DATA201 – ASSIGNMENT

PLEASE GIVE US AN A+

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STARTING OUT

PICKING A TOPIC

Movies

Research Questions

Most profitable movie genre

Most profitable movie based on budget

Profit of movies based on length

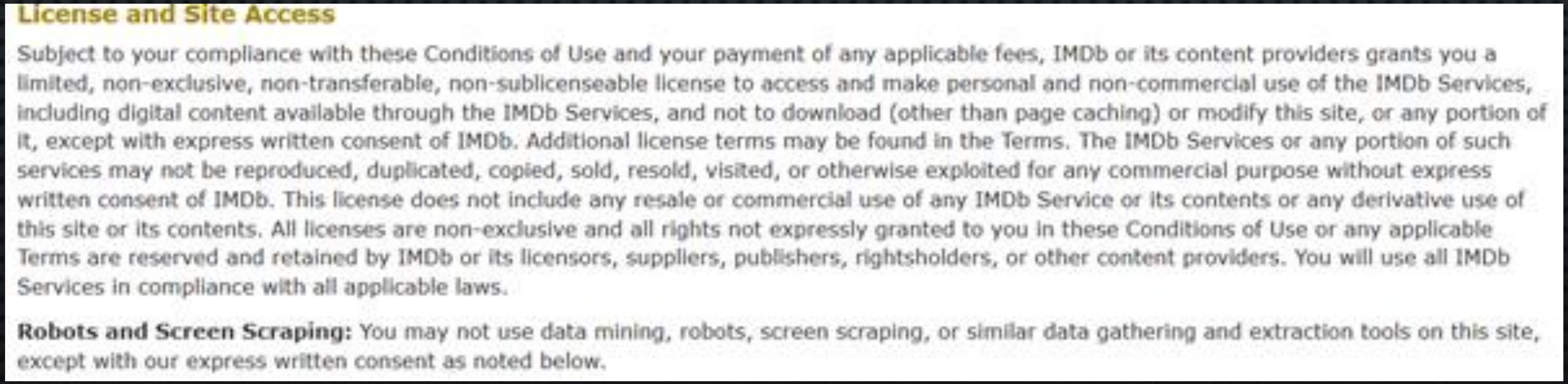
ETHICS

- [HTTP://DEON.DRIVENDATA.ORG/](http://deon.drivendata.org/)
- WEB SCRAPING
- API'S

Rules and Regulations
Rules of Conduct
Values
Ethics
Ethical Practices
Research
Moral Principles

WEB SCRAPING AND API ETHICS WITH GATHING OUR DATA

- Api avaliable at unresonable prices
- Checking terms and conditions
- Abidng by robots.txt (robots exclusion standards)



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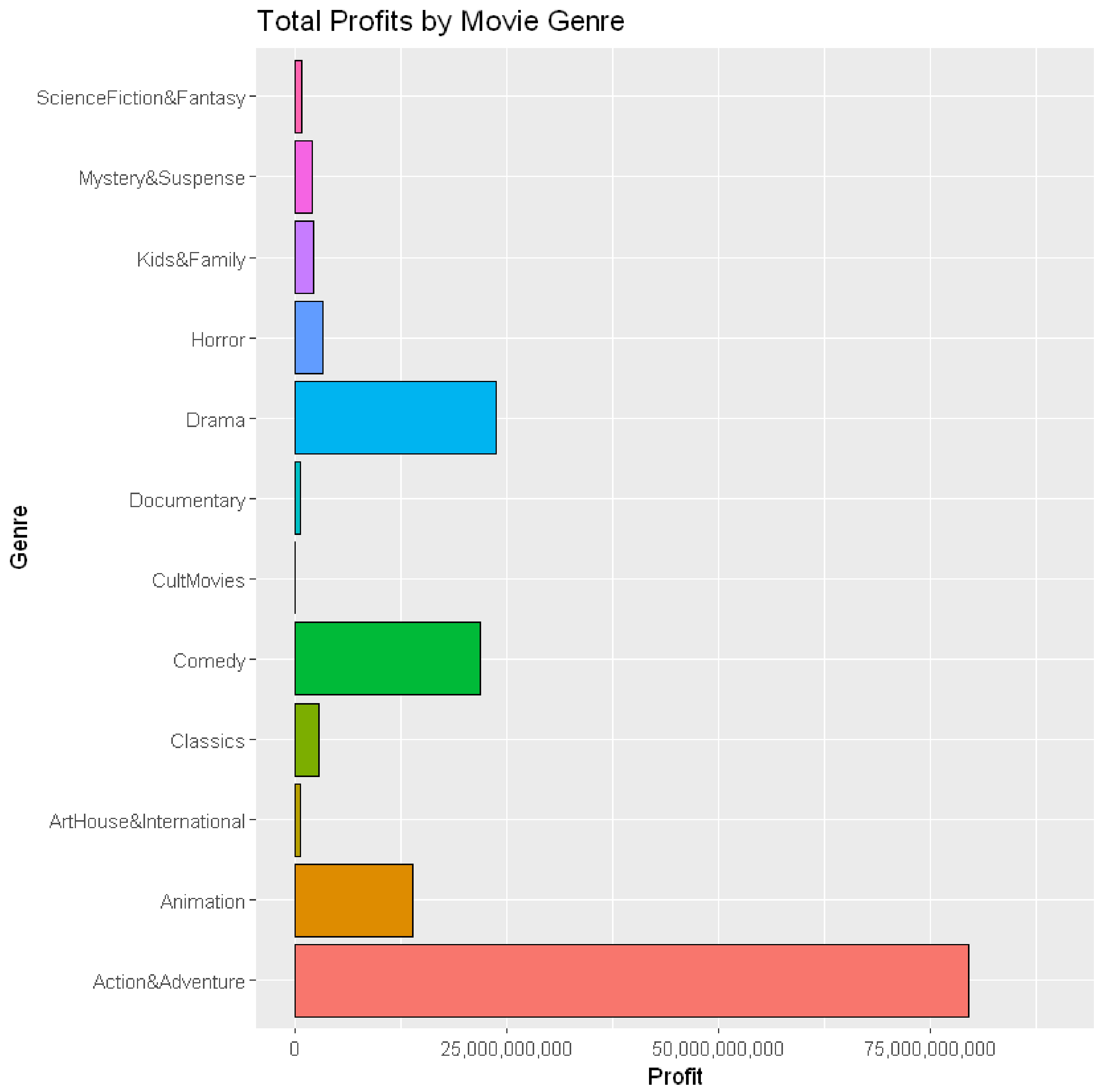
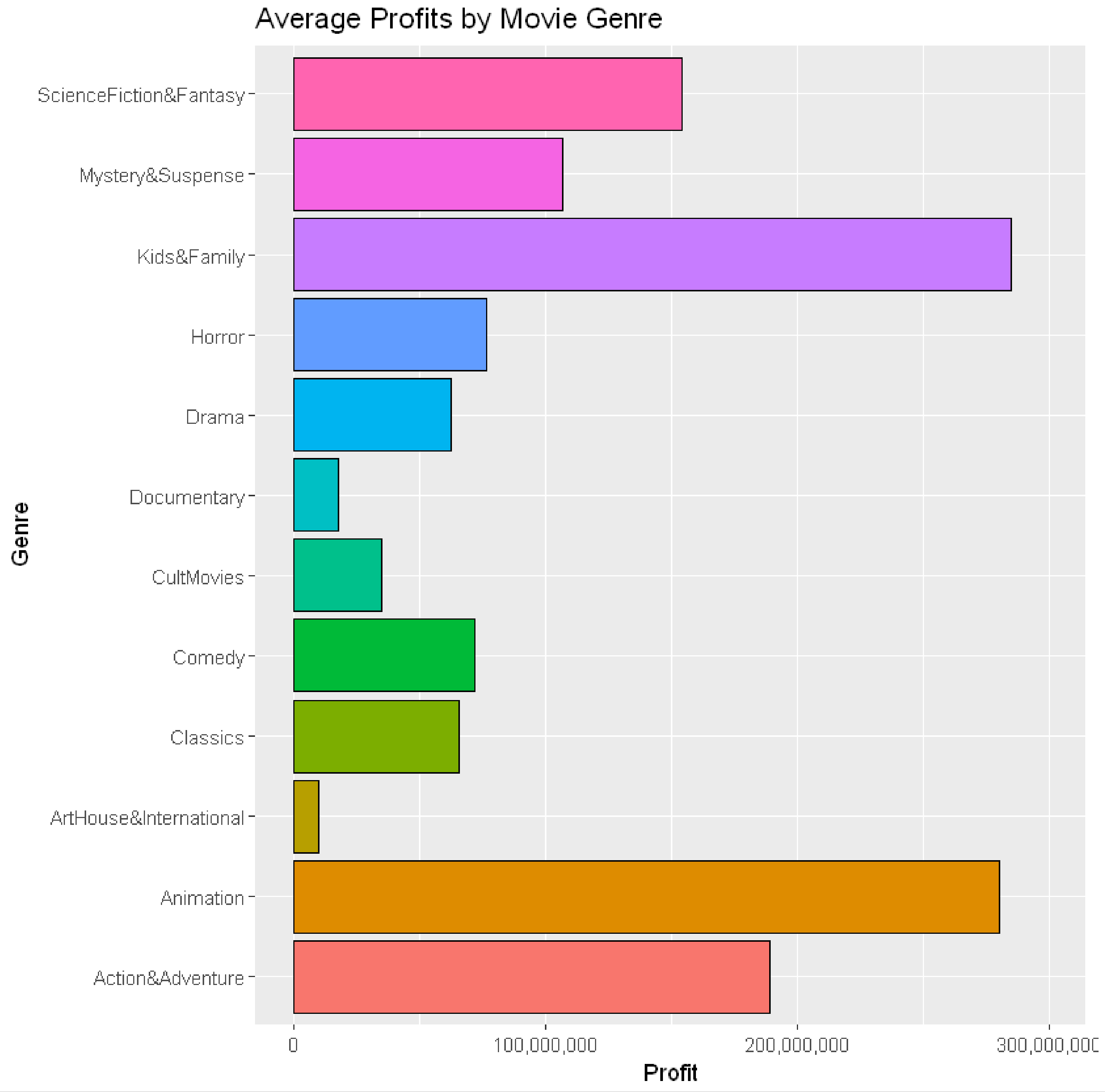
ROTTEN TOMATOES WEB SCRAPING

- Top 100 Movies for each year on the Rotten Tomatoes database
- Time Consuming
- Variable type formatting and Web errors

TOTAL PROFITS BY MOVIE GENRE



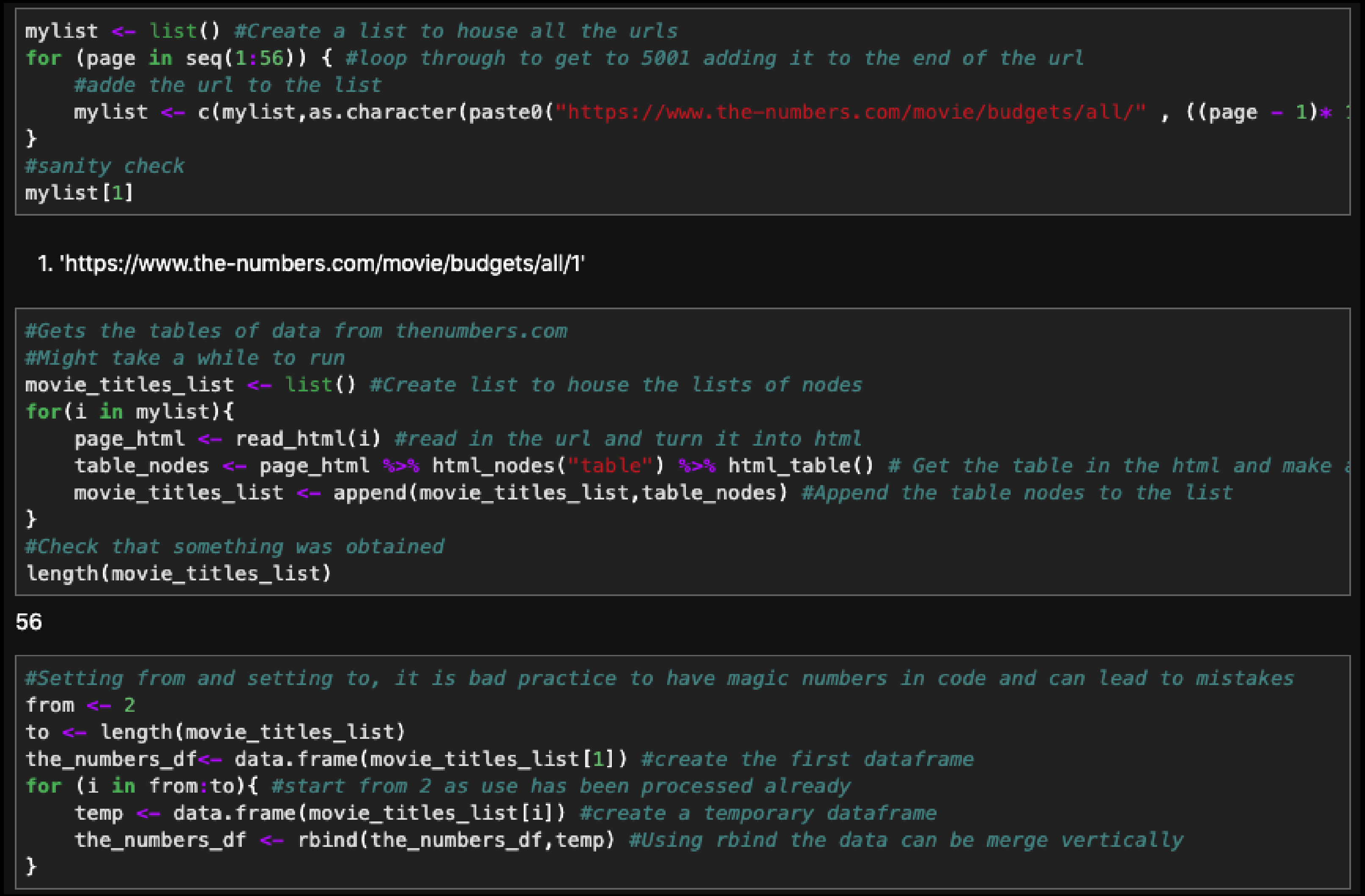
AVERAGE PROFITS BY MOVIE GENRE



ADD SOME CODE FOR WEB SCRAPING THE NUMBERS

- *TALK ABOUT WHAT YOU DID AND CHALLENGES

THE-NUMBERS.COM WEB SCRAPING



```
mylist <- list() #Create a list to house all the urls
for (page in seq(1:56)) { #loop through to get to 5001 adding it to the end of the url
    #adde the url to the list
    mylist <- c(mylist,as.character(paste0("https://www.the-numbers.com/movie/budgets/all/" , ((page - 1)*
}
#sanity check
mylist[1]
```

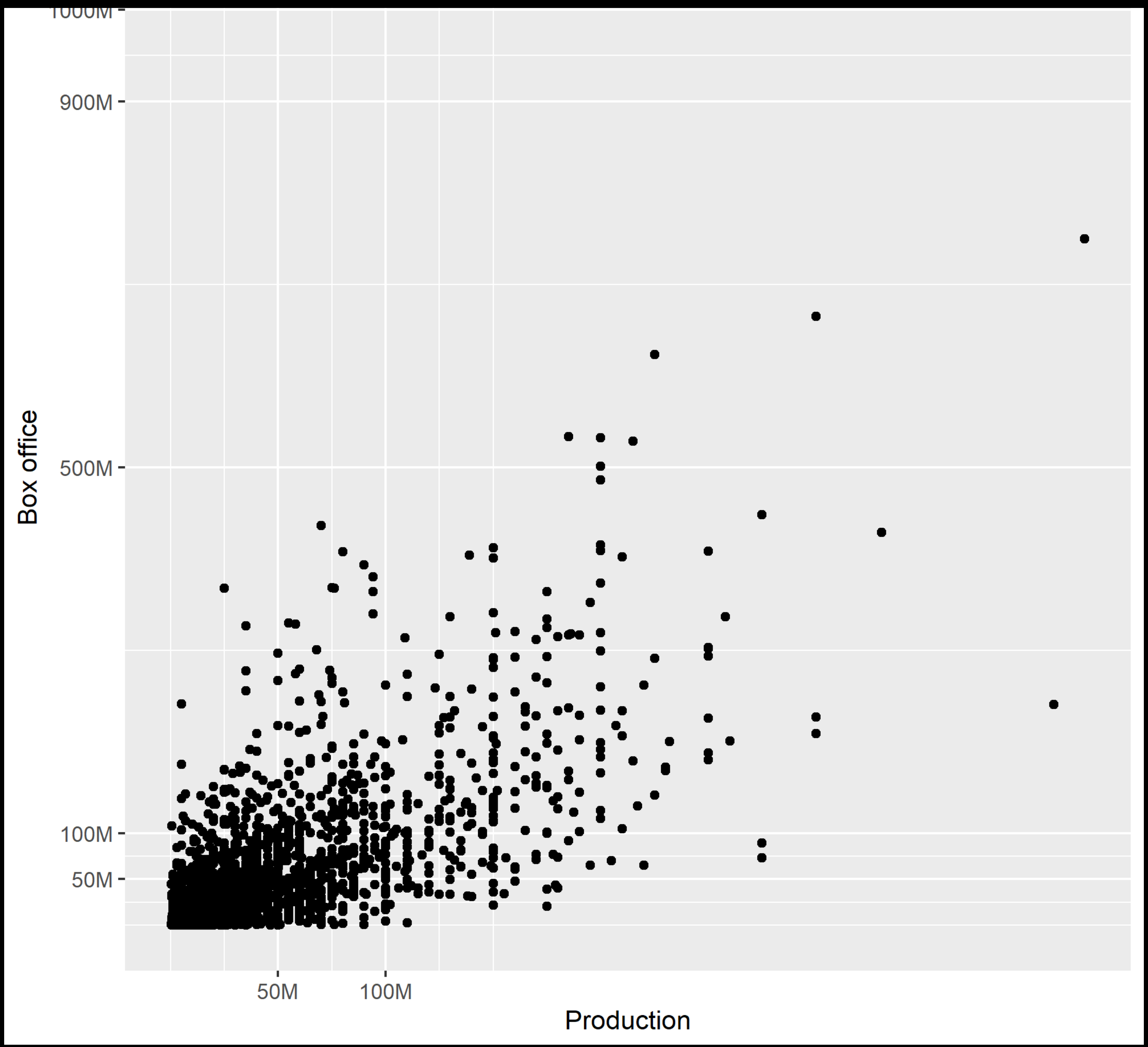
```
1. 'https://www.the-numbers.com/movie/budgets/all/1'
```

```
#Gets the tables of data from thenumbers.com
#Might take a while to run
movie_titles_list <- list() #Create list to house the lists of nodes
for(i in mylist){
    page_html <- read_html(i) #read in the url and turn it into html
    table_nodes <- page_html %>% html_nodes("table") %>% html_table() # Get the table in the html and make
    movie_titles_list <- append(movie_titles_list,table_nodes) #Append the table nodes to the list
}
#Check that something was obtained
length(movie_titles_list)
```

```
56
```

```
#Setting from and setting to, it is bad practice to have magic numbers in code and can lead to mistakes
from <- 2
to <- length(movie_titles_list)
the_numbers_df<- data.frame(movie_titles_list[1]) #create the first dataframe
for (i in from:to){ #start from 2 as use has been processed already
    temp <- data.frame(movie_titles_list[i]) #create a temporary dataframe
    the_numbers_df <- rbind(the_numbers_df,temp) #Using rbind the data can be merge vertically
}
```

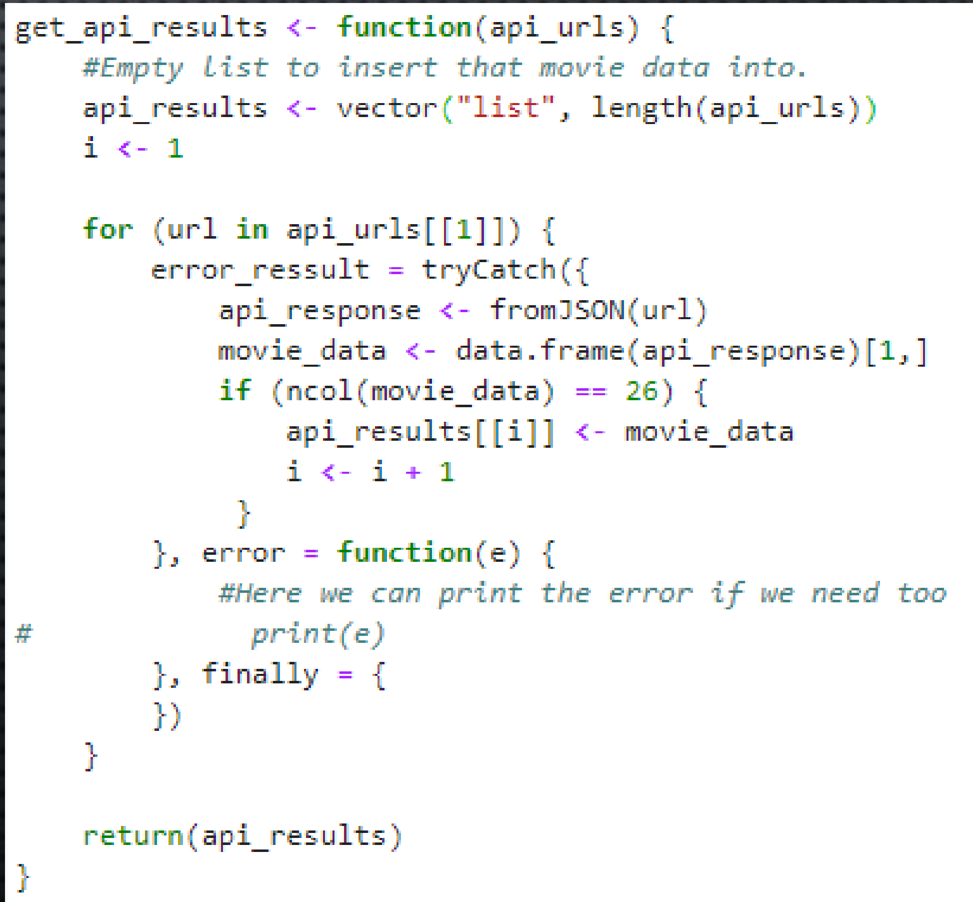
MOST PROFITABLE MOVIE BASED ON BUDGET



IMDB API

- Used the titles gathered from the 2 scrapes to search the API
- 3 Main functions used
  - Titles to Url's
  - Searching the API
  - Cleaning the JSON returned from the API

- Lots of struggles with the AP returning weird data
- Also struggled with API errors, needed to buy an API key



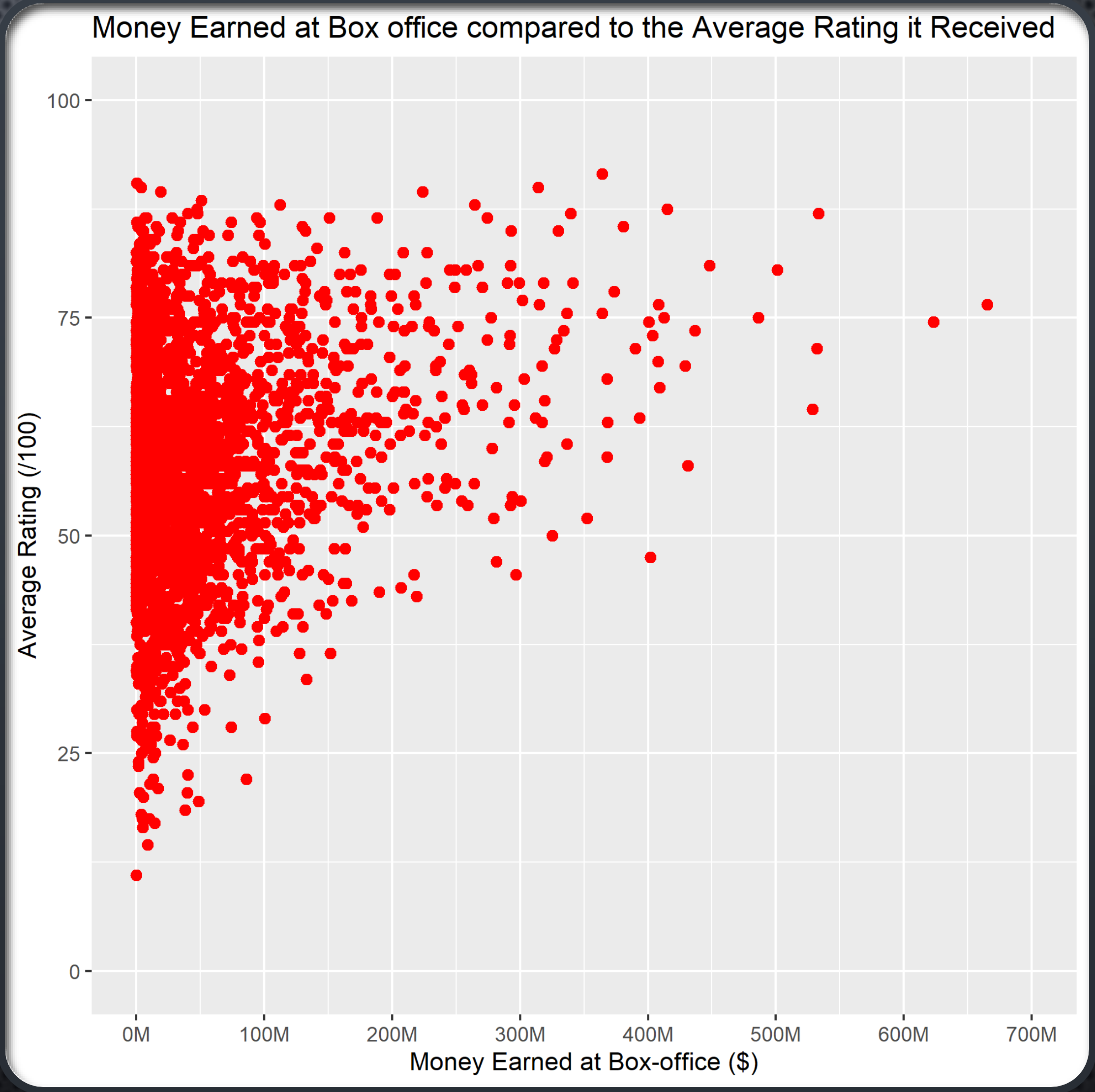
```
get_api_results <- function(api_urls) {
    #Empty list to insert that movie data into.
    api_results <- vector("list", length(api_urls))
    i <- 1

    for (url in api_urls[[1]]) {
        error_ressult = tryCatch({
            api_response <- fromJSON(url)
            movie_data <- data.frame(api_response)[1,]
            if (ncol(movie_data) == 26) {
                api_results[[i]] <- movie_data
                i <- i + 1
            }
        }, error = function(e) {
            #Here we can print the error if we need too
#             print(e)
        }, finally = {
        })
    }

    return(api_results)
}
```

AVERAGE RATING OF A MOVIE BASED ON THE MONEY EARNED AT BOX-OFFICE

- CAN'T SEE MUCH OF A CORRELATION
- MAYBE THAT SOME MOVIES ARE TOO BIG TO FAIL



THANKS FOR LISTENING, ANY QUESTIONS?

Please no questions
we're bad at public
speaking