Sentiment_analysis

Separate comment in Youtube

```
#install.packages("syuzhet")
library(syuzhet)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2
## --
```

```
## v ggplot2 3.4.0      v purrr   1.0.1
## v tibble  3.1.8      v stringr 1.5.0
## v tidyr   1.3.0      v forcats 1.0.0
## v readr   2.1.3
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

Import file

```
#data = read.csv("ytdata1.csv")
data = read.csv(file.choose(), header = T)
glimpse(data)
```

```
## Rows: 229
## Columns: 4
## $ Comment     <chr> "That's very beautiful and was very much helpful for me. T~
## $ ReplyCount  <int> 2, 0, 2, 1, 1, 1, 2, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1~
## $ LikeCount   <int> 0, 0, 1, 0, 0, 0, 6, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0~
## $ PublishedAt <chr> "01/12/2021", "01/12/2021", "10/29/2020", "09/20/2020", "0~
```

put column text

```
comment = iconv(data$Comment, to = 'utf-8')
comment
```

```
##    [1] "That's very beautiful and was very much helpful for me. Thank you so much. Gonna try this out
##    [2] "Do you always use hot pressed paper for ocean scenes?"
##    [3] "this is a very beautiful painting... i love it so much"
##    [4] "very good and nice painting"
##    [5] "Love from india madam"
##    [6] NA
##    [7] "Started painting with my grandaughter when she was amazed at a scribble I did. Started with F:
##    [8] "What is the brand of this fan brush?"
##    [9] "I'm in love with your waterscapes, I simply can't stop watching! It is your imagination or di
##   [10] "Thank you soo much!\nBeautiful job and really appreciate the color description"
##   [11] "Excellent work where do you get the bottle with that type of applicator?"
##   [12] "Wow...beautiful painting......"
##   [13] "That's some fantastic work with that fan brush. Mighty pretty."
##   [14] "So nice"
##   [15] "Wow I just discovered your channel and it's now 3 am and I'm binge watching.  Beautiful!"
##   [16] "Stunning"
##   [17] "Mam, can we paint it without having an artist mask fluid? Please reply.."
##   [18] "Plz reply must...  I will wait you...."
##   [19] "Hello Sir...  I don't know how to greet you.... Very beautiful and awesome....  Can you tell i
##   [20] "I love this, I probably will try it. Beautiful work!"
##   [21] NA
##   [22] "Super"
##   [23] "Nice"
##   [24] "beautiful!"
##   [25] "amazing!"
##   [26] "I was noticing that little instrument that you used to apply the  masking fluid, and was wond
##   [27] "Stunning!"
##   [28] "You got a mason town what your art thank you for sharing that welcome painting of the beach g:
##   [29] "Nice drawing"
##   [30] "Woow"
##   [31] "Maria,\nI commented last Sunday on one of your paintings and I want you to know that your art
##   [32] "very very nice."
##   [33] "Omg very very good painting"
##   [34] "Speechless!!"
##   [35] NA
##   [36] NA
##   [37] "where did you get your masking fluid container?"
##   [38] "super"
##   [39] "draw cat"
##   [40] NA
##   [41] "Hey!\nyour paintings are amazing."
##   [42] "Simply superb!!!!!"
##   [43] "can i use insead of art masking fluid also pva glue?"
##   [44] "Thanks you so much. Your paintings inspired me."
##   [45] "Have been watching your painting tutorials for sometime. . You really are a fantastic artist l
##   [46] NA
##   [47] "nnnnnniiiicccceeee work"
##   [48] "Lovely painting Maria! How old are you?"
```

```
##  [49] "Oh, Maria! You are such an encouragement! I'm just beginning my painting journey at age 67. Fo
##  [50] "Lovely but if we need to do it without the mask then how can we do?"
##  [51] "Beautiful like always"
##  [52] "It's amazing I love this paintig"
##  [53] "Totally delightful, Maria! You do have such a talent. But it makes me want to keep on trying!"
##  [54] "Si gracias maria esta marina la pinte anoche."
##  [55] NA
##  [56] NA
##  [57] "So nice"
##  [58] "Great work"
##  [59] "it is so beautiful"
##  [60] "Thanks for the video..Loved it and  painted it..Turned out nice..I wish I could send you the p
##  [61] "so beautiful!! I love watching it just come to life, right in front of the eyes"
##  [62] "what is art masking"
##  [63] NA
##  [64] "I so enjoy your work and I will learn so much from being a patron. I can't wait to get started
##  [65] "Beautiful"
##  [66] "Beautiful painting......it looks soooo real...:-)"
##  [67] "Love it !"
##  [68] "very  nice"
##  [69] "Ma'am I have done this on my canvas.thanks a lot."
##  [70] "Speechless"
##  [71] "@maria this painting is awesome .......too good"
##  [72] "Wow this is a assom painting"
##  [73] "Ogladalam jak zahipnotyzowana super przyjemnosc, technicznie filmik swietnie zrobiony swietni
##  [74] NA
##  [75] "Not sure if this has been asked yet, but I would like to know which masking fluid you are usi
##  [76] "This is just beautiful. I've just seen a picture in the paper with a scene nearly the  same b
##  [77] "AMAZING! Thank you so much for the tutorial Maria"
##  [78] "who unlike  this???"
##  [79] "i love your paintings maria.you really inspire me to paint again.thank you for posting these
##  [80] "Marysiu kochana, pieknie malujesz , inspirujesz , masz w sobie to cos co choc tak ulotne to p
##  [81] "So amazing!!. I love it. Looks so real. l love the beach and blue skies"
##  [82] NA
##  [83] "CAN U DO A HUMAN PAINTING PLEASE AND SOME TIPS ON IT??"
##  [84] "WOW is really small word to express my emotion towards the painting"
##  [85] "Grandiosa"
##  [86] NA
##  [87] "Thank you!.. going to Amazon right now to buy Art Masking Fluid for Watercolors!"
##  [88] "This music is so calming"
##  [89] "beautiful"
##  [90] "Awesome Painting Maria"
##  [91] "Yo! That is legit!that scenery is AMAZING !!!!!!"
##  [92] "Very excellent painting ! I think these are great effort to achieve this perfection !"
##  [93] "Marie, your work is delightful to watch and so helpful.  I was very impressed with your techni
##  [94] "Hello Maria, well following along with this tutorial was a great success. How do I know ???? 
##  [95] "Omg I don't usually pay much attention to speed paints as I only painted 2 things ever before
##  [96] "how much time do u take to make this one? :'D"
##  [97] "Love this tutorial!   Palm trees & Caribbean houses are what I love to paint.   I can learn s
##  [98] "Wonderful painting.."
##  [99] "Maria Its me Riane i am just using my mom's account you know i have many watercolor paintings
## [100] "Beautiful painting,great use of the fan brush"
## [101] "Omgosh Maria, that is lovely! Thanks for sharing.  I am going to follow along to see if I can
## [102] "Amazed"
```

[103] "What's the purpose of art masking fluid please? Beautiful painting. I wonder if you could do
[104] "Your videos are always a great happiness for me. I love to watch them. Many thanks to share y
[105] "beautyful"
[106] "beautiful painting! i was wondering if you'd ever do/have done a snow scene?"
[107] "Awesome!"
[108] "Beautiful Maria !!"
[109] "No i have not -- is that something online to order from?"
[110] "Absolutely beautiful."
[111] "Beautiful painting, Maria! Also, love the way you put up the colors and brush that you are us:
[112] "Can this resist be used with acrylics as well?"
[113] "Beautiful!"
[114] "amazing video Maria! you totally made my day (^_-), cheers Desiree"
[115] "Wow. ...wonderful"
[116] "Wow. This looks almost exactly like Urunao on my Pacific island of Guam. Awesome. I will emai
[117] "Maria you have such a beautiful talent. Thank you"
[118] "I love to watch you work. I'm inspired!"
[119] "Good afternoon Maria! Very nice,peaceful scene. Great tree detail, ocean colour reminds me of
[120] "Your very welcome. Sophie"
[121] "Wow!"
[122] "Thank you for the sand color, very useful for me! And for all your art, thank you!"
[123] "Superb!!!"
[124] "I wish I could be there in that painting, it's flawless"
[125] "Still looking for that bottle and tip LOL"
[126] "So Beautiful!!!!"
[127] "Your skill level is incredible! Wonderful work!"
[128] "Wow.   Just beautiful! Love the colors and so realistic."
[129] "Nice"
[130] "Interesante tecnica para usar el masking fluid...la botellita es una muy buena idea...cuanto
[131] "Wonderful painting, Maria! I love the colors you used here, but I don't have any Holbein wat
[132] "LOVE IT!"
[133] "Very beautyful"
[134] "beautiful Maria feel like going for holiday trip on this beautiful beach"
[135] "Lovely beach scene. I particularly like the way you painted the palm trees. May I ask what
[136] "Beautiful! I like the idea of the masking fluid in the fine line bottle. Does it gum up at a
[137] "Ah, a day at the beach, what would we do without a fan....brush. Very nice Maria. Have a grea
[138] "Beautiful painting Maria. tfs"
[139] "wow!! looks exactly where I live!! :D very beautiful painting!!"
[140] NA
[141] "wow,Maria you made my tongue unable to say anything because it so good that I am confused .
[142] "i love all your paintings. it is beautiful , pretty , nice"
[143] "@Maria Raczynska I'm 72 and recently started to paint with watercolors . The last time I pa
[144] "From"
[145] "thank you"
[146] "thank you!!"
[147] "Thank you. BTW, I love your videos."
[148] "Hi Gary, you can find it under my art supplies at www.mariamorjane.com it's called: FINE LINE
[149] "thank you so much"
[150] "thank you"
[151] "you can get it at dickblick.com or amazon.com here's my affiliate link: https://www.amazon.co
[152] "thank you"
[153] "Hi, if you don't have masking fluid I would just omit the areas and not use anything else :) i
[154] "Thank you!"
[155] "Ok"
[156] "Just try to go around it, preserve white :)"

[157] NA
[158] NA
[159] NA
[160] "It's a drawing gum, it's a rubber substance that once it's dry, you can remove it of your pape
[161] "Great :) Have fun painting Phil!"
[162] "Maria Raczynska great idea regarding the glass/ towel! Thanks so much."
[163] "thank you Delyn :)"
[164] NA
[165] "May I use anything else without fan brush?"
[166] "Are u american?"
[167] "What is different between flat brush and angular brush"
[168] "U r a very good artist. Where did u live"
[169] "How many cost is art masking fluid for water colour"
[170] "Thank u"
[171] NA
[172] "your very welcome :)"
[173] "Great! Thank you so much for your reply"
[174] "Hi Merri :) thank you so much, I use Masking Fluid by Winsor and Newton. I have recently trie
[175] "Thank you Thelma :) and that's great! you will have a reference photo this way. So many beac
[176] "Your very welcome Asha :) Happy New Year!"
[177] "Thank you Joynal :)"
[178] "Dziekuje ci bardzo, jak milo przeczytac twoj komentarz :)"
[179] NA
[180] "Dziekuje ci slicznie Asiu :)"
[181] "Thank you very much Beatriz :)"
[182] "hi Anuja :) wow I feel so honored to get this credit of inspiring you :) thank you so much. A
[183] "Hi, I will add it to my list :)"
[184] "aww thank you Aimee ;)) very happy you enjoyed this one!"
[185] "awesome :) and your very welcome :)"
[186] "Thank you so much :)"
[187] "Thank you Smita :)"
[188] "You are Welcome"
[189] "Thank you Ian :)"
[190] "aww I'm so happy Nadine :) that is sooo awesome!!! very happy for you! congratulations ;)"
[191] "Actually from BD"
[192] "Thank you Nemo, I'm from the US, how about you?"
[193] "Maria Raczynska so much thankful to you.I have a question,which country r u from???"
[194] "aww thank you so much, that's so kind of you :) xx"
[195] "Hi, yes have fun :)"
[196] "#NAME?"
[197] "Hi, about 1 hour :)"
[198] "Maria Raczynska welcome.."
[199] "Hi Riane, yes I do :) www.mariamorjane.com"
[200] "thank you so much Ralph :)"
[201] "Awesome Michely! Have fun painting :) thank you!!"
[202] "Hi, you use art masking fluid to preserve white areas, areas on a paper you want to keep whit
[203] "thank you Momchil :)"
[204] "thank you so much and yes :) plenty snow scenes!! if you go directly to my YT channel www.you
[205] "Thank you Tammy :)"
[206] "Hi Linda, yes they have an online store but I just checked and couldn't find it online.. ahhh
[207] "thank you MaryAnne :)"
[208] "Maria Raczynska Thanks so much for your reply. I will definitely try the Arches paper."
[209] "Hi Kathy, thank you so much! a lot of times I do use a photo as reference, this is the most c
[210] "Hi, yes :) you can paint any painting with any medium you wish :)"

```
## [211] "Sona luvs random stuffs  lol"
## [212] "thank you Antonietta :)"
## [213] "thank you Ernestina :) that's cool!"
## [214] "Hi, thank you so much, I actually thought of Thailand when I painted this beach :)"
## [215] "thank you!"
## [216] "your very welcome :) thank you for watching!"
## [217] "thank you Neha ;)"
## [218] "thank you so much!"
## [219] "Thank you Borek :)"
## [220] NA
## [221] "Maria Raczynska Thanks for replying, Maria!  I started with a pad of Strathmore and by my thi:
## [222] "thank you Ana :)"
## [223] NA
## [224] "Maria Raczynska  Thank You!  What about in the bottle... Does it gum up the tip of the bottle
## [225] "thank you Shannon :) I didn't feel like it gummed up.. once it's dry, it's easy to paint over
## [226] NA
## [227] "thank you Roshni :)"
## [228] "thank you so much Dhruvi ;)"
## [229] "thank you :-)"
```

```
a = get_nrc_sentiment(comment)
```

```
## Warning: 'spread_()' was deprecated in tidyr 1.2.0.
## i Please use 'spread()' instead.
## i The deprecated feature was likely used in the syuzhet package.
##   Please report the issue to the authors.
```

```
glimpse(a)
```

```
## Rows: 229
## Columns: 10
## $ anger        <dbl> 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, ~
## $ anticipation <dbl> 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, ~
## $ disgust      <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ fear         <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, ~
## $ joy          <dbl> 2, 0, 2, 1, 1, 0, 2, 0, 1, 1, 1, 1, 2, 0, 1, 0, 0, 0, 1, ~
## $ sadness      <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ surprise     <dbl> 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ trust        <dbl> 1, 0, 0, 1, 0, 0, 3, 0, 0, 0, 1, 0, 2, 0, 0, 0, 0, 0, 1, ~
## $ negative     <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, ~
## $ positive     <dbl> 2, 0, 2, 1, 1, 0, 3, 0, 1, 2, 1, 1, 2, 0, 1, 0, 0, 0, 2, ~
```

add column neutral

```
a$neutral = ifelse(a$negative + a$positive == 0, 1, 0)
glimpse(a)
```

```
## Rows: 229
## Columns: 11
```

```
## $ anger        <dbl> 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, ~
## $ anticipation <dbl> 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, ~
## $ disgust      <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ fear         <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, ~
## $ joy          <dbl> 2, 0, 2, 1, 1, 0, 2, 0, 1, 1, 1, 1, 2, 0, 1, 0, 0, 0, 1, ~
## $ sadness      <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ surprise     <dbl> 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ trust        <dbl> 1, 0, 0, 1, 0, 0, 3, 0, 0, 0, 1, 0, 2, 0, 0, 0, 0, 0, 1, ~
## $ negative     <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, ~
## $ positive     <dbl> 2, 0, 2, 1, 1, 0, 3, 0, 1, 2, 1, 1, 2, 0, 1, 0, 0, 0, 2, ~
## $ neutral      <dbl> 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, ~
```

export file

```
write.csv(a, "sentiment_data1.csv", row.names = F)
```

check total amount

```
colSums(a)
```

```
##         anger anticipation      disgust         fear          joy      sadness
##             9           74            5           13          140           29
##      surprise        trust     negative     positive      neutral
##            42           71           15          176          126
```

```
sum(a)
```

```
## [1] 700
```

```
cal_sum = 100*colSums(a)/sum(a) # Percentage
cal_sum
```

```
##         anger anticipation      disgust         fear          joy      sadness
##     1.2857143   10.5714286    0.7142857    1.8571429   20.0000000    4.1428571
##      surprise        trust     negative     positive      neutral
##     6.0000000   10.1428571    2.1428571   25.1428571   18.0000000
```

```
barplot(cal_sum,
        las = 2,
        col = rainbow(11),
        ylab = "Percentage",
        main = "Sentiment Score"
)
```

Sentiment Score
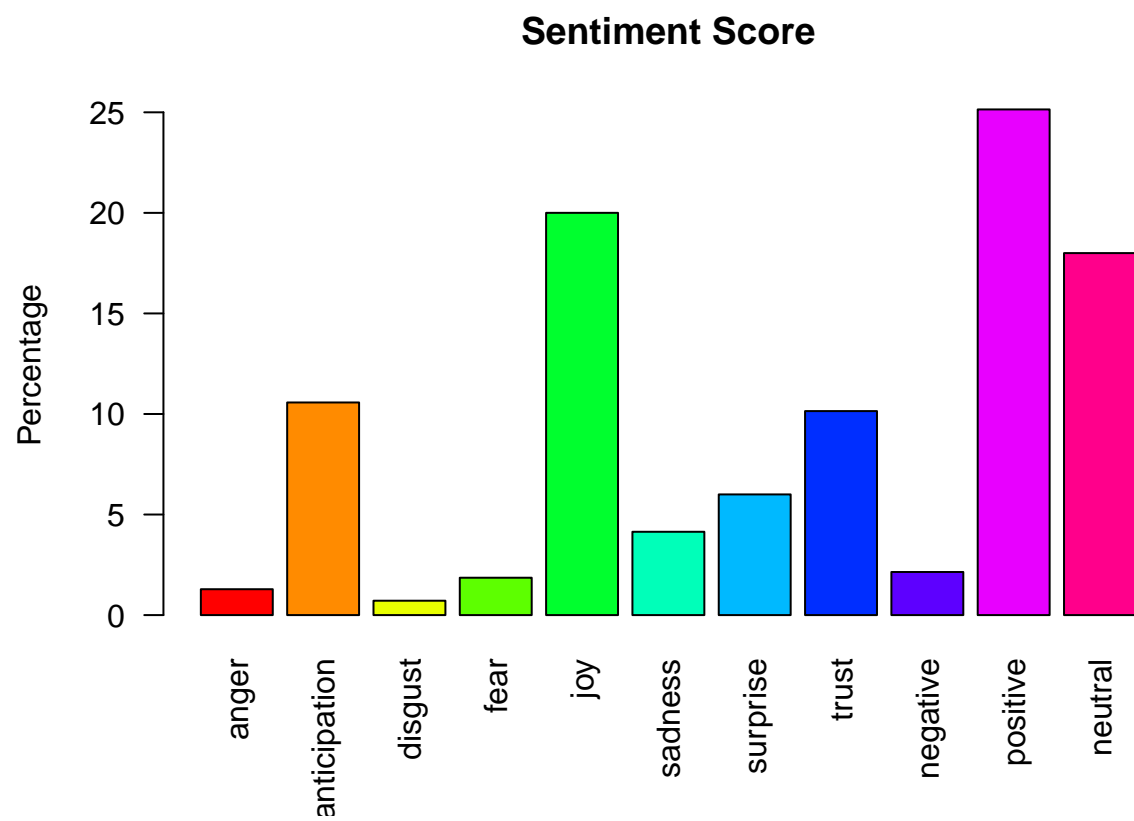
data

a

```
##    anger anticipation disgust fear joy sadness surprise trust negative
## 1      0            0       0    0   2       0        0     1        0
## 2      1            0       0    0   0       0        0     0        0
## 3      0            0       0    0   2       0        0     0        0
## 4      0            1       0    0   1       0        1     1        0
## 5      0            0       0    0   1       0        0     0        0
## 6      0            0       0    0   0       0        0     0        0
## 7      0            1       0    0   2       0        0     3        0
## 8      0            0       0    0   0       0        0     0        0
## 9      0            0       0    0   1       0        0     0        0
## 10     0            0       0    0   1       0        0     0        0
## 11     0            0       0    0   1       0        0     1        0
## 12     0            0       0    0   1       0        0     0        0
## 13     1            1       0    1   2       0        0     2        0
## 14     0            0       0    0   0       0        0     0        0
## 15     0            0       0    0   1       0        0     0        0
## 16     0            0       0    0   0       0        0     0        0
## 17     0            0       0    0   0       0        0     0        0
## 18     0            1       0    0   0       0        0     0        1
```

```
## 19          0             0         0       0     1         0             0        1            0
## 20          0             0         0       0     2         0             0        0            0
## 21          0             0         0       0     0         0             0        0            0
## 22          0             0         0       0     0         0             0        0            0
## 23          0             0         0       0     0         0             0        0            0
## 24          0             0         0       0     1         0             0        0            0
## 25          0             0         0       0     0         0             0        0            0
## 26          0             0         0       0     0         0             0        0            0
## 27          0             0         0       0     0         0             0        0            0
## 28          0             1         0       0     2         1             1        0            0
## 29          0             0         0       0     0         0             0        0            0
## 30          0             0         0       0     0         0             0        0            0
## 31          0             1         0       0     2         1             1        1            0
## 32          0             0         0       0     0         0             0        0            0
## 33          0             1         0       0     1         0             1        1            0
## 34          0             0         0       0     0         0             0        0            0
## 35          0             0         0       0     0         0             0        0            0
## 36          0             0         0       0     0         0             0        0            0
## 37          0             0         0       0     0         0             0        0            0
## 38          0             0         0       0     0         0             0        0            0
## 39          0             0         0       0     0         0             0        0            0
## 40          0             0         0       0     0         0             0        0            0
## 41          0             0         0       0     0         0             0        0            0
## 42          0             0         0       0     0         0             0        0            0
## 43          0             1         0       0     1         1             1        0            0
## 44          0             0         0       0     1         0             1        1            0
## 45          0             0         0       0     0         0             0        0            0
## 46          0             0         0       0     0         0             0        0            0
## 47          0             0         0       0     0         0             0        0            0
## 48          0             1         0       0     1         1             1        1            0
## 49          0             5         0       1     3         0             1        3            0
## 50          0             1         0       0     1         1             1        1            0
## 51          0             0         0       0     1         0             0        0            0
## 52          0             0         0       0     1         0             0        0            0
## 53          0             1         0       0     1         0             0        1            0
## 54          0             0         0       0     0         0             0        0            0
## 55          0             0         0       0     0         0             0        0            0
## 56          0             0         0       0     0         0             0        0            0
## 57          0             0         0       0     0         0             0        0            0
## 58          0             0         0       0     0         0             0        0            0
## 59          0             0         0       0     1         0             0        0            0
## 60          0             0         0       0     0         0             0        0            0
## 61          0             0         0       0     2         0             0        0            0
## 62          0             1         0       0     1         1             1        0            0
## 63          0             0         0       0     0         0             0        0            0
## 64          0             3         0       0     1         0             0        3            1
## 65          0             0         0       0     1         0             0        0            0
## 66          0             0         0       0     1         0             0        1            0
## 67          0             0         0       0     1         0             0        0            0
## 68          0             0         0       0     0         0             0        0            0
## 69          0             0         0       0     0         0             0        0            0
## 70          0             0         0       0     0         0             0        0            0
## 71          0             1         0       0     1         0             1        1            0
## 72          0             0         0       0     0         0             0        0            0
```

```
## 73     0          0    0    0    0          0          0    0    0
## 74     0          0    0    0    0          0          0    0    0
## 75     0          0    0    0    1          0          0    0    0
## 76     0          1    0    0    3          0          1    1    0
## 77     0          0    0    0    0          0          0    0    0
## 78     0          0    0    0    0          0          0    0    0
## 79     0          1    0    0    3          0          1    2    0
## 80     0          0    0    0    0          0          0    0    0
## 81     0          0    0    0    2          1          0    1    0
## 82     0          0    0    0    0          0          0    0    0
## 83     0          0    0    0    0          0          0    0    0
## 84     0          0    0    0    0          0          0    1    1
## 85     0          0    0    0    0          0          0    0    0
## 86     0          0    0    0    0          0          0    0    0
## 87     0          1    0    0    1          1          1    0    0
## 88     0          0    0    0    1          1          0    0    0
## 89     0          0    0    0    1          0          0    0    0
## 90     0          0    0    0    0          0          0    0    0
## 91     0          0    0    0    0          0          0    0    0
## 92     0          1    0    0    3          0          1    3    0
## 93     1          3    1    1    3          0          1    3    0
## 94     0          3    0    0    3          1          2    2    0
## 95     0          1    0    0    2          0          1    1    0
## 96     0          1    0    0    0          0          0    0    0
## 97     0          2    1    0    4          0          1    2    0
## 98     0          0    0    0    1          0          1    1    0
## 99     0          0    0    0    0          0          0    1    0
## 100    0          0    0    0    1          0          0    0    0
## 101    0          1    0    0    1          1          1    1    0
## 102    0          0    0    0    0          0          0    0    0
## 103    0          1    0    0    2          2          1    1    1
## 104    0          3    0    1    3          0          0    1    0
## 105    0          0    0    0    0          0          0    0    0
## 106    0          0    0    0    1          0          0    0    0
## 107    0          0    0    0    0          0          0    0    0
## 108    0          0    0    0    1          0          0    0    0
## 109    0          0    0    0    0          0          0    0    0
## 110    0          0    0    0    1          0          0    0    0
## 111    0          0    0    0    2          0          0    0    0
## 112    0          0    0    0    0          0          0    0    1
## 113    0          0    0    0    1          0          0    0    0
## 114    0          0    0    0    0          0          0    0    0
## 115    0          0    0    0    1          0          1    1    0
## 116    0          0    0    0    0          0          0    0    0
## 117    0          0    0    0    1          0          0    0    0
## 118    0          1    0    1    2          0          1    1    0
## 119    1          3    1    0    3          0          3    3    0
## 120    0          0    0    0    0          0          0    0    0
## 121    0          0    0    0    0          0          0    0    0
## 122    0          1    0    0    1          1          1    0    0
## 123    0          0    0    0    0          0          0    0    0
## 124    0          0    0    0    0          0          0    0    0
## 125    0          0    0    0    0          0          0    0    0
## 126    0          0    0    0    1          0          0    0    0
```

```
## 127   0          0        0     0     1       0        1     2        0
## 128   0          0        0     0     2       0        0     0        0
## 129   0          0        0     0     0       0        0     0        0
## 130   0          0        0     0     0       0        0     0        0
## 131   0          0        0     0     2       0        1     2        0
## 132   0          0        0     0     1       0        0     0        0
## 133   0          0        0     0     0       0        0     0        0
## 134   0          1        0     0     3       0        1     0        0
## 135   0          2        0     0     3       1        1     2        0
## 136   0          0        0     0     1       0        0     0        0
## 137   0          0        0     0     1       0        0     0        0
## 138   0          0        0     0     1       0        0     0        0
## 139   0          0        0     0     1       0        0     0        0
## 140   0          0        0     0     0       0        0     0        0
## 141   0          1        0     0     1       1        1     1        1
## 142   0          1        0     0     3       0        0     1        0
## 143   0          1        0     0     0       0        0     0        0
## 144   0          0        0     0     0       0        0     0        0
## 145   0          0        0     0     0       0        0     0        0
## 146   0          0        0     0     0       0        0     0        0
## 147   0          0        0     0     1       0        0     0        0
## 148   0          1        0     0     1       1        1     0        0
## 149   0          0        0     0     0       0        0     0        0
## 150   0          0        0     0     0       0        0     0        0
## 151   0          0        0     0     0       0        0     0        0
## 152   0          0        0     0     0       0        0     0        0
## 153   0          0        0     0     0       0        0     0        1
## 154   0          0        0     0     0       0        0     0        0
## 155   0          0        0     0     0       0        0     0        0
## 156   0          1        0     0     1       0        0     1        0
## 157   0          0        0     0     0       0        0     0        0
## 158   0          0        0     0     0       0        0     0        0
## 159   0          0        0     0     0       0        0     0        0
## 160   1          1        0     1     1       1        0     1        1
## 161   0          1        0     0     1       0        0     0        0
## 162   0          0        0     0     0       0        0     0        0
## 163   0          0        0     0     0       0        0     0        0
## 164   0          0        0     0     0       0        0     0        0
## 165   0          0        0     0     0       0        0     0        0
## 166   0          0        0     0     0       0        0     0        0
## 167   0          0        0     0     0       0        0     0        0
## 168   0          1        0     0     1       0        1     1        0
## 169   0          1        0     0     1       1        1     0        0
## 170   0          0        0     0     0       0        0     0        0
## 171   0          0        0     0     0       0        0     0        0
## 172   0          0        0     0     0       0        0     0        0
## 173   0          0        0     0     0       0        0     0        0
## 174   3          0        2     3     0       3        1     0        3
## 175   0          1        0     0     1       0        0     0        0
## 176   0          1        0     0     1       0        0     1        0
## 177   0          0        0     0     0       0        0     0        0
## 178   0          0        0     0     0       0        0     0        0
## 179   0          0        0     0     0       0        0     0        0
## 180   0          0        0     0     0       0        0     0        0
```

```
## 181        0             0       0    0    0       0       0    0       0
## 182        0             1       0    0    2       0       1    3       0
## 183        0             0       0    0    0       0       0    0       0
## 184        0             1       0    0    1       0       0    1       0
## 185        0             0       0    0    0       0       0    0       0
## 186        0             0       0    0    0       0       0    0       0
## 187        0             0       0    0    0       0       0    0       0
## 188        0             0       0    0    0       0       0    0       0
## 189        0             0       0    0    0       0       0    0       0
## 190        0             1       0    0    1       0       0    1       0
## 191        0             0       0    0    0       0       0    0       0
## 192        0             0       0    0    0       0       0    0       0
## 193        0             0       0    0    1       0       0    0       0
## 194        0             0       0    0    1       0       0    1       0
## 195        0             1       0    0    1       0       0    0       0
## 196        0             0       0    0    0       0       0    0       0
## 197        0             0       0    0    0       0       0    0       0
## 198        0             0       0    0    0       0       0    0       0
## 199        0             0       0    0    0       0       0    0       0
## 200        0             0       0    0    0       0       0    0       0
## 201        0             1       0    0    1       0       0    0       0
## 202        0             4       0    1    2       2       1    1       1
## 203        0             0       0    0    0       0       0    0       0
## 204        0             0       0    0    0       0       0    0       0
## 205        0             0       0    0    0       0       0    0       0
## 206        0             2       0    0    1       1       1    0       0
## 207        0             0       0    0    0       0       0    0       0
## 208        0             0       0    0    0       0       0    0       0
## 209        0             1       0    1    2       2       1    0       1
## 210        0             0       0    0    0       0       0    0       0
## 211        0             0       0    0    0       0       0    0       0
## 212        0             0       0    0    0       0       0    0       0
## 213        0             0       0    0    0       0       0    0       0
## 214        0             1       0    0    1       0       0    0       0
## 215        0             0       0    0    0       0       0    0       0
## 216        0             0       0    0    0       0       0    0       0
## 217        0             0       0    0    0       0       0    0       0
## 218        0             0       0    0    0       0       0    0       0
## 219        0             0       0    0    0       0       0    0       0
## 220        0             0       0    0    0       0       0    0       0
## 221        0             0       0    0    2       0       0    1       0
## 222        0             0       0    0    0       0       0    0       0
## 223        0             0       0    0    0       0       0    0       0
## 224        0             0       0    0    0       0       0    0       0
## 225        1             2       0    2    2       2       0    2       2
## 226        0             0       0    0    0       0       0    0       0
## 227        0             0       0    0    0       0       0    0       0
## 228        0             0       0    0    0       0       0    0       0
## 229        0             0       0    0    0       0       0    0       0
##     positive neutral
## 1          2      0
## 2          0      1
## 3          2      0
## 4          1      0
```

```
## 5           1        0
## 6           0        1
## 7           3        0
## 8           0        1
## 9           1        0
## 10          2        0
## 11          1        0
## 12          1        0
## 13          2        0
## 14          0        1
## 15          1        0
## 16          0        1
## 17          0        1
## 18          0        0
## 19          2        0
## 20          2        0
## 21          0        1
## 22          0        1
## 23          0        1
## 24          1        0
## 25          0        1
## 26          0        1
## 27          0        1
## 28          2        0
## 29          0        1
## 30          0        1
## 31          2        0
## 32          0        1
## 33          1        0
## 34          0        1
## 35          0        1
## 36          0        1
## 37          0        1
## 38          0        1
## 39          0        1
## 40          0        1
## 41          0        1
## 42          1        0
## 43          1        0
## 44          1        0
## 45          0        1
## 46          0        1
## 47          0        1
## 48          1        0
## 49          7        0
## 50          1        0
## 51          1        0
## 52          1        0
## 53          2        0
## 54          0        1
## 55          0        1
## 56          0        1
## 57          0        1
## 58          0        1
```

```
## 59            1            0
## 60            0            1
## 61            2            0
## 62            1            0
## 63            0            1
## 64            3            0
## 65            1            0
## 66            2            0
## 67            1            0
## 68            0            1
## 69            0            1
## 70            0            1
## 71            1            0
## 72            0            1
## 73            0            1
## 74            0            1
## 75            1            0
## 76            5            0
## 77            0            1
## 78            0            1
## 79            4            0
## 80            0            1
## 81            2            0
## 82            0            1
## 83            0            1
## 84            1            0
## 85            0            1
## 86            0            1
## 87            1            0
## 88            1            0
## 89            1            0
## 90            0            1
## 91            0            1
## 92            4            0
## 93            3            0
## 94            3            0
## 95            3            0
## 96            0            1
## 97            5            0
## 98            1            0
## 99            0            1
## 100           1            0
## 101           1            0
## 102           0            1
## 103           3            0
## 104           4            0
## 105           0            1
## 106           1            0
## 107           0            1
## 108           1            0
## 109           0            1
## 110           1            0
## 111           2            0
## 112           0            0
```

```
## 113          1          0
## 114          0          1
## 115          1          0
## 116          1          0
## 117          2          0
## 118          2          0
## 119          3          0
## 120          0          1
## 121          0          1
## 122          1          0
## 123          1          0
## 124          0          1
## 125          0          1
## 126          1          0
## 127          2          0
## 128          2          0
## 129          0          1
## 130          0          1
## 131          4          0
## 132          1          0
## 133          0          1
## 134          2          0
## 135          2          0
## 136          1          0
## 137          0          1
## 138          1          0
## 139          1          0
## 140          0          1
## 141          1          0
## 142          3          0
## 143          0          1
## 144          0          1
## 145          0          1
## 146          0          1
## 147          1          0
## 148          2          0
## 149          0          1
## 150          0          1
## 151          1          0
## 152          0          1
## 153          0          0
## 154          0          1
## 155          0          1
## 156          2          0
## 157          0          1
## 158          0          1
## 159          0          1
## 160          3          0
## 161          1          0
## 162          0          1
## 163          0          1
## 164          0          1
## 165          0          1
## 166          0          1
```

```
## 167          0          1
## 168          1          0
## 169          1          0
## 170          0          1
## 171          0          1
## 172          0          1
## 173          0          1
## 174          0          0
## 175          1          0
## 176          1          0
## 177          0          1
## 178          0          1
## 179          0          1
## 180          0          1
## 181          0          1
## 182          3          0
## 183          0          1
## 184          1          0
## 185          0          1
## 186          0          1
## 187          0          1
## 188          0          1
## 189          0          1
## 190          1          0
## 191          0          1
## 192          0          1
## 193          2          0
## 194          1          0
## 195          1          0
## 196          0          1
## 197          0          1
## 198          0          1
## 199          0          1
## 200          0          1
## 201          1          0
## 202          4          0
## 203          0          1
## 204          0          1
## 205          0          1
## 206          2          0
## 207          0          1
## 208          0          1
## 209          2          0
## 210          0          1
## 211          0          1
## 212          0          1
## 213          1          0
## 214          0          1
## 215          0          1
## 216          0          1
## 217          0          1
## 218          0          1
## 219          0          1
## 220          0          1
```

```
## 221          3          0
## 222          0          1
## 223          0          1
## 224          0          1
## 225          3          0
## 226          0          1
## 227          0          1
## 228          0          1
## 229          0          1
```