

RWorksheet#5a_group(Espadon_Bernasol_Gerona)

(Espadon, Bernasol, Gerona)

2024-11-11

```
library(polite)
library(httr)
library(rvest)
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
url <- "https://www.imdb.com/chart/toptv/?sort=rank%2Casc"
session <- bow(url,
               user_agent = "Educational")
session
```

```
## <polite session> https://www.imdb.com/chart/toptv/?sort=rank%2Casc
##   User-agent: Educational
##   robots.txt: 35 rules are defined for 3 bots
##   Crawl delay: 5 sec
##   The path is scrapable for this user-agent
```

1. Extracting TV Shows

```
#Extracting the ranks and titles
title_list <- read_html(url) %>%
  html_nodes('.ipc-title__text') %>%
  html_text()
title_list
```

```
## [1] "IMDb Charts"
## [2] "Top 250 TV Shows"
## [3] "1. Breaking Bad"
## [4] "2. Planet Earth II"
## [5] "3. Planet Earth"
## [6] "4. Band of Brothers"
## [7] "5. Chernobyl"
## [8] "6. The Wire"
## [9] "7. Avatar: The Last Airbender"
```

```
## [10] "8. Blue Planet II"
## [11] "9. The Sopranos"
## [12] "10. Cosmos: A Spacetime Odyssey"
## [13] "11. Cosmos"
## [14] "12. Our Planet"
## [15] "13. Game of Thrones"
## [16] "14. Bluey"
## [17] "15. The World at War"
## [18] "16. Fullmetal Alchemist: Brotherhood"
## [19] "17. Rick and Morty"
## [20] "18. Life"
## [21] "19. The Last Dance"
## [22] "20. The Twilight Zone"
## [23] "21. The Vietnam War"
## [24] "22. Sherlock"
## [25] "23. Attack on Titan"
## [26] "24. Batman: The Animated Series"
## [27] "25. The Office"
## [28] "Recently viewed"
```

#Cleaning extracted text

```
title_list_sub <- as.data.frame(title_list[3:27], stringsAsFactors = FALSE)
colnames(title_list_sub) <- "ranks"

split_df <- strsplit(as.character(title_list_sub$ranks), "\\.", fixed = FALSE)
split_df <- data.frame(do.call(rbind, split_df), stringsAsFactors = FALSE)

colnames(split_df) <- c("rank", "title")
split_df <- split_df %>% select(rank, title)

split_df$title <- trimws(split_df$title)

rank_title <- split_df
rank_title
```

```
##      rank      title
## 1      1  Breaking Bad
## 2      2  Planet Earth II
## 3      3  Planet Earth
## 4      4  Band of Brothers
## 5      5  Chernobyl
## 6      6  The Wire
## 7      7  Avatar: The Last Airbender
## 8      8  Blue Planet II
## 9      9  The Sopranos
## 10     10  Cosmos: A Spacetime Odyssey
## 11     11  Cosmos
## 12     12  Our Planet
## 13     13  Game of Thrones
## 14     14  Bluey
## 15     15  The World at War
## 16     16  Fullmetal Alchemist: Brotherhood
## 17     17  Rick and Morty
## 18     18  Life
## 19     19  The Last Dance
```

```
## 20 20 The Twilight Zone
## 21 21 The Vietnam War
## 22 22 Sherlock
## 23 23 Attack on Titan
## 24 24 Batman: The Animated Series
## 25 25 The Office
```

#Extracting tv rating, the number of people who voted, the number of episodes, and the year it was released

```
rating_ls <- read_html(url) %>%
  html_nodes('.ipc-rating-star--rating') %>%
  html_text()

voter_ls <- read_html(url) %>%
  html_nodes('.ipc-rating-star--voteCount') %>%
  html_text()
clean_votes <- gsub('[(\)]', '', voter_ls)

#extracted the number of episodes
eps_ls <- read_html(url) %>%
  html_nodes('span.sc-5bc66c50-6.00dsw.cli-title-metadata-item:nth-of-type(2)') %>%
  html_text()
clean_eps <- gsub('[eps]', '', eps_ls) # You need to use clean_eps here, not clean
num_eps <- as.numeric(clean_eps) # Now you're using the correct variable

#extracted the year released
years <- read_html(url) %>%
  html_nodes('span.sc-5bc66c50-6.00dsw.cli-title-metadata-item:nth-of-type(1)') %>%
  html_text()
```

Create the data frame

```
top_tv_shows <- data.frame(
  Title = rank_title[, 2], # Assuming rank_title is your data frame
  Rating = rating_ls,
  Voters = clean_votes,
  Episodes = num_eps,
  Year = years
)
```

Print the data frame

```
print(top_tv_shows)
```

##	Title	Rating	Voters	Episodes	Year
## 1	Breaking Bad	9.5	2.2M	62	2008-2013
## 2	Planet Earth II	9.5	162K	6	2016
## 3	Planet Earth	9.4	223K	11	2006
## 4	Band of Brothers	9.4	544K	10	2001
## 5	Chernobyl	9.3	905K	5	2019
## 6	The Wire	9.3	390K	60	2002-2008
## 7	Avatar: The Last Airbender	9.3	388K	62	2005-2008
## 8	Blue Planet II	9.3	48K	7	2017
## 9	The Sopranos	9.2	497K	86	1999-2007
## 10	Cosmos: A Spacetime Odyssey	9.2	131K	13	2014
## 11	Cosmos	9.3	45K	13	1980
## 12	Our Planet	9.2	53K	12	2019-2023
## 13	Game of Thrones	9.2	2.4M	74	2011-2019

## 14	Bluey	9.3	33K	194	2018-
## 15	The World at War	9.2	31K	26	1973-1974
## 16	Fullmetal Alchemist: Brotherhood	9.1	208K	68	2009-2010
## 17	Rick and Morty	9.1	626K	78	2013-
## 18	Life	9.1	43K	11	2009
## 19	The Last Dance	9.1	159K	10	2020
## 20	The Twilight Zone	9.0	96K	156	1959-1964
## 21	The Vietnam War	9.1	29K	10	2017
## 22	Sherlock	9.1	1M	15	2010-2017
## 23	Attack on Titan	9.1	559K	98	2013-2023
## 24	Batman: The Animated Series	9.0	122K	85	1992-1995
## 25	The Office	9.0	744K	188	2005-2013

Number of user reviews (You'll need to add the code to extract this)

```
home_link <- 'https://www.imdb.com/chart/toptv/'
main_page <- read_html(home_link)
```

```
links <- main_page %>%
html_nodes("a.ipc-title-link-wrapper") %>%
html_attr("href")
```

```
# Loop to get link of each show's page
show_data <- lapply(links, function(link) {
complete_link <- paste0("https://imdb.com", link)
```

```
#loop to get the link for user review page
usrv_link <- read_html(complete_link)
usrv_link_page <- usrv_link %>%
html_nodes('a.isReview') %>%
html_attr("href")
```

```
#loop to extract critic reviews
critic <- usrv_link %>%
html_nodes("span.score") %>%
html_text()
critic_df <- data.frame(Critic_Reviews = critic[2], stringsAsFactors = FALSE)
```

```
#loop to extract pop rating
pop_rating <- usrv_link %>%
html_nodes('[data-testid="hero-rating-bar__popularity__score"]') %>%
html_text()
```

```
#loop to get user reviews of each shows
usrv <- read_html(paste0("https://imdb.com", usrv_link_page[1]))
usrv_count <- usrv %>%
html_nodes('[data-testid="tturv-total-reviews"]') %>%
html_text()
```

```
return(data.frame>Show_Link = complete_link, User_Reviews = usrv_count, Critic = critic_df, Popularity_
})
```

```
show_url_df <- do.call(rbind, show_data)
```

```
print(show_url_df)
```

```
##                               Show_Link  User_Reviews
## 1  https://imdb.com/title/tt0903747/?ref_=chttvtp_t_1  5,084 reviews
## 2  https://imdb.com/title/tt0903747/?ref_=chttvtp_t_1  5,084 reviews
## 3  https://imdb.com/title/tt5491994/?ref_=chttvtp_t_2   158 reviews
## 4  https://imdb.com/title/tt5491994/?ref_=chttvtp_t_2   158 reviews
## 5  https://imdb.com/title/tt0795176/?ref_=chttvtp_t_3   111 reviews
## 6  https://imdb.com/title/tt0795176/?ref_=chttvtp_t_3   111 reviews
## 7  https://imdb.com/title/tt0185906/?ref_=chttvtp_t_4  1,055 reviews
## 8  https://imdb.com/title/tt0185906/?ref_=chttvtp_t_4  1,055 reviews
## 9  https://imdb.com/title/tt7366338/?ref_=chttvtp_t_5  3,531 reviews
## 10 https://imdb.com/title/tt7366338/?ref_=chttvtp_t_5  3,531 reviews
## 11 https://imdb.com/title/tt0306414/?ref_=chttvtp_t_6    786 reviews
## 12 https://imdb.com/title/tt0306414/?ref_=chttvtp_t_6    786 reviews
## 13 https://imdb.com/title/tt0417299/?ref_=chttvtp_t_7    997 reviews
## 14 https://imdb.com/title/tt0417299/?ref_=chttvtp_t_7    997 reviews
## 15 https://imdb.com/title/tt6769208/?ref_=chttvtp_t_8     53 reviews
## 16 https://imdb.com/title/tt6769208/?ref_=chttvtp_t_8     53 reviews
## 17 https://imdb.com/title/tt0141842/?ref_=chttvtp_t_9    961 reviews
## 18 https://imdb.com/title/tt0141842/?ref_=chttvtp_t_9    961 reviews
## 19 https://imdb.com/title/tt2395695/?ref_=chttvtp_t_10   205 reviews
## 20 https://imdb.com/title/tt2395695/?ref_=chttvtp_t_10   205 reviews
## 21 https://imdb.com/title/tt0081846/?ref_=chttvtp_t_11     80 reviews
## 22 https://imdb.com/title/tt0081846/?ref_=chttvtp_t_11     80 reviews
## 23 https://imdb.com/title/tt9253866/?ref_=chttvtp_t_12   245 reviews
## 24 https://imdb.com/title/tt9253866/?ref_=chttvtp_t_12   245 reviews
## 25 https://imdb.com/title/tt0944947/?ref_=chttvtp_t_13  5,894 reviews
## 26 https://imdb.com/title/tt0944947/?ref_=chttvtp_t_13  5,894 reviews
## 27 https://imdb.com/title/tt7678620/?ref_=chttvtp_t_14   366 reviews
## 28 https://imdb.com/title/tt7678620/?ref_=chttvtp_t_14   366 reviews
## 29 https://imdb.com/title/tt0071075/?ref_=chttvtp_t_15   126 reviews
## 30 https://imdb.com/title/tt0071075/?ref_=chttvtp_t_15   126 reviews
## 31 https://imdb.com/title/tt1355642/?ref_=chttvtp_t_16   465 reviews
## 32 https://imdb.com/title/tt1355642/?ref_=chttvtp_t_16   465 reviews
## 33 https://imdb.com/title/tt2861424/?ref_=chttvtp_t_17   908 reviews
## 34 https://imdb.com/title/tt2861424/?ref_=chttvtp_t_17   908 reviews
## 35 https://imdb.com/title/tt1533395/?ref_=chttvtp_t_18     12 reviews
## 36 https://imdb.com/title/tt1533395/?ref_=chttvtp_t_18     12 reviews
## 37 https://imdb.com/title/tt8420184/?ref_=chttvtp_t_19   541 reviews
## 38 https://imdb.com/title/tt8420184/?ref_=chttvtp_t_19   541 reviews
## 39 https://imdb.com/title/tt0052520/?ref_=chttvtp_t_20   213 reviews
## 40 https://imdb.com/title/tt0052520/?ref_=chttvtp_t_20   213 reviews
## 41 https://imdb.com/title/tt1877514/?ref_=chttvtp_t_21   175 reviews
## 42 https://imdb.com/title/tt1877514/?ref_=chttvtp_t_21   175 reviews
## 43 https://imdb.com/title/tt1475582/?ref_=chttvtp_t_22  1,094 reviews
## 44 https://imdb.com/title/tt1475582/?ref_=chttvtp_t_22  1,094 reviews
## 45 https://imdb.com/title/tt2560140/?ref_=chttvtp_t_23  2,353 reviews
## 46 https://imdb.com/title/tt2560140/?ref_=chttvtp_t_23  2,353 reviews
## 47 https://imdb.com/title/tt0103359/?ref_=chttvtp_t_24    219 reviews
## 48 https://imdb.com/title/tt0103359/?ref_=chttvtp_t_24    219 reviews
## 49 https://imdb.com/title/tt0386676/?ref_=chttvtp_t_25  1,773 reviews
## 50 https://imdb.com/title/tt0386676/?ref_=chttvtp_t_25  1,773 reviews
##      Critic_Reviews Popularity_Rating
```

## 1	175	20
## 2	175	20
## 3	6	1,121
## 4	6	1,121
## 5	10	2,011
## 6	10	2,011
## 7	34	171
## 8	34	171
## 9	88	173
## 10	88	173
## 11	77	108
## 12	77	108
## 13	57	373
## 14	57	373
## 15	9	4,415
## 16	9	4,415
## 17	93	33
## 18	93	33
## 19	12	1,499
## 20	12	1,499
## 21	8	3,866
## 22	8	3,866
## 23	15	2,765
## 24	15	2,765
## 25	368	14
## 26	368	14
## 27	4	411
## 28	4	411
## 29	5	2,627
## 30	5	2,627
## 31	16	508
## 32	16	508
## 33	94	137
## 34	94	137
## 35	9	3,455
## 36	9	3,455
## 37	28	1,521
## 38	28	1,521
## 39	85	354
## 40	85	354
## 41	13	2,022
## 42	13	2,022
## 43	121	172
## 44	121	172
## 45	64	60
## 46	64	60
## 47	25	527
## 48	25	527
## 49	76	55
## 50	76	55

```
shows <- cbind(top_tv_shows, show_url_df)
shows
```

##	Title	Rating	Voters	Episodes	Year
----	-------	--------	--------	----------	------

## 1	Breaking Bad	9.5	2.2M	62	2008-2013
## 2	Planet Earth II	9.5	162K	6	2016
## 3	Planet Earth	9.4	223K	11	2006
## 4	Band of Brothers	9.4	544K	10	2001
## 5	Chernobyl	9.3	905K	5	2019
## 6	The Wire	9.3	390K	60	2002-2008
## 7	Avatar: The Last Airbender	9.3	388K	62	2005-2008
## 8	Blue Planet II	9.3	48K	7	2017
## 9	The Sopranos	9.2	497K	86	1999-2007
## 10	Cosmos: A Spacetime Odyssey	9.2	131K	13	2014
## 11	Cosmos	9.3	45K	13	1980
## 12	Our Planet	9.2	53K	12	2019-2023
## 13	Game of Thrones	9.2	2.4M	74	2011-2019
## 14	Bluey	9.3	33K	194	2018-
## 15	The World at War	9.2	31K	26	1973-1974
## 16	Fullmetal Alchemist: Brotherhood	9.1	208K	68	2009-2010
## 17	Rick and Morty	9.1	626K	78	2013-
## 18	Life	9.1	43K	11	2009
## 19	The Last Dance	9.1	159K	10	2020
## 20	The Twilight Zone	9.0	96K	156	1959-1964
## 21	The Vietnam War	9.1	29K	10	2017
## 22	Sherlock	9.1	1M	15	2010-2017
## 23	Attack on Titan	9.1	559K	98	2013-2023
## 24	Batman: The Animated Series	9.0	122K	85	1992-1995
## 25	The Office	9.0	744K	188	2005-2013
## 26	Breaking Bad	9.5	2.2M	62	2008-2013
## 27	Planet Earth II	9.5	162K	6	2016
## 28	Planet Earth	9.4	223K	11	2006
## 29	Band of Brothers	9.4	544K	10	2001
## 30	Chernobyl	9.3	905K	5	2019
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## 35	Cosmos: A Spacetime Odyssey	9.2	131K	13	2014
## 36	Cosmos	9.3	45K	13	1980
## 37	Our Planet	9.2	53K	12	2019-2023
## 38	Game of Thrones	9.2	2.4M	74	2011-2019
## 39	Bluey	9.3	33K	194	2018-
## 40	The World at War	9.2	31K	26	1973-1974
## 41	Fullmetal Alchemist: Brotherhood	9.1	208K	68	2009-2010
## 42	Rick and Morty	9.1	626K	78	2013-
## 43	Life	9.1	43K	11	2009
## 44	The Last Dance	9.1	159K	10	2020
## 45	The Twilight Zone	9.0	96K	156	1959-1964
## 46	The Vietnam War	9.1	29K	10	2017
## 47	Sherlock	9.1	1M	15	2010-2017
## 48	Attack on Titan	9.1	559K	98	2013-2023
## 49	Batman: The Animated Series	9.0	122K	85	1992-1995
## 50	The Office	9.0	744K	188	2005-2013
##	Show_Link				User_Reviews
## 1	https://imdb.com/title/tt0903747/?ref_=chtvtp_t_1			5,084	reviews
## 2	https://imdb.com/title/tt0903747/?ref_=chtvtp_t_1			5,084	reviews
## 3	https://imdb.com/title/tt5491994/?ref_=chtvtp_t_2			158	reviews

```

## 4  https://imdb.com/title/tt5491994/?ref_=chttvtp_t_2 158 reviews
## 5  https://imdb.com/title/tt0795176/?ref_=chttvtp_t_3 111 reviews
## 6  https://imdb.com/title/tt0795176/?ref_=chttvtp_t_3 111 reviews
## 7  https://imdb.com/title/tt0185906/?ref_=chttvtp_t_4 1,055 reviews
## 8  https://imdb.com/title/tt0185906/?ref_=chttvtp_t_4 1,055 reviews
## 9  https://imdb.com/title/tt7366338/?ref_=chttvtp_t_5 3,531 reviews
## 10 https://imdb.com/title/tt7366338/?ref_=chttvtp_t_5 3,531 reviews
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## 13 https://imdb.com/title/tt0417299/?ref_=chttvtp_t_7 997 reviews
## 14 https://imdb.com/title/tt0417299/?ref_=chttvtp_t_7 997 reviews
## 15 https://imdb.com/title/tt6769208/?ref_=chttvtp_t_8 53 reviews
## 16 https://imdb.com/title/tt6769208/?ref_=chttvtp_t_8 53 reviews
## 17 https://imdb.com/title/tt0141842/?ref_=chttvtp_t_9 961 reviews
## 18 https://imdb.com/title/tt0141842/?ref_=chttvtp_t_9 961 reviews
## 19 https://imdb.com/title/tt2395695/?ref_=chttvtp_t_10 205 reviews
## 20 https://imdb.com/title/tt2395695/?ref_=chttvtp_t_10 205 reviews
## 21 https://imdb.com/title/tt0081846/?ref_=chttvtp_t_11 80 reviews
## 22 https://imdb.com/title/tt0081846/?ref_=chttvtp_t_11 80 reviews
## 23 https://imdb.com/title/tt9253866/?ref_=chttvtp_t_12 245 reviews
## 24 https://imdb.com/title/tt9253866/?ref_=chttvtp_t_12 245 reviews
## 25 https://imdb.com/title/tt0944947/?ref_=chttvtp_t_13 5,894 reviews
## 26 https://imdb.com/title/tt0944947/?ref_=chttvtp_t_13 5,894 reviews
## 27 https://imdb.com/title/tt7678620/?ref_=chttvtp_t_14 366 reviews
## 28 https://imdb.com/title/tt7678620/?ref_=chttvtp_t_14 366 reviews
## 29 https://imdb.com/title/tt0071075/?ref_=chttvtp_t_15 126 reviews
## 30 https://imdb.com/title/tt0071075/?ref_=chttvtp_t_15 126 reviews
## 31 https://imdb.com/title/tt1355642/?ref_=chttvtp_t_16 465 reviews
## 32 https://imdb.com/title/tt1355642/?ref_=chttvtp_t_16 465 reviews
## 33 https://imdb.com/title/tt2861424/?ref_=chttvtp_t_17 908 reviews
## 34 https://imdb.com/title/tt2861424/?ref_=chttvtp_t_17 908 reviews
## 35 https://imdb.com/title/tt1533395/?ref_=chttvtp_t_18 12 reviews
## 36 https://imdb.com/title/tt1533395/?ref_=chttvtp_t_18 12 reviews
## 37 https://imdb.com/title/tt8420184/?ref_=chttvtp_t_19 541 reviews
## 38 https://imdb.com/title/tt8420184/?ref_=chttvtp_t_19 541 reviews
## 39 https://imdb.com/title/tt0052520/?ref_=chttvtp_t_20 213 reviews
## 40 https://imdb.com/title/tt0052520/?ref_=chttvtp_t_20 213 reviews
## 41 https://imdb.com/title/tt1877514/?ref_=chttvtp_t_21 175 reviews
## 42 https://imdb.com/title/tt1877514/?ref_=chttvtp_t_21 175 reviews
## 43 https://imdb.com/title/tt1475582/?ref_=chttvtp_t_22 1,094 reviews
## 44 https://imdb.com/title/tt1475582/?ref_=chttvtp_t_22 1,094 reviews
## 45 https://imdb.com/title/tt2560140/?ref_=chttvtp_t_23 2,353 reviews
## 46 https://imdb.com/title/tt2560140/?ref_=chttvtp_t_23 2,353 reviews
## 47 https://imdb.com/title/tt0103359/?ref_=chttvtp_t_24 219 reviews
## 48 https://imdb.com/title/tt0103359/?ref_=chttvtp_t_24 219 reviews
## 49 https://imdb.com/title/tt0386676/?ref_=chttvtp_t_25 1,773 reviews
## 50 https://imdb.com/title/tt0386676/?ref_=chttvtp_t_25 1,773 reviews
## Critic_Reviews Popularity_Rating
## 1 175 20
## 2 175 20
## 3 6 1,121
## 4 6 1,121
## 5 10 2,011
## 6 10 2,011

```


## 7	34	171
## 8	34	171
## 9	88	173
## 10	88	173
## 11	77	108
## 12	77	108
## 13	57	373
## 14	57	373
## 15	9	4,415
## 16	9	4,415
## 17	93	33
## 18	93	33
## 19	12	1,499
## 20	12	1,499
## 21	8	3,866
## 22	8	3,866
## 23	15	2,765
## 24	15	2,765
## 25	368	14
## 26	368	14
## 27	4	411
## 28	4	411
## 29	5	2,627
## 30	5	2,627
## 31	16	508
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## 33	94	137
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## 39	85	354
## 40	85	354
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## 43	121	172
## 44	121	172
## 45	64	60
## 46	64	60
## 47	25	527
## 48	25	527
## 49	76	55
## 50	76	55

#Below is the Amazon Data authored by Camarista

Load necessary libraries

```
library(rvest)
library(httr)
library(dplyr)
library(polite)
library(stringr)
```

Define URLs

```

urls <- c('https://www.amazon.com/s?k=backpacks&crid=35ZQ1H72MC3G9&sprefix=backpacks%2Caps%2C590&ref=nb_
'https://www.amazon.com/s?k=laptops&crid=L7MQBW7MD4SX&sprefix=laptopb%2Caps%2C1304&ref=nb_sb_noss_2',
'https://www.amazon.com/s?k=phone+case&dc&crid=1VPDCJ87S93TL&sprefix=phone+cas%2Caps%2C451&ref=a9_asc_1
'https://www.amazon.com/s?k=mountain+bike&crid=1ZQR71S8XHZN6&sprefix=mountain+bik%2Caps%2C499&ref=nb_sb_
'https://www.amazon.com/s?k=tshirt&crid=2RQIP7MP6IYAW&sprefix=tshirt%2Caps%2C443&ref=nb_sb_noss_2')

df <- list()

for (i in seq_along(urls)) {

  session <- bow(urls[i], user_agent = "Educational")

  product_name <- scrape(session) %>%
  html_nodes('h2.a-size-mini') %>%
  html_text() %>%
  head(30)

  product_description <- scrape(session) %>%
  html_nodes('div.productDescription') %>%
  html_text() %>%
  head(30)

  product_rating <- scrape(session) %>%
  html_nodes('span.a-icon-alt') %>%
  html_text() %>%
  head(30)
  ratings <- as.numeric(str_extract(product_rating, "\\d+\\.\\d"))

  product_price <- scrape(session) %>%
  html_nodes('span.a-price') %>%
  html_text() %>%
  head(30)
  price <- as.numeric(str_extract(product_price, "\\d+\\.\\d+"))

  product_review <- scrape(session) %>%
  html_nodes('div.review-text-content') %>%
  html_text() %>%
  head(30)

  dfTemp <- data.frame(Product_Name = product_name[1:30],
    Description = product_description[1:30],
    Rating = ratings[1:30],
    Price = price[1:30],
    stringsAsFactors = FALSE)

  df[[i]] <- dfTemp
}

```

```
print(df[[1]])
```

```
##
## 1          SUPACOOOL Lightweight Casual Travel Backpack with USB Charging Port for Men and Women, Lap
## 2 LOVEVOOK Laptop Backpack for Women, 15.6 Inch Work Business Backpacks Purse with USB Port, Large C
## 3          JanSport SuperBreak One Backpacks - Durable, Lightweight Bo
## 4 MATEIN Travel Laptop Backpack, Business Anti Theft Slim Sturdy Laptops Backpack with USB Charging
## 5          YOREPEK Travel Backpack, Extra Large 50L Laptop Backpacks for Men Women, Water Resistant Col
## 6          MIYCOO Backpack - Ultra Lightweight Pack
## 7          Carhartt 21L, Durable Water-Resistant Pa
## 8          JanSport Right Pack Backpack - Durable Dayp
## 9
## 10 Taygeer Travel Backpack for Women, Carry On Backpack with USB Charging Port & Shoe Pouch, TSA 1
## 11
## 12          Backpack for Women Men,Lightweight Durable Water-Resistant Pack
## 13          Laptop Backpack,Business Travel Anti Theft Slim Durable Laptops Backpack with USB Charging
## 14
## 15
## 16          JanSport Laptop Backpack - Computer Bag w
## 17          BIKROD Black Backpack for School Teen Boys and Girls, Plain Backpacks for Men and Women, Lar
## 18
## 19
## 20
## 21 LOVEVOOK Laptop Backpack for Women, 15.6 Inch Work Business Backpacks Purse with USB Port, Large C
## 22          SUPACOOOL Lightweight Casual Backpack for Men and Women
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
##      Description Rating Price
## 1      <NA>      4.5 19.91
## 2      <NA>      4.3 23.99
## 3      <NA>      4.4 29.98
## 4      <NA>      4.8 38.00
## 5      <NA>      4.6 21.99
## 6      <NA>      4.7 39.96
## 7      <NA>      4.7 27.99
## 8      <NA>      4.7 39.99
## 9      <NA>      4.3 14.99
## 10     <NA>      4.7 49.99
## 11     <NA>      4.6 44.35
## 12     <NA>      4.7 64.99
## 13     <NA>      3.7 23.99
## 14     <NA>      4.7 23.99
## 15     <NA>      4.6  8.99
## 16     <NA>      4.7 12.00
## 17     <NA>      4.8 16.99
## 18     <NA>      4.7 29.99
## 19     <NA>      4.6 65.00
## 20     <NA>      4.6 99.00
```

```
## 21      <NA>      4.7 45.81
## 22      <NA>      4.6 55.00
## 23      <NA>      4.8 15.99
## 24      <NA>      4.6 23.99
## 25      <NA>      NA 80.00
## 26      <NA>      NA 79.99
## 27      <NA>      NA 99.99
## 28      <NA>      NA 29.98
## 29      <NA>      NA 21.99
## 30      <NA>      NA 24.99
```

```
print(df[[2]])
```

```
##
## 1      15.6-inch Laptop, 16GB DDR4 512GB SSD, Newest Windows 11 Laptop with Intel 12th Gen A
## 2      Acer Aspire 3 A315-24P-R7VH Slim Laptop | 15.6" Full HD IPS Display | AMD Ryzen 3 7320U Quad-C
## 3      HP Flagship 14" Laptop with 1 Year Office 365 | 16GB RAM | 1.28TB Storage(128GB E
## 4      15.6 FHD Student Laptop Computer, 16GB RAM 1TB SSD, Backlit Keyboar
## 5      HP Newest 255 G10 Laptop for Home or Work, 16GB RAM, 1TB SSD, 15.6" Full HD, Ryzen 3
## 6      HP Portable Laptop, Student and Business, 14" HD Display, Intel Quad-Core
## 7      HP Stream 14" HD BrightView Laptop, Intel Celeron N4120, 16GB RAM, 288GB Storage (128GB eMMC +
## 8      HP Newest 14" Ultral Light Laptop for Students and Business, Intel Quad-Core N4120, 8GB
## 9      HP 15.6" Business & Student Laptop Computer, Intel Core i5, Windows 11 Pro Laptop with Mic
## 10     HP 15.6" Business & Student Laptop Computer, Intel Core i3, Windows 11 P
## 11     HP 14 Laptop, Intel Celeron N4020, 4 GB RAM, 64 GB Storage, 14-inch Micro-edge HD Display, V
## 12
## 13     Lenovo Newest V15 Business Laptop Computer, 15.6" FHD Display, Intel Dual-core Processor, 16GB DD
## 14     HP 17 Laptop, 17.3" HD+ Display, 1
## 15     Newest HP 14" HD Laptop, Windows 11, Inte
## 16     NIMO 15.6 FHD Student Laptop, 16GB RAM, 1TB SSD, Intel Pentium Quad-Core N1
## 17
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
##      Description Rating  Price
## 1      <NA>      4.2 379.98
## 2      <NA>      4.2 399.99
## 3      <NA>      4.2 277.00
## 4      <NA>      4.4 321.99
## 5      <NA>      4.6 399.00
## 6      <NA>      5.0 389.00
## 7      <NA>      4.3 439.00
## 8      <NA>      4.1 448.88
## 9      <NA>      4.3 599.00
## 10     <NA>      4.0 190.35
```

## 11	<NA>	4.1	269.00
## 12	<NA>	4.1	309.00
## 13	<NA>	4.0	399.00
## 14	<NA>	4.1	249.99
## 15	<NA>	4.2	689.99
## 16	<NA>	4.2	599.99
## 17	<NA>	4.1	177.50
## 18	<NA>	5.0	209.99
## 19	<NA>	NA	148.00
## 20	<NA>	NA	409.00
## 21	<NA>	NA	474.96
## 22	<NA>	NA	157.48
## 23	<NA>	NA	168.95
## 24	<NA>	NA	399.99
## 25	<NA>	NA	NA
## 26	<NA>	NA	NA
## 27	<NA>	NA	NA
## 28	<NA>	NA	NA
## 29	<NA>	NA	NA
## 30	<NA>	NA	NA

```
print(df[[3]])
```

##	
## 1	ESR for iPhone 14 Case/iPhone 13 Case, Compatible with MagSafe, Shockproof
## 2	BENTOBEN Magnetic for iPhone 13 Case & iPhone 14 Case [Compatible with Magsafe] Translucent Matte
## 3	ORNARTO Compatible with iPhone
## 4	OtterBox iPhone 15, iPh
## 5	Temdan for iPhone 16 Pro Max Case Clear, [Compatible with Magsafe][Anti-Yellow
## 6	
## 7	Otte
## 8	OtterBox :
## 9	OtterBox iPhon
## 10	OtterBox iPhone 13 Pro Ma
## 11	elago Compatible with iPhone 14 Pro Max Case, Liquid Silicone Case, Full Bo
## 12	
## 13	JETech Cas
## 14	FABSPARK Phone Case for iPhone 13
## 15	OtterBox
## 16	OtterBox iPhone SE 3rd & 2nd Gen, iPhone 8 & iPhone 7 (not Compatible wi
## 17	
## 18	
## 19	
## 20	
## 21	
## 22	
## 23	
## 24	
## 25	
## 26	
## 27	
## 28	
## 29	
## 30	
##	Description Rating Price

```
## 1      <NA>      3.6 14.99
## 2      <NA>      3.6 30.99
## 3      <NA>      3.4 12.98
## 4      <NA>      4.6  9.99
## 5      <NA>      4.5 20.99
## 6      <NA>      4.5 35.19
## 7      <NA>      4.6 39.95
## 8      <NA>      4.6  8.99
## 9      <NA>      3.9 44.95
## 10     <NA>      4.7 29.95
## 11     <NA>      4.7 34.63
## 12     <NA>      4.7 39.95
## 13     <NA>      4.6 26.69
## 14     <NA>      4.5 39.95
## 15     <NA>      4.7 29.95
## 16     <NA>      4.6 39.95
## 17     <NA>      4.3 12.99
## 18     <NA>      4.6 31.99
## 19     <NA>      4.6 59.95
## 20     <NA>      NA  9.99
## 21     <NA>      NA  9.99
## 22     <NA>      NA 32.99
## 23     <NA>      NA 39.95
## 24     <NA>      NA 29.96
## 25     <NA>      NA 39.95
## 26     <NA>      NA  NA
## 27     <NA>      NA  NA
## 28     <NA>      NA  NA
## 29     <NA>      NA  NA
## 30     <NA>      NA  NA
```

```
print(df[[4]])
```

```
##
## 1 WEIZE Mountain Bike, 24/26/27.5 inch Outdoor Cycling Bike,18-Speed/High-Carbon Steel/Dual Full Suspension
## 2      Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicycle Wheel
## 3      Racer Electric Bike for Adults - 21-Speed Mountain Lightweight Ebike with 26" Wheels
## 4      Mongoose Flatrock 21-Speed Hardtail Mountain Bike, 24 to 26" Wheels
## 5      Mountain Bike 24/26/27.5 Inch, Dual Full Suspension
## 6      Schwinn High Timber Mountain Bike for Adult Youth Men Women
## 7      Outroad 26 Inch Mountain Bike, 21-Speed/High-Carbon Steel/Aviation Grade Frame, 18-Speed
## 8      Ktaxon Mountain Bike 26/27.5/29 Inch Men & Women
## 9      HOVERFLY OUREA Electric Bike 26", 750W Peak Motor Mountain Ebike, 26"
## 10 Schwinn Traxion Mountain Bike for Adult Men Women, 29-Inch Wheels, Full Suspension, 24-Speed Shimano
## 11      Mongoose Salvo Comp, Trail, or Sport Mountain Bike for Adult Men and Women
## 12      Dynacraft Magna Echo Ridge Mountain Bike - Rugged and Durable Design
## 13      Schwinn Bonafide Men and Women
## 14      Grafton Mountain Bike for Adult and Youth Men and Women, 24/26 / 27.5-Inch
## 15      Huffy Stone Mountain Hardtail Mountain Bike for Boys/Girls/Men/Women, 20"/24"/26"
## 16 isinwheel M10 Electric Bike Adult 500W, 26" Commuting Electric Mountain Bike 20MPH Max Range 50 Miles
## 17
## 18
## 19
## 20
## 21
```

```
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
##      Description Rating  Price
## 1      <NA>      4.0 179.99
## 2      <NA>      4.4 199.99
## 3      <NA>      4.3 492.99
## 4      <NA>      4.1 519.99
## 5      <NA>      4.2 199.99
## 6      <NA>      4.1 309.99
## 7      <NA>      3.9 179.99
## 8      <NA>      4.2 423.24
## 9      <NA>      4.2 499.99
## 10     <NA>      4.3  99.98
## 11     <NA>      4.2 199.99
## 12     <NA>      4.0 549.99
## 13     <NA>      4.2 629.99
## 14     <NA>      3.5 675.33
## 15     <NA>      3.7 899.99
## 16     <NA>      4.3 164.99
## 17     <NA>      NA  612.37
## 18     <NA>      NA  349.99
## 19     <NA>      NA  249.99
## 20     <NA>      NA  399.99
## 21     <NA>      NA    NA
## 22     <NA>      NA    NA
## 23     <NA>      NA    NA
## 24     <NA>      NA    NA
## 25     <NA>      NA    NA
## 26     <NA>      NA    NA
## 27     <NA>      NA    NA
## 28     <NA>      NA    NA
## 29     <NA>      NA    NA
## 30     <NA>      NA    NA
```

```
print(df[[5]])
```

```
##
## 1
## 2      Men's Crew T-Shirts, Multipack, Style 1000, 5 Pack
## 3      Fruit of the Loom Men's Eversoft Cotton Stay Tucked Crew Neck T-Shirt, 1 or 2 Pack, Available in T
## 4      Men's Eversoft Cotton Stay Tucked Crew Neck T-Shirt, 1 or 2 Pack, Available in T
## 5
## 6      Men's Pocket Undershirt Pack, Cotton Crew Neck T-Shirt, Moisture Wicking Tee, Assorted Colors, 5 Pack
## 7
## 8      Men's T-Shirt, Beefy-T Heavyweight Cotton Crewneck Tee, 1 or 2 Pack, Available in T
## 9
## 10     Unisex Adult Ultra Cotton T-Shirt, Style G2000, 1 or 2 Pack, Available in T
## 11
```

## 12	Men's Cotton, Moisture-Wicking Crew Tee Undershirts, Multi-Packs A		
## 13			T:
## 14	6 Pack, Men's Short Sleeve Crew Neck T-Shirt		
## 15			Fruit c
## 16	Men's Eversoft Cotton Stay Tucked V-Neck		
## 17			Russe
## 18	Men's Dri-Power Cotton Blend Short Sleeve Tees, Moisture Wicking, Odor Protection, UPF 30+, S		
## 19			Com
## 20	Adult Heavyweight Short Sleeve Tee, Style G1		
## 21			T:
## 22	3 Pack, Men's Short Sleeve Crew Neck T-Shirt		
## 23			
## 24	Men's Loose Fit Heavyweight Short-Sleeve Pocke		
## 25			Libe
## 26	5 Pack Men's Active Quick Dry Crew Neck T Shirts Athletic Running Gym Workout Short Sleeve Tee		
## 27			
## 28	Workout Shirts for Men Short Sleeve Quick Dry Athletic Gym Active T Shirt Moistur		
## 29			
## 30			Men's V-Neck T-Shirts, Multipack, St
##	Description	Rating	Price
## 1	<NA>	4.6	19.97
## 2	<NA>	4.6	21.48
## 3	<NA>	4.4	21.98
## 4	<NA>	4.5	7.39
## 5	<NA>	4.5	12.00
## 6	<NA>	4.5	11.11
## 7	<NA>	4.3	11.99
## 8	<NA>	4.6	15.40
## 9	<NA>	4.5	22.00
## 10	<NA>	4.5	89.99
## 11	<NA>	4.1	99.99
## 12	<NA>	4.6	17.42
## 13	<NA>	4.6	18.49
## 14	<NA>	4.4	7.42
## 15	<NA>	4.5	10.99
## 16	<NA>	4.4	9.04
## 17	<NA>	4.3	14.99
## 18	<NA>	4.5	56.99
## 19	<NA>	4.4	89.97
## 20	<NA>	4.5	19.99
## 21	<NA>	4.3	33.95
## 22	<NA>	4.5	59.95
## 23	<NA>	4.6	43.99
## 24	<NA>	4.4	33.17
## 25	<NA>	4.3	14.99
## 26	<NA>	4.5	45.98
## 27	<NA>	4.3	52.00
## 28	<NA>	4.3	11.13
## 29	<NA>	4.2	12.66
## 30	<NA>	4.5	35.99