91] "compared"         "comparison"       "completely"
##  [94] "concerning"       "concerns"         "concluded"
##  [97] "conclusion"       "conclusions"      "condition"
## [100] "conditions"       "conducted"        "conference"
## [103] "confirmed"        "connection"       "considered"
## [106] "consistent"       "consistently"     "constant"
## [109] "consultants"      "control"          "conversation"
## [112] "corresponding"    "counsel"          "course"
## [115] "crew"             "curves"           "daniel"
## [118] "data"             "date"             "day"
## [121] "days"             "deflate"          "deflated"
## [124] "deflation"        "deflator"         "deliberate"
## [127] "delivered"        "described"        "determine"
## [130] "determined"       "deviation"        "difference"
## [133] "differences"      "different"        "directly"
## [136] "director"         "discussed"        "discussion"
## [139] "done"             "door"             "dressing"
## [142] "drop"             "drops"            "dry"
## [145] "earlier"          "edt"              "effect"
## [148] "effects"          "efforts"          "either"
## [151] "eleven"           "email"            "end"
## [154] "england"          "entire"           "environment"
## [157] "environmental"    "equilibrium"      "equipment"
## [160] "error"            "est"              "estimated"
## [163] "evaluate"         "even"             "events"
## [166] "evidence"         "example"          "exchange"
## [169] "exchanged"        "exemplar"         "exhibited"
## [172] "expected"         "experiment"       "experimental"
## [175] "experiments"      "explain"          "explained"
## [178] "explanation"      "exponent"         "exponents"
## [181] "exposed"          "fact"             "factor"
## [184] "factors"          "farley"           "field"
## [187] "figure"           "final"            "find"
## [190] "finding"          "findings"         "first"
## [193] "following"        "followup"         "footage"
## [196] "football"         "footballs"        "forth"
## [199] "found"            "four"             "friend"
## [202] "function"         "game"             "games"
## [205] "gas"              "gauge"            "gauges"
## [208] "general"          "generally"        "generated"
## [211] "get"              "gillette"         "give"
## [214] "given"            "going"            "good"
## [217] "gostkowski"       "greater"          "grigson"
## [220] "guidelines"       "half"             "halftime"
## [223] "handed"           "head"             "help"
## [226] "higher"           "home"             "hours"
## [229] "however"          "human"            "humidity"
## [232] "ideal"            "identical"        "identified"
## [235] "immediately"      "impact"           "important"
## [238] "included"         "including"        "increased"
```

```
## [241] "indianapolis"    "individual"     "inflated"
## [244] "inflation"       "information"    "initial"
## [247] "initially"       "inside"         "inspected"
## [250] "inspection"      "intercepted"    "internal"
## [253] "interview"       "interviewed"    "interviews"
## [256] "investigation"   "investigative"  "involved"
## [259] "issue"           "issues"         "items"
## [262] "january"         "jastremski"     "jastremskis"
## [265] "jets"            "jim"            "john"
## [268] "judge"           "just"           "kball"
## [271] "kballs"          "kensil"         "kerzner"
## [274] "kicking"         "kickoff"        "knew"
## [277] "know"            "knowledge"      "known"
## [280] "last"            "later"          "law"
## [283] "league"          "least"          "left"
## [286] "less"            "level"          "levels"
## [289] "like"            "likely"         "listed"
## [292] "locker"          "logo"           "long"
## [295] "lot"             "low"            "lower"
## [298] "made"            "magnitude"      "main"
## [301] "make"            "manager"        "manifold"
## [304] "mark"            "marlow"         "master"
## [307] "materials"       "may"            "mcnally"
## [310] "mcnallys"        "mean"           "measure"
## [313] "measured"        "measurement"    "measurements"
## [316] "measuring"       "media"          "members"
## [319] "mentioned"       "message"        "messages"
## [322] "might"           "miller"         "min"
## [325] "minimum"         "minute"         "minutes"
## [328] "model"           "mom"            "morning"
## [331] "multiple"        "must"           "name"
## [334] "natural"         "near"           "needle"
## [337] "never"           "new"            "next"
## [340] "nfl"             "night"          "none"
## [343] "nonlogo"         "note"           "noted"
## [346] "nothing"         "number"         "observed"
## [349] "occurred"        "october"        "offered"
## [352] "official"        "officials"      "officiating"
## [355] "one"             "operations"     "order"
## [358] "others"          "outside"        "parameters"
## [361] "part"            "participated"   "particular"
## [364] "patriots"        "paul"           "performed"
## [367] "period"          "permissible"    "permission"
## [370] "person"          "personnel"      "phone"
## [373] "physical"        "physics"        "place"
## [376] "plausible"       "play"           "playing"
## [379] "point"           "possession"     "possible"
## [382] "potential"       "practice"       "predicted"
## [385] "pregame"         "preparation"    "prepare"
## [388] "prepared"        "present"        "presented"
## [391] "press"           "pressure"       "pressures"
## [394] "previously"      "primary"        "prioleau"
## [397] "prior"           "probable"       "procedure"
## [400] "process"         "produced"       "properly"
```

```
## [403] "provide"           "provided"             "psi"
## [406] "psig"              "pump"                 "put"
## [409] "pvalue"            "quarterback"          "questions"
## [412] "raised"            "range"                "ranges"
## [415] "rather"            "raucci"               "reach"
## [418] "reached"           "read"                 "reading"
## [421] "readings"          "reads"                "realistic"
## [424] "really"            "reasons"              "recall"
## [427] "recalls"           "received"             "recipient"
## [430] "recorded"          "reduction"            "referee"
## [433] "reference"         "referred"             "regarding"
## [436] "regardless"        "relating"             "relative"
## [439] "relatively"        "release"              "relevant"
## [442] "remained"          "removed"              "repeatability"
## [445] "repeated"          "report"               "reported"
## [448] "reports"           "representative"       "request"
## [451] "requested"         "required"             "respect"
## [454] "respective"        "respectively"         "responded"
## [457] "response"          "responsibilities" "result"
## [460] "results"           "retained"             "returned"
## [463] "review"            "right"                "riveron"
## [466] "room"              "rubbing"              "rule"
## [469] "rules"             "said"                 "scenario"
## [472] "scenarios"         "schoenfeld"           "scientific"
## [475] "season"            "second"               "seconds"
## [478] "section"           "security"             "see"
## [481] "seen"              "sender"               "sent"
## [484] "series"            "set"                  "several"
## [487] "shortly"           "showing"              "shown"
## [490] "sideline"          "significance"         "significant"
## [493] "significantly"     "similar"              "similarly"
## [496] "simulation"        "simulations"          "since"
## [499] "sitting"           "small"                "sneakers"
## [502] "specifically"      "spoke"                "stadium"
## [505] "staff"             "standard"             "start"
## [508] "starting"          "stated"               "statements"
## [511] "statistical"       "statistically"        "stress"
## [514] "study"             "subject"              "subsequent"
## [517] "suggested"         "sullivan"             "sunday"
## [520] "super"             "support"              "sure"
## [523] "surface"           "switch"               "switched"
## [526] "table"             "take"                 "taken"
## [529] "taking"            "tampering"            "team"
## [532] "teams"             "telephone"            "temperature"
## [535] "temperatures"      "term"                 "test"
## [538] "tested"            "testing"              "tests"
## [541] "text"              "therefore"            "things"
## [544] "third"             "thirteen"             "though"
## [547] "three"             "throughout"           "thus"
## [550] "tickets"           "time"                 "times"
## [553] "timing"            "told"                 "tom"
## [556] "took"              "total"                "transient"
## [559] "trying"            "two"                  "understand"
## [562] "understood"        "unlikely"             "upon"
```

6

```
## [565] "usage"          "use"          "used"
## [568] "using"          "value"        "values"
## [571] "variability"    "variation"    "variations"
## [574] "various"        "varying"      "view"
## [577] "vigorous"       "volume"       "walk"
## [580] "walked"         "walt"         "warmer"
## [583] "way"            "weather"      "week"
## [586] "weiss"          "well"         "wet"
## [589] "whether"        "will"         "wilson"
## [592] "window"         "within"       "without"
## [595] "witnesses"      "words"        "work"
## [598] "written"        "xxxx"         "yard"
## [601] "years"          "yette"
```

```
plot(tdm,terms = findFreqTerms(tdm, lowfreq = 14)[1:28], corThreshold=0.3, nodeAttrs=list(fillcolor=vc)]
```

according account accuracy acknowledged activities actual actually addition additional adjusted afc affected agreed air allowed alone also although among amount analyses analysis anderson andersons another anything appear appears

```r
# Stem words
d$stem <- wordStem(row.names(d), language = "english")

# and put words to column, otherwise they would be lost when aggregating
d$word <- row.names(d)

# remove web address (very long string):
d <- d[nchar(row.names(d)) < 20, ]

# aggregate freqeuncy by word stem and
# keep first words..
agg_freq <- aggregate(freq ~ stem, data = d, sum)
(agg_word <- aggregate(word ~ stem, data = d, function(x) x[1]))
```

```r
d <- cbind(freq = agg_freq[, 2], agg_word)

# sort by frequency
d <- d[order(d$freq, decreasing = T), ]

# print wordcloud:
set.seed(123) # to make it reproducible
wordcloud(d$word, d$freq, min.freq=5, random.order=F,
 scale = c (5 , .1), colors =brewer.pal ( 6 , "Dark2"))
```



```
##                   stem              word
## 1                  abe               abe
## 2                 abij              abij
## 3                 abil           ability
## 4                  abl              able
## 5               absenc           absence
## 6              absolut          absolute
## 7               accept        acceptable
## 8               access            access
## 9             accident      accidentally
## 10            accommod       accommodate
## 11            accompani        accompanied
## 12           accomplish        accomplish
## 13               accord         according
## 14              account           account
```

```
## 15            accur           accurate
## 16         accuraci           accuracy
## 17            accus           accusing
## 18           achiev            achieve
## 19       acknowledg       acknowledged
## 20         acquaint      acquaintances
## 21           acquir           acquired
## 22           across             across
## 23              act              acted
## 24           action            actions
## 25            activ         activities
## 26            actor             actors
## 27           actual             actual
## 28               ad              added
## 29             adam              adams
## 30              add                add
## 31            addit           addition
## 32          address            address
## 33            adequ         adequately
## 34            adjac           adjacent
## 35           adjust           adjusted
## 36         administr     administration
## 37           admiss         admissible
## 38            admit           admitted
## 39           advanc            advance
## 40         advantag          advantage
## 41           advers            adverse
## 42            advic             advice
## 43            advis            advised
## 44            advoc         advocating
## 45              afc                afc
## 46           affect           affected
## 47           affili          affiliate
## 48            affix            affixed
## 49         aforement     aforementioned
## 50        afternoon          afternoon
## 51        afterward         afterwards
## 52            agent              agent
## 53              ago                ago
## 54             agre             agreed
## 55            ahead              ahead
## 56              aif                aif
## 57              aim                aim
## 58              air                air
## 59           airway             airway
## 60             akil               akil
## 61           albeit             albeit
## 62          alberto            alberto
## 63            alert              alert
## 64            align           aligning
## 65            alleg        allegations
## 66            allen              allen
## 67            allot           allotted
## 68            allow            allowed
```

```
## 69            almost            almost
## 70              alon             alone
## 71             along             along
## 72           alreadi           already
## 73           alright           alright
## 74              also              also
## 75             alter             alter
## 76            altern         alternate
## 77          although          although
## 78           altogeth        altogether
## 79             alway            always
## 80           ambient           ambient
## 81           america          americas
## 82          american          american
## 83               ami               amy
## 84             among             among
## 85            amount            amount
## 86            analog         analogous
## 87            analys           analyses
## 88           analysi          analysis
## 89            analyt         analytical
## 90            analyz          analyzed
## 91          anderson          anderson
## 92             andor             andor
## 93            andrew            andrew
## 94             angel           angeles
## 95             anger             anger
## 96              angl            angles
## 97             angri             angry
## 98           angrili           angrily
## 99              anim          animated
## 100           announc         announced
## 101            anomal         anomalous
## 102            anomali          anomaly
## 103             anoth           another
## 104           anotheri          anotherie
## 105            answer            answer
## 106            anticip        anticipated
## 107             anyon            anyone
## 108          anyonetri       anyonetrying
## 109             anyth           anything
## 110             apart            apart
## 111             appar          apparent
## 112          apparatus         apparatus
## 113            apparel           apparel
## 114            appear           appears
## 115       appearanceh       appearancehe
## 116           appendic         appendices
## 117           appendix          appendix
## 118        applestoappl     applestoapples
## 119             appli          applying
## 120            applic         applicable
## 121          approach         approached
## 122           appropri        appropriate
```

```
## 123            approv         approval
## 124            approxim       approximately
## 125            area           area
## 126            argu           arguing
## 127            aris           arise
## 128            arisen         arisen
## 129            aros           arose
## 130            around         around
## 131            arrang         arrange
## 132            arriv          arrived
## 133            arrow          arrow
## 134            art            art
## 135            articl         article
## 136            artifici       artificially
## 137            ascertain      ascertain
## 138            asid           aside
## 139            ask            asked
## 140            askingi        askingi
## 141            aspect         aspects
## 142            asrecord       asrecorded
## 143            ass            ass
## 144            assembl        assembled
## 145            assert         assertions
## 146            assess         assess
## 147            assign         assigned
## 148            assist         assistant
## 149            associ         associated
## 150            assum          assuming
## 151            assumpt        assumption
## 152            assur          assure
## 153            astatist       astatistical
## 154            astm           astm
## 155            athlet         athletic
## 156            atmospher      atmospheric
## 157            attach         attached
## 158            attack         attack
## 159            attain         attained
## 160            attempt        attempted
## 161            attend         attendant
## 162            attent         attention
## 163            attorney       attorneys
## 164            attribut       attributed
## 165            auction        auction
## 166            august         august
## 167            authent        authentic
## 168            author         authorized
## 169            autograph      autographed
## 170            automat        automatically
## 171            autooff        autooff
## 172            avail          available
## 173            avenu          avenue
## 174            averag         average
## 175            awak           awake
## 176            awar           aware
```

```
## 177          award                award
## 178           away                 away
## 179         awesom              awesome
## 180        awkward           awkwardness
## 181           back                 back
## 182     background           background
## 183         backup               backup
## 184            bad                  bad
## 185            bag                 bags
## 186           bake                baked
## 187         balanc              balance
## 188           ball                balls
## 189        ballboy             ballboys
## 190         ballif               ballif
## 191        balloon              balloon
## 192     ballsalmost          ballsalmost
## 193        ballsat              ballsat
## 194      ballskraft           ballskraft
## 195        ballswer             ballswere
## 196       balltobal            balltoball
## 197       baltimor             baltimore
## 198           band                 band
## 199           base                based
## 200           basi                basis
## 201          basic                basic
## 202      basketbal           basketball
## 203       bathroom             bathroom
## 204         batteri              battery
## 205      batterypow         batterypowered
## 206      batteryrel         batteryrelated
## 207            bay                  bay
## 208           bear                bears
## 209           beat              beating
## 210          becam               became
## 211          becom               become
## 212          began                began
## 213          begin                begin
## 214          begun                begun
## 215         behalf               behalf
## 216       behavior             behavior
## 217         behind               behind
## 218      belichick            belichick
## 219         believ               believe
## 220       bellshap            bellshaped
## 221         belong             belonged
## 222      belowregul         belowregulation
## 223          bench                bench
## 224        beneath              beneath
## 225        benefit             benefited
## 226         bengal              bengals
## 227         benign               benign
## 228           bent                 bent
## 229        bergman              bergman
## 230           berj                 berj
```

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```
## 231          best            best
## 232     bestprepar     bestprepared
## 233          better          better
## 234     betweenteam     betweenteam
## 235          beyond          beyond
## 236            bias            bias
## 237             bif             bif
## 238             big             big
## 239            bill            bill
## 240            bird            bird
## 241             bit             bit
## 242           black           black
## 243         bladder         bladder
## 244         blakeman        blakeman
## 245        blakemana       blakemana
## 246        blandino        blandino
## 247            blow            blow
## 248           blown           blown
## 249           board           board
## 250             bob             bob
## 251            bodi            body
## 252           boger           boger
## 253            bola            bola
## 254            bond         bonding
## 255            book            book
## 256           booth           booth
## 257          boston          boston
## 258           bottl          bottle
## 259          bottom          bottom
## 260           bound          bounds
## 261        boundari      boundaries
## 262            bowl            bowl
## 263             box             box
## 264             boy            boys
## 265            brad            brad
## 266           bradi           brady
## 267       bradythat       bradythat
## 268           brain           brain
## 269           brand           brand
## 270         brandon         brandon
## 271           brass           brass
## 272          breach          breach
## 273           break           break
## 274         brenden         brenden
## 275           brian           brian
## 276           brick          bricks
## 277           brief           brief
## 278         briefli         briefly
## 279           brigg          briggs
## 280           bring           bring
## 281         britton         britton
## 282           broad           broad
## 283       broadcast       broadcast
## 284         brocher         brocher
```

```
## 285           broken           broken
## 286           bronco          broncos
## 287          brought          brought
## 288            brown            brown
## 289            bruis          bruised
## 290            brush         brushing
## 291              bud              bud
## 292            buddi            buddy
## 293             budi             budi
## 294            build         building
## 295            bulki            bulky
## 296           bureau           bureau
## 297             burn            burns
## 298              bus              bus
## 299             busi             busy
## 300             bust          busting
## 301           bustin           bustin
## 302             butt             butt
## 303           button           button
## 304              buy           buying
## 305            buyer            buyer
## 306              cad              cad
## 307           calcul       calculated
## 308           calibr       calibrated
## 309         caligiuri        caligiuri
## 310             call             call
## 311          callahan         callahan
## 312         callendar        callendar
## 313            caller           caller
## 314          callhow          callhow
## 315           calliv          callive
## 316             calm             calm
## 317             came             came
## 318           camera           camera
## 319              can              can
## 320             cant             cant
## 321            capabl       capability
## 322            capac         capacity
## 323           captur          capture
## 324             card            cards
## 325             care          careful
## 326           career           career
## 327             carl             carl
## 328            carri          carries
## 329             case             case
## 330             cash             cash
## 331           casual         casually
## 332          catalyst         catalyst
## 333           caught           caught
## 334             caus           caused
## 335           caution        cautioned
## 336         cavaletto        cavaletto
## 337             cell             cell
## 338           celtic          celtics
```

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```
## 339        celticslak        celticslakers
## 340           center              center
## 341          central             central
## 342          certain             certain
## 343        certainti           certainty
## 344           cessat           cessation
## 345            chain               chain
## 346            chair               chair
## 347         chairman            chairman
## 348          chamber             chamber
## 349            champ               champ
## 350     championship        championship
## 351            chanc              chance
## 352            chang              change
## 353        character          characterize
## 354      characterist       characteristics
## 355            charg              charge
## 356          chariti             charity
## 357          chatter             chatter
## 358            check             checked
## 359         chemistri           chemistry
## 360          chicago             chicago
## 361            chief               chief
## 362            chill               chill
## 363             chop               chops
## 364            chose               chose
## 365           chosen              chosen
## 366          christma           christmas
## 367         chronolog        chronological
## 368        cincinnati          cincinnati
## 369            circl              circled
## 370           circuit             circuit
## 371         circuitri           circuitry
## 372           circul           circulated
## 373          circumst        circumstances
## 374           circumv          circumvent
## 375             cite               cited
## 376            claim             claimed
## 377            clean               clean
## 378            clear               clear
## 379            clete               clete
## 380            clock               clock
## 381            close               close
## 382           closer              closer
## 383          closeup             closeup
## 384            cloth            clothing
## 385             club                club
## 386            coach               coach
## 387             coad                coad
## 388             coat              coated
## 389         coconspir         coconspirator
## 390             coin                coin
## 391          coincel            coincell
## 392          coincid         coincidences
```

```
## 393              cold                   cold
## 394            colder                 colder
## 395          colleagu             colleagues
## 396           collect              collected
## 397         collector              collector
## 398             color                  color
## 399              colt                  colts
## 400            column                 column
## 401          columnist              columnist
## 402            combin            combination
## 403              come                   come
## 404           comfort            comfortable
## 405           commenc               commences
## 406         commensur          commensurately
## 407           comment                comment
## 408        commentari             commentary
## 409        commission           commissioner
## 410            commit             commitment
## 411          committe              committee
## 412            common                 common
## 413      commonwealth           commonwealth
## 414            commun         communications
## 415           compani                company
## 416            compar               compared
## 417        comparison             comparison
## 418           compart            compartment
## 419          competit            competitive
## 420            compil              compiling
## 421          complain             complained
## 422         complaint             complaints
## 423           complet             completely
## 424            compli               complied
## 425          complianc             compliance
## 426            compon              component
## 427            compos               composed
## 428          composit            composition
## 429         comprehens          comprehensive
## 430           compris               comprise
## 431            comput               computed
## 432          conceptu           conceptually
## 433           concern             concerning
## 434           conclud              concluded
## 435           conclus            conclusions
## 436           concurr           concurrently
## 437            condit             conditions
## 438          condition            conditioner
## 439     conditionertr    conditionertreated
## 440           conduct              conducted
## 441            confer             conference
## 442            confid             confidence
## 443         confidenti        confidentiality
## 444           configur          configuration
## 445            confirm              confirmed
## 446          confluenc             confluence
```

```
## 447         conform              conforms
## 448        confront            confronted
## 449        congratul         congratulate
## 450         congreg           congregate
## 451           conic              conical
## 452         connect           connection
## 453         consent              consent
## 454          consid            considered
## 455        consider        consideration
## 456         consist            consistent
## 457      conspiraci           conspiracy
## 458        constant             constant
## 459    constantvolum        constantvolume
## 460        constrain          constrained
## 461      constraint          constraints
## 462       construct            construct
## 463         consult          consultants
## 464          consum             consumer
## 465         contact              contact
## 466         contain             contains
## 467      contemporan     contemporaneous
## 468        contend            contended
## 469        content             contents
## 470         context              context
## 471         continu             continue
## 472        contract             contract
## 473       contradict         contradicted
## 474        contrari             contrary
## 475        contrast             contrast
## 476        contribut          contributed
## 477      contributor         contributors
## 478         control              control
## 479         conveni            convenient
## 480         convent           convention
## 481         convers         conversation
## 482         convert            converted
## 483          convey             conveyed
## 484           cool               cooled
## 485          cooper          cooperation
## 486         coordin          coordinator
## 487           copi               copies
## 488         cordial              cordial
## 489          corey                corey
## 490         corner               corner
## 491         correct            correctly
## 492         correl             correlate
## 493         corrent             corrente
## 494       correspond        corresponding
## 495        corridor             corridor
## 496         corrug          corrugations
## 497          costa               costas
## 498          couch                couch
## 499         council              council
## 500         counsel              counsel
```

```
## 501          count          count
## 502       countdown      countdown
## 503         counter        counter
## 504         countri        country
## 505           coupl         couple
## 506           cours         course
## 507        courtsid      courtside
## 508           cover          cover
## 509         coverag       coverage
## 510          crappi         crappy
## 511        crawford       crawford
## 512           crazi          crazy
## 513           creat        created
## 514        credenti    credentials
## 515         credibl       credible
## 516          credit         credit
## 517            crew           crew
## 518           cribb         cribbs
## 519          critic      criticism
## 520           cross          cross
## 521           crowd        crowded
## 522            crux           crux
## 523            cube           cube
## 524          curios      curiosity
## 525         curious        curious
## 526         current        current
## 527            curv         curves
## 528         cushion        cushion
## 529         custodi        custody
## 530       customari      customary
## 531            cycl         cycles
## 532          cyclic         cyclic
## 533         cylindr    cylindrical
## 534           daili          daily
## 535           damag        damaged
## 536            damp           damp
## 537             dan            dan
## 538          daniel         daniel
## 539         daniell       danielle
## 540           danni          danny
## 541            dark           dark
## 542            data           data
## 543            date           date
## 544            dave           dave
## 545           david          david
## 546             day            day
## 547          daysto         daysto
## 548            deal           deal
## 549         dealcom       dealcome
## 550            dean           dean
## 551           debri          debris
## 552           decad          decade
## 553          decemb       december
## 554           decid        decided
```

```
## 555              decis          decision
## 556             declar           declare
## 557             declin          declined
## 558            decreas          decrease
## 559               deem            deemed
## 560              defac          defacing
## 561             defeat          defeated
## 562             defens           defense
## 563              defin           defined
## 564             definit       definitions
## 565             deflat          deflation
## 566           deflateg         deflategate
## 567             deform         deformation
## 568             degrad         degradation
## 569              degre           degrees
## 570              delay             delay
## 571              deleg         delegated
## 572              delet           deleted
## 573            deliber        deliberate
## 574              deliv         delivered
## 575            deliveri          delivery
## 576             demand          demanded
## 577            demonstr       demonstrated
## 578               deni            denied
## 579              denni            dennis
## 580              denot            denote
## 581             denver            denver
## 582             depart        department
## 583             depend         depending
## 584             depict          depicted
## 585            deposit           deposit
## 586              deriv            derive
## 587             describ         described
## 588            descript        description
## 589              design          designed
## 590            designe          designee
## 591              desir           desired
## 592             despit           despite
## 593             detail            detail
## 594             detect          detected
## 595            determin         determine
## 596           detriment        detrimental
## 597             develin           develin
## 598            develop         developed
## 599             deviat         deviation
## 600         deviationsor       deviationsor
## 601              devic           devices
## 602              devis            devise
## 603             dewitt            dewitt
## 604            diagnos         diagnosed
## 605               didnt             didnt
## 606             differ         difference
## 607           differenti       differential
## 608            difficult         difficult
```

```
## 609      difficulti      difficulties
## 610           digit           digital
## 611            dijk              dijk
## 612           dilig          diligent
## 613          dimens        dimensions
## 614       dimension       dimensional
## 615           dimpl           dimples
## 616          dinner            dinner
## 617          direct          directly
## 618        director          director
## 619            dirt              dirt
## 620         disagre          disagree
## 621        disallow          disallow
## 622       disappear     disappearance
## 623         discard        discarding
## 624         discern        discernible
## 625        disciplin        discipline
## 626     disciplinari      disciplinary
## 627         disclos          disclose
## 628          discov        discovered
## 629        discoveri         discovery
## 630         discret         discretion
## 631         discuss         discussed
## 632          dispar         disparity
## 633         display         displayed
## 634    dissatisfact    dissatisfaction
## 635          dissip        dissipated
## 636         distanc          distance
## 637        distinct       distinctive
## 638      distinguish      distinguished
## 639        distribut        distributed
## 640         disturb          disturb
## 641           divid           divided
## 642           divis          division
## 643        division        divisional
## 644        document         documents
## 645          doesnt            doesnt
## 646            dome             domed
## 647            done              done
## 648            dont              dont
## 649            door              door
## 650         doorway           doorway
## 651             dot              dots
## 652           doubt             doubt
## 653            doug              doug
## 654          dougla           douglas
## 655            down             downs
## 656           dozen            dozens
## 657             dpg               dpg
## 658          dqwell            dqwell
## 659           draft           drafted
## 660            draw              draw
## 661           drawn             drawn
## 662           dress          dressing
```

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```
## 663          drew              drew
## 664           dri              dry
## 665         drift             drift
## 666         drive             drive
## 667          drop              drop
## 668         dropi            dropie
## 669         drove             drove
## 670          drug              drug
## 671       dryness           dryness
## 672          duan             duane
## 673      dudejimmi         dudejimmy
## 674           due               due
## 675          duke              duke
## 676         durat          duration
## 677          duti            duties
## 678         dyrol             dyrol
## 679         earli             early
## 680        earlier           earlier
## 681       earliest          earliest
## 682          easi              easy
## 683        easier            easier
## 684        easili            easily
## 685          ebay              ebay
## 686           edg              edge
## 687          edit           edition
## 688           edt               edt
## 689        edward           edwards
## 690        effect            effect
## 691        effecti           effectie
## 692        effort           efforts
## 693         eight             eight
## 694        either            either
## 695         elaps           elapsed
## 696       electron        electronic
## 697       element          elements
## 698        eleven            eleven
## 699         elimin          eliminate
## 700           els              else
## 701         email             email
## 702        emphas         emphasized
## 703        employ          employed
## 704        employe          employee
## 705         empti             empty
## 706         enclos          enclosed
## 707        encount        encountered
## 708       encourag          encourage
## 709           end               end
## 710       endeavor         endeavored
## 711        enforc        enforcement
## 712         engag            engage
## 713         engin        engineering
## 714       england           england
## 715         enjoy             enjoy
## 716        enough            enough
```

```
## 717            ensur           ensure
## 718            entail          entailed
## 719            enter           entered
## 720            entir           entire
## 721            entireti        entirety
## 722            entitl          entitled
## 723            entranc         entrance
## 724            enumer          enumerated
## 725            environ         environment
## 726            environment     environmental
## 727            equal           equal
## 728            equat           equations
## 729            equilibr        equilibrated
## 730            equilibrium     equilibrium
## 731            equip           equipment
## 732            equival         equivalent
## 733            eric            eric
## 734            error           error
## 735            escap           escaped
## 736            escort          escort
## 737            especi          especially
## 738            espn            espn
## 739            espnyet         espnyet
## 740            esq             esq
## 741            essenti         essential
## 742            est             est
## 743            establish       establishes
## 744            estim           estimated
## 745            etc             etc
## 746            evalu           evaluate
## 747            evan            evans
## 748            evas            evasive
## 749            even            even
## 750            evennumb        evennumbered
## 751            event           events
## 752            eventu          eventually
## 753            ever            ever
## 754            everi           every
## 755            everyon         everyone
## 756            everyth         everything
## 757            evid            evidence
## 758            evidentiari     evidentiary
## 759            evolv           evolved
## 760            exact           exactly
## 761            examin          examined
## 762            exampl          example
## 763            exceed          exceed
## 764            except          exception
## 765            exceptionth     exceptionthe
## 766            excess          excess
## 767            exchang         exchanged
## 768            exclud          excluding
## 769            exclus          exclusively
## 770            execut          executive
```

```
## 771          exemplar          exemplar
## 772           exhibit          exhibited
## 773             exist           existed
## 774              exit            exited
## 775            expand          expanded
## 776            expect          expected
## 777          expediti       expeditious
## 778            expens          expenses
## 779            experi       experiments
## 780          experienc        experienced
## 781        experiment       experimental
## 782            expert            expert
## 783           expertis          expertise
## 784           explain          explained
## 785      explainedboth      explainedboth
## 786            explan       explanation
## 787            explet          expletive
## 788             expon          exponent
## 789             expos           exposed
## 790            exposur           exposure
## 791           express           express
## 792          expressli          expressly
## 793            extend            extend
## 794            extens          extensive
## 795            extent            extent
## 796          exterior          exterior
## 797            extern          external
## 798             extra             extra
## 799           extract          extracted
## 800            extrem          extremely
## 801               eye              eyes
## 802            fabric          fabricated
## 803              face            facing
## 804          facebook          facebook
## 805             facil          facilities
## 806              fact              fact
## 807            factor           factors
## 808           factual           factual
## 809         fahrenheit         fahrenheit
## 810              fail            failed
## 811            failur           failure
## 812              fair            fairly
## 813              fall              fall
## 814              fame              fame
## 815            famili            family
## 816           familiar          familiar
## 817               fan              fans
## 818               far               far
## 819            farley            farley
## 820           fashion           fashion
## 821               fbi               fbi
## 822            featur           feature
## 823          februari          february
## 824              feder           federal
```

```
## 825           feel            feel
## 826           feet            feet
## 827           felt            felt
## 828        ferguson        ferguson
## 829           fewer           fewer
## 830          fiancÃ©        fiancée
## 831           field           field
## 832         fifteen         fifteen
## 833      fifteenminut  fifteenminute
## 834           fifth           fifth
## 835           fifti           fifty
## 836       fiftyyard       fiftyyard
## 837           figur          figure
## 838        figuresiv       figuresiv
## 839            fill            fill
## 840            film            film
## 841           final           final
## 842            find            find
## 843            fine            fine
## 844            fing            fing
## 845          finish        finished
## 846           finit          finite
## 847            firm            firm
## 848           first           first
## 849        firsthand       firsthand
## 850             fit             fit
## 851            five            five
## 852             fix           fixed
## 853       fixedvolum      fixedvolume
## 854          fixtur         fixture
## 855           floor           floor
## 856         florida         florida
## 857         fluctuat    fluctuations
## 858           focus           focus
## 859          follow       following
## 860        followedup      followedup
## 861         followup        followup
## 862           footag          footage
## 863          footbal       footballs
## 864     footballhead    footballhead
## 865      footballsat     footballsat
## 866    footballsboth   footballsboth
## 867       footballsi      footballsis
## 868       footballth      footballthe
## 869         footwear        footwear
## 870            forc       forcefully
## 871         forecast        forecast
## 872          forens        forensic
## 873            form            form
## 874          formal          formal
## 875          format       formations
## 876          former          former
## 877          formul       formulated
## 878         formula        formulas
```

```
## 879          forth           forth
## 880          forti           forty
## 881          fortyf          fortyfive
## 882          forward         forwarded
## 883          found           found
## 884          four            four
## 885          fourteen        fourteen
## 886          foxborough      foxborough
## 887          fraction        fraction
## 888          frame           frame
## 889          free            free
## 890          freedom         freedom
## 891          frequenc        frequency
## 892          frequent        frequently
## 893          fresh           fresh
## 894          friction        friction
## 895          friday          friday
## 896          friend          friend
## 897          front           front
## 898          frustrat        frustration
## 899          fuck            fuck
## 900          fuckin          fuckin
## 901          full            full
## 902          fullback        fullback
## 903          fulli           fully
## 904          fullsiz         fullsize
## 905          fulltim         fulltime
## 906          fumbl           fumbled
## 907          fun             fun
## 908          function        function
## 909          fundament       fundamental
## 910          funni           funny
## 911          funnygo         funnygo
## 912          furnish         furnish
## 913          further         furtherance
## 914          furthermor      furthermore
## 915          futur           future
## 916          fyi             fyi
## 917          fyidav          fyidave
## 918          gabriel         gabriel
## 919          gage            gage
## 920          gain            gain
## 921          galani          galanis
## 922          game            game
## 923          gameaft         gameafter
## 924          gameand         gameand
## 925          gamebal         gameballs
## 926          gameday         gameday
## 927          gametarget      gametargeted
## 928          gameworn        gameworn
## 929          gang            gang
## 930          ganot           ganot
## 931          gardi           gardi
## 932          gari            gary
```

```
## 933        garrison        garrison
## 934             gas             gas
## 935          gather        gathered
## 936            gaug           gauge
## 937     gaugeoffici   gaugeofficial
## 938       gaugeteam       gaugeteam
## 939     gaugetogaug   gaugetogauge
## 940            gave            gave
## 941        gaylussac      gaylussacs
## 942           geara           geara
## 943         general        generally
## 944         generat       generated
## 945         generic         generic
## 946           genuin        genuinely
## 947           georg          george
## 948             get             get
## 949            gift           gifts
## 950         gillett        gillette
## 951            give            give
## 952           given           given
## 953           gland           gland
## 954         glauber         glauber
## 955          global          global
## 956           glove         gloving
## 957              go           going
## 958            goal            goal
## 959           gobbi           gobbi
## 960             god             god
## 961             goe            goes
## 962            gold            gold
## 963       goldstein        goldstein
## 964            good            good
## 965          goodel         goodell
## 966            goog          googly
## 967      gostkowksi      gostkowksi
## 968      gostkowski      gostkowski
## 969             got             got
## 970          gotten          gotten
## 971          govern        governing
## 972            grab         grabbed
## 973          gradual        gradually
## 974          graduat      graduations
## 975           grain         grained
## 976           grand           grand
## 977           grant         granted
## 978          graphic      graphically
## 979            gray            gray
## 980           great           great
## 981          greater         greater
## 982           green           green
## 983            greg            greg
## 984           grier           grier
## 985         grigson         grigson
## 986            grip            grip
```

```
## 987          gronkowski          gronkowski
## 988             grossi              grossi
## 989           grossito            grossito
## 990             group               group
## 991              grow                grow
## 992          guarante           guarantee
## 993             guard               guard
## 994             guess            guessing
## 995             guest               guest
## 996              guid               guide
## 997          guidelin          guidelines
## 998               guy                 guy
## 999           hadhazi             hadhazy
## 1000         hahathat            hahathat
## 1001             half                half
## 1002          halftim            halftime
## 1003       halftimeand         halftimeand
## 1004          halfway             halfway
## 1005            halfx               halfx
## 1006             hall                hall
## 1007         hampshir           hampshire
## 1008             hand              handed
## 1009            handl             handled
## 1010         handwrit          handwriting
## 1011       handwritten         handwritten
## 1012         handwrot           handwrote
## 1013             hang               hangs
## 1014           happen            happened
## 1015            happi               happy
## 1016             hard                hard
## 1017           harder              harder
## 1018           harlow              harlow
## 1019            hasnt               hasnt
## 1020            hassl              hassle
## 1021             head                head
## 1022        headquart        headquarters
## 1023             hear                hear
## 1024            heard               heard
## 1025             heat              heated
## 1026           heater             heaters
## 1027            heavi               heavy
## 1028           heavier             heavier
## 1029          heavili             heavily
## 1030      heavilyinfl      heavilyinflated
## 1031             heck                heck
## 1032             held                held
## 1033             help                help
## 1034          hereaft           hereafter
## 1035           herein              herein
## 1036              hes                 hes
## 1037             hesh               heshe
## 1038              hey                 hey
## 1039             high                high
## 1040      highaccuraci         highaccuracy
```

```
## 1041              higher                higher
## 1042           highlight           highlighted
## 1043        highresolut        highresolution
## 1044                hill                  hill
## 1045              himand                himand
## 1046                hire                 hired
## 1047              histori             histories
## 1048                hold               holding
## 1049                hole                  hole
## 1050                holi                  holy
## 1051             holiday               holiday
## 1052              hollow                hollow
## 1053                home                  home
## 1054              honest                honest
## 1055           honeymoon             honeymoon
## 1056                hood                hooded
## 1057                hope              hopefully
## 1058            horizont            horizontal
## 1059                hour                 hours
## 1060                hous                 house
## 1061           household             household
## 1062               howev               however
## 1063               human                 human
## 1064               humid              humidity
## 1065               humor                 humor
## 1066               hundr              hundreds
## 1067               hurri                 hurry
## 1068                hurt                  hurt
## 1069                hvac                  hvac
## 1070            hyperbol             hyperbole
## 1071                idea                  idea
## 1072               ideal                 ideal
## 1073                ident             identical
## 1074              identif        identification
## 1075             identifi            identified
## 1076                 idl                  idle
## 1077               ignor               ignored
## 1078                 iib                   iib
## 1079                 iii                   iii
## 1080                iiic                  iiic
## 1081                 ijk                   ijk
## 1082                 ill                   ill
## 1083               illeg               illegal
## 1084             illumin           illuminated
## 1085             illustr            illustrate
## 1086                imag                 image
## 1087              immedi           immediately
## 1088              impact                impact
## 1089             implaus           implausible
## 1090           implement           implementing
## 1091              implic          implications
## 1092              import             important
## 1093               impos                impose
## 1094             imprint             imprinted
```

```
## 1095              improp          improperly
## 1096               inabl           inability
## 1097              inaccur          inaccurate
## 1098             inadvert          inadvertent
## 1099            inappropri       inappropriate
## 1100               incent          incentive
## 1101                inch               inch
## 1102             inchgaug           inchgauge
## 1103                incid           incident
## 1104             inclement          inclement
## 1105               includ           including
## 1106               inclus           inclusion
## 1107             inconsist         inconsistent
## 1108              incorpor        incorporated
## 1109             incorrect         incorrectly
## 1110               increas          increased
## 1111             increment          increment
## 1112             incropera          incropera
## 1113                inde               indeed
## 1114              independ       independently
## 1115              indiana            indiana
## 1116            indianapoli       indianapolis
## 1117                indic             indicate
## 1118              indisput         indisputable
## 1119              individu          individual
## 1120               indoor            indoors
## 1121                induc             induce
## 1122                infer              infer
## 1123               inflat            inflation
## 1124          inflationlevel      inflationlevel
## 1125              influenc          influenced
## 1126               inform          information
## 1127               infrar            infrared
## 1128               infrequ         infrequently
## 1129          ingressegress      ingressegress
## 1130               initi             initial
## 1131               inlet              inlet
## 1132               inner              inner
## 1133               innov            innovation
## 1134             inperson           inperson
## 1135               input              input
## 1136              inquiri            inquiry
## 1137              inscrib           inscribed
## 1138             inscript         inscription
## 1139               insert           inserted
## 1140               insid             inside
## 1141              inspect          inspection
## 1142             instanc            instance
## 1143             instant            instant
## 1144            instantan      instantaneously
## 1145             instead            instead
## 1146             institut           institute
## 1147             instruct          instructed
## 1148             insuffici       insufficiently
```

```
## 1149              insur              insure
## 1150              integr           integrity
## 1151              intend            intended
## 1152           intensifi         intensified
## 1153             intent              intent
## 1154            interact         interaction
## 1155           intercept         intercepted
## 1156            interest            interest
## 1157            interfac           interface
## 1158           interject         interjected
## 1159           intermitt         intermittent
## 1160              intern            internal
## 1161            internet            internet
## 1162           interpret      interpretation
## 1163            interrel        interrelation
## 1164       interrogatori      interrogatories
## 1165           intersect           intersect
## 1166               interv           intervals
## 1167            interven           intervene
## 1168           intervent        intervention
## 1169           interview           interview
## 1170      interviewedwhen     interviewedwhen
## 1171         interviewwa        interviewwas
## 1172            introduc           introduce
## 1173           introduct        introduction
## 1174              invert            inverted
## 1175            investig       investigation
## 1176               invit            inviting
## 1177              involv            involved
## 1178              inward            inwardly
## 1179           irretriev        irretrievable
## 1180                isnt                isnt
## 1181                 iso                 iso
## 1182                issu               issue
## 1183                item               items
## 1184                iter          iteratively
## 1185                itll                itll
## 1186              itlook             itlooks
## 1187                 ivb                 ivb
## 1188                 ive                 ive
## 1189                 ixb                 ixb
## 1190                jack                jack
## 1191              jacket             jackets
## 1192             jackson             jackson
## 1193                jame               james
## 1194                 jan                 jan
## 1195             januari             january
## 1196               jason               jason
## 1197           jastremski          jastremski
## 1198        jastremskiwho       jastremskiwho
## 1199                jeff                jeff
## 1200                 jen                 jen
## 1201               jerom              jerome
## 1202               jerri               jerry
```

```
## 1203             jersey              jersey
## 1204                jet                jets
## 1205                jfs                 jfs
## 1206                jim                 jim
## 1207              jimmi               jimmy
## 1208                jkt                 jkt
## 1209                job                 job
## 1210               john                john
## 1211             johnni              johnny
## 1212               join              joined
## 1213              joint               joint
## 1214               joke                joke
## 1215                jon                 jon
## 1216           jonathan            jonathan
## 1217              jonni               jonny
## 1218             joshua              joshua
## 1219            journal            journals
## 1220               judg               judge
## 1221               juli                july
## 1222             junior              junior
## 1223         juniormost          juniormost
## 1224           jurisdict        jurisdiction
## 1225               just                just
## 1226             justif       justifications
## 1227               karp                karp
## 1228              kball               kball
## 1229               keep                keep
## 1230              keith               keith
## 1231             kensil              kensil
## 1232               kept                kept
## 1233            kerzner             kerzner
## 1234              kevin               kevin
## 1235                key                 key
## 1236               kick             kicking
## 1237             kicker              kicker
## 1238            kickoff             kickoff
## 1239          kickoffjim          kickoffjim
## 1240           kickslet           kickslets
## 1241                kid                 kid
## 1242             kidbig              kidbig
## 1243               kind                kind
## 1244               king                king
## 1245          kneeldown           kneeldown
## 1246               knew                knew
## 1247               know                know
## 1248           knowledg           knowledge
## 1249              known               known
## 1250              kraft               kraft
## 1251            kravitz             kravitz
## 1252            krysiak             krysiak
## 1253                kth                 kth
## 1254              ktype               ktype
## 1255               kyle                kyle
## 1256              label              labels
```

```
## 1257           labor           labor
## 1258       laboratori      laboratory
## 1259            lace           laces
## 1260            lack            lack
## 1261            laid            laid
## 1262           laker          lakers
## 1263      languagetom     languagetom
## 1264            larg           large
## 1265          larger          larger
## 1266           laser           laser
## 1267            last            last
## 1268           latch        latching
## 1269            late            late
## 1270           later           later
## 1271          latest          latest
## 1272           laugh         laughed
## 1273             law             law
## 1274          lawyer         lawyers
## 1275           layer          layers
## 1276          layout          layout
## 1277             lbs             lbs
## 1278             lcd             lcd
## 1279            lead         leading
## 1280           leagu          league
## 1281      leaguemand   leaguemandated
## 1282            leak            leak
## 1283          leakag         leakage
## 1284           learn         learned
## 1285           least           least
## 1286         leather         leather
## 1287      leatherpalm   leatherpalmed
## 1288            leav           leave
## 1289           leavi           leavy
## 1290             led             led
## 1291             lee             lee
## 1292            left            left
## 1293        lefthand        lefthand
## 1294           legal           legal
## 1295          legend          legend
## 1296          legitim       legitimate
## 1297          length          length
## 1298         lengthi         lengthy
## 1299            less            less
## 1300          lesser          lesser
## 1301             let             let
## 1302          letter          letter
## 1303           level           level
## 1304           leven         levenes
## 1305           lever           lever
## 1306         liaison         liaison
## 1307           licens        licensed
## 1308             lie            lied
## 1309       lightheart    lighthearted
## 1310            like          likely
```

```
## 1311      likelihood      likelihood
## 1312     likelihooda     likelihooda
## 1313         likewis        likewise
## 1314           limit         limited
## 1315            line            line
## 1316          linear          linear
## 1317        lineback       linebacker
## 1318        linesman        linesman
## 1319            link         linking
## 1320            list          listed
## 1321          listen        listened
## 1322           littl          little
## 1323            live           lived
## 1324             llc             llc
## 1325             llp             llp
## 1326            load         loading
## 1327             lob             lob
## 1328           lobbi        lobbying
## 1329           local           local
## 1330           locat         located
## 1331            lock          locked
## 1332          locker          locker
## 1333             log             log
## 1334           logic         logical
## 1335            logo            logo
## 1336        logogaug       logogauge
## 1337     logononlogo     logononlogo
## 1338            long            long
## 1339          longer          longer
## 1340       longstand     longstanding
## 1341        longterm        longterm
## 1342            look            look
## 1343           lorin           lorin
## 1344             los             los
## 1345            lose            lose
## 1346            loss            loss
## 1347            lost            lost
## 1348             lot             lot
## 1349            love            love
## 1350             low             low
## 1351           lower           lower
## 1352        lowerend        lowerend
## 1353          lowest          lowest
## 1354           lubric      lubricated
## 1355            luck            luck
## 1356           lucki           lucky
## 1357           macki          mackie
## 1358            made            made
## 1359        magnitud       magnitude
## 1360            main            main
## 1361        maintain       maintained
## 1362           major        majority
## 1363            make            make
## 1364           maker           maker
```

```
## 1365           malfunct        malfunction
## 1366                man            manning
## 1367              manag            manager
## 1368             maneuv           maneuver
## 1369               mani               many
## 1370           manifold           manifold
## 1371             manner             manner
## 1372             manual             manual
## 1373          manufactur        manufacture
## 1374                map             mapped
## 1375                mar                mar
## 1376              march              march
## 1377               mark               mark
## 1378             marker             marker
## 1379             marlow             marlow
## 1380               mass               mass
## 1381        massachusett      massachusetts
## 1382             master             master
## 1383              match            matched
## 1384             materi          materials
## 1385            mathemat       mathematical
## 1386             matrix             matrix
## 1387             matter             matter
## 1388              maxim           maximize
## 1389            maximum            maximum
## 1390                may                may
## 1391               mayb              maybe
## 1392            mcaulay            mcaulay
## 1393             mckinn          mckinnely
## 1394            mcnalli            mcnally
## 1395            mcnulti            mcnulty
## 1396               mean               mean
## 1397              meant              meant
## 1398             measur       measurements
## 1399             mechan         mechanical
## 1400              media              media
## 1401           mediaand           mediaand
## 1402               meet            meeting
## 1403        meetingsthat       meetingsthat
## 1404             member            members
## 1405            memento            memento
## 1406           memoranda          memoranda
## 1407          memorandum         memorandum
## 1408             memori             memory
## 1409              menlo              menlo
## 1410            mention          mentioned
## 1411               mere             merely
## 1412               mesh               mesh
## 1413             messag           messages
## 1414      messagesubsequ messagesubsequently
## 1415                met                met
## 1416              metal            metallic
## 1417           metallurg       metallurgical
## 1418              meter              meter
```

```
## 1419              method              methods
## 1420           methodolog          methodology
## 1421             meticul           meticulous
## 1422              metric              metrics
## 1423               meyer               meyer
## 1424             michael             michael
## 1425               middl              middle
## 1426            midnight            midnight
## 1427            midpoint            midpoint
## 1428            midsunday           midsunday
## 1429              midway              midway
## 1430             midweek             midweek
## 1431               might               might
## 1432                mike                mike
## 1433                mile               miles
## 1434            mileston           milestone
## 1435              miller              miller
## 1436              milton              milton
## 1437                 min                 min
## 1438                mind             mindful
## 1439          minicollect       minicollection
## 1440               minim             minimal
## 1441             minimum             minimum
## 1442       minimummaximum      minimummaximum
## 1443          minirefriger        minirefrigerator
## 1444              minsec              minsec
## 1445               minut             minutes
## 1446                miss             missing
## 1447              mistak             mistake
## 1448               mitig            mitigate
## 1449                 mix                 mix
## 1450              mixtur             mixture
## 1451               mobil              mobile
## 1452                mode                mode
## 1453               model               model
## 1454               modif        modification
## 1455              modifi            modified
## 1456               moist               moist
## 1457             moistur            moisture
## 1458                mole               moles
## 1459             molecul           molecules
## 1460                moli                moly
## 1461                 mom                 mom
## 1462              monday              monday
## 1463               money               money
## 1464             monitor           monitored
## 1465               month              months
## 1466             morelli             morelli
## 1467               moreov            moreover
## 1468                morn             morning
## 1469               morri              morris
## 1470              mother              mother
## 1471              motion            motioned
## 1472               mount             mounted
```

```
## 1473                  move                   moved
## 1474                   mph                     mph
## 1475                  much                    much
## 1476              multimet              multimeter
## 1477               multipl                multiple
## 1478                murphi                  murphy
## 1479                  must                    must
## 1480                   mvp                     mvp
## 1481                   nah                     nah
## 1482              najarian                najarian
## 1483                  name                    name
## 1484              narrowli                narrowly
## 1485                nation                national
## 1486   nationallytelevis    nationallytelevised
## 1487                 natur                 natural
## 1488                   nbc                     nbc
## 1489                  near                    near
## 1490                nearbi                  nearby
## 1491             necessari               necessary
## 1492            necessarili             necessarily
## 1493                  need                  needed
## 1494                 needl                  needle
## 1495          needlefuckin           needlefuckin
## 1496                 neglig              negligible
## 1497                negoti               negotiate
## 1498               neither                 neither
## 1499               nervous                 nervous
## 1500                 never                   never
## 1501          nevertheless            nevertheless
## 1502                   new                     new
## 1503            newkicksor              newkicksor
## 1504                  news                    news
## 1505               newsday                 newsday
## 1506                  next                    next
## 1507                   nfc                     nfc
## 1508                   nfl                     nfl
## 1509                  nfls                    nfls
## 1510             nflspecifi             nflspecified
## 1511                  nice                    nice
## 1512               nicknam                nickname
## 1513                 night                   night
## 1514                  nine                    nine
## 1515              nineteen                nineteen
## 1516                  nist                    nist
## 1517           nomenclatur            nomenclature
## 1518                 nomin                 nominal
## 1519              nonapprov             nonapproved
## 1520             noncompli            noncompliance
## 1521                  none                    none
## 1522               nonkick                nonkicking
## 1523              nonlinear               nonlinear
## 1524               nonlogo                 nonlogo
## 1525               nonzero                 nonzero
## 1526                  nope                    nope
```

```
## 1527            normal            normal
## 1528         northeast         northeast
## 1529            notabl            notably
## 1530             notat          notation
## 1531             notbi             notby
## 1532              note             noted
## 1533        noteworthi        noteworthy
## 1534              noth           nothing
## 1535       nothingwait       nothingwait
## 1536             notic        noticeably
## 1537            notifi          notified
## 1538            notion            notion
## 1539               nov               nov
## 1540             novak             novak
## 1541            novemb          november
## 1542               now               now
## 1543               nrt               nrt
## 1544               nub              nubs
## 1545            number            number
## 1546             numer         numerical
## 1547               nut              nuts
## 1548            object         objective
## 1549             oblig       obligations
## 1550            observ          observed
## 1551            obtain          obtained
## 1552           obvious           obvious
## 1553             occas          occasions
## 1554          occasion      occasionally
## 1555            occur          occurred
## 1556               oct               oct
## 1557            octob          october
## 1558               odd               odd
## 1559           oddnumb       oddnumbered
## 1560            offend         offending
## 1561            offens           offense
## 1562             offer           offered
## 1563            offic            office
## 1564            offici         officials
## 1565       officialsnot      officialsnot
## 1566          offseason         offseason
## 1567             often             often
## 1568              oili              oily
## 1569              okay              okay
## 1570               old               old
## 1571             omega             omega
## 1572               omg               omg
## 1573              omit           omitted
## 1574           onboard           onboard
## 1575               one               one
## 1576              ongo           ongoing
## 1577            onlogo            onlogo
## 1578             onoff             onoff
## 1579              onto              onto
## 1580                op               ops
```

```
## 1581             open              open
## 1582             oper        operations
## 1583          opinion          opinions
## 1584         opportun       opportunity
## 1585            oppos           opposed
## 1586          opposit          opposite
## 1587            orang            orange
## 1588            order             order
## 1589          ordinari          ordinary
## 1590        ordinarili        ordinarily
## 1591              ore             oring
## 1592             orel              orel
## 1593            organ         organized
## 1594           origin          original
## 1595           osborn           osborne
## 1596           ostens        ostensibly
## 1597            other            others
## 1598         otherson         othersonly
## 1599          otherwis         otherwise
## 1600           outcom           outcome
## 1601          outdoor           outdoor
## 1602            outer             outer
## 1603           outlin          outlined
## 1604           outsid           outside
## 1605             over             overly
## 1606           overal           overall
## 1607         overestim      overestimated
## 1608          overinfl      overinflated
## 1609          overlaid          overlaid
## 1610          overlap           overlap
## 1611          overlay        overlaying
## 1612           overse          oversees
## 1613          oversea          overseas
## 1614          overseen          overseen
## 1615          overshot          overshot
## 1616           overtim          overtime
## 1617          overview          overview
## 1618       overwritten       overwritten
## 1619            owner             owner
## 1620        ownership         ownership
## 1621             pack            packed
## 1622           packer           packers
## 1623         paganelli         paganelli
## 1624             page              page
## 1625             pain              pain
## 1626            paint             paint
## 1627             pair             pairs
## 1628            panda             panda
## 1629            paper            papers
## 1630          parallel          parallel
## 1631           paramet        parameters
## 1632             park              park
## 1633            parri             parry
## 1634             part              part
```

```
## 1635             partial          partially
## 1636             particip      participated
## 1637             particul      particulate
## 1638            particular        particular
## 1639              parttim          parttime
## 1640         parttimehour    parttimehourly
## 1641                 pash              pash
## 1642                 pass           passing
## 1643               passer            passer
## 1644                 past              past
## 1645                 path              path
## 1646              patriot          patriots
## 1647          patriotscolt     patriotscolts
## 1648          patriotscom       patriotscom
## 1649         patriotsissu     patriotsissued
## 1650       patriotsprovid   patriotsprovided
## 1651                 paul              paul
## 1652                  pay               pay
## 1653               pebbl            pebble
## 1654                  pee              pees
## 1655                  pen               pen
## 1656               penetr         penetrate
## 1657               peopl            people
## 1658            peoplegam         peoplegame
## 1659                  per               per
## 1660              perceiv         perceived
## 1661              percent           percent
## 1662          percentthat       percentthat
## 1663              perfect           perfect
## 1664              perform         performed
## 1665              perimet         perimeter
## 1666               period            period
## 1667               perman       permanently
## 1668              permeabl      permeability
## 1669              permiss        permissible
## 1670               permit         permitted
## 1671               permut      permutations
## 1672               person            person
## 1673            personnel         personnel
## 1674              pertain        pertaining
## 1675               pertin         pertinent
## 1676                 pete              pete
## 1677                peter             peter
## 1678             petrucci          petrucci
## 1679               peyton            peyton
## 1680            phenomenon        phenomenon
## 1681                 phil              phil
## 1682                phone             phone
## 1683             phonebas         phonebased
## 1684              phoneto           phoneto
## 1685           photograph        photograph
## 1686               phrase            phrase
## 1687               physic          physical
## 1688            physician        physicians
```

```
## 1689              pick           picked
## 1690            pictur          picture
## 1691               pig              pig
## 1692               pin              pin
## 1693              pink             pink
## 1694             place            place
## 1695         placement        placement
## 1696              plan             plan
## 1697           plastic          plastic
## 1698          plausibl         plausible
## 1699              play          playing
## 1700           playabl         playable
## 1701            player          players
## 1702           playoff          playoff
## 1703             plead            plead
## 1704             pleas          pleased
## 1705             pledg         pledging
## 1706              plot             plot
## 1707          pmtwenti         pmtwenty
## 1708             point            point
## 1709             polic           police
## 1710             polici           policy
## 1711              pool             pool
## 1712           portion          portion
## 1713              pose           posing
## 1714             posit        positions
## 1715           possess       possession
## 1716           possibl         possible
## 1717              post           posted
## 1718           postgam         postgame
## 1719       posthalftim      posthalftime
## 1720         postseason       postseason
## 1721            potenti         potential
## 1722             pound           pounds
## 1723             power            power
## 1724           practic         practice
## 1725             prais           praised
## 1726             preced         preceding
## 1727           precipit     precipitation
## 1728            precis          precise
## 1729        predecessor       predecessor
## 1730           predict         predicted
## 1731          preemptiv      preemptively
## 1732          preexist       preexisting
## 1733            prefer       preference
## 1734            pregam          pregame
## 1735        preliminari       preliminary
## 1736           premark          premarks
## 1737            prenumb       prenumbered
## 1738            prepar       preparation
## 1739    preparationwer    preparationwere
## 1740        preparatori        preparatory
## 1741          preponder     preponderance
## 1742            prerub           prerub
```

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```
## 1743         preschedul         prescheduled
## 1744           prescrib           prescribed
## 1745          preseason            preseason
## 1746            present              present
## 1747            preserv         preservative
## 1748            presid            president
## 1749             press                press
## 1750            pressur             pressure
## 1751 pressuretemperatur pressuretemperature
## 1752         pressuretim          pressuretime
## 1753            presum           presumably
## 1754            pretti               pretty
## 1755          previous           previously
## 1756           primari              primary
## 1757         primarili            primarily
## 1758          princeton            princeton
## 1759           princip            principal
## 1760           principl           principles
## 1761            print              printed
## 1762           prioleau             prioleau
## 1763          prioleaus            prioleaus
## 1764            prior                prior
## 1765           privaci              privacy
## 1766            privat              private
## 1767              pro                  pro
## 1768             prob                 prob
## 1769           probabl             probable
## 1770           problem              problem
## 1771          procedur            procedure
## 1772           proceed           proceeding
## 1773           process              process
## 1774           procur               procure
## 1775           produc              produced
## 1776          product              product
## 1777         profession         professional
## 1778         professor            professor
## 1779           profil              profile
## 1780     profootballtalk     profootballtalk
## 1781          program             programs
## 1782          prohibit             prohibit
## 1783          project              project
## 1784           prompt             promptly
## 1785          pronounc       pronouncements
## 1786            proof                proof
## 1787           proper             properly
## 1788          proport         proportional
## 1789           propos             proposal
## 1790          protocol             protocol
## 1791            prove                proved
## 1792           provid             provided
## 1793           provis           provisions
## 1794           proxim            proximity
## 1795              psi                  psi
## 1796             psig                 psig
```

```
## 1797             public             public
## 1798            publish          published
## 1799               pump               pump
## 1800               punt               punt
## 1801             punter             punter
## 1802            purchas          purchased
## 1803             purpos            purpose
## 1804           pursuant           pursuant
## 1805               push               push
## 1806                put                put
## 1807              pvalu             pvalue
## 1808                pye                pye
## 1809                qbs                qbs
## 1810            qualifi           qualified
## 1811             qualit      qualitatively
## 1812            qualiti          qualities
## 1813           quantifi           quantify
## 1814            quarter            quarter
## 1815        quarterback        quarterback
## 1816          quasioffic         quasioffice
## 1817           question          questions
## 1818              quick            quickly
## 1819              quiet              quiet
## 1820             quinci             quincy
## 1821               quot             quoted
## 1822              radio              radio
## 1823             radioa             radioa
## 1824               rain               rain
## 1825               rais             raised
## 1826              rakov              rakov
## 1827                ran                ran
## 1828             random             random
## 1829               rang              range
## 1830              rapid            rapidly
## 1831               rate               rate
## 1832             rather             rather
## 1833             raucci             raucci
## 1834              raven             ravens
## 1835        ravensprepar      ravensprepared
## 1836           raytheon           raytheon
## 1837              reach              reach
## 1838           reaction           reaction
## 1839               read           readings
## 1840             reader             reader
## 1841              readi              ready
## 1842            readili            readily
## 1843           readjust          readjusted
## 1844               real               real
## 1845            realist          realistic
## 1846             realiz            realized
## 1847             realli             really
## 1848             reason            reasons
## 1849            rebecca            rebecca
## 1850              recal             recall
```

```
## 1851              receipt              receipt
## 1852               receiv             received
## 1853               recent               recent
## 1854           recharacter        recharacterize
## 1855              recheck              recheck
## 1856               recipi            recipient
## 1857               recogn           recognized
## 1858              recognit          recognition
## 1859             recollect          recollection
## 1860             recommend     recommendations
## 1861              reconcil            reconcile
## 1862              reconsid          reconsidered
## 1863               record             recorded
## 1864              recount             recounted
## 1865                recov            recovered
## 1866              recover          recoverable
## 1867                  red                  red
## 1868                reduc              reduced
## 1869               reduct            reduction
## 1870               reenact          reenactment
## 1871                  ref                 refs
## 1872                refer            reference
## 1873               refere              referee
## 1874              referenc           referenced
## 1875                refin              refined
## 1876              reflect              reflect
## 1877              refresh          refreshments
## 1878              refriger         refrigerator
## 1879                refus              refused
## 1880               regard            regarding
## 1881            regardless           regardless
## 1882               regaug            regauging
## 1883               region               region
## 1884               regist           registered
## 1885              regress            regression
## 1886                regul            regulated
## 1887              regular              regular
## 1888             regulatori           regulatory
## 1889              reinflat            reinflated
## 1890      reinflatedimprov    reinflatedimproved
## 1891           reinterview          reinterview
## 1892            reintroduc           reintroduce
## 1893           reintroduct        reintroduction
## 1894               reisner              reisner
## 1895                reiter           reiterated
## 1896               reject               reject
## 1897                relat           relatively
## 1898            relatedissu         relatedissues
## 1899          relationship         relationship
## 1900                relay             relayed
## 1901               releas              release
## 1902                relev             relevant
## 1903                 reli               relied
## 1904              reliabl              reliably
```

```
## 1905            relianc             reliance
## 1906             reluct            reluctant
## 1907             remain             remained
## 1908            remaind            remainder
## 1909             remark             remarked
## 1910             rememb             remember
## 1911             remind             reminded
## 1912              remov              removed
## 1913             renaiss          renaissance
## 1914             repack               repack
## 1915             repeat         repeatability
## 1916             replac             replaced
## 1917             replay               replay
## 1918             replic           replicated
## 1919             report               report
## 1920             repres       representative
## 1921           represent       representation
## 1922           repressur         repressurized
## 1923            reproduc           reproduced
## 1924            request              request
## 1925             requir             required
## 1926              resal               resale
## 1927            research             research
## 1928            resembl            resembles
## 1929             reserv              reserve
## 1930              reset                reset
## 1931             reshap            reshaping
## 1932             resist             resisted
## 1933            resolut           resolution
## 1934            respect          respectively
## 1935   respectivelyabout   respectivelyabout
## 1936         respectthey          respectthey
## 1937            respond            responded
## 1938            respons             response
## 1939               rest                 rest
## 1940             result              results
## 1941             retail            retailers
## 1942             retain             retained
## 1943            retriev            retrieved
## 1944             return             returned
## 1945               reus                 reuse
## 1946             reveal             revealed
## 1947             revers             reversal
## 1948             review               review
## 1949              revis              revised
## 1950             revisit            revisited
## 1951             rezero             rezeroed
## 1952              rezipp          rezippered
## 1953            richard              richard
## 1954            ridicul            ridiculous
## 1955            rifkind              rifkind
## 1956              right                right
## 1957            rightto              rightto
## 1958              rigid                rigid
```

```
## 1959              rise              rise
## 1960             risen             risen
## 1961              risk              risk
## 1962              rita              rita
## 1963            riveron           riveron
## 1964              road              road
## 1965               rob               rob
## 1966            robert            robert
## 1967             roger             roger
## 1968              role              role
## 1969              room              room
## 1970             rooma            roomas
## 1971          roomwalt          roomwalt
## 1972           rosburg           rosburg
## 1973              rose              rose
## 1974         rosenbaum         rosenbaum
## 1975            roster            roster
## 1976             rotat           rotated
## 1977             rough           roughly
## 1978             round             round
## 1979            routin           routine
## 1980               row              rows
## 1981            rsquar          rsquared
## 1982               rub           rubbing
## 1983            rubber            rubber
## 1984             rugbi             rugby
## 1985              rule             rules
## 1986               run               run
## 1987              ryan              ryan
## 1988              safe              safe
## 1989            safeti            safety
## 1990              said              said
## 1991              sale              sale
## 1992             sampl            sample
## 1993               sat               sat
## 1994          satisfact       satisfaction
## 1995          saturday          saturday
## 1996              save              save
## 1997               saw               saw
## 1998               say               say
## 1999             scale             scale
## 2000              scan             scans
## 2001           scandal           scandal
## 2002          scenario          scenario
## 2003             scene             scene
## 2004            schedul          schedule
## 2005            schemat      schematically
## 2006         schoenfeld         schoenfeld
## 2007            school            school
## 2008             scienc           science
## 2009           scientif         scientific
## 2010          scientist         scientists
## 2011             scope             scope
## 2012             score             score
```

```
## 2013        scoreboard         scoreboard
## 2014             scott              scott
## 2015            screen             screen
## 2016          scrimmag           scrimmage
## 2017          seabrook           seabrooks
## 2018           seahawk           seahawks
## 2019              seal             sealed
## 2020            sealer             sealer
## 2021              sean               sean
## 2022            season             season
## 2023       seasoncould        seasoncould
## 2024              seat              seats
## 2025            seattl            seattle
## 2026               sec                sec
## 2027            second             second
## 2028        secondhalf         secondhalf
## 2029           section            section
## 2030             secur           security
## 2031               see                see
## 2032              seek            seeking
## 2033              seem          seemingly
## 2034              seen               seen
## 2035            select             select
## 2036       selfconsist     selfconsistent
## 2037              sell               sell
## 2038          semibust        semibusting
## 2039              send               send
## 2040            sender             sender
## 2041            senior             senior
## 2042              sens              sense
## 2043            sensit        sensitivity
## 2044            sensor             sensor
## 2045              sent               sent
## 2046          sentinel           sentinel
## 2047             separ           separate
## 2048              sept               sept
## 2049           septemb          september
## 2050           sequenc           sequence
## 2051          sequenti         sequential
## 2052          sergeant           sergeant
## 2053              seri             series
## 2054            serious            serious
## 2055              serv             served
## 2056            servic           services
## 2057           session           sessions
## 2058               set                set
## 2059             settl             settle
## 2060             setup              setup
## 2061             seven              seven
## 2062             sever            several
## 2063             shade             shaded
## 2064             shall              shall
## 2065             shape              shape
## 2066             share             shared
```

```
## 2067              sharpi             sharpie
## 2068               sheet            sheeting
## 2069              shield              shield
## 2070                ship             shipped
## 2071              shitti              shitty
## 2072                shop                shop
## 2073               short             shortly
## 2074             shorter             shorter
## 2075           shortterm           shortterm
## 2076                show             showing
## 2077              shower              shower
## 2078               shown               shown
## 2079               shred               shred
## 2080                shut                shut
## 2081                 sic                 sic
## 2082                side                side
## 2083           sidebysid           sidebyside
## 2084             sidelin            sideline
## 2085               sight               sight
## 2086                sign                sign
## 2087             signatur           signature
## 2088            signific         significant
## 2089             signora             signora
## 2090             similar             similar
## 2091                simpl              simple
## 2092               simpli              simply
## 2093             simplic          simplicity
## 2094                simul          simulations
## 2095             simultan       simultaneously
## 2096                sinc               since
## 2097               singl              single
## 2098          singletoilet        singletoilet
## 2099                sink                sink
## 2100              sister              sister
## 2101                 sit             sitting
## 2102                site                site
## 2103              situat            situation
## 2104                 six                 six
## 2105              sixman              sixman
## 2106               sixth               sixth
## 2107                size                size
## 2108                skin                skin
## 2109               sleep            sleeping
## 2110            sleepless           sleepless
## 2111               slept               slept
## 2112              slight            slightly
## 2113              slowli              slowly
## 2114             sluggish            sluggish
## 2115               small               small
## 2116             smaller             smaller
## 2117       smallestlargest     smallestlargest
## 2118              smooth              smooth
## 2119                snap               snaps
## 2120             sneaker            sneakers
```

```
## 2121    sneakerssometim    sneakerssometime
## 2122              soccer              soccer
## 2123              social              social
## 2124                soft                soft
## 2125              soften              soften
## 2126              softer              softer
## 2127             softwar            software
## 2128                sold                sold
## 2129              solder            soldered
## 2130                sole                sole
## 2131               solid               solid
## 2132            somebodi            somebody
## 2133              someon             someone
## 2134              someth           something
## 2135             sometim            sometime
## 2136                soon                soon
## 2137              sooner              sooner
## 2138                sort              sorted
## 2139              sought              sought
## 2140               sourc              source
## 2141            southern            southern
## 2142               space               space
## 2143                span                span
## 2144                spaz                spaz
## 2145               speak               speak
## 2146             special             special
## 2147          specialist          specialist
## 2148              specif        specifically
## 2149             specifi             specify
## 2150             specul          speculated
## 2151               speed               speed
## 2152               spend               spend
## 2153               spent               spent
## 2154               spike             spiking
## 2155               split               split
## 2156               spoke               spoke
## 2157              spoken              spoken
## 2158           spokesman           spokesman
## 2159               spong              sponge
## 2160              spongi              spongy
## 2161               sport              sports
## 2162                spot                spot
## 2163               spray               spray
## 2164              spread              spread
## 2165              sprung              sprung
## 2166               squar              square
## 2167              squeez            squeezed
## 2168              stabil           stability
## 2169              stadia              stadia
## 2170             stadium             stadium
## 2171         stadiumwith         stadiumwith
## 2172               staff               staff
## 2173               stage              stages
## 2174               stall              stalls
```

```
## 2175              stamp              stamped
## 2176          stampmark          stampmark
## 2177               stand          standing
## 2178            standard          standard
## 2179          standpoint        standpoint
## 2180               start             start
## 2181               state             stated
## 2182           statement        statements
## 2183      statementwhich     statementwhich
## 2184             station           station
## 2185              statist       statistical
## 2186              status            status
## 2187                stay            stayed
## 2188             steffey           steffey
## 2189              stellj          stelljes
## 2190                stem              stem
## 2191                step              step
## 2192             stephen           stephen
## 2193             stepwis          stepwise
## 2194               steve             steve
## 2195             steward          stewards
## 2196             sticker           sticker
## 2197               still             still
## 2198               sting             sting
## 2199               stone             stone
## 2200               stood             stood
## 2201               stool            stools
## 2202                stop           stopped
## 2203               store            stored
## 2204               stori             story
## 2205            straight          straight
## 2206     straightforward   straightforward
## 2207              stress            stress
## 2208              strict          strictly
## 2209              string            string
## 2210              strong            strong
## 2211              struck            struck
## 2212             structur        structural
## 2213             stubhub           stubhub
## 2214               studi             study
## 2215               stuff             stuff
## 2216               style             style
## 2217              styliz           stylized
## 2218             subject           subject
## 2219              submit            submit
## 2220           subscript        subscripts
## 2221             subsequ        subsequent
## 2222            substanc         substance
## 2223           substanti       substantial
## 2224           substitut       substitution
## 2225               subtl            subtle
## 2226            subtract       subtracting
## 2227                suck              suck
## 2228             sucksim           sucksim
```

```
## 2229           sudden          suddenly
## 2230           suffer            suffer
## 2231          suffici        sufficient
## 2232          suggest         suggested
## 2233             suit              suit
## 2234         sullivan          sullivan
## 2235              sum               sum
## 2236           summar        summarized
## 2237          summari           summary
## 2238        summaryix         summaryix
## 2239              sun               sun
## 2240           sunday            sunday
## 2241       sundayjust        sundayjust
## 2242             suni             sunis
## 2243            super             super
## 2244          supervis          supervise
## 2245       supervisor        supervisor
## 2246       supplement       supplemental
## 2247           suppli            supply
## 2248          support           support
## 2249           suppos          supposed
## 2250             sure              sure
## 2251           surfac           surface
## 2252          surpass         surpassed
## 2253          surpris         surprised
## 2254          surrend        surrendered
## 2255         surround         surrounded
## 2256          suscept       susceptible
## 2257          suspect         suspected
## 2258        suspicion        suspicions
## 2259          sustain         sustained
## 2260              svp               svp
## 2261            sweat             sweat
## 2262       sweatshirt        sweatshirt
## 2263            sweet             sweet
## 2264           switch            switch
## 2265           symbol            symbol
## 2266           system            system
## 2267          systemat     systematically
## 2268             tabl             table
## 2269              tac               tac
## 2270             tack              tack
## 2271            tacki             tacky
## 2272           tailor          tailored
## 2273             take            taking
## 2274            taken             taken
## 2275             talk            talked
## 2276            tampa             tampa
## 2277           tamper         tampering
## 2278              tan               tan
## 2279             tape              tape
## 2280           target            target
## 2281             task              task
## 2282            tcttk             tcttk
```

```
## 2283              teach            teaching
## 2284               team                team
## 2285           teamgaug           teamgauge
## 2286               tear                tear
## 2287            techniqu           technique
## 2288           technolog          technology
## 2289                tee                 tee
## 2290           telecast            telecast
## 2291           telephon           telephone
## 2292            televis          television
## 2293               tell                tell
## 2294          temperatur         temperature
## 2295   temperatureinduc   temperatureinduced
## 2296 temperaturepressur temperaturepressure
## 2297       temperaturerel temperaturerelative
## 2298           temporari           temporary
## 2299                ten                 ten
## 2300               tend               tends
## 2301            tendenc          tendencies
## 2302              tenur             tenured
## 2303               term                term
## 2304             termin           terminals
## 2305          terminolog         terminology
## 2306              terri               terry
## 2307               test              tested
## 2308        testedinclud      testedincluding
## 2309            testifi           testifying
## 2310           testimoni            testimony
## 2311         testsblakeman       testsblakeman
## 2312             testth             testthe
## 2313               text                text
## 2314             textur             texture
## 2315              thank               thank
## 2316               that               thats
## 2317           thencolt           thencolts
## 2318           thenequip        thenequipment
## 2319            thennfl             thennfl
## 2320             theodor             theodore
## 2321             theoret        theoretically
## 2322              theori              theory
## 2323              there              theres
## 2324            thereaft           thereafter
## 2325            therefor           therefore
## 2326             thereof             thereof
## 2327             therev             thereve
## 2328             thermal             thermal
## 2329          thermocoupl         thermocouple
## 2330          thermodynam       thermodynamics
## 2331          thermostat          thermostat
## 2332               thin                thin
## 2333              thing              things
## 2334              think               think
## 2335              third               third
## 2336           thirteen            thirteen
```

```
## 2337           thirteenth          thirteenth
## 2338               thirti              thirty
## 2339         thirtyminut        thirtyminute
## 2340             thornton            thornton
## 2341             thorough            thorough
## 2342               though              though
## 2343              thought             thought
## 2344             thousand           thousands
## 2345               thread            threaded
## 2346               threat              threat
## 2347             threaten         threatening
## 2348                three               three
## 2349            threshold           threshold
## 2350           throughout          throughout
## 2351                throw               throw
## 2352               thrown              thrown
## 2353             thursday            thursday
## 2354                 thus                thus
## 2355               ticket             tickets
## 2356           tickethold         ticketholder
## 2357                  tie                tied
## 2358                tight               tight
## 2359                 till                till
## 2360                 time                time
## 2361          timedepend        timedependent
## 2362              timelin            timeline
## 2363              timemcn         timemcnally
## 2364          timepressur       timepressured
## 2365                timer               timer
## 2366                  tip                 tip
## 2367                 titl               title
## 2368               togeth            together
## 2369               toilet              toilet
## 2370             toiletri           toiletries
## 2371                 told                told
## 2372                  tom                 tom
## 2373            tombradi            tombrady
## 2374              tommak             tommake
## 2375             tomorrow            tomorrow
## 2376                 tone                tone
## 2377                 toni                tony
## 2378              tonight             tonight
## 2379                 took                took
## 2380                 tool               tools
## 2381                  top                 top
## 2382                topic              topics
## 2383                total               total
## 2384                touch             touched
## 2385            touchdown           touchdown
## 2386               toward             towards
## 2387                towel               towel
## 2388             traceabl           traceable
## 2389                track              tracks
## 2390                tradit         traditional
```

```
## 2391              train              trained
## 2392          transcrib          transcribed
## 2393          transcript       transcription
## 2394           transfer             transfer
## 2395          transient            transient
## 2396            transit          transitions
## 2397           transpir           transpired
## 2398          transport            transport
## 2399             travel              travels
## 2400              treat              treated
## 2401          treatment           treatments
## 2402              trend                trend
## 2403                tri               trying
## 2404              trial                trial
## 2405               trip                 trip
## 2406             troubl              trouble
## 2407               troy                 troy
## 2408              truck                truck
## 2409               true                 true
## 2410              trunk                trunk
## 2411              truth                truth
## 2412               tube               tubing
## 2413            tuesday              tuesday
## 2414             tunnel               tunnel
## 2415               turn               turned
## 2416              tweet               tweets
## 2417              twelv               twelve
## 2418             twenti               twenty
## 2419            twentyf           twentyfive
## 2420         twentythre          twentythree
## 2421          twentyyear           twentyyear
## 2422              twice                twice
## 2423            twitter              twitter
## 2424                two                  two
## 2425           twominut            twominute
## 2426               type                 type
## 2427              typic            typically
## 2428       typicallyand         typicallyand
## 2429                ugg                 uggs
## 2430             ughtom               ughtom
## 2431              ultim           ultimately
## 2432              umpir               umpire
## 2433              unabl               unable
## 2434        unaccompani        unaccompanied
## 2435             unanim          unanimously
## 2436            unavail          unavailable
## 2437             unawar               unaware
## 2438           uncertain            uncertain
## 2439         uncertainti          uncertainty
## 2440            unchang            unchanged
## 2441         unconstrain        unconstrained
## 2442              under           underlying
## 2443          underestim         underestimate
## 2444            undergo           undergoing
```

```
## 2445        underinfl       underinflated
## 2446       understand          understand
## 2447       understood          understood
## 2448       undertaken          undertaken
## 2449        undertook           undertook
## 2450          undesir         undesirable
## 2451             undu                undue
## 2452         unexamin           unexamined
## 2453         unexpect           unexpected
## 2454            unfair          unfairness
## 2455           unhappi          unhappiness
## 2456        unidentifi         unidentified
## 2457          uniform            uniformly
## 2458         unilater         unilaterally
## 2459            union               unions
## 2460             unit               united
## 2461          univers          university
## 2462          unknown             unknown
## 2463           unless               unless
## 2464            unlik             unlikely
## 2465         unpreced        unprecedented
## 2466         unpressur        unpressurized
## 2467         unrealist          unrealistic
## 2468    unsatisfactori       unsatisfactory
## 2469         unsolicit          unsolicited
## 2470         unspecifi          unspecified
## 2471         unsuccess         unsuccessful
## 2472         unsurpris       unsurprisingly
## 2473            unusu              unusual
## 2474         unwilling        unwillingness
## 2475            upcom             upcoming
## 2476            updat              updated
## 2477             upon                 upon
## 2478            upper                upper
## 2479            upset                upset
## 2480          upstair             upstairs
## 2481          urethan             urethane
## 2482             urin              urinals
## 2483              usa                  usa
## 2484             usag                usage
## 2485              use                 used
## 2486             user                 user
## 2487           usthat               usthat
## 2488            usual                usual
## 2489             util              utilize
## 2490             vagu              vaguely
## 2491            valid                valid
## 2492             valu               values
## 2493           valuabl             valuable
## 2494             valv                valve
## 2495             vari              varying
## 2496           variabl          variability
## 2497           varianc             variance
## 2498        variancesof          variancesof
```

```
## 2499         variat         variation
## 2500         varieti          variety
## 2501        various          various
## 2502           vent             vent
## 2503         verifi         verified
## 2504          versa            versa
## 2505        version          version
## 2506         versus           versus
## 2507         vessel           vessel
## 2508         veteri           veteri
## 2509            via              via
## 2510           vice             vice
## 2511         victori          victory
## 2512          video            video
## 2513        videotap         videotape
## 2514           view             view
## 2515          viewer          viewers
## 2516          vigil         vigilant
## 2517          vigor         vigorous
## 2518            vii              vii
## 2519           viib             viib
## 2520           viic             viic
## 2521           viii             viii
## 2522        vincent          vincent
## 2523       vinovich         vinovich
## 2524         violat         violation
## 2525         visibl          visible
## 2526          visit         visiting
## 2527        visitor          visitor
## 2528         visual           visual
## 2529       volleybal       volleyball
## 2530         voltag          voltage
## 2531          volum           volume
## 2532         volunt       volunteered
## 2533     voluntarili       voluntarily
## 2534          vomit            vomit
## 2535           wait             wait
## 2536           walk           walked
## 2537     walkthrough       walkthrough
## 2538           wall             wall
## 2539           walt             walt
## 2540           want           wanted
## 2541           ward             ward
## 2542           warm             warm
## 2543         warmer           warmer
## 2544         warmup          warmups
## 2545           warn          warning
## 2546          watch          watched
## 2547          water            water
## 2548       waterlog       waterlogged
## 2549      watermelon       watermelons
## 2550           wave            waved
## 2551            way              way
## 2552           wayn            wayne
```

```
## 2553               wear               wearing
## 2554            weather               weather
## 2555             websit               website
## 2556                wed               wedding
## 2557          wednesday             wednesday
## 2558               weei                  weei
## 2559               week                  week
## 2560            weekend               weekend
## 2561              weigh               weighed
## 2562             weight                weight
## 2563              weiss                 weiss
## 2564             welcom               welcome
## 2565               well                  well
## 2566          wellknown             wellknown
## 2567          wellprepar           wellprepared
## 2568         wellrespect          wellrespected
## 2569       wellunderstood        wellunderstood
## 2570               went                  went
## 2571                wet                   wet
## 2572            wharton               wharton
## 2573             whatev              whatever
## 2574           whatsoev            whatsoever
## 2575             wherea               whereas
## 2576         whereabout           whereabouts
## 2577            wherebi               whereby
## 2578            whether               whether
## 2579              whole                 whole
## 2580               wide                  wide
## 2581          widereceiv           widereceiver
## 2582         widespread            widespread
## 2583             wilken             wilkening
## 2584               will                  will
## 2585             wilson                wilson
## 2586                win                   win
## 2587               wind                 winds
## 2588             window                window
## 2589               wipe                wiping
## 2590               wire                 wires
## 2591                wit             witnesses
## 2592           withdrawn             withdrawn
## 2593             within                within
## 2594         withingaug           withingauge
## 2595            without               without
## 2596              women                 women
## 2597                won                   won
## 2598               wont                  wont
## 2599               word                 words
## 2600               wore                  wore
## 2601               work                  work
## 2602               worn                  worn
## 2603              worri               worried
## 2604            wouldnt               wouldnt
## 2605              write               writing
## 2606            written               written
```

```
## 2607               wrong                wrong
## 2608             wrongdo           wrongdoing
## 2609               wrote                wrote
## 2610                wthr                 wthr
## 2611             wthrcom              wthrcom
## 2612                 xii                  xii
## 2613                xiii                 xiii
## 2614                 xiv                  xiv
## 2615                xlix                 xlix
## 2616                xxxx                 xxxx
## 2617                yard                 yard
## 2618                yaxi                yaxis
## 2619                year                years
## 2620              yellow               yellow
## 2621                 yet                  yet
## 2622                yett                yette
## 2623               yield               yields
## 2624                york                 york
## 2625                 yup                  yup
## 2626                zach                 zach
## 2627                zero                 zero
## 2628               zipper             zippered
## 2629                zone                 zone
```

```r
endTime <- Sys.time()
```

The analysis was completed on Tue Sep 08 8:42:25 PM 2015 in 0 seconds.