finalMilestone.r

muj_m

2022-04-06

```
####Milestone 1 ####

#first 40 lines are required for all the milestones to be accessed
library(plyr)
library(dplyr)
```

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

```
## The following objects are masked from 'package:plyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize
```

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

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

```
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v tibble  3.1.5     v purrr   0.3.4
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.0.2     v forcats 0.5.1
```

```
## -- Conflicts ---------------------------------------- tidyverse_conflicts() --
## x dplyr::arrange()   masks plyr::arrange()
## x purrr::compact()   masks plyr::compact()
## x dplyr::count()     masks plyr::count()
## x dplyr::failwith()  masks plyr::failwith()
## x dplyr::filter()    masks stats::filter()
## x dplyr::id()        masks plyr::id()
## x dplyr::lag()       masks stats::lag()
## x dplyr::mutate()    masks plyr::mutate()
## x dplyr::rename()    masks plyr::rename()
## x dplyr::summarise() masks plyr::summarise()
## x dplyr::summarize() masks plyr::summarize()
```

```
library(plotly)
```

```
##
## Attaching package: 'plotly'
```

```
## The following object is masked from 'package:ggplot2':
##
##     last_plot
```

```
## The following objects are masked from 'package:plyr':
##
##     arrange, mutate, rename, summarise
```

```
## The following object is masked from 'package:stats':
##
##     filter
```

```
## The following object is masked from 'package:graphics':
##
##     layout
```

```
library(hrbrthemes)
```

```
## NOTE: Either Arial Narrow or Roboto Condensed fonts are required to use these themes.
```

```
##       Please use hrbrthemes::import_roboto_condensed() to install Roboto Condensed and
```

```
##       if Arial Narrow is not on your system, please see https://bit.ly/arialnarrow
```

```
library(lubridate)
```

```
##
## Attaching package: 'lubridate'
```

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

```
library(purrrlyr)
```

```
## Warning: package 'purrrlyr' was built under R version 4.1.2
```

```
library(corrplot)
```

```
## Warning: package 'corrplot' was built under R version 4.1.2
```

```
## corrplot 0.92 loaded
```

```
library(ggpubr)
```

```
##
## Attaching package: 'ggpubr'
```

```
## The following object is masked from 'package:plyr':
##
##     mutate
```

```
#Loading data
setwd("C:\\Users\\muj_m\\Desktop\\Aly_6010\\project")

#Since data has special characters, so making use of enconding
df <- read.csv("CAvideos.csv", encoding = "UTF-8")

head(df)
```

```
##      video_id trending_date
## 1 n1WpP7iowLc      17.14.11
## 2 0dBIkQ4Mz1M      17.14.11
## 3 5qpjK5DgCt4      17.14.11
## 4 d380meD0W0M      17.14.11
## 5 2Vv-BfVoq4g      17.14.11
## 6 0yIWz1XEeyc      17.14.11
##
title
## 1                                                    Eminem - Walk On Water (Audio) ft. Be
yoncé
## 2                                                                PLUSH - Bad Unboxing Fan
Mail
## 3                                        Racist Superman | Rudy Mancuso, King Bach & Lele
Pons
## 4                                                                    I Dare You: GOING B
ALD!?
## 5                                                  Ed Sheeran - Perfect (Official Music V
ideo)
## 6 Jake Paul Says Alissa Violet CHEATED with LOGAN PAUL! #DramaAlert Team 10 vs  Martinez T
wins!
##   channel_title category_id             publish_time
## 1    EminemVEVO          10 2017-11-10T17:00:03.000Z
## 2     iDubbbzTV          23 2017-11-13T17:00:00.000Z
## 3  Rudy Mancuso          23 2017-11-12T19:05:24.000Z
## 4      nigahiga          24 2017-11-12T18:01:41.000Z
## 5    Ed Sheeran          10 2017-11-09T11:04:14.000Z
## 6    DramaAlert          25 2017-11-13T07:37:51.000Z
##
tags
## 1
Eminem|Walk|On|Water|Aftermath/Shady/Interscope|Rap
## 2
plush|bad unboxing|unboxing|fan mail|idubbbztv|idubbbztv2|things|best|packages|plushies|chont
ent chop
## 3 racist superman|rudy|mancuso|king|bach|racist|superman|love|rudy mancuso poo bear black
white official music video|iphone x by pineapple|lelepons|hannahstocking|rudymancuso|inanna|a
nwar|sarkis|shots|shotsstudios|alesso|anitta|brazil|Getting My Driver's License | Lele Pons
## 4
ryan|higa|higatv|nigahiga|i dare you|idy|rhpc|dares|no truth|comments|comedy|funny|stupid|fai
l
## 5
edsheeran|ed sheeran|acoustic|live|cover|official|remix|official video|lyrics|session
## 6                                                          #DramaAlert|Drama|Alert|D
ramaAlert|keemstar|youtube news|jake paul|team 10|alissa violet|cheated|logan paul|logan paul
alissa violet|jake paul alissa violet|Martinez Twins|left team 10|faze banks|erika costell
##      views   likes dislikes comment_count
## 1 17158579  787425    43420        125882
## 2  1014651  127794     1688         13030
## 3  3191434  146035     5339          8181
## 4  2095828  132239     1989         17518
## 5 33523622 1634130    21082         85067
## 6  1309699  103755     4613         12143
##                                  thumbnail_link comments_disabled
## 1 https://i.ytimg.com/vi/n1WpP7iowLc/default.jpg            False
```

```
## 2 https://i.ytimg.com/vi/0dBIkQ4Mz1M/default.jpg             False
## 3 https://i.ytimg.com/vi/5qpjK5DgCt4/default.jpg             False
## 4 https://i.ytimg.com/vi/d380meD0W0M/default.jpg             False
## 5 https://i.ytimg.com/vi/2Vv-BfVoq4g/default.jpg             False
## 6 https://i.ytimg.com/vi/0yIWz1XEeyc/default.jpg             False
##   ratings_disabled video_error_or_removed
## 1            False                  False
## 2            False                  False
## 3            False                  False
## 4            False                  False
## 5            False                  False
## 6            False                  False
##
description
## 1
Eminem's new track Walk on Water ft. Beyoncé is available everywhere: http://shady.sr/WOWEmin
em \\nPlaylist Best of Eminem: https://goo.gl/AquNpo\\nSubscribe for more: https://goo.gl/DxC
rDV\\n\\nFor more visit: \\nhttp://eminem.com\\nhttp://facebook.com/eminem\\nhttp://twitter.c
om/eminem\\nhttp://instagram.com/eminem\\nhttp://eminem.tumblr.com\\nhttp://shadyrecords.com
\\nhttp://facebook.com/shadyrecords\\nhttp://twitter.com/shadyrecords\\nhttp://instagram.com/
shadyrecords\\nhttp://trustshady.tumblr.com\\n\\nMusic video by Eminem performing Walk On Wat
er. (C) 2017 Aftermath Records\\nhttp://vevo.ly/gA7xKt
## 2
STill got a lot of packages. Probably will last for another year. On a side note, more 2nd ch
annel vids soon. editing with premiere from now on, gon' be a tedious transition, but i think
it's for the best. \\n\\n__\\n\\nSUBSCRIBE <U+25BA> http://www.youtube.com/subscription_cente
r?add_user=iDubbbztv\\n\\nMain Channel <U+25BA> https://www.youtube.com/user/iDubbbzTV\\nSeco
nd Channel <U+25BA> https://www.youtube.com/channel/UC-tsNNJ3yIW98MtPH6PWFAQ\\nGaming Channel
<U+25BA> https://www.youtube.com/channel/UCVhfFXNY0z3-mbrTh1OYRXA\\n\\nWebsite <U+25BA> htt
p://www.idubbbz.com/\\n\\nInstagram <U+25BA> https://instagram.com/idubbbz/\\nTwitter <U+25BA
> https://twitter.com/Idubbbz\\nFacebook <U+25BA> http://www.facebook.com/IDubbbz\\nTwitch <U
+25BA> http://www.twitch.tv/idubbbz\\n_
## 3
WATCH MY PREVIOUS VIDEO <U+25B6> \\n\\nSUBSCRIBE <U+25BA> https://www.youtube.com/channel/UC5
jkXpfnBhlDjqh0ir5FsIQ?sub_confirmation=1\\n\\nTHANKS FOR WATCHING! LIKE & SUBSCRIBE FOR MORE
VIDEOS!\\n-------------------------------------------------------------\\nFIND ME ON: \\nInstag
ram | http://instagram.com/rudymancuso\\nTwitter | http://twitter.com/rudymancuso\\nFacebook
| http://facebook.com/rudymancuso\\n\\nCAST: \\nRudy Mancuso | http://youtube.com/c/rudymancu
so\\nLele Pons | http://youtube.com/c/lelepons\\nKing Bach | https://youtube.com/user/Bachelo
rsPadTv\\n\\nVideo Effects: \\nCaleb Natale | https://instagram.com/calebnatale\\n\\nPA:\\nPa
ulina Gregory\\n\\n\\nShots Studios Channels:\\nAlesso | https://youtube.com/c/alesso\\nAnitt
a | http://youtube.com/c/anitta\\nAnwar Jibawi | http://youtube.com/c/anwar\\nAwkward Puppets
| http://youtube.com/c/awkwardpuppets\\nHannah Stocking | http://youtube.com/c/hannahstocking
\\nInanna Sarkis | http://youtube.com/c/inanna\\nLele Pons | http://youtube.com/c/lelepons\\n
Maejor | http://youtube.com/c/maejor\\nMike Tyson | http://youtube.com/c/miketyson \\nRudy Ma
ncuso | http://youtube.com/c/rudymancuso\\nShots Studios | http://youtube.com/c/shots\\n\\n#R
udy\\n#RudyMancuso
## 4
I know it's been a while since we did this show, but we're back with what might be the best e
pisode yet!\\nLeave your dares in the comment section! \\n\\nOrder my book how to write good
\\nhttp://higatv.com/ryan-higas-how-to-write-good-pre-order-links/\\n\\nJust Launched New Off
icial Store\\nhttps://www.gianthugs.com/collections/ryan\\n\\nHigaTV Channel\\nhttp://www.you
tube.com/higatv\\n\\nTwitter\\nhttp://www.twitter.com/therealryanhiga\\n\\nFacebook\\nhttp://
www.facebook.com/higatv\\n\\nWebsite\\nhttp://www.higatv.com\\n\\nInstagram\\nhttp://www.inst
agram.com/notryanhiga\\n\\nSend us mail or whatever you want here!\\nPO Box 232355\\nLas Vega
s, NV 89105
```

```
## 5 <U+0001F3A7>: https://ad.gt/yt-perfect\\n<U+0001F4B0>: https://atlanti.cr/yt-album\\nSub
scribe to Ed's channel: http://bit.ly/SubscribeToEdSheeran\\n\\nFollow Ed on...\\nFacebook: h
ttp://www.facebook.com/EdSheeranMusic\\nTwitter: http://twitter.com/edsheeran\\nInstagram: ht
tp://instagram.com/teddysphotos\\nOfficial Website: http://edsheeran.com\\n\\nDirector: Jason
Koenig\\nProducer: Honna Kimmerer\\nStarring: Ed Sheeran & Zoey Deutch \\nDirector of Photogr
aphy: Johnny Valencia\\nProduction Company: Anonymous Content\\nExec Producer: Nina Soriano
\\nProduction Manager: Doug Hoff\\nCommissioner: Dan Curwin\\nProduction Designer: John Lavin
\\nLead Casting: Amy Hubbard \\n \\nWritten by: Jason Koenig, Ed Sheeran, Andrew Kolvet, Jenn
y Koenig, Murray Cummings\\n\\nEdited by: Jason Koenig & Johnny Valencia\\nVFX: Ian Hubert\\n
\\nCast: Bo Valencia, Dennis Ranalta, Arthur Pauli\\n \\nSki Cinematography: Corey Koniniec
\\nSpecialty Camera op: Ryan Haug\\n1st AC: Ryan Brown\\n \\n1st Assistant Director: Ole Zapa
tka\\nArt Director: Klaus Hartl\\nSnow fx: Lucien Stephenson\\n\\nGaffer: Thomas Berz\\nStyli
st: Claudia Lajda\\nHair & Makeup: Christel Thoresen\\nAustrian Casting: Ursula Kiplinger\\n
\\nAdditional VFX: Zoic\\n\\nSpecial Thanks to: The Hintertux Glacier, Austria;\\nThe Tenne,
and Hotel Neuhintertux
## 6
<U+25BA> Follow for News! - https://twitter.com/KEEMSTAR\\n\\n<U+25BA> Also follow #DramaAler
t on:\\n<U+22C6> Instagram: https://instagram.com/DramaAlert\\n<U+22C6> Twitter: https://twit
ter.com/DramaAlert\\n<U+22C6> Facebook: https://facebook.com/DramaAlert\\n\\n<U+25BA> Follow
for livestreams! - https://twitch.tv/KEEMSTAR\\n\\n<U+25BA> KEEM Merch\\nhttp://keem.shirtz.c
ool\\n\\n<U+25BA> USE CODE (KEEM)\\nhttps://gfuel.com/pages/keemstar\\n\\nDollar in the Wood
s! (OUT NOW)\\n<U+25BA> iTunes\\nhttps://itunes.apple.com/us/album/dollar-in-the-woods-singl
e/id1295414119https://itunes.apple.com/us/album/dollar-in-the-woods-single/id1295414119\\n\\n
<U+25BA> Spotify \\nhttps://open.spotify.com/track/3uUHoKWqPbJ5qoREGbguC9?si=v4CgSBBR\\n\\n<U
+25BA> YouTube (Music Video)\\nhttps://youtu.be/n38Qxi7TVWo\\n\\nAdpocalypse! (My New Game)
\\n<U+25BA> Apple (iOS)\\nhttps://itunes.apple.com/us/app/the-adpocalypse/id1263621591\\n\\n<
U+25BA> Android\\nhttps://play.google.com/store/apps/details?id=com.projectorgames.howtogetah
ead
```

```
str(df)
```

```
## 'data.frame':    40881 obs. of  16 variables:
##  $ video_id              : chr  "n1WpP7iowLc" "0dBIkQ4Mz1M" "5qpjK5DgCt4" "d380meD0W0M"
...
##  $ trending_date         : chr  "17.14.11" "17.14.11" "17.14.11" "17.14.11" ...
##  $ title                 : chr  "Eminem - Walk On Water (Audio) ft. Beyoncé" "PLUSH - Bad
Unboxing Fan Mail" "Racist Superman | Rudy Mancuso, King Bach & Lele Pons" "I Dare You: GOING
BALD!?" ...
##  $ channel_title         : chr  "EminemVEVO" "iDubbbzTV" "Rudy Mancuso" "nigahiga" ...
##  $ category_id           : int  10 23 23 24 10 25 23 22 24 22 ...
##  $ publish_time          : chr  "2017-11-10T17:00:03.000Z" "2017-11-13T17:00:00.000Z" "201
7-11-12T19:05:24.000Z" "2017-11-12T18:01:41.000Z" ...
##  $ tags                  : chr  "Eminem|Walk|On|Water|Aftermath/Shady/Interscope|Rap" "plu
sh|bad unboxing|unboxing|fan mail|idubbbztv|idubbbztv2|things|best|packages|plushies|chontent
chop" "racist superman|rudy|mancuso|king|bach|racist|superman|love|rudy mancuso poo bear blac
k white official music vi"| __truncated__ "ryan|higa|higatv|nigahiga|i dare you|idy|rhpc|dare
s|no truth|comments|comedy|funny|stupid|fail" ...
##  $ views                 : int  17158579 1014651 3191434 2095828 33523622 1309699 2987945
748374 4477587 505161 ...
##  $ likes                 : int  787425 127794 146035 132239 1634130 103755 187464 57534 29
2837 4135 ...
##  $ dislikes              : int  43420 1688 5339 1989 21082 4613 9850 2967 4123 976 ...
##  $ comment_count         : int  125882 13030 8181 17518 85067 12143 26629 15959 36391 1484
...
##  $ thumbnail_link        : chr  "https://i.ytimg.com/vi/n1WpP7iowLc/default.jpg" "https://
i.ytimg.com/vi/0dBIkQ4Mz1M/default.jpg" "https://i.ytimg.com/vi/5qpjK5DgCt4/default.jpg" "htt
ps://i.ytimg.com/vi/d380meD0W0M/default.jpg" ...
##  $ comments_disabled     : chr  "False" "False" "False" "False" ...
##  $ ratings_disabled      : chr  "False" "False" "False" "False" ...
##  $ video_error_or_removed: chr  "False" "False" "False" "False" ...
##  $ description           : chr  "Eminem's new track Walk on Water ft. Beyoncé is available
everywhere: http://shady.sr/WOWEminem \\nPlaylist Bes"| __truncated__ "STill got a lot of pac
kages. Probably will last for another year. On a side note, more 2nd channel vids soon. e"| _
_truncated__ "WATCH MY PREVIOUS VIDEO <U+25B6> \\n\\nSUBSCRIBE <U+25BA> https://www.youtube.c
om/channel/UC5jkXpfnBhlDjqh0ir5F"| __truncated__ "I know it's been a while since we did this
show, but we're back with what might be the best episode yet!\\nLeav"| __truncated__ ...
```

```
sum(is.na(df))
```

```
## [1] 0
```

```
summary(df)
```

```
##    video_id         trending_date         title           channel_title
##  Length:40881       Length:40881       Length:40881       Length:40881
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##   category_id   publish_time           tags               views
##  Min.   : 1.0   Length:40881       Length:40881       Min.   :      733
##  1st Qu.:20.0   Class :character   Class :character   1st Qu.:   143902
##  Median :24.0   Mode  :character   Mode  :character   Median :   371204
##  Mean   :20.8                                         Mean   :  1147036
##  3rd Qu.:24.0                                         3rd Qu.:   963302
##  Max.   :43.0                                         Max.   :137843120
##      likes            dislikes       comment_count     thumbnail_link
##  Min.   :      0   Min.   :      0   Min.   :      0   Length:40881
##  1st Qu.:   2191   1st Qu.:     99   1st Qu.:    417   Class :character
##  Median :   8780   Median :    303   Median :   1301   Mode  :character
##  Mean   :  39583   Mean   :   2009   Mean   :   5043
##  3rd Qu.:  28717   3rd Qu.:    950   3rd Qu.:   3713
##  Max.   :5053338   Max.   :1602383   Max.   :1114800
##  comments_disabled  ratings_disabled   video_error_or_removed
##  Length:40881       Length:40881       Length:40881
##  Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character
##
##
##
##  description
##  Length:40881
##  Class :character
##  Mode  :character
##
##
##
```

```
colnames(df)
```

```
##  [1] "video_id"              "trending_date"         "title"
##  [4] "channel_title"         "category_id"           "publish_time"
##  [7] "tags"                  "views"                 "likes"
## [10] "dislikes"              "comment_count"         "thumbnail_link"
## [13] "comments_disabled"     "ratings_disabled"      "video_error_or_removed"
## [16] "description"
```

```
#data cleaning (removing non usable variables)
# and further cleaning with names and different datatype
colnames(df)[11]="comments"
df$comments_disabled <- as.logical(df$comments_disabled)
df$ratings_disabled <- as.logical(df$ratings_disabled)
df$video_error_or_removed <- as.logical(df$video_error_or_removed)

df$tags<-NULL
df$thumbnail_link<-NULL
df$description<-NULL

#working with time and getting them in correct format
df$trending_date<- format(as.Date(df$trending_date, '%y.%d.%m'), "%Y/%m/%d")
df$trending_date <-as.Date(df$trending_date, "%Y/%m/%d")
df$publish_time <- as.Date(df$publish_time, "%Y-%m-%d")



#
str(df)
```

```
## 'data.frame':    40881 obs. of  13 variables:
##  $ video_id              : chr  "n1WpP7iowLc" "0dBIkQ4Mz1M" "5qpjK5DgCt4" "d380meD0W0M"
...
##  $ trending_date         : Date, format: "2017-11-14" "2017-11-14" ...
##  $ title                 : chr  "Eminem - Walk On Water (Audio) ft. Beyoncé" "PLUSH - Bad
Unboxing Fan Mail" "Racist Superman | Rudy Mancuso, King Bach & Lele Pons" "I Dare You: GOING
BALD!?" ...
##  $ channel_title         : chr  "EminemVEVO" "iDubbbzTV" "Rudy Mancuso" "nigahiga" ...
##  $ category_id           : int  10 23 23 24 10 25 23 22 24 22 ...
##  $ publish_time          : Date, format: "2017-11-10" "2017-11-13" ...
##  $ views                 : int  17158579 1014651 3191434 2095828 33523622 1309699 2987945
748374 4477587 505161 ...
##  $ likes                 : int  787425 127794 146035 132239 1634130 103755 187464 57534 29
2837 4135 ...
##  $ dislikes              : int  43420 1688 5339 1989 21082 4613 9850 2967 4123 976 ...
##  $ comments              : int  125882 13030 8181 17518 85067 12143 26629 15959 36391 1484
...
##  $ comments_disabled     : logi  FALSE FALSE FALSE FALSE FALSE FALSE ...
##  $ ratings_disabled      : logi  FALSE FALSE FALSE FALSE FALSE FALSE ...
##  $ video_error_or_removed: logi  FALSE FALSE FALSE FALSE FALSE FALSE ...
```

```
dim(df)
```

```
## [1] 40881    13
```

```
nrow(df)
```

```
## [1] 40881
```

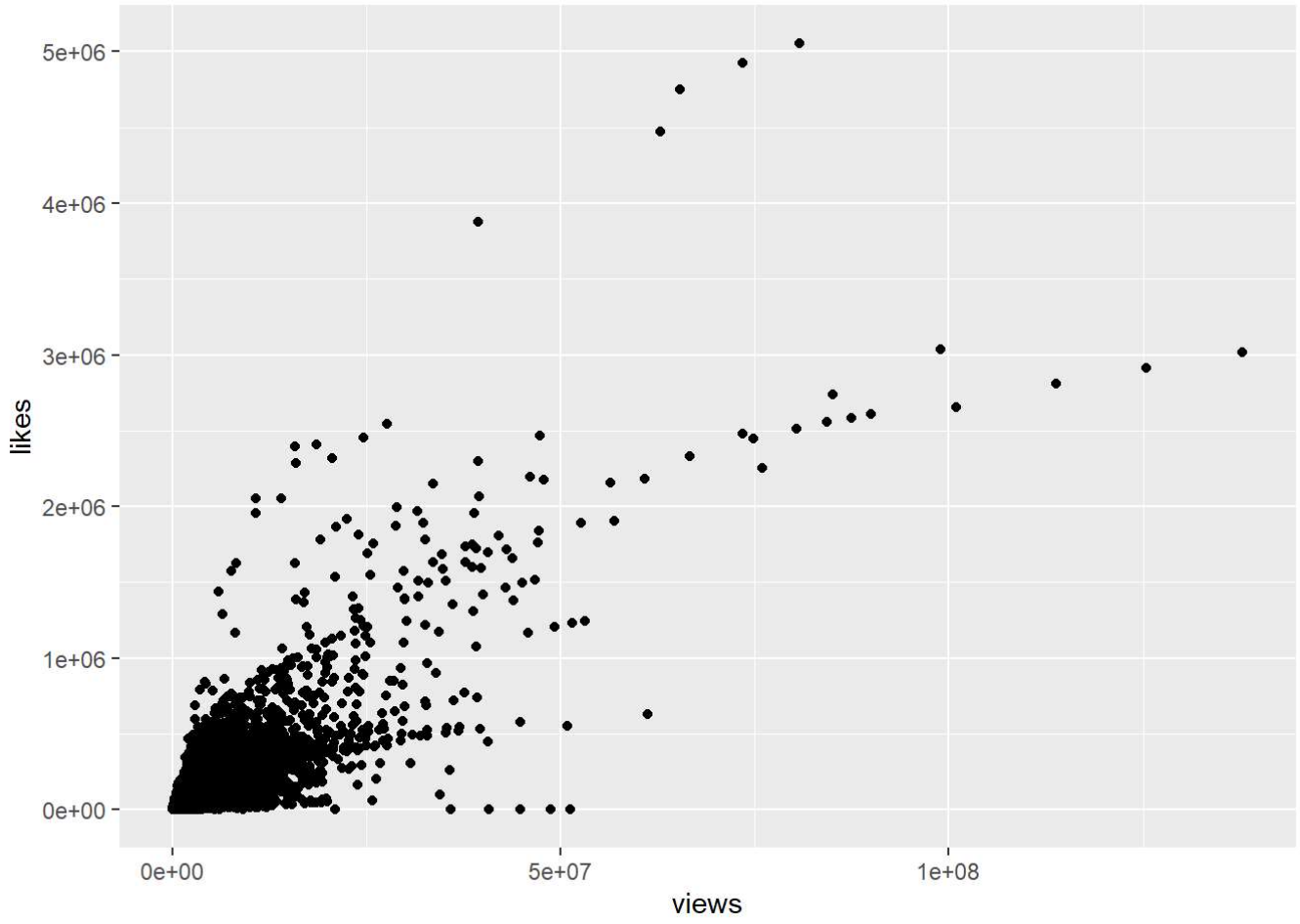
```
ncol(df)
```

```
## [1] 13
```

```
colnames(df)
```

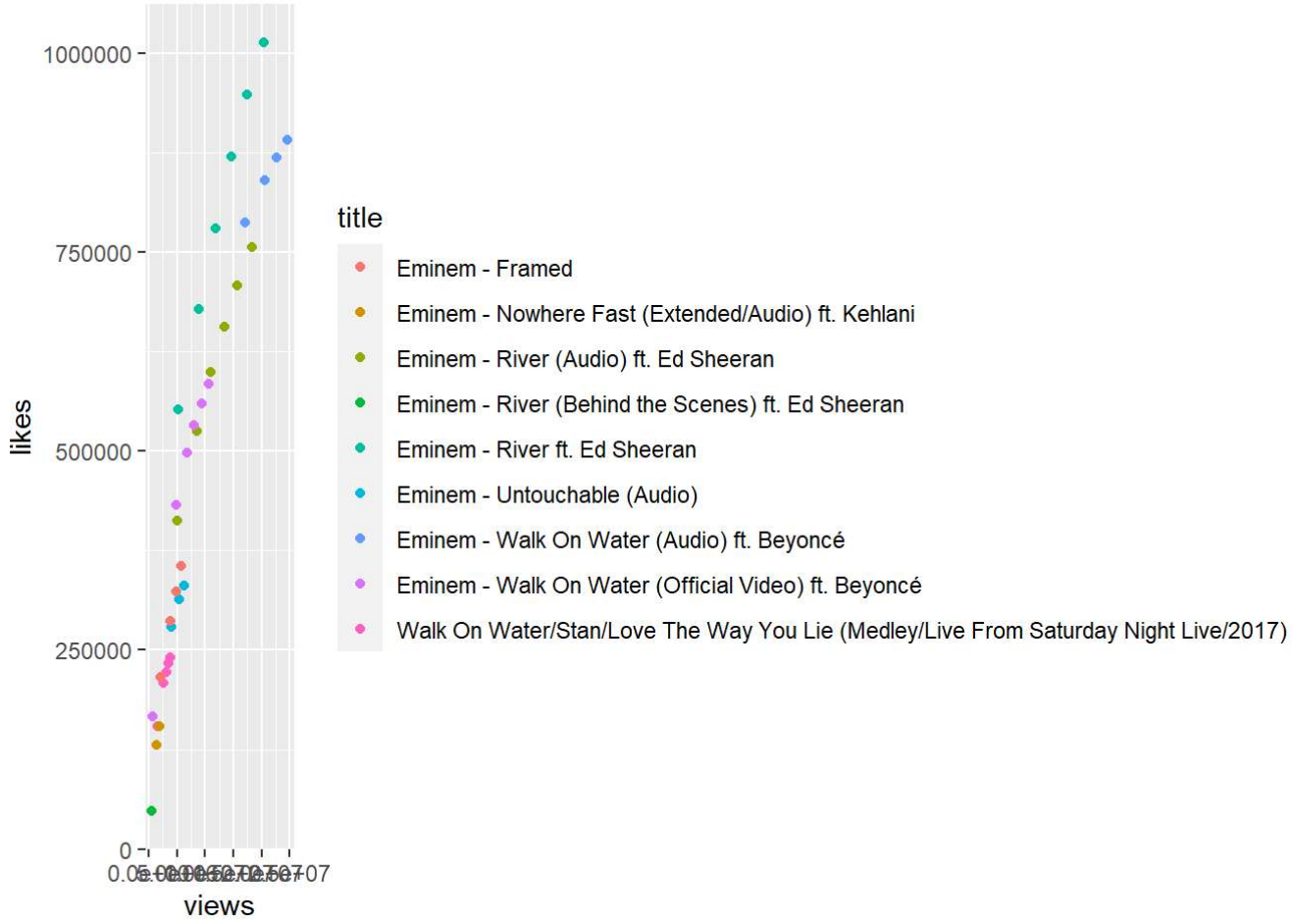
```
##  [1] "video_id"               "trending_date"          "title"
##  [4] "channel_title"          "category_id"            "publish_time"
##  [7] "views"                  "likes"                  "dislikes"
## [10] "comments"               "comments_disabled"      "ratings_disabled"
## [13] "video_error_or_removed"
```

```
#overall correlation
ggplot(df)+geom_point(mapping=aes(x=views,y=likes))
```




```
#subset of a channel
Em <- subset(df, channel_title=="EminemVEVO" )

#eminem songs
ggplot(data=Em)+
  geom_point(mapping=aes(x = views, y = likes, color = title))
```



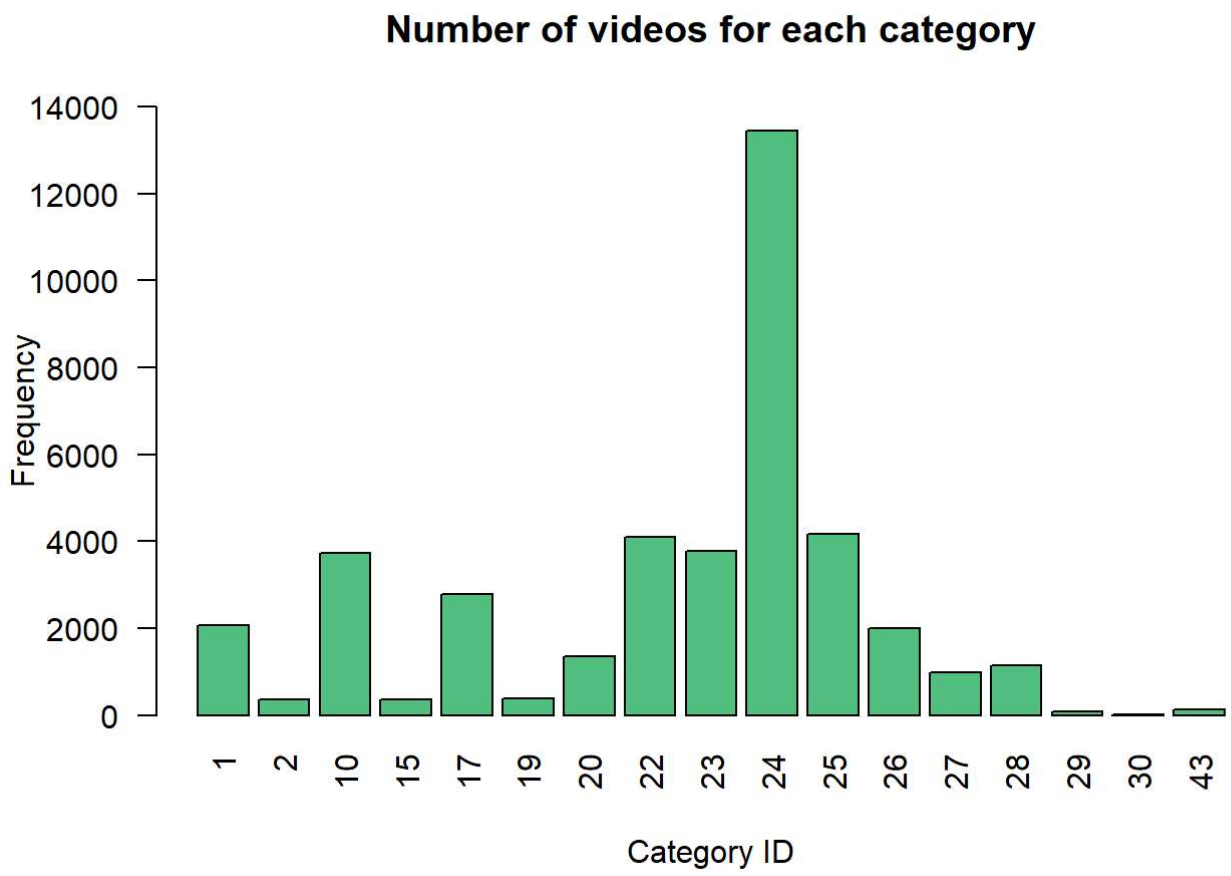

```
#getting latest rows for each
lat<-df %>%
  group_by(title) %>%
  slice(which.max(as.Date(trending_date, '%y/%m/%d')))

latt <- data.frame(lat)

#categories within youtube dataset
unique(df$category_id)
```

```
##  [1] 10 23 24 25 22 26  1 28 20 17 29 15 19  2 27 43 30
```

```
#frequency table for category
fqt <- table(df$category_id)
View(fqt)
barplot(fqt, ylim = c(0,14000), xlab = "Category ID", ylab = "Frequency", main="Number of vid
eos for each category", col="#52BE80", las=2)
```



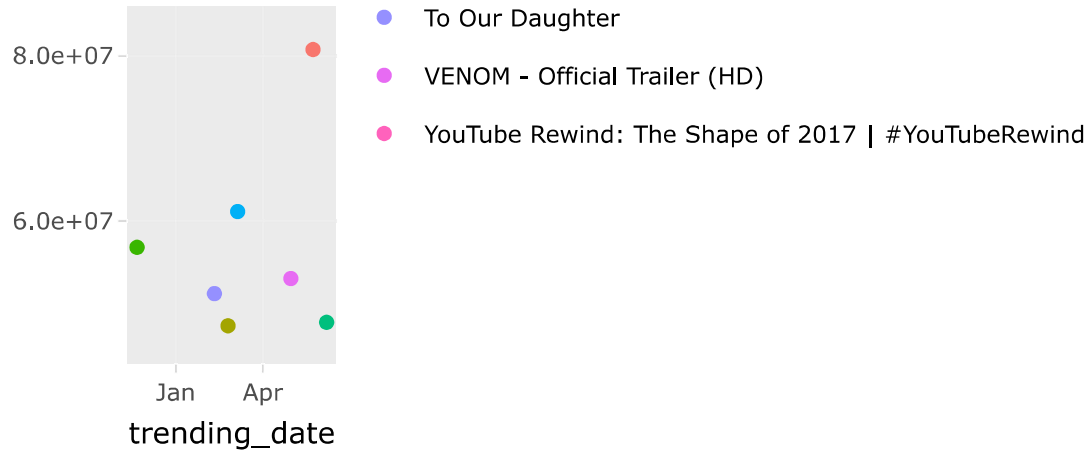

```
#getting the ones with most views
mv <- data.frame(lat[order(lat$views, decreasing = TRUE),])

#top 10 views
mvh <- head(mv, 10)

#plot for top views
plmv <- ggplot(data = mvh)+geom_point(mapping = aes(x=trending_date, y=views, text=views,colo
r = title))
```

```
## Warning: Ignoring unknown aesthetics: text
```

```
ggplotly(plmv, tooltip = "text")
```

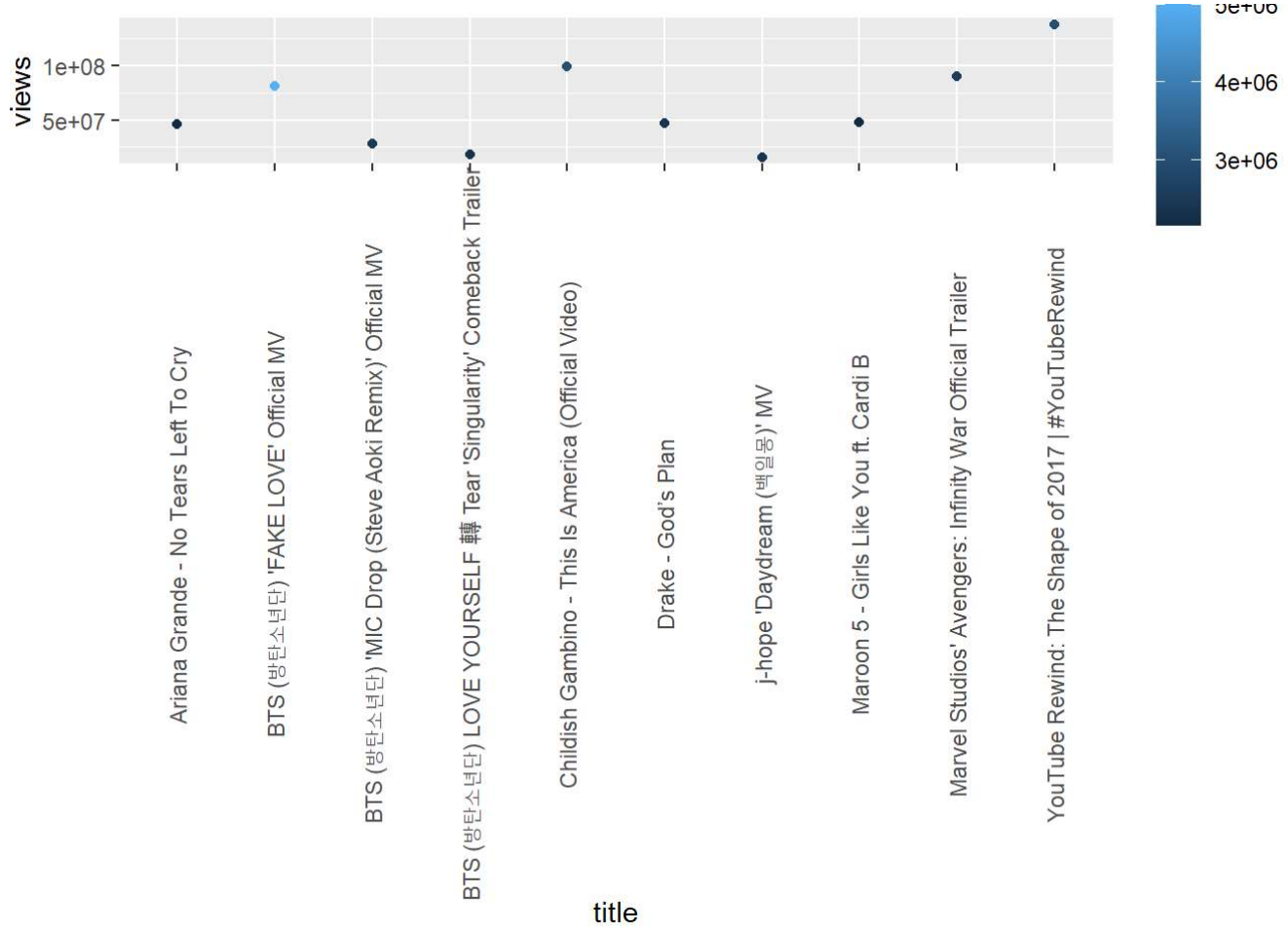



```
#getting the ones with most likes
ml <- lat[order(lat$likes, decreasing = TRUE),]
head(ml)
```

```
## # A tibble: 6 x 13
## # Groups:   title [6]
##   video_id  trending_date title    channel_title category_id publish_time  views
##   <chr>     <date>        <chr>    <chr>               <int> <date>        <int>
## 1 7C2z4Gqq~ 2018-05-23    BTS (<U+BC29>~ ibighit                10 2018-05-18   8.07e7
## 2 VYOjWnS4~ 2018-05-13    Childis~ ChildishGamb~          10 2018-05-06   9.89e7
## 3 FlsCjmMh~ 2017-12-13    YouTube~ YouTube Spot~          24 2017-12-06   1.38e8
## 4 6ZfuNTqb~ 2017-12-07    Marvel ~ Marvel Enter~          24 2017-11-29   8.99e7
## 5 kTlv5_Bs~ 2017-11-28    BTS (<U+BC29>~ ibighit                10 2017-11-24   2.77e7
## 6 xpVfcZ0Z~ 2018-02-24    Drake -~ DrakeVEVO              10 2018-02-17   4.74e7
## # ... with 6 more variables: likes <int>, dislikes <int>, comments <int>,
## #   comments_disabled <lgl>, ratings_disabled <lgl>,
## #   video_error_or_removed <lgl>
```

```
#top 10 likes
mln <- head(ml,10)

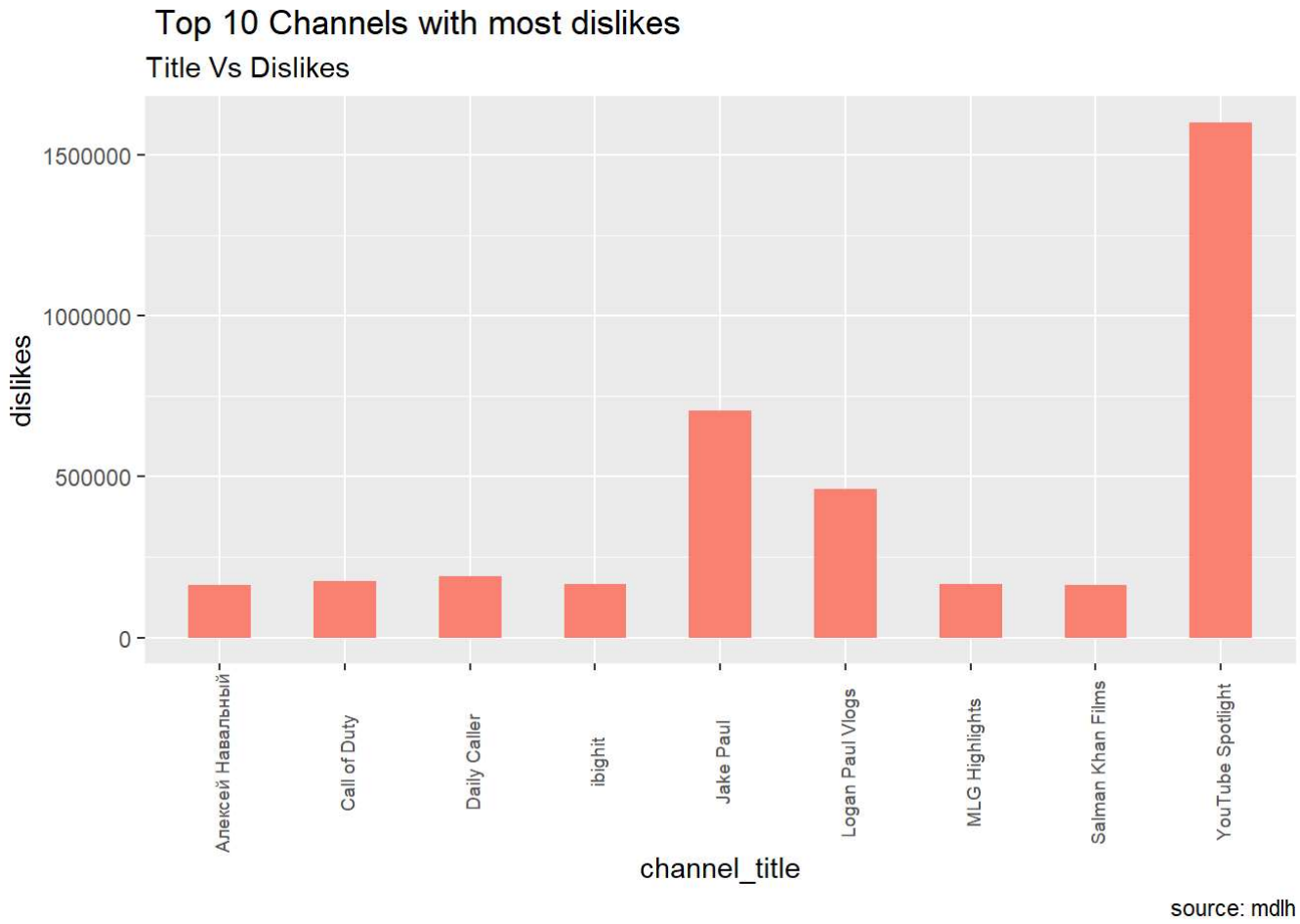
ggplot(data = mln)+geom_point(mapping = aes(x=title, y=views,color = likes))+theme(axis.text.
x = element_text(angle=90, vjust=0.5))
```




```
#getting the ones with most dislikes
mdl <- lat[order(lat$dislikes, decreasing = TRUE),]

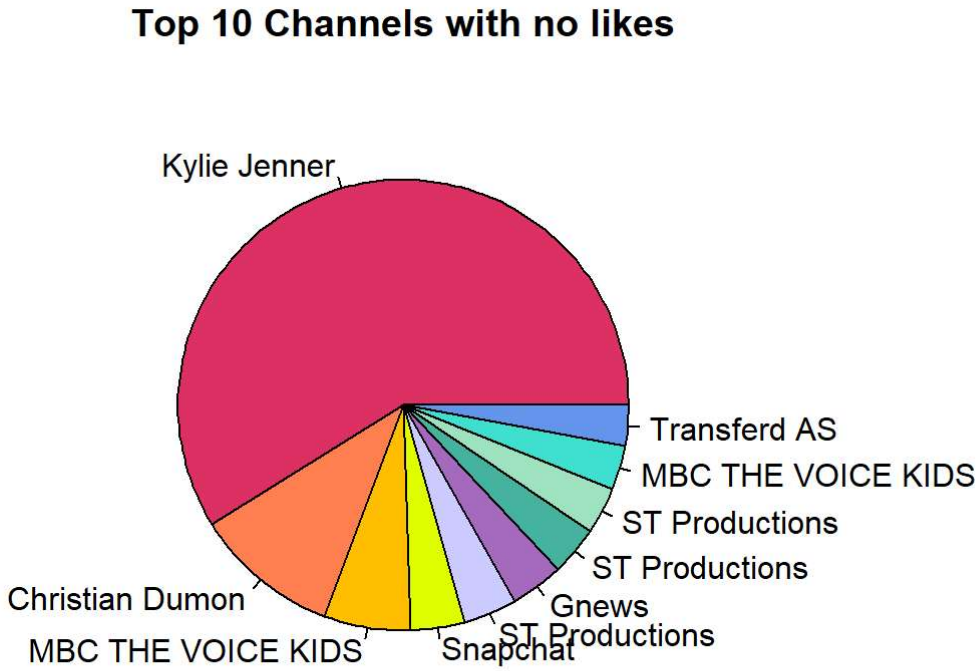
mdlh <- head(mdl, 10)

#vid dislikes
ggplot(mdlh, aes(x=channel_title, y=dislikes)) +
  geom_bar(stat="identity", width=.5, fill="#FA8072") +
  labs(title=" Top 10 Channels with most dislikes",
       subtitle="Title Vs Dislikes",
       caption="source: mdlh") +
  theme(axis.text.x = element_text(angle=90, vjust=0.6, size = 7))
```




```
#videos with no likes and rating disabled
nl <- lat[lat$likes==0,]
nl <- nl[order(nl$views,decreasing = TRUE),]
nlh = head(nl,10)

pie(nlh$views,nlh$channel_title,col = c("#DE3163","#FF7F50","#FFBF00","#DFFF00","#CCCCFF","#A
569BD","#45B39D","#9FE2BF","#40E0D0","#6495ED"), main = "Top 10 Channels with no likes")
```




```
#video with comments disabled
cd <- df[df$comments_disabled==TRUE,]
cdd <- table(cd$comments)
View(cdd)

#checking for videos with more than a million views
mvtable <- table(df$views>1000000)
View(mvtable)

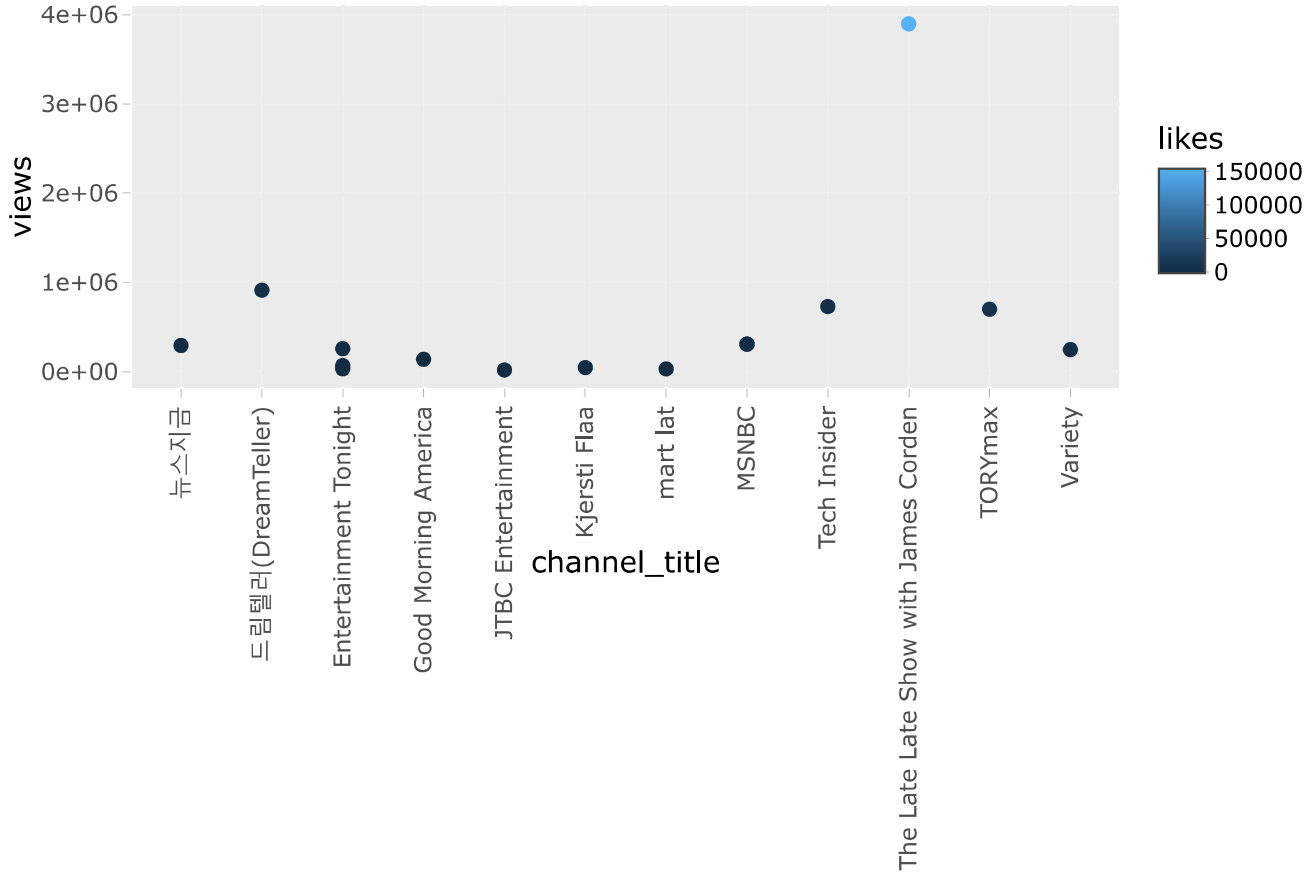
#checking for videos with more than a 100k likes
mltable <- table(df$likes>100000)
View(mltable)

#checking for videos with more than a 100k dislikes
mdltable <- table(df$dislikes>100000)
View(mdltable)

#plotting with four variables
topp <- head(lat,15)
top <- topp[order(topp$views,decreasing = TRUE),]
plmv <- ggplot(data = top)+geom_point(mapping = aes(x=channel_title, y=views, text=dislikes ,
color = likes))+theme(axis.text.x = element_text(angle = 90, vjust = 0.5, hjust=1))
```

```
## Warning: Ignoring unknown aesthetics: text
```

```
ggplotly(plmv, tooltip = "text")
```


views
4e+06
3e+06
2e+06
1e+06
0e+00
channel_title
뉴스지금
드림텔러(DreamTeller)
Entertainment Tonight
Good Morning America
JTBC Entertainment
Kjersti Flaa
mart lat
MSNBC
Tech Insider
The Late Late Show with James Corden
TORYmax
Variety
likes
150000
100000
50000
0

```
#### Milestone 2 ####

#Q1#
#a. Which category of videos has the highest number of total views?
#A company wants to place their entertainment ad on either music or entertainment
#video who has good reach but is confused which one would benefit him.
#to work on this we'll select a sample from the general population.

#we try to find the category with most overall views
group5 <- data.frame(Subject=df$video_id, pt=df$views, category= df$category_id)

ci <-group5 %>%
  group_by(category) %>%
  summarize(views = sum(pt))

ci <- ci[order(ci$views, decreasing = TRUE),]
View(ci)
#from the above we find cat 10 & 24 has most views

#Arranging the data
lat<-df %>%
  group_by(title) %>%
  slice(which.max(as.Date(trending_date, '%y/%m/%d')))
lat <- lat[order(lat$trending_date, decreasing = FALSE),]


#subset of 10 and 24
#we see that cat 24 has more number of videos that cat10, but is the reach the same?
cat10 <- subset(lat,category_id==10)
cat24 <- subset(lat,category_id==24)

sum(cat10$views)
```

```
## [1] 5025279764
```

```
sum(cat24$views)
```

```
## [1] 6071275605
```

```
blog1 <- subset(lat,category_id==10|category_id==24)

#Number of records each category has
blog1$category_id <- as.factor(blog1$category_id)

blog1$category_id
```

```
##    [1] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 24 10 10 24 10
##   [25] 10 24 24 24 24 24 24 24 24 24 24 24 10 24 10 24 10 24 24 24 24 10 24 24
##   [49] 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 10 10 24 24 24 10 24 24 24
##   [73] 24 10 10 24 10 24 24 10 24 24 10 24 24 10 10 24 24 24 24 24 24 24 24 24
##   [97] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24
##  [121] 10 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 10 24 24 10 24 10 24 10
##  [145] 24 24 24 24 24 24 24 24 24 10 24 10 24 10 24 24 24 24 24 24 24 24 24 24
##  [169] 24 10 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24
##  [193] 24 24 24 10 24 10 10 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24
##  [217] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 24 24 24 24 24 10 24 24
##  [241] 24 24 24 24 10 24 24 24 10 24 24 10 24 24 24 24 24 10 24 24 24 24 24 24
##  [265] 24 24 24 24 10 24 24 10 24 24 24 10 24 24 24 24 24 10 24 10 24 24 24 24
##  [289] 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 10 24 24 24 10 24
##  [313] 24 10 24 24 10 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24
##  [337] 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10
##  [361] 24 24 24 24 24 24 24 24 24 24 10 24 10 24 24 24 24 24 24 24 24 24 24 24
##  [385] 24 10 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10
##  [409] 10 24 10 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24
##  [433] 10 24 10 24 24 24 10 24 24 24 10 10 24 24 24 24 24 10 24 24 10 24 24 10
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##  [481] 10 24 24 10 24 10 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24
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##  [601] 24 24 24 24 24 24 24 24 24 10 24 24 24 10 24 24 24 10 24 24 24 24 24 24
##  [625] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
##  [649] 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 10 24 24 10 10 24 24 24 24
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##  [697] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24
##  [721] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
##  [745] 10 24 24 24 10 24 10 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24
##  [769] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 10 24 24 24 24 10 24
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##  [817] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 10 24 24 24 24 24 24
##  [841] 24 24 24 10 10 24 24 24 24 24 10 10 24 24 24 24 10 24 24 24 24 24 24 24
##  [865] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
##  [889] 24 24 24 10 24 24 24 10 24 24 24 24 24 24 24 24 24 10 24 24 10 24 24 24
##  [913] 24 10 24 24 24 10 10 24 24 24 24 24 24 24 24 24 10 24 24 24 10 24 24 24
##  [937] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 10 24 10 24
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##  [985] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 10 10 24 24
## [1009] 24 10 24 10 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 10 10 24 24
## [1033] 24 10 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 10 10 24 10
## [1057] 24 24 10 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [1081] 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 10 24 24 24
## [1105] 24 24 24 24 24 10 24 10 24 24 24 24 24 24 24 24 10 24 10 24 24 24 10 24
## [1129] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24
## [1153] 24 24 24 24 24 24 24 24 10 24 24 24 10 24 10 10 10 24 24 24 24 24 10 24
## [1177] 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [1201] 24 24 24 24 10 24 24 24 24 10 10 10 10 24 24 10 24 24 24 10 24 24 24 24
## [1225] 10 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 10 24 24 24 24 24
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## [1465] 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24
## [1489] 24 24 24 10 24 24 24 24 24 24 24 10 24 24 24 10 24 24 10 24 24 24 24 24
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## [1561] 24 24 10 24 10 24 24 24 24 10 24 24 24 24 24 24 24 10 10 24 24 24 10 24
## [1585] 10 24 24 24 24 10 24 24 24 24 24 24 24 10 24 24 10 24 24 10 24 24 24 24 24
## [1609] 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24
## [1633] 24 24 24 10 24 24 24 24 24 24 10 24 24 10 24 24 24 24 24 24 10 10 24 24 24
## [1657] 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10
## [1681] 24 24 24 24 24 24 24 24 24 10 10 24 24 24 24 24 24 10 24 10 10 24 24 24 24 24
## [1705] 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24
## [1729] 24 24 10 24 24 24 24 24 24 24 24 24 24 10 24 10 24 24 24 24 24 24 24 24 24 10
## [1753] 24 24 10 24 24 10 24 24 24 24 24 24 10 24 10 10 24 10 24 24 10 10 24 24 24
## [1777] 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24
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## [1921] 24 24 24 10 24 24 24 10 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 10
## [1945] 24 24 24 24 10 24 10 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24
## [1969] 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 10
## [1993] 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24
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## [2137] 24 10 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 10 24 10 10 24 24 24
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## [2473] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24
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## [2593] 24 10 24 24 24 24 24 24 24 10 24 24 24 24 24 10 24 24 24 24 24 24 24 24
## [2617] 24 10 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [2641] 24 24 24 10 10 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24
```

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## [2665] 24 10 24 24 24 24 24 10 24 24 24 24 10 24 10 24 24 24 24 24 24 24 10 24
## [2689] 24 24 24 24 24 24 24 10 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [2713] 24 24 24 24 24 10 24 24 24 24 24 24 24 24 10 24 10 10 24 24 24 24 24 24
## [2737] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 10 10 24 10 24 10 10
## [2761] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 10 24 10 10 24 24
## [2785] 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 10 24 24 24
## [2809] 24 24 24 24 10 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [2833] 10 24 24 24 24 24 10 24 24 24 24 24 24 10 24 24 24 10 10 24 24 24 24 10
## [2857] 10 24 10 10 24 24 24 24 10 10 24 24 24 24 24 10 24 24 24 24 24 10 24 24
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## [2929] 24 24 10 24 24 10 24 24 10 10 10 24 24 24 24 24 24 10 24 10 10 10 24 24
## [2953] 24 24 24 24 24 10 24 24 24 24 10 24 24 24 24 24 10 24 10 10 24 24 24 24
## [2977] 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 10 24 24 10 10 24 24 24 24 24
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## [3217] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 10 24
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## [3265] 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 24 24 24
## [3289] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 10 10 24 10 24 10 24 24 24
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## [3433] 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 24 24 24 24
## [3457] 24 10 24 10 24 24 24 24 24 24 24 10 24 24 24 10 24 10 10 10 24 24 24 10
## [3481] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [3505] 10 24 24 24 10 24 24 24 24 10 10 24 24 24 24 24 10 24 24 24 24 24 10 10
## [3529] 24 24 24 24 10 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24
## [3553] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 10 24 10 24 24 24 24 24 24 24 24
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## [3601] 24 24 24 24 24 10 24 24 24 10 10 24 24 24 24 24 24 24 24 24 10 24 24 24
## [3625] 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [3649] 10 24 10 24 24 24 24 24 24 24 24 10 24 24 24 24 10 10 24 24 24 24 24 24
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## [3721] 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24
## [3745] 24 24 24 24 24 24 24 24 24 24 10 24 24 24 10 24 24 10 24 24 24 24 24 24 24
## [3769] 24 24 10 10 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24
## [3793] 24 24 24 24 24 10 24 24 24 10 24 24 24 10 10 10 24 24 24 24 24 24 24 24
## [3817] 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 24 10
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## [3961] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24 24 24 24 24 24 10 24
## [3985] 10 24 10 10 24 24 24 24 10 24 24 24 10 24 24 24 24 24 24 24 24 24 24 24 24
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## [4081] 10 24 24 24 10 10 24 24 24 10 10 10 10 24 24 24 24 24 24 24 24 24 24 24
## [4105] 24 24 10 24 24 10 10 10 10 10 10 24 10 24 24 24 10 24 24 24 10 24 24 24
## [4129] 10 10 24 24 10 24 24 24 10 10 24 24 24 24 24 10 10 24 24 24 24 10 24 24
## [4153] 24 10 24 24 24 24 24 24 24 24 24 10 24 24 24 24 10 10 24 24 24 10 24 24
## [4177] 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 10 24 24 24 24
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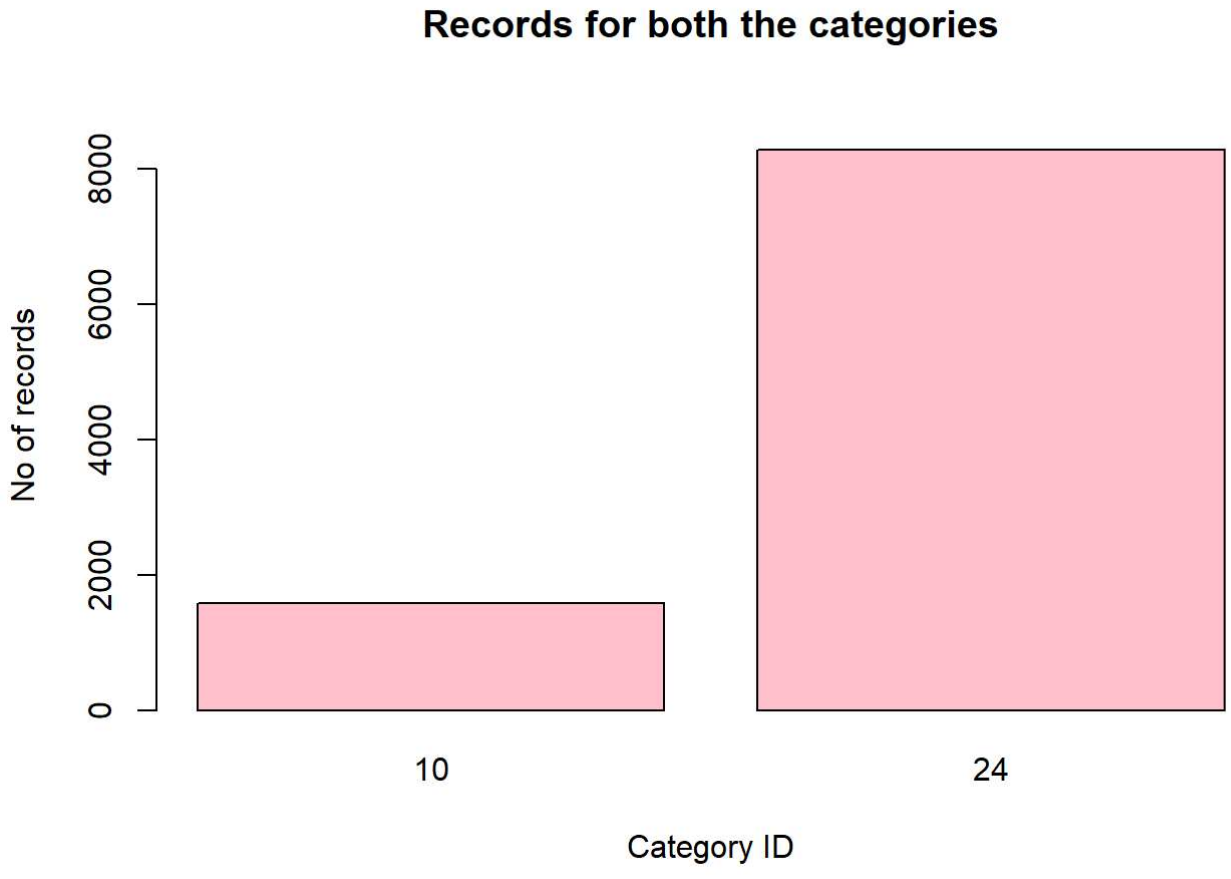
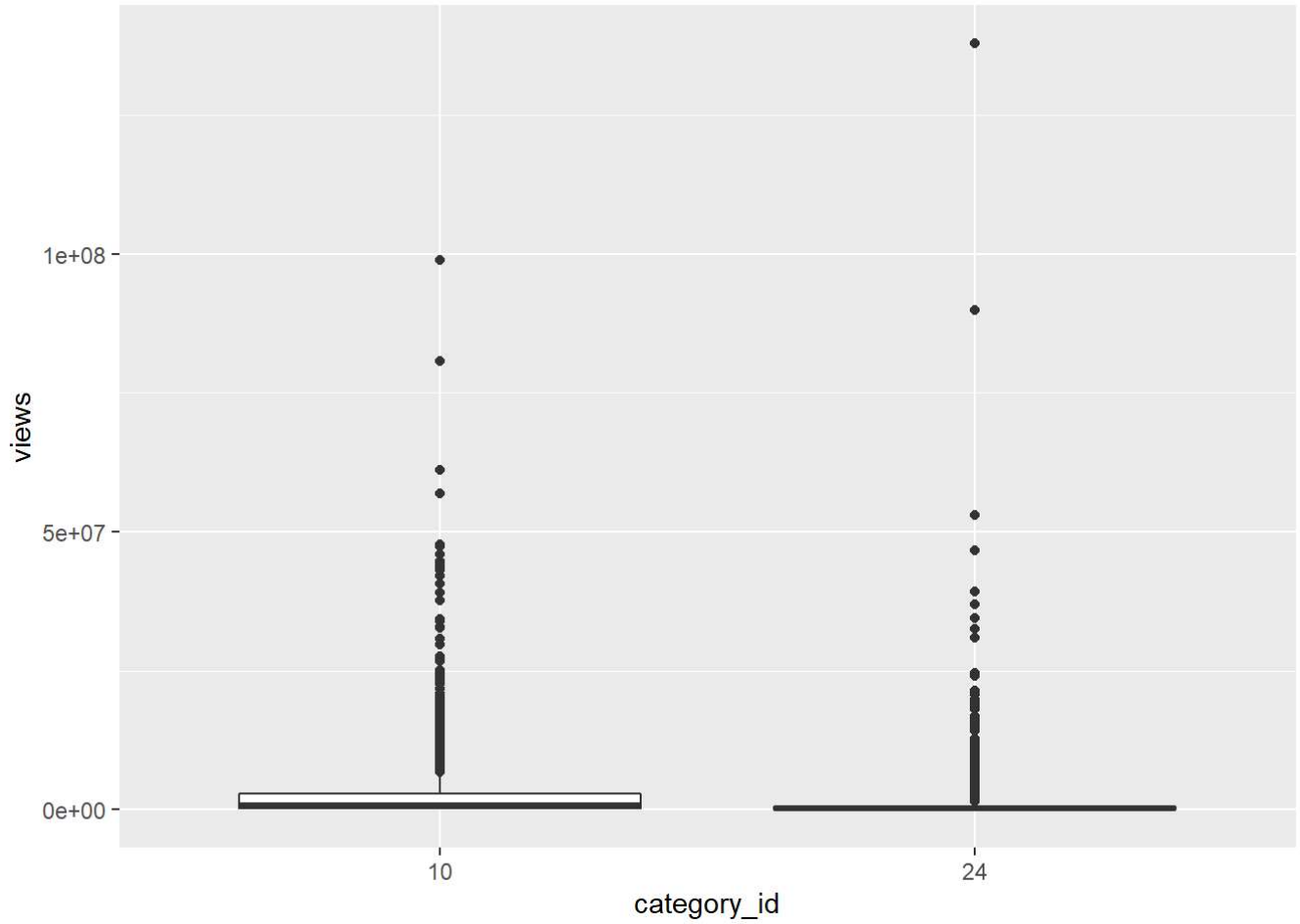
## Levels: 10 24
```

```
we <- table(blog1$category_id)
barplot(we, xlab="Category ID", ylab="No of records", main="Records for both the categories",
ylim = c(0,9000), col = "pink")
```



```
#boxplot for category
ggplot(blog1, aes(x=category_id, y=views)) +
  geom_boxplot()
```




```
#hypothesis
#test for cat10
shapiro.test(cat10$views)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  cat10$views
## W = 0.44914, p-value < 2.2e-16
```

```
#performing t test
t.test(cat10$views,cat24$views)
```

```
##
##  Welch Two Sample t-test
##
## data:  cat10$views and cat24$views
## t = 13.988, df = 1668.1, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  2096207 2779941
## sample estimates:
## mean of x mean of y
## 3170523.5  732449.7
```

```
##random question#
#going for timebased
#youtube wants to know the time based views for both the categories
ct2 <- cat24[order(cat24$views, decreasing = TRUE),]
ct1 <- cat10[order(cat10$views, decreasing = FALSE),]

#creating time based graph for highest views in cat 24
ct2 %>%
  ggplot( aes(x=trending_date, y=views)) +
  geom_line(color="#69b3a2") +
  ylim(0,138000000) +
  annotate(geom="text", x=as.Date("2017-12-13"), y=137943120,
           label="Highest views was around 137 million") +
  annotate(geom="point", x=as.Date("2017-12-13"), y=137843120, size=10, shape=21, fill="trans
parent") +
  geom_hline(yintercept=50000000, color="orange", size=.5) +
  theme_ipsum()
```

```
## Warning in grid.Call(C_stringMetric, as.graphicsAnnot(x$label)): font family not
## found in Windows font database
```

```
## Warning in grid.Call(C_stringMetric, as.graphicsAnnot(x$label)): font family not
## found in Windows font database
```

```
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

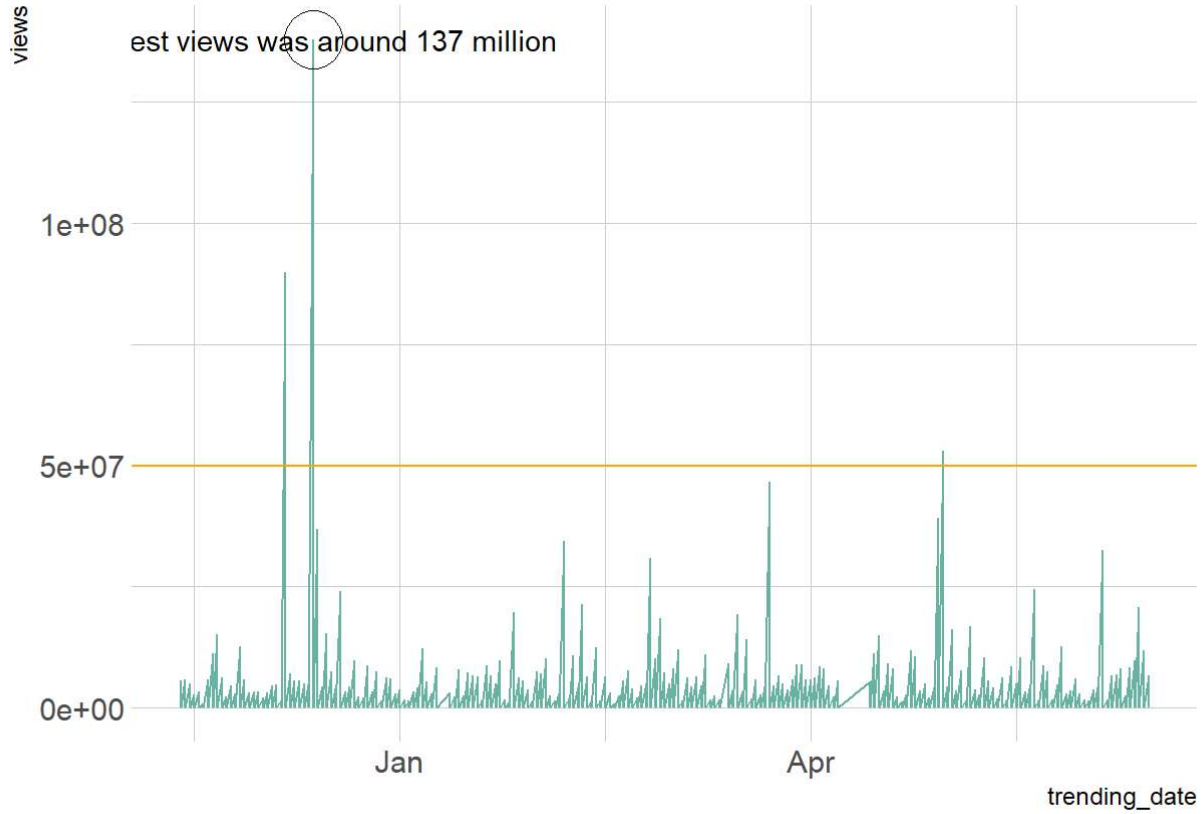
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database
```

```
## Warning in grid.Call.graphics(C_text, as.graphicsAnnot(x$label), x$x, x$y, :
## font family not found in Windows font database
```



```
#creating time based graph for highest views in cat 10
ct1 %>%
  ggplot( aes(x=trending_date, y=views)) +
  geom_line(color="#69b3a2") +
  ylim(0,100000000) +
  annotate(geom="text", x=as.Date("2018-05-18"), y=98938809,
           label="Highest views was around 980 million") +
  annotate(geom="point", x=as.Date("2018-05-15"), y=98938809, size=10, shape=21, fill="transp
arent") +
  geom_hline(yintercept=48000000, color="orange", size=.5) +
  theme_ipsum()
```

```
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database
```

```
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

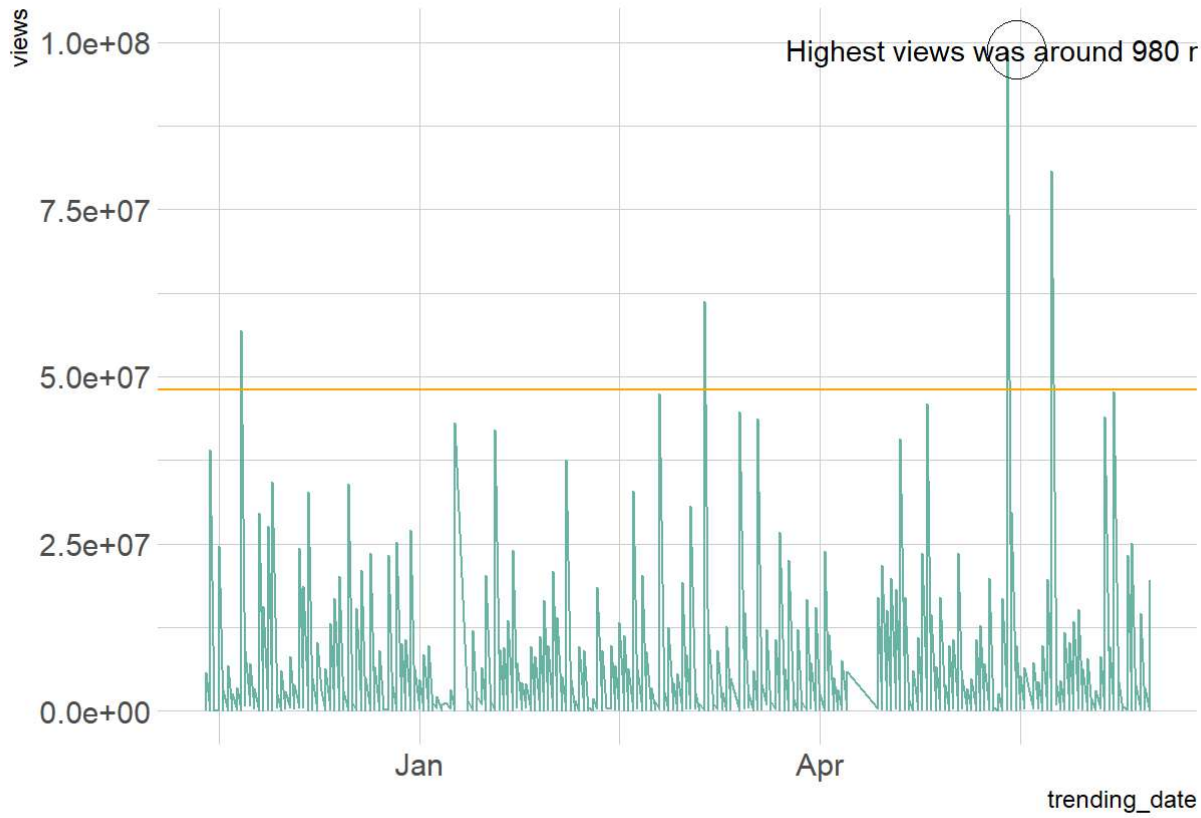
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database

## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x, x$y, : font
## family not found in Windows font database
```

```
## Warning in grid.Call.graphics(C_text, as.graphicsAnnot(x$label), x$x, x$y, :
## font family not found in Windows font database
```




```
#performing two-sample t-test
t.test(ct2$views,ct1$views)
```

```
##
##  Welch Two Sample t-test
##
## data:  ct2$views and ct1$views
## t = -13.988, df = 1668.1, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2779941 -2096207
## sample estimates:
## mean of x mean of y
##  732449.7 3170523.5
```

```
#Q2#
#which is the most disliked video ? As a company would select the most liked,
#they would like to know disliked as well so as to stay away from it.

dislike <- df[(df$dislikes),]

#checking for disliked videos
dislike <- dislike[order(dislike$dislikes, decreasing = TRUE),]

#specifying the data
group <- data.frame(Subject=dislike$video_id, pt=dislike$dislikes, title= dislike$title)

#extracting latest rows based on video title
zz <-group %>%
  group_by(title) %>%
  summarize(dislikes = max(pt))

#arranging in descending order
dis <- zz[order(zz$dislikes, decreasing = TRUE),]

#top 10 overall most dislike in 17 & 18
d1 <- head(dis,10)

#pie chart with top 10 disliked vids
ggplot(d1, aes(x = "", y = dislikes, fill = title)) +
  geom_col(color = "black") +
  geom_text(aes(label = dislikes),
            position = position_stack(vjust = 0.5)) +
  coord_polar(theta = "y")
```


```
#performing one sample t test
t.test(dis$dislikes, mu= 2000, alternative = "less")
```

```
##
##  One Sample t-test
##
## data:  dis$dislikes
## t = -0.16612, df = 4337, p-value = 0.434
## alternative hypothesis: true mean is less than 2000
## 95 percent confidence interval:
##      -Inf 2592.417
## sample estimates:
## mean of x
##  1933.466
```

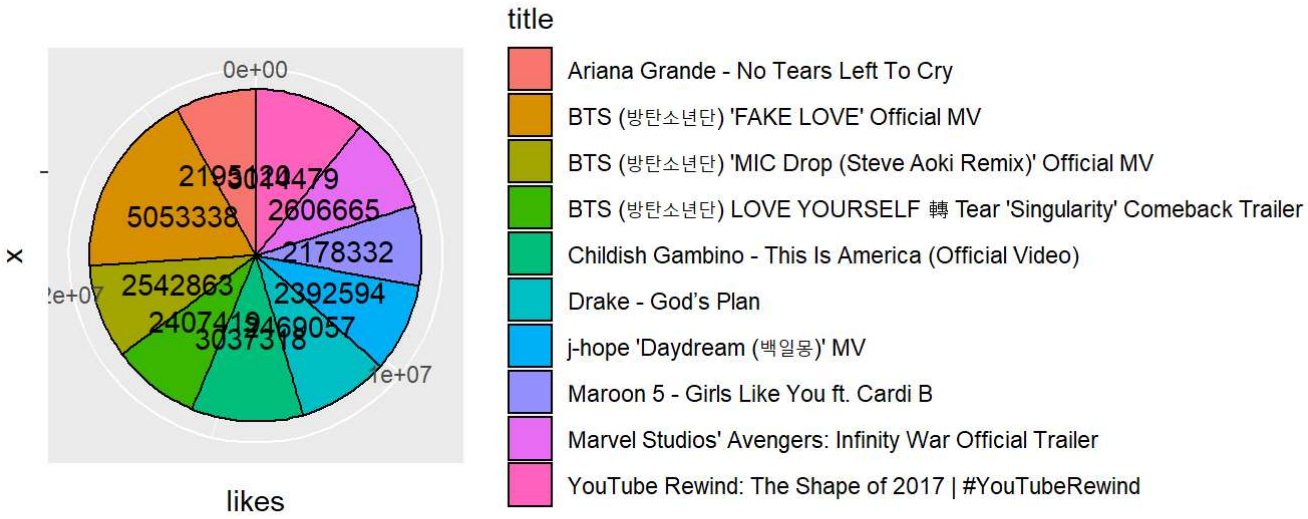
```
#Liked videos
group1 <- data.frame(Subject=df$video_id, pt=df$likes, title= df$title)

#extracting latest rows based on video title
zaz <-group1 %>%
  group_by(title) %>%
  summarize(likes = max(pt))

#arranging them in descending order
lik <- zaz[order(zaz$likes, decreasing = TRUE),]

#top 10 with most likes
df10 <- head(lik,10)

#piechart for the likes
ggplot(df10, aes(x = "", y = likes, fill = title)) +
  geom_col(color = "black") +
  geom_text(aes(label = likes),
            position = position_stack(vjust = 0.5)) +
  coord_polar(theta = "y")
```




```
#t test for likes
t.test(df$likes, mu = 35000, alternative = "less")
```

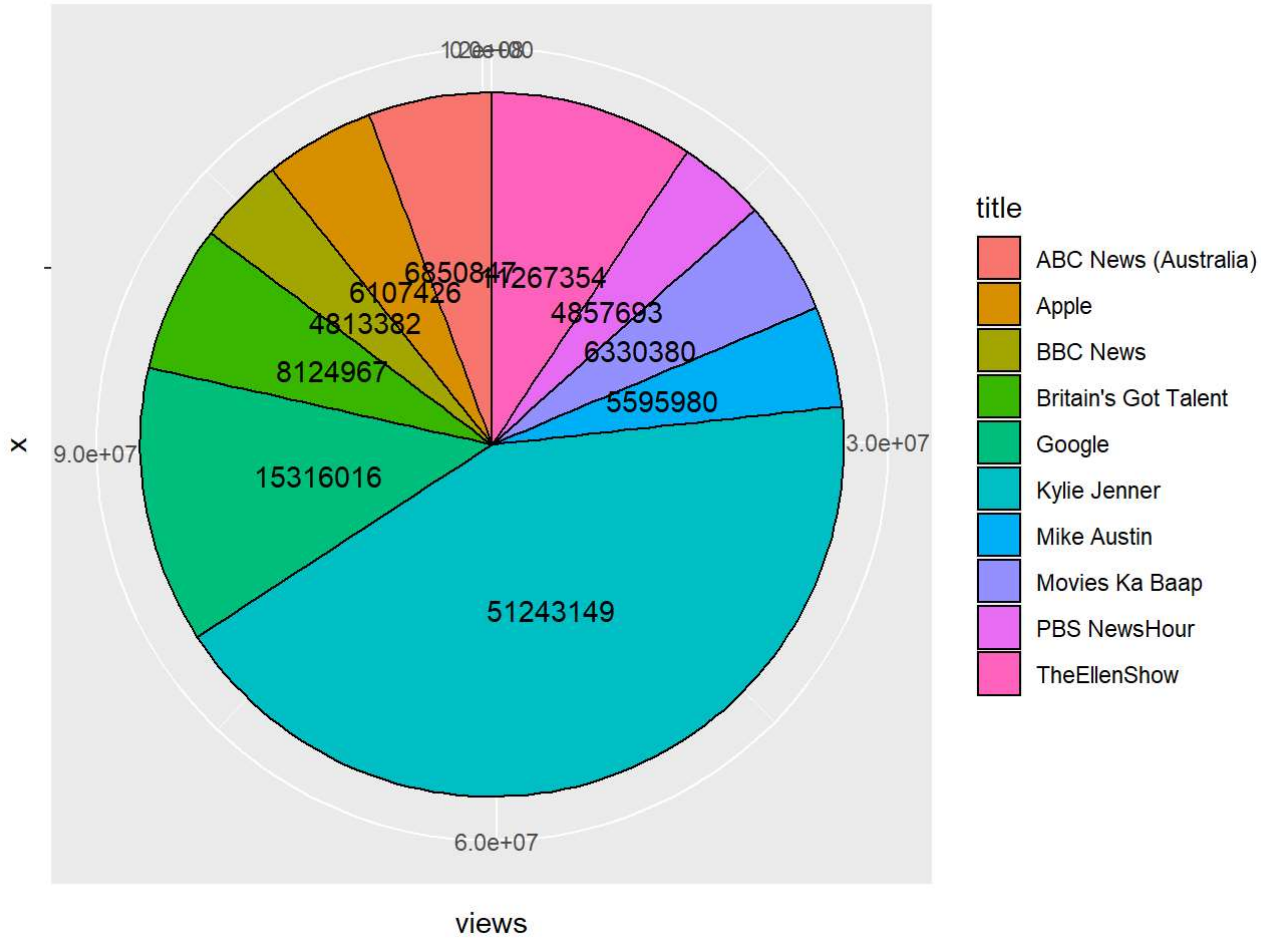
```
##
##  One Sample t-test
##
## data:  df$likes
## t = 6.983, df = 40880, p-value = 1
## alternative hypothesis: true mean is less than 35000
## 95 percent confidence interval:
##      -Inf 40662.16
## sample estimates:
## mean of x
##  39582.69
```

```
#Q3#
#videos where crowd was engaging (more comments)Youtube wants to know which video
#has more comments to put up survey
#find max in comments and compared between top 2
#comments
#comments closed person wants to know which video has their comments closed
# and does it affect the views
cx <- df[(df$comments_disabled==TRUE),]
group3 <- data.frame(Subject=cx$video_id, pt=cx$views, title= cx$channel_title)

#getting latest rows based on channel title
cx1 <-group3 %>%
  group_by(title) %>%
  summarize(views = max(pt))
#arranging them in descending order
cx2 <- cx1[order(cx1$views, decreasing = TRUE),]

#getting top 10 rows with most views
cx2_10 <- head(cx2,10)

ggplot(cx2_10, aes(x = "", y = views, fill = title)) +
  geom_col(color = "black") +
  geom_text(aes(label = views),
            position = position_stack(vjust = 0.5)) +
  coord_polar(theta = "y")
```




```
#shapiro 2 for normality
shapiro.test(cx$likes)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  cx$likes
## W = 0.38834, p-value < 2.2e-16
```

```
#we run t test to see whether there is a similarity between the views and dislikes
#since the comments are closed.
t.test(cx$views,cx$likes)
```

```
##
##  Welch Two Sample t-test
##
## data:  cx$views and cx$likes
## t = 6.8945, df = 582.09, p-value = 1.411e-11
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   899358.6 1615883.9
## sample estimates:
##  mean of x  mean of y
## 1271768.61   14147.37
```

```
#we see even though they have comments blocked some of the videos have over 100
#million views while other has around 500 mil

####Milestone 3####

#2018 first five months
dd <- df[df$trending_date >= as.Date("180101", "%y%m%d") & df$trending_date <= as.Date("18053
1", "%y%m%d"), ]

#category 10 data
cat10 <- subset(dd, category_id == 10)

#category 10 data in descending order
cat10d <- cat10[order(cat10$likes, decreasing = TRUE),]


#extracting latest rows based on video title
categ10<-cat10d %>% slice_rows("title") %>% dmap(max)

#showcasing needed data
categ10$video_id <- NULL
categ10$publish_time <- NULL
categ10$ratings_disabled <- NULL
categ10$video_error_or_removed <- NULL
categ10$comments_disabled <- NULL
categ10$trending_date <- NULL

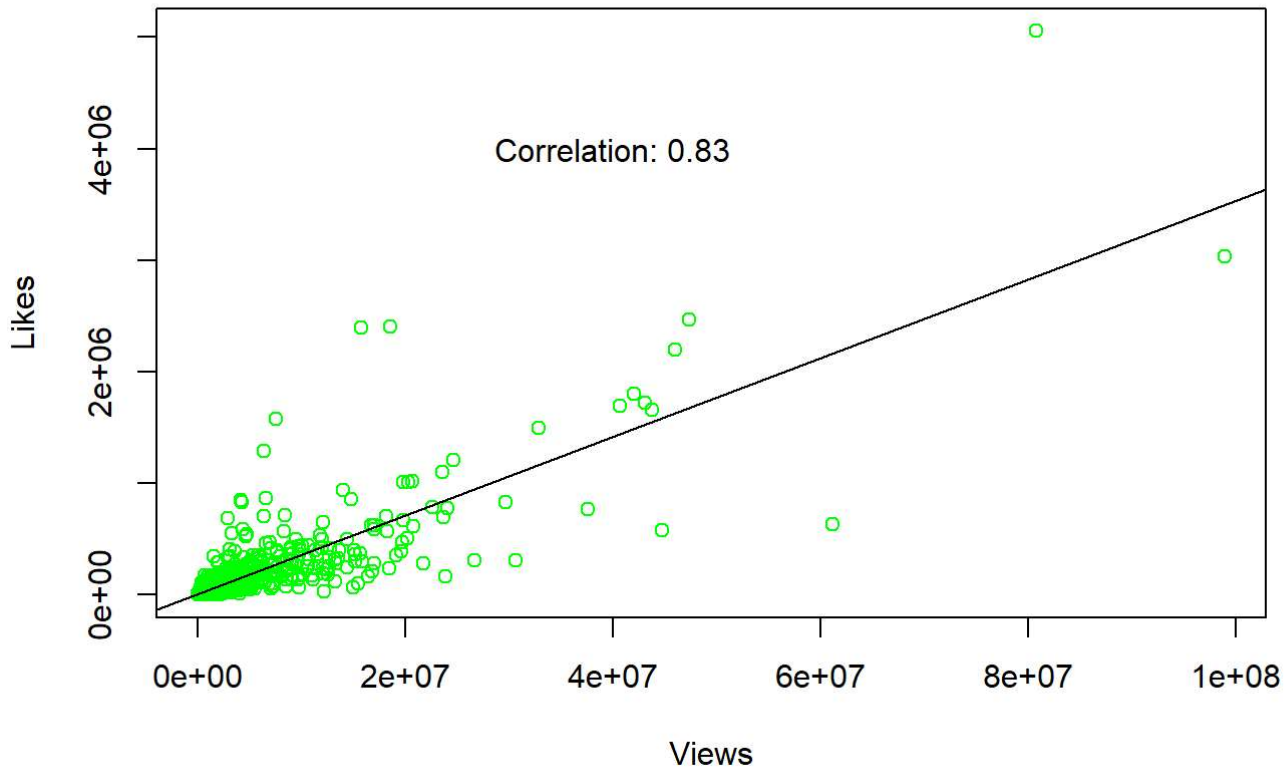
#descriptive statistics of views and likes
summary(categ10$views)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
##     3201   337814   935232  3053617  2778062 98938809
```

```
summary(categ10$likes)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##       0   10367   38067  115604  106947 5053338
```

```
#regression plot
plot(categ10$views,categ10$likes,col="green", xlab = "Views", ylab="Likes")
abline(lm(data=categ10, likes~views))
text(paste("Correlation:", round(cor(categ10$views, categ10$likes), 2)), x = 4e+07, y = 4e+06
)
```



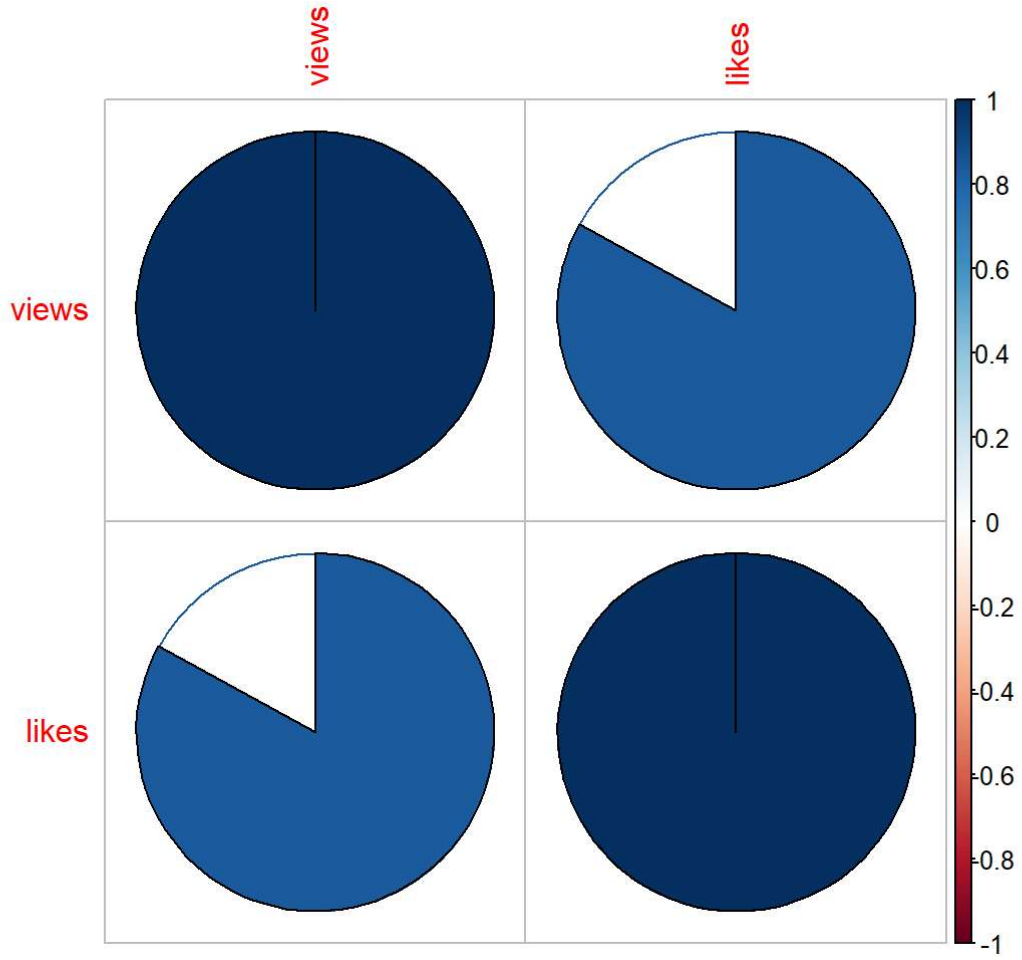

```
#Linear regression equation
lrvl <- lm(data=categ10, likes~views)
summary(lrvl)
```

```
##
## Call:
## lm(formula = likes ~ views, data = categ10)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1534725   -21460    -7531    12649  2199496
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 7.969e+03  5.174e+03    1.54    0.124
## views       3.525e-02  6.990e-04   50.43   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 160500 on 1158 degrees of freedom
## Multiple R-squared:  0.6871, Adjusted R-squared:  0.6868
## F-statistic:  2543 on 1 and 1158 DF,  p-value: < 2.2e-16
```

```
#finding correlation
views<- categ10$views
likes <- categ10$likes
vl <- data.frame(views,likes)
vl <- round(cor(vl),2)
vl
```

```
##       views likes
## views  1.00  0.83
## likes  0.83  1.00
```

```
#finding correlation plot
corrplot(vl,method = "pie")
```




```
#Q. youtube says that if you were to upload videos under this cat10 then you would
#get more than million views

#hypothesis test
summary(categ10$views)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
##     3201   337814   935232  3053617  2778062 98938809
```

```
t.test(categ10$likes, mu = 40000, alternative = "greater")
```

```
##
##  One Sample t-test
##
## data:  categ10$likes
## t = 8.9774, df = 1159, p-value < 2.2e-16
## alternative hypothesis: true mean is greater than 40000
## 95 percent confidence interval:
##  101740.7      Inf
## sample estimates:
## mean of x
##  115604.1
```

```
lml <- lm(data=categ10, likes~views)
summary(lml)
```

```
##
## Call:
## lm(formula = likes ~ views, data = categ10)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1534725   -21460    -7531    12649  2199496
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 7.969e+03  5.174e+03    1.54    0.124
## views       3.525e-02  6.990e-04   50.43   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 160500 on 1158 degrees of freedom
## Multiple R-squared:  0.6871, Adjusted R-squared:  0.6868
## F-statistic:  2543 on 1 and 1158 DF,  p-value: < 2.2e-16
```

```
#Q. correlation between views and dislikes (dependent is dislikes, independent is views)
dis <- categ10[order(categ10$dislikes, decreasing = TRUE),]


#dislikes statistics
summary(categ10$views)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
##     3201   337814   935232  3053617  2778062 98938809
```

```
summary(categ10$dislikes)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
##      0.0    246.2    843.0   4587.0   2913.8 165854.0
```

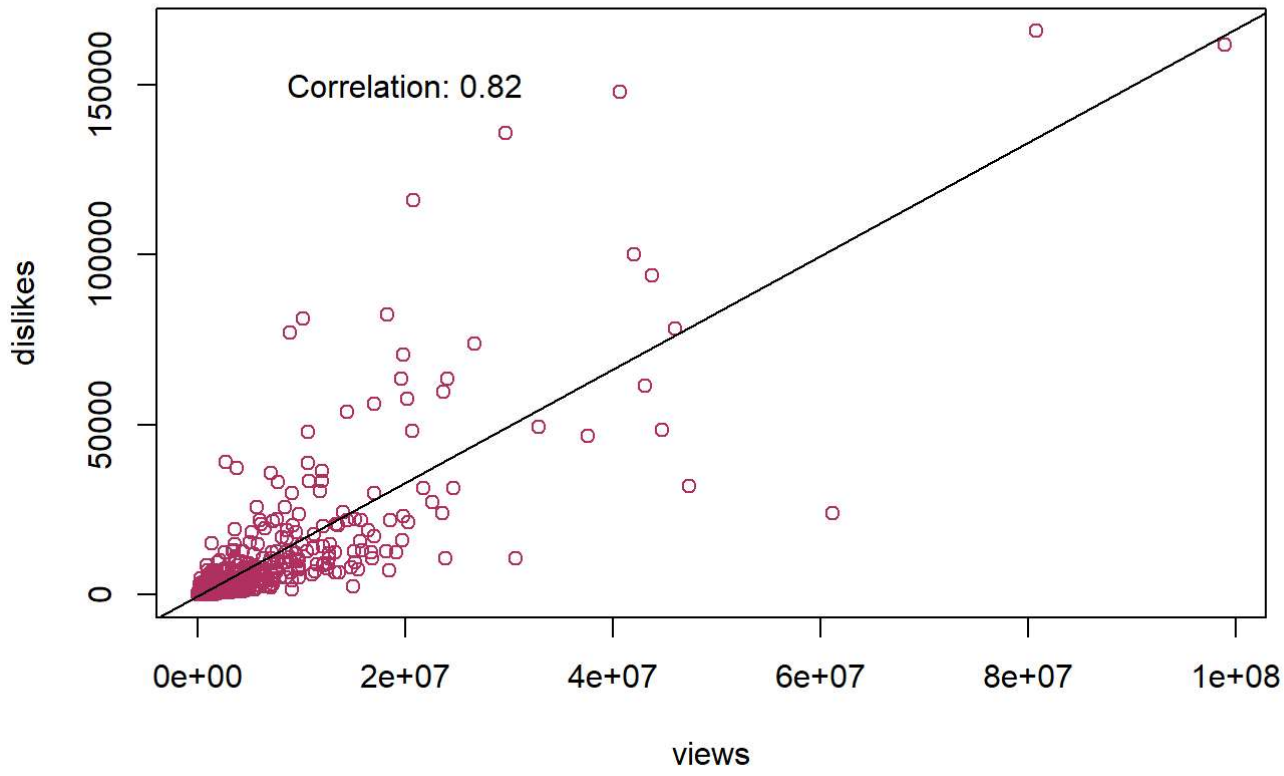
```
#hypo test one sample
t.test(categ10$dislikes, mu=5000, alternative="greater")
```

```
##
##  One Sample t-test
##
## data:  categ10$dislikes
## t = -1.0255, df = 1159, p-value = 0.8473
## alternative hypothesis: true mean is greater than 5000
## 95 percent confidence interval:
##  3924.133      Inf
## sample estimates:
## mean of x
##   4587.03
```

```
#difference in likes and difference, two sample test
t.test(categ10$likes,categ10$dislikes)
```

```
##
##  Welch Two Sample t-test
##
## data:  categ10$likes and categ10$dislikes
## t = 13.167, df = 1164.3, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   94474.92 127559.24
## sample estimates:
## mean of x mean of y
## 115604.11   4587.03
```

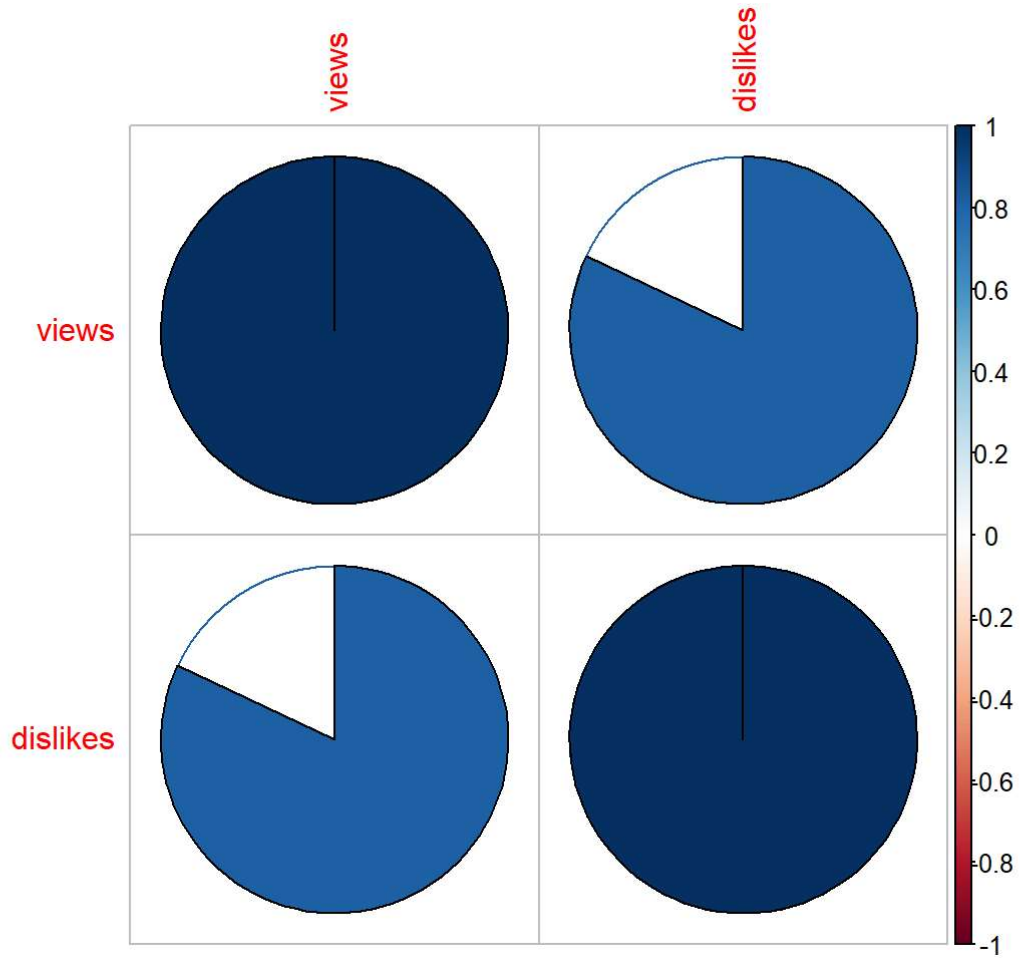
```
#regression plot
plot(dis$views,dis$dislikes,col="maroon", xlab="views", ylab="dislikes")
abline(lm(data = dis,dislikes~views))
text(paste("Correlation:", round(cor(categ10$views, categ10$dislikes), 2)), x = 2e+07, y = 15
0000)
```




```
#finding correlation
views<- categ10$views
dislikes <- categ10$dislikes
vd <- data.frame(views,dislikes)
vd <- round(cor(vd),2)
vd
```

```
##          views dislikes
## views     1.00     0.82
## dislikes  0.82     1.00
```

```
#correlation plot
corrplot(vd,method = "pie")
```




```
#correlation coefficient
lindis <- lm(data = categ10,dislikes~views)
summary(lindis) #0.0016, -390
```

```
##
## Call:
## lm(formula = dislikes ~ views, data = categ10)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -77750   -973     97    469  86921
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.109e+02  2.524e+02  -2.024   0.0432 *
## views        1.669e-03  3.411e-05  48.948   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7832 on 1158 degrees of freedom
## Multiple R-squared:  0.6742, Adjusted R-squared:  0.6739
## F-statistic:  2396 on 1 and 1158 DF,  p-value: < 2.2e-16
```