EDA LA - 1 "Netflix Titles" Group 15: B Sai Narsa Reddy, Pranava Aithal K S

Github: https://github.com/PranavaAithal/EDA-LA #NT #Part 1 #In this part, we are loading the necessary libraries (readr, dplyr, ggplot2, e1071, and moments) to work with the data. Then, we are reading a CSV file named "netflix_titles.csv" from the specified path and assigning it to the dataframe nt. Finally, we are viewing the dataframe nt using the View() function.

```
library(readr)
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(ggplot2)
library(e1071)
library(moments)
##
## Attaching package: 'moments'
## The following objects are masked from 'package:e1071':
##
##
      kurtosis, moment, skewness
nt <- read_csv("C:/Users/prana/OneDrive/Desktop/5th Sem/7th SEM/EDA/netflix_titles.csv")</pre>
## Rows: 8807 Columns: 13
## -- Column specification -----
## Delimiter: ","
## chr (12): show_id, type, title, director, cast, country, date_added, rating,...
## dbl (1): release_year
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
View(nt)
```

#Part 2 #In this part, we are performing data type conversions on the release_year column of the nt dataframe. First, we convert it to numeric using as.numeric(), then we subset the first 400 values using [1:400] and assign it to the variable neww. Next, we convert neww to integer using as.integer(), subset the first 400 values, and assign it to neww1. Then, we convert neww1 to character using as.character(), subset the first 400 values, and assign it to neww2. Finally, we check the classes of the nt dataframe, nttitle, andntrelease_year.

```
neww = as.numeric(nt$release_year)
neww[1:400]
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[1] 2020 2021 2021 2021 2021 2021 2021 1993 2021 2021 2021 2021 2021 2021 2021
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 [61] 2010 2005 2006 2004 2021 2021 2014 1994 2021 2015 2021 2021 2021 2018 2021
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## [166] 2019 1984 2008 2001 2006 1997 2017 2003 2015 2003 1980 1986 1961 2014 1996
## [181] 2000 2021 2008 1993 2021 2021 2021 2021 2008 2020 2021 2017 2008 2021 2002
## [196] 2008 2021 2021 2021 2006 2004 2003 2005 2016 2012 2001 2010 2008 2010 2013
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## [316] 2010 2011 2021 2021 2005 2021 2013 2008 2012 2020 1992 1993 2007 2016 2002
## [331] 2009 2020 1999 1986 2019 2006 2010 2007 2014 2021 2010 1999 1995 1991 1994
## [346] 2015 2008 2009 2019 2003 2000 2004 2016 2013 1991 2011 2010 2004 1995 2000
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```
neww1 = as.integer(neww)
neww1[1:400]
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##
  [16] 2021 2020 2020 2021 2021 2021 2018 1996 2021 1998 2021 1997 2010 2013 2013
  [46] 2021 2012 2020 2001 2021 2014 2002 2003 2004 2001 2021 2011 2008 2009 2007
  [61] 2010 2005 2006 2004 2021 2021 2014 1994 2021 2015 2021 2021 2021 2018 2021
 ## [121] 2021 2019 2003 2012 2013 2021 2020 2004 2017 2005 2021 1982 2021 2015 1994
## [136] 1993 2003 2001 2010 1989 2014 2015 2007 2011 1990 1991 1994 2021 2020 1998
## [151] 1999 2005 2016 2016 2015 1986 2010 2018 2003 2010 1992 1996 2017 2003 1999
## [166] 2019 1984 2008 2001 2006 1997 2017 2003 2015 2003 1980 1986 1961 2014 1996
## [181] 2000 2021 2008 1993 2021 2021 2021 2021 2008 2020 2021 2017 2008 2021 2002
## [196] 2008 2021 2021 2021 2006 2004 2003 2005 2016 2012 2001 2010 2008 2010 2013
## [256] 2021 2020 2015 2020 2018 2020 2021 2021 2016 2014 2018 2020 1993 2020 2015
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neww2 = as.character(neww1) neww2[1:400]

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[1] "2020" "2021" "2021" "2021" "2021" "2021" "2021" "1993" "2021" "2021"
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               [11] "2021" "2021" "2021" "2021" "2021" "2021" "2020" "2020" "2020" "2021" "2021"
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              [51] "2014" "2002" "2003" "2004" "2001" "2021" "2011" "2008" "2009" "2007"
##
              [61] "2010" "2005" "2006" "2004" "2021" "2021" "2014" "1994" "2021" "2015"
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              [81] "2021" "2021" "2021" "2021" "2020" "2021" "2021" "2019" "2011" "2017"
            [91] "2019" "2021" "2021" "2021" "2018" "2021" "2018" "2021" "2021" "2021" "2021"
##
## [101] "2019" "2021" "2021" "2020" "2016" "2017" "2021" "2018" "2021" "2021"
## [111] "2021" "2021" "2021" "2021" "1994" "2009" "2015" "2021" "2017" "2020"
## [121] "2021" "2019" "2003" "2012" "2013" "2021" "2020" "2004" "2017" "2005"
## [131] "2021" "1982" "2021" "2015" "1994" "1993" "2003" "2001" "2010" "1989"
## [141] "2014" "2015" "2007" "2011" "1990" "1991" "1994" "2021" "2020" "1998"
## [151] "1999" "2005" "2016" "2016" "2015" "1986" "2010" "2018" "2003" "2010"
## [161] "1992" "1996" "2017" "2003" "1999" "2019" "1984" "2008" "2001" "2006"
## [171] "1997" "2017" "2003" "2015" "2003" "1980" "1986" "1961" "2014" "1996"
## [181] "2000" "2021" "2008" "1993" "2021" "2021" "2021" "2021" "2008" "2020"
## [191] "2021" "2017" "2008" "2021" "2002" "2008" "2021" "2021" "2021" "2006"
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class(nt)
## [1] "spec_tbl_df" "tbl_df"
                                                                            "tbl"
                                                                                                           "data.frame"
class(nt$title)
## [1] "character"
class(nt$release_year)
## [1] "numeric"
#Part 3 #In this part, you are performing various operations on the nt dataframe. colnames(nt) retrieves
and displays the column names of the nt dataframe. head(nt) displays the first few rows of the nt dataframe.
tail(nt) displays the last few rows of the nt dataframe. summary(nt) provides summary statistics for each col-
umn in the nt dataframe. sd(ntrelease_uear) calculates the standard deviation of the release_uear column. var(ntrelease_year)
calculates the variance of the release\_year column. \ range (ntrelease\_year) gives the minimum and maximum values of the release\_year) and the release\_year column. \ range (ntrelease\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year column. \ range (ntrelease\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the minimum and maximum values of the release\_year) gives the release\_year (ntrelease\_year) gives the minimum and maximum values of the release\_year) gives the release\_year (ntrelease\_year) gives the release\_year (n
1/2) calculates the median of the release_year column. skewness(ntrelease_year)calculates the skewness of the release_year column.
calculates the kurtosis of the release_year column. rev(nt$release_year) reverses the order of the
release year column. cat command prints the number of columns in the release year column.
colnames(nt)
         [1] "show id"
                                                  "type"
                                                                                   "title"
                                                                                                                    "director"
                                                                                                                                                    "cast"
         [6] "country"
                                                  "date_added"
                                                                                   "release_year" "rating"
                                                                                                                                                    "duration"
## [11] "listed in"
                                                  "description"
                                                                                   "hero"
head(nt)
## # A tibble: 6 x 13
          show_id type
                                             title
##
                                                                 director cast country date_added release_year rating
                                                                                                                   <chr>>
##
          <chr>>
                            <chr>
                                             <chr>>
                                                                 <chr>>
                                                                                     <chr> <chr>
                                                                                                                                                          <dbl> <chr>
                                                                                                 United~ September~
## 1 s1
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## [8793] 2021 2021 2021 2021 2021 2021 2021 1993 2021 2021 2021 2021 2021 2021
## [8807] 2020
```

```
cat("\nColumn:",ncol(nt$release_year))
```

Column:

#Part 4 We modified a column Hero and added abc, def, ghi, ijk #In this part, you are performing various operations on the nt dataframe. nrow(nt) returns the number of rows in the nt dataframe. nrow(nt) returns the number of columns in the nt dataframe. str(nt) provides information about the structure of the nt dataframe. grep("ab", nt\$hero) searches for the pattern "ab" in the hero column and returns the indices where it is found. grep("hi", nt[3,]) checks if the pattern "hi" is present in the third row of the dataframe nt and returns a logical vector. toupper(nt[4,13]) converts the value in the fourth row and thirteenth column to uppercase. tolower(nt[4,13]) converts the value in the fourth row and thirteenth column to lowercase. substring(nt[5,12], 0, 30) extracts a substring from the value in the fifth row and twelfth column, starting from position 0 and ending at position 30.

```
nrow(nt)
## [1] 8807
ncol(nt)
## [1] 13
str(nt)
```

```
## spc_tbl_ [8,807 x 13] (S3: spec_tbl_df/tbl_df/tbl/data.frame)
         $ show_id
                                            : chr [1:8807] "s1" "s2" "s3" "s4" ...
                                             : chr [1:8807] "Movie" "TV Show" "TV Show" "TV Show"
##
         $ type
                                             : chr [1:8807] "Dick Johnson Is Dead" "Blood & Water" "Ganglands" "Jailbirds New Orle
##
         $ title
                                            : chr [1:8807] "Kirsten Johnson" NA "Julien Leclercq" NA ...
##
         $ director
                                             : chr [1:8807] NA "Ama Qamata, Khosi Ngema, Gail Mabalane, Thabang Molaba, Dillon Win
##
                                             : chr [1:8807] "United States" "South Africa" NA NA ...
##
         $ country
##
         $ date_added : chr [1:8807] "September 25, 2021" "September 24, 2021" "September 24, 2021" "September 24, 2021" "September 24, 2021" "September 25, 2021" "September 26, 2021" "September 27, 2021" "September 28, 2021" "September 29, 2021" "S
##
         $ release year: num [1:8807] 2020 2021 2021 2021 2021 ...
                                             : chr [1:8807] "PG-13" "TV-MA" "TV-MA" "TV-MA" ...
##
         $ rating
                                             : chr [1:8807] "90 min" "2 Seasons" "1 Season" "1 Season" ...
##
         $ duration
##
                                            : chr [1:8807] "Documentaries" "International TV Shows, TV Dramas, TV Mysteries" "Cri
         $ listed_in
##
         $ description : chr [1:8807] "As her father nears the end of his life, filmmaker Kirsten Johnson st
##
                                             : chr [1:8807] "abc" "def" "ghi" "ijk" ...
         $ hero
         - attr(*, "spec")=
##
##
             .. cols(
##
                        show_id = col_character(),
##
                        type = col_character(),
##
                        title = col_character(),
            . .
                        director = col_character(),
##
##
                        cast = col_character(),
##
                        country = col_character(),
                        date_added = col_character(),
##
            . .
##
                        release_year = col_double(),
##
                        rating = col character(),
             . .
```

duration = col_character(),

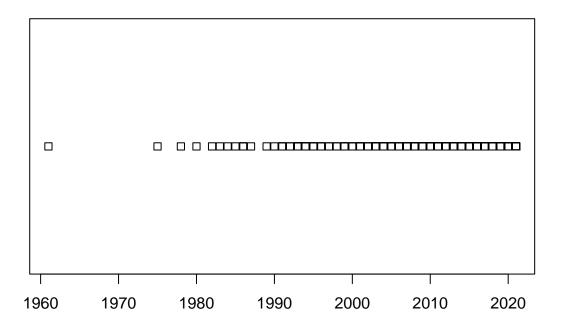
##

```
listed_in = col_character(),
##
##
         description = col_character(),
         hero = col_character()
##
##
     ..)
   - attr(*, "problems")=<externalptr>
grep("ab",nt$hero)
## [1] 1
grepl("hi",nt[3,])
## [1] FALSE FALSE FALSE FALSE TRUE FALSE FALSE FALSE FALSE FALSE TRUE
## [13] TRUE
toupper(nt[4,13])
## [1] "IJK"
tolower(nt[4,13])
## [1] "ijk"
substring(nt[5,12],0,30)
```

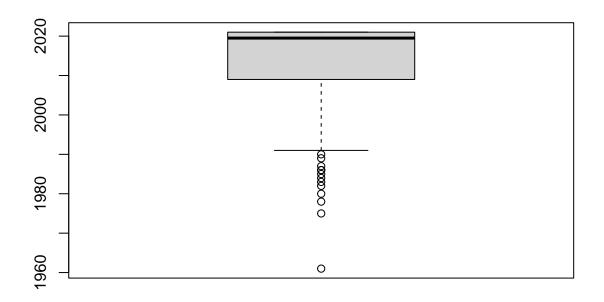
[1] "In a city of coaching centers "

#Part 5 #In this part, you are performing various operations on the nt dataframe. plot(nt[1:400,8]) creates a plot of the values in the eighth column of the first 400 rows. boxplot(nt[1:400,8]) creates a boxplot of the values in the eighth column of the first 400 rows. table(nt[1:400,8][nt[1:400,8] > 4000]) counts the occurrences of values greater than 4000 in the eighth column of the first 400 rows. table(nt[1:400,8]) standardizes the values in the eighth column of the first 400 rows. table(nt[1:400,8]) standardizes the values in the eighth column of the first 400 rows. table(nt[1:400,8]) cummaxtable(nt[1:400,8]) standardizes the values in the eighth column of the first 400 rows. table(nt[1:400,8]) cummaxtable(nt[1:400,8]) standardizes the values in the eighth column of the first 400 rows. table(nt[1:400,8]) creates table(nt[1:400,8]) standardizes the values in the eighth column of the first 400 rows. table(nt[1:400,8]) calculates table(nt[1:400,8]) standardizes table(nt[1:400,8]) standardizes table(nt[1:400,8]) rows. table(n

```
plot(nt[1:400,8])
```



boxplot(nt[1:400,8])



```
table(nt[1:400,8][nt[1:400,8] > 4000])

## 
scale(nt[1:400,8])
```

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cummax(nt\$release_year)

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```
## [8807] 2021
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cumsum(nt\$release year)

##	[1]	2020	4041	6062	8083	10104	12125	14146	16139
##	[9]	18160	20181	22202	24223	26244	28265	30286	32307

##	[17]	34327	36347	38368	40389	42410	44428	46424	48445
##	[25]	50443	52464	54461	56471	58484	60497	62518	64539
##	[33]	66559	68580	70600	72621	74642	76660	78677	80698
##	[41]	82719	84694	86672	88655	90642	92663	94675	96695
##	[49]	98696	100717	102731	104733	106736	108740	110741	112762
##	[57]	114773	116781	118790	120797	122807	124812	126818	128822
##	[65]	130843	132864	134878	136872	138893	140908	142929	144950
##	[73]	146971	148989	151010	153031	155044	157065	159085	161106
##	[81]	163127	165148	167169	169190	171210	173231	175252	177271
				183328		187370			
##	[89]	179292	181309		185349		189391	191409	193430
##	[97]	195448	197469	199490	201511	203530	205551	207572	209592
##	[105]	211608	213625	215646	217664	219685	221706	223727	225748
##	[113]	227769	229790	231784	233793	235808	237829	239846	241866
##	[121]	243887	245906	247909	249921	251934	253955	255975	257979
##	[129]	259996	262001	264022	266004	268025	270040	272034	274027
##	[137]	276030	278031	280041	282030	284044	286059	288066	290077
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##	[193]	388346	390367	392369	394377	396398	398419	400440	402446
##	[201]	404450	406453	408458	410474	412486	414487	416497	418505
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##	[209]	420515	422528		426553		430590	432611	434618
##	[217]	436629	438640	440661	442682	444703	446724	448745	450766
##	[225]	452787	454808	456829	458849	460863	462883	464904	466925
##	[233]	468944	470965	472986	475007	477028	479049	481070	483091
##	[241]	485112	487133	489154	491175	493193	495214	497235	499256
##	[249]	501277	503298	505318	507329	509350	511345	513366	515387
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##	[265]	533552	535570	537590	539583	541603	543618	545639	547660
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```

#Part 6 #In this part, you are performing various operations on the nt dataframe. mean(ntrelease_year, na.rm = TRUE)calculates themean of the release_year column, ignoring missing values.rev(nt[1:10,3]) reverses the order of the values is sep = ",") concatenates the values in the show_id column with a comma separator and prints the result. nchar(nt) calculates the number of characters in each element of the dataframe nt. table(nt[1:400,2]) creates a frequency table for the values in the second column of the first 400 rows. ntshow_id[ntrelease_year] = 2021] retrieves the values in the show_id column where the release_year is equal to 2021. sort(ntrelease_year)sortstherelease_yearcolumninascendingorder.order(nttitle) returns the indices that would sort the title column in ascending order. rank(nt\$director) calculates the rank of each value in the director column.

```
mean(nt$release_year,na.rm = TRUE)
## [1] 2014.18
rev(nt[1:10,3])
## # A tibble: 10 x 1
##
      title
##
      <chr>
   1 Dick Johnson Is Dead
##
##
   2 Blood & Water
##
  3 Ganglands
  4 Jailbirds New Orleans
  5 Kota Factory
##
   6 Midnight Mass
##
##
  7 My Little Pony: A New Generation
   8 Sankofa
   9 The Great British Baking Show
## 10 The Starling
cat(nt$show_id, sep = ",")
```

nchar(nt)

```
##
         show_id
                                        title
                                                   director
                                                                                  country
                           type
                                                                      cast
##
           78312
                         84783
                                       192336
                                                      130118
                                                                    983129
                                                                                   135835
##
     date_added release_year
                                       rating
                                                   duration
                                                                 listed_in
                                                                             description
##
          165119
                         52947
                                        74415
                                                       97415
                                                                    330066
                                                                                  1293715
##
            hero
##
           35310
```

table(nt[1:400,2])

```
## type
## Movie TV Show
## 256 144
```

nt\$show_id[nt\$release_year == 2021]

```
[1] "s2"
                   "s3"
                            "s4"
                                     "s5"
                                             "s6"
                                                      "s7"
                                                               "s9"
                                                                        "s10"
                                                                                 "s11"
##
##
    [10] "s12"
                   "s13"
                            "s14"
                                     "s15"
                                              "s16"
                                                      "s19"
                                                                "s20"
                                                                        "s21"
                                                                                 "s24"
##
    [19] "s26"
                   "s31"
                            "s32"
                                     "s34"
                                              "s36"
                                                      "s37"
                                                                "s40"
                                                                        "s41"
                                                                                 "s46"
##
    [28] "s50"
                   "s56"
                            "s65"
                                     "s66"
                                             "s69"
                                                      "s71"
                                                               "s72"
                                                                        "s73"
                                                                                 "s75"
    [37] "s76"
                            "s80"
                                     "s81"
                                             "s82"
                                                                        "s86"
##
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                                                      "s83"
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