RWorksheet5

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```r
url <- "https://www.imdb.com/chart/toptv/?ref_=nv_tvv_250c"
```

```r
library(rvest)
page <- read_html(url)
```

```r
library(httr)
library(dplyr)
library(rvest)
rows <-  page %>%
  html_nodes('h3.ipc-title__text') %>%
  html_text()
rows
```

```
##  [1] "IMDb Charts"                          "1. Breaking Bad"
##  [3] "2. Planet Earth II"                   "3. Planet Earth"
##  [5] "4. Band of Brothers"                  "5. Chernobyl"
##  [7] "6. The Wire"                          "7. Avatar: The Last Airbender"
##  [9] "8. Blue Planet II"                    "9. The Sopranos"
## [11] "10. Cosmos: A Spacetime Odyssey"      "11. Cosmos"
## [13] "12. Our Planet"                       "13. Game of Thrones"
## [15] "14. Bluey"                            "15. The World at War"
## [17] "16. Fullmetal Alchemist: Brotherhood" "17. Rick and Morty"
## [19] "18. Life"                             "19. The Last Dance"
## [21] "20. The Twilight Zone"                "21. The Vietnam War"
## [23] "22. Sherlock"                         "23. Attack on Titan"
## [25] "24. Batman: The Animated Series"      "25. Arcane"
## [27] "Recently viewed"
```

```r
rows <- as.data.frame(rows)
 Titles <- rows[-c(1, nrow(rows)), ]

Titles
```

```
##  [1] "1. Breaking Bad"                      "2. Planet Earth II"
##  [3] "3. Planet Earth"                      "4. Band of Brothers"
##  [5] "5. Chernobyl"                         "6. The Wire"
##  [7] "7. Avatar: The Last Airbender"        "8. Blue Planet II"
##  [9] "9. The Sopranos"                      "10. Cosmos: A Spacetime Odyssey"
## [11] "11. Cosmos"                           "12. Our Planet"
## [13] "13. Game of Thrones"                  "14. Bluey"
## [15] "15. The World at War"                 "16. Fullmetal Alchemist: Brotherhood"
## [17] "17. Rick and Morty"                   "18. Life"
## [19] "19. The Last Dance"                   "20. The Twilight Zone"
## [21] "21. The Vietnam War"                  "22. Sherlock"
```

```
## [23] "23. Attack on Titan"              "24. Batman: The Animated Series"
## [25] "25. Arcane"
```

```r
ratings <- page %>% html_nodes("span.ipc-rating-star--rating")  %>%  html_text()

ratings
```

```
##  [1] "9.5" "9.5" "9.4" "9.4" "9.3" "9.3" "9.3" "9.3" "9.2" "9.2" "9.3" "9.2" "9.2" "9.3" "9.2" "9.1"
## [19] "9.0" "9.0" "9.1" "9.1" "9.1" "9.0" "9.0"
```

```r
The_number_of_people_voted <- page %>% html_nodes("span.ipc-rating-star--voteCount")  %>%  html_text()

print(The_number_of_people_voted)
```

```
##  [1] " (2.2M)" " (163K)" " (224K)" " (547K)" " (911K)" " (392K)" " (391K)" " (49K)"  " (501K)" " (13
## [11] " (46K)"  " (54K)"  " (2.4M)" " (34K)"  " (32K)"  " (210K)" " (629K)" " (44K)"  " (160K)" " (98
## [21] " (30K)"  " (1M)"   " (566K)" " (123K)" " (336K)"
```

```r
library(stringr)
episodes <- page %>% html_nodes("span.sc-300a8231-7.eaXxft.cli-title-metadata-item")  %>%  html_text()

episode_numbers <- str_extract(episodes, "\\d+ eps")

episode_numbers <- str_remove(episode_numbers, " eps")

episode_numbers <- as.data.frame(episode_numbers)
episode_numbers <- episode_numbers[!is.na(episode_numbers)]
print(episode_numbers)
```

```
##  [1] "62"  "6"   "11"  "10"  "5"   "60"  "62"  "7"   "86"  "13"  "13"  "12"  "74"  "194" "26"  "68"
## [19] "10"  "156" "10"  "15"  "98"  "85"  "18"
```

```r
episodes <- page %>% html_nodes("span.sc-300a8231-7.eaXxft.cli-title-metadata-item") %>% html_text()

year_data <- str_extract(episodes, "\\d{4}")

year_data <- year_data[!is.na(year_data)]

year_data <- as.numeric(year_data)

print(year_data)
```

```
##  [1] 2008 2016 2006 2001 2019 2002 2005 2017 1999 2014 1980 2019 2011 2018 1973 2009 2013 2009 2020
## [22] 2010 2013 1992 2021
```

```r
Imdb <- data.frame(Titles,ratings,The_number_of_people_voted,episode_numbers,year_data)
Imdb
```

```
##                          Titles ratings The_number_of_people_voted episode_numbers year_data
## 1            1. Breaking Bad    9.5                      (2.2M)              62      2008
## 2         2. Planet Earth II    9.5                      (163K)               6      2016
## 3            3. Planet Earth    9.4                      (224K)              11      2006
## 4          4. Band of Brothers   9.4                      (547K)              10      2001
```

2

```
## 5                       5. Chernobyl  9.3                (911K)       5   2019
## 6                       6. The Wire    9.3                (392K)      60   2002
## 7        7. Avatar: The Last Airbender 9.3                (391K)      62   2005
## 8                   8. Blue Planet II  9.3                 (49K)       7   2017
## 9                    9. The Sopranos   9.2                (501K)      86   1999
## 10     10. Cosmos: A Spacetime Odyssey 9.2                (132K)      13   2014
## 11                       11. Cosmos    9.3                 (46K)      13   1980
## 12                   12. Our Planet    9.2                 (54K)      12   2019
## 13               13. Game of Thrones   9.2                (2.4M)      74   2011
## 14                        14. Bluey    9.3                 (34K)     194   2018
## 15              15. The World at War   9.2                 (32K)      26   1973
## 16 16. Fullmetal Alchemist: Brotherhood 9.1               (210K)      68   2009
## 17               17. Rick and Morty    9.1                (629K)      78   2013
## 18                         18. Life    9.1                 (44K)      11   2009
## 19               19. The Last Dance    9.0                (160K)      10   2020
## 20             20. The Twilight Zone   9.0                 (98K)     156   1959
## 21             21. The Vietnam War     9.1                 (30K)      10   2017
## 22                    22. Sherlock     9.1                  (1M)      15   2010
## 23             23. Attack on Titan     9.1                (566K)      98   2013
## 24     24. Batman: The Animated Series 9.0                (123K)      85   1992
## 25                       25. Arcane    9.0                (336K)      18   2021
```

#2. From the 50 tv shows, select at least 5 tv shows to scrape 20 user reviews that will include the reviewer's name, date of reviewed, user rating, title of the review, the numbers for "is helpful" and "is not helpful", and text reviews.

```
link <-  "https://www.imdb.com/title/tt5491994/reviews/?ref_=tt_urv_sm"
link1 <- "https://www.imdb.com/title/tt0185906/reviews/?ref_=tt_urv_sm"
link2 <- "https://www.imdb.com/title/tt7366338/reviews/?ref_=tt_urv_sm"
link3 <- "https://www.imdb.com/title/tt0306414/reviews/?ref_=tt_urv_sm"
link4 <- "https://www.imdb.com/title/tt0417299/reviews/?ref_=tt_urv_sm"
window <- read_html(link)
window1 <- read_html(link1)
window2 <- read_html(link2)
window3 <- read_html(link3)
window4 <- read_html(link4)
```

```
Reviewers_name <-  window %>%
  html_nodes("a.ipc-link.ipc-link--base") %>%
  html_text()

Reviewers_names <- Reviewers_name[Reviewers_name != "Permalink"]
Reviewers_names[c(1:20)]
```

```
##  [1] "arjanhylkema"       "Wentloog"          "john-m-madsen"      "thespookybuz"        "pjdickinson
##  [6] "dbijis33"           "dhanrajjughead"    "NeilBarnett"        "salmanu-27386"       "panagiotisl
## [11] "ianrobo"            "adamonIMDb"        "tinyfordst"         "larask-21775"        "BobFillmore
## [16] "farshidkarimi"      "TheLittleSongbird" "myersei-165-4350"   "fierceeagle-40009"   "adam-whitme
```

```
Date_of_Reviewed <-  window %>%
  html_nodes("li.ipc-inline-list__item.review-date") %>%
  html_text()

Date_of_Reviewed[c(1:20)]
```

```
##  [1] "Nov 7, 2016"  "Nov 5, 2016"  "Nov 5, 2016"  "Nov 9, 2016"  "Nov 5, 2016"  "Nov 8, 2016"  "Nov
```

3

```
##  [8] "Nov 13, 2016" "Nov 6, 2016"  "Dec 31, 2016" "Nov 19, 2016" "Dec 28, 2016" "May 19, 2019" "Oct 2
## [15] "Sep 29, 2017" "Nov 22, 2016" "Oct 12, 2017" "Dec 4, 2016"  "Apr 23, 2020" "Jan 5, 2017"
```

```
Ratings <- window %>%
  html_nodes("span.ipc-rating-star--rating") %>%
  html_text()

Ratings[c(1:20)]
```

```
##  [1] "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "7"  "10" "10" "10" "10" "10" "10" "10"
```

```
Title <- window %>%
  html_nodes("h3.ipc-title__text") %>%
  html_text()

as.data.frame(Title)
```

```
##
## 1
## 2                                                          At once awe-inspiring a
## 3                                    Yet another masterpiece from BBC Nature & Dav
## 4
## 5
## 6                                                                        Dangero
## 7                                                           Greatest documentary
## 8                                                         Best thing on TV since la
## 9
## 10                                       One of the best documentaries
## 11                                                      In times of climat
## 12
## 13                                     More irritated with IMDb for the bias tha
## 14
## 15                                                      Should be required vie
## 16                                                      What a Beautiful Plane
## 17 Like the first 'Planet Earth', does for nature and our planet as 'Walking with Dinosaurs' did wit
## 18                                                      This masterpiece deserve
## 19                                                                        Absol
## 20                                       Peerless evocation of nature a
## 21
## 22
## 23                                     Beautifully filmed but starting to feel a
## 24                                                      I'm not a fan but it'
## 25                                                         Greatest piece
## 26                                                                 More
## 27                                                                           1
## 28                                                                           1
```

```
Title[c(1:20)]
```

```
##  [1] ">10"
##  [2] "At once awe-inspiring and terrifying!"
##  [3] "Yet another masterpiece from BBC Nature & David Attenborough"
##  [4] "Mesmerizing"
##  [5] "Astounding"
##  [6] "Dangerously beautiful"
##  [7] "Greatest documentary ever created."
```

```
##  [8] "Best thing on TV since last Planet Earth"
##  [9] "Excellent"
## [10] "One of the best documentaries I 've ever seen"
## [11] "In times of climate deniers, hope"
## [12] "Breathtaking"
## [13] "More irritated with IMDb for the bias than with the show"
## [14] "Love it!"
## [15] "Should be required viewing in schools"
## [16] "What a Beautiful Planet- Bewitching !"
## [17] "Like the first 'Planet Earth', does for nature and our planet as 'Walking with Dinosaurs' did w
## [18] "This masterpiece deserves higher scores"
## [19] "Absolutely amazing."
## [20] "Peerless evocation of nature across the globe"
```

```r
Helpful <- window %>%
  html_nodes("span.ipc-voting__label__count.ipc-voting__label__count--up") %>%
  html_text()
Helpful[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Not_Helpful <- window %>%
  html_nodes("span.ipc-voting__label__count ipc-voting__label__count--up")  %>%
  html_text()

Not_Helpful[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Review_text <- window %>%
   html_nodes("div.ipc-html-content-inner-div")  %>%
  html_text()
Review_text[c(1:20)]
```

```
##  [1] "As Planet Earth I was released about ten years ago, a visual improvement could have been expec
##  [2] "I have just finished watching the first episode on BBC 1 and I am amazed to find that Planet Ea
##  [3] "What to say about Planet Earth II which has not already been said about so many other fantastic
##  [4] "The original Planet Earth back in 2006 was an astounding and refreshing series that tore down
##  [5] "The professionalism of everyone involved in this glorious production is evident in every frame
##  [6] "Hello this is my first written review. Note that I haven't watched the first season (2006) so
##  [7] "By far the greatest and best nature documentaries ever made. Everyone needs to watch this. I ha
##  [8] "This is without doubt the best thing I have seen on television for years. The photography, nar
##  [9] "The opening image of Planet Earth II contained the promise of everything to come. It was specta
## [10] "One of the best documentaries I 've ever seen. Every episode is a new wonderful experience,gett
## [11] "Plant Earth 2 was everything you would expect and more. Every scene, every vista shows that hum
## [12] "I never thought the original 'Planet Earth' could be topped, but 10 years on and Attenborough
## [13] "Was Planet Earth 2 good? Absolutely, it was a visual masterpiece with locations that not even
## [14] "Stunning photography, excellent music, and the unique narration Attenborough brings make this a
## [15] "This is probably the most intimate documentary I have seen of our fellow species on earth. Awes
## [16] "This is my first comment and I hope I am not bungling it.I have been watching nature documentar
## [17] "Absolutely adore the first 'Planet Earth' from 2007, one of the best documentaries ever made an
## [18] "It's a shame I can only give this breathtaking masterpiece 10 out of 10, it really deserves mo
## [19] "Let me say the score, the music, the scenery, the animals and all the detail is like nothing yo
## [20] "This is not just one of the best wildlife documentaries ever made - superbly filmed using the l
it is one of the great achievements in any area of culture from this or any other year. Little else shou
```

```r
Reviewers_name1 <-  window1 %>%
  html_nodes("a.ipc-link.ipc-link--base") %>%
  html_text()

Reviewers_name1 <- Reviewers_name1[Reviewers_name1 != "Permalink"]
Reviewers_name1[c(1:20)]
```

```
##  [1] "Rob1331"          "sanderson777"     "wildcatt268"        "arjay24"
##  [5] "rbverhoef"        "yodaschoda"       "philip_vanderveken" "Supermanfan-13"
##  [9] "thiagoutp"        "bsmith5552"       "faded_english_monkey" "planktonrules"
## [13] "stilonkostrzyn"   "faded_Glory"      "jazmodo"            "kait2007"
## [17] "mickman91-1"      "kipmcmillan"      "erwan_ticheler"     "grahamsj3"
```

```r
Date_of_Reviewed1 <-  window1 %>%
  html_nodes("li.ipc-inline-list__item.review-date") %>%
  html_text()

Date_of_Reviewed1[c(1:20)]
```

```
##  [1] "Sep 27, 2022" "Oct 14, 2001" "Jan 18, 2002" "Apr 18, 2004" "Feb 13, 2003" "Jan 23, 2005" "Sep
##  [8] "May 6, 2022"  "Nov 4, 2019"  "Nov 5, 2001"  "Aug 25, 2004" "May 30, 2015" "Apr 10, 2021" "May
## [15] "Jun 3, 2019"  "Jan 26, 2005" "May 3, 2022"  "Oct 24, 2018" "Dec 7, 2002"  "Nov 25, 2002"
```

```r
Ratings1 <-  window1 %>%
  html_nodes("span.ipc-rating-star--rating") %>%
  html_text()

Ratings1[c(1:20)]
```

```
##  [1] "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "7"  "5"  "10" "10" "10" "10" "9"  "10"
```

```r
Title1 <-  window1 %>%
  html_nodes("h3.ipc-title__text") %>%
  html_text()

Title1[c(1:20)]
```

```
##  [1] "Incredible!!"
##  [2] "Possibly the finest 10 hours ever created"
##  [3] "One of the best war movies/series ever"
##  [4] "Realistic"
##  [5] "Excellent"
##  [6] "One of, if not the best, mini series' ever made"
##  [7] "This series is so unbelievably realistic, so authentic."
##  [8] "One of the best mini-series ever created!"
##  [9] "Probably the best ever"
## [10] "Realistic WWII Drama With Warts Included"
## [11] "war, no frills"
## [12] "You can't beat this...."
## [13] "Overrated??"
## [14] "Not very realistic at all"
## [15] "Without Doubt, the Best Mini-Series Ever Recorded"
## [16] "Great Miniseries"
## [17] "A series like this won't be made again (see below), so treasure it"
## [18] "Share With Your Children"
## [19] "Best Mini series ever"
```

```
## [20] "A-1, TOPS, the BOMB what else can I say?"
```

```r
Helpful1 <- window1 %>%
  html_nodes("scan.ipc-voting__label__count ipc-voting__label__count--up") %>%
  html_text()
Helpful1[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Not_Helpful1 <- window1 %>%
  html_nodes("span.ipc-voting__label__count ipc-voting__label__count--up")  %>%
  html_text()
Not_Helpful1[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Review_text1 <- window1 %>%
   html_nodes("div.ipc-html-content-inner-div")  %>%
  html_text()
Review_text[c(1:20)]
```

```
##  [1] "As Planet Earth I was released about ten years ago, a visual improvement could have been expec
##  [2] "I have just finished watching the first episode on BBC 1 and I am amazed to find that Planet Ea
##  [3] "What to say about Planet Earth II which has not already been said about so many other fantastic
##  [4] "The original Planet Earth back in 2006 was an astounding and refreshing series that tore down
##  [5] "The professionalism of everyone involved in this glorious production is evident in every frame
##  [6] "Hello this is my first written review. Note that I haven't watched the first season (2006) so
##  [7] "By far the greatest and best nature documentaries ever made. Everyone needs to watch this. I ha
##  [8] "This is without doubt the best thing I have seen on television for years. The photography, nar
##  [9] "The opening image of Planet Earth II contained the promise of everything to come. It was specta
## [10] "One of the best documentaries I 've ever seen. Every episode is a new wonderful experience,get
## [11] "Plant Earth 2 was everything you would expect and more. Every scene, every vista shows that hu
## [12] "I never thought the original 'Planet Earth' could be topped, but 10 years on and Attenborough
## [13] "Was Planet Earth 2 good? Absolutely, it was a visual masterpiece with locations that not even
## [14] "Stunning photography, excellent music, and the unique narration Attenborough brings make this
## [15] "This is probably the most intimate documentary I have seen of our fellow species on earth. Awe
## [16] "This is my first comment and I hope I am not bungling it.I have been watching nature documentar
## [17] "Absolutely adore the first 'Planet Earth' from 2007, one of the best documentaries ever made a
## [18] "It's a shame I can only give this breathtaking masterpiece 10 out of 10, it really deserves mo
## [19] "Let me say the score, the music, the scenery, the animals and all the detail is like nothing y
## [20] "This is not just one of the best wildlife documentaries ever made - superbly filmed using the
## it is one of the great achievements in any area of culture from this or any other year. Little else sho
```

```r
Reviewers_name2 <-  window2 %>%
  html_nodes("a.ipc-link.ipc-link--base") %>%
  html_text()

Reviewers_names2<-Reviewers_name2[Reviewers_name2 != "Permalink"]
Reviewers_names2[c(1:20)]
```

```
##  [1] "curiosityonmars"   "stelmakh"          "natashapekar"      "m-porpaczi"        "Lladerat"
##  [6] "jfirebug"          "thegldt"           "alexander-phoenix" "wmeduardowm"       "Leofwine_dracal
## [11] "Jamie_Seaton"      "piter554"          "frimark"           "krzysztof-18241"   "ahmetkozan"
## [16] "Rob1331"           "stephenpdodds"     "Supermanfan-13"    "emholberg"         "josephwhitton"
```

```r
Date_of_Reviewed2 <-  window2 %>%
  html_nodes("li.ipc-inline-list__item.review-date") %>%
```

```
  html_text()
```

Date_of_Reviewed2[c(1:20)]

```
##  [1] "May 23, 2019" "May 10, 2019" "May 9, 2019"  "May 14, 2019" "May 7, 2019"  "May 20, 2019" "May
##  [8] "May 13, 2019" "May 6, 2019"  "Nov 27, 2019" "May 23, 2019" "Jun 29, 2019" "May 20, 2019" "May
## [15] "Jun 7, 2019"  "Sep 27, 2022" "May 6, 2019"  "Jul 10, 2022" "May 26, 2019" "May 15, 2019"
```

```
Ratings2 <-  window2 %>%
  html_nodes("span.ipc-rating-star--rating") %>%
  html_text()
```

Ratings2[c(1:20)]

```
##  [1] "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "1"  "8"  "10" "10" "9"  "10" "9"  "9"  "10"
```

```
Title2 <-  window2 %>%
  html_nodes("h3.ipc-title__text") %>%
  html_text()
```

Title2[c(1:20)]

```
##  [1] "They got it right"
##  [2] "Goosebumps and tears"
##  [3] "I highly recommend this film!"
##  [4] "No hero wakes up wanting to die"
##  [5] "So far looks excellent"
##  [6] "Incredible"
##  [7] "Bleak, Unsettling, Haunting All Throughout"
##  [8] "Unbelievable"
##  [9] "HBO did it again!"
## [10] "Exemplary"
## [11] "Amazing!"
## [12] "How cost the lie?"
## [13] "Emotionally drained..."
## [14] "Just watch it (!)"
## [15] "Now you look like the minister of coal!"
## [16] "Must Watch!"
## [17] "Cracking."
## [18] "Brilliant!"
## [19] "It is hard to overestimate the importance of this show."
## [20] "Amazing"
```

```
Helpful2 <- window2 %>%
  html_nodes("scan.ipc-voting__label__count ipc-voting__label__count--up") %>%
  html_text()
Helpful2[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```
Not_Helpful2 <- window2 %>%
  html_nodes("span.ipc-voting__label__count ipc-voting__label__count--up")  %>%
  html_text()
Not_Helpful2[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Review_text2 <- window2 %>%
  html_nodes("div.ipc-html-content-inner-div")  %>%
  html_text()
Review_text2[c(1:20)]
```

```
##  [1] "I was born in Pripyat. I was four years old when the accident happened. Watching it is more ho
##  [2] "A Belarusian here, born in 1983. Parents were scientists, knew everything on the 27th. Chernoby
##  [3] "Hi. I'm from Kiev, Ukraine. I was born in 1983 and I was 2 and a half years when the Chernobyl
##  [4] "As my mother tells it, the weather was quite nice, the sky was clear without any sign of clouds
##  [5] "Im ukrainian, born in 1988 and still live here. I want to give the authors of this show a big
##  [6] "My husband grew up near Kyiv and his father drove one of the buses that evacuated the civilians
##  [7] "'Chernobyl' is scarier than most horror movies in that it is a dramatization of actual, real-li
##  [8] "I'm Russian. Amazing work! Newer, you hear this, never ever before western cinematography made
##  [9] "The first episode somehow surpassed my expectations for what this TV Show would do with the big
## [10] "Quite possibly the most intense and powerful experience in television history! Very well could
## [11] "This film is a beautifully made anti-Soviet and anti-Russian propaganda. How cost the lie? You
## [12] "I'm Russian, my father went to Chernobyl as a physicist quite a while after the explosion (a fe
## [13] "30th of April, 1986, was a cloudless, sunny day in southern Poland. I was 13 years old, and wer
## [14] "In terms of series expression, it moves on in a style that we can call \"documentary-drama\".
## [15] "Chernobyl is about the brave men and women who had to navigate the ridiculously scary nuclear a
## [16] "Grim is an understatement.This is one of the very few shows that I'd bless with a ten star.It
## [17] "I can not overstate just how good Chernobyl really is! It's one of the best mini-series ever ma
## [18] "I was born in Ukraine, 1971. Parents - Soviet \"intelligentsia\": mother was a high school tea
## [19] "I work as an apprentice within the nuclear industry and I have to say without a doubt that this
## [20] "As a person who comes from a country that was ruled by the Communism, I have a good idea of how
```

```r
Reviewers_name3 <-  window3 %>%
  html_nodes("a.ipc-link.ipc-link--base") %>%
  html_text()

Reviewers_names3 <- Reviewers_name3[Reviewers_name3 != "Permalink"]
Reviewers_names3[c(1:20)]
```

```
##  [1] "OmarHartwellWhite"        "Rob1331"            "gogoschka-1"
##  [4] "Supermanfan-13"           "rwdelos5517"        "jaoneal"
##  [7] "atrevino90"               "ozgunozaksoy"       "TheLittleSongbird"
## [10] "ezraaaa"                  "the_batman0902"     "chrisneill"
## [13] "Zubacz"                   "jcslawyer"          "shandronobrien"
## [16] "=G="                      "echoman-net"        "inthepalemoonlight"
## [19] "suman-tangirala-836-985304" "jeffronthi"
```

```r
Date_of_Reviewed3 <-  window3 %>%
  html_nodes("li.ipc-inline-list__item.review-date") %>%
  html_text()

Date_of_Reviewed3[c(1:20)]
```

```
##  [1] "May 12, 2014" "Sep 29, 2022" "Jan 11, 2014" "Sep 20, 2022" "Apr 24, 2020" "Sep 19, 2006" "Oct
##  [8] "Sep 27, 2020" "Jul 21, 2011" "May 7, 2021"  "Sep 16, 2021" "Jan 14, 2005" "Aug 25, 2013" "Feb
## [15] "Sep 28, 2016" "Oct 24, 2004" "Sep 16, 2021" "Oct 17, 2004" "Aug 11, 2024" "Jul 22, 2014"
```

```r
Ratings3 <-  window3 %>%
  html_nodes("span.ipc-rating-star--rating") %>%
  html_text()

Ratings3[c(1:20)]
```

```
##  [1] "10" "10" "10" "10" "10" "10" "9"  "10" "10" "10" "10" "7"  "5"  "10" "10" "10" "10" "10" "10"
```

```r
Title3 <-  window3 %>%
  html_nodes("h3.ipc-title__text") %>%
  html_text()

Title3[c(1:20)]
```

```
##  [1] "If You Haven't Seen this show, but are considering it, please read my review."
##  [2] "Incredible!"
##  [3] "This isn't just a show about crime - this tries to show every aspect of life in a crumbling soc
##  [4] "As good as everyone says it is!"
##  [5] "The Wire is why awards are irrelevant."
##  [6] "Fantastic"
##  [7] "I used to not understand what whas so great about it"
##  [8] "It's not a show, feels like real life"
##  [9] "Hard to put into words how phenomenal The Wire is"
## [10] "Best TV Series Ever Made?"
## [11] "Doesn't get better than this"
## [12] "The best thing on TV today"
## [13] "...while you're waiting for moments that never come."
## [14] "I'm definitely in the minority"
## [15] "An American Masterpiece: The Single Greatest Narrative of Our Generation"
## [16] "Ahead of its time"
## [17] "20 years ahead of its time."
## [18] "Best show on TV"
## [19] "A Timeless Masterpiece of Gritty Realism"
## [20] "As Close as it Gets"
```

```r
Helpful3 <- window3 %>%
  html_nodes("scan.ipc-voting__label__count ipc-voting__label__count--up") %>%
  html_text()
Helpful3[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Not_Helpful3 <- window3 %>%
  html_nodes("span.ipc-voting__label__count ipc-voting__label__count--up")  %>%
  html_text()
Not_Helpful3[c(1:20)]
```

```
##  [1] NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
```

```r
Review_text3 <- window3 %>%
   html_nodes("div.ipc-html-content-inner-div")  %>%
  html_text()
Review_text3[c(1:20)]
```

```
##  [1] "This Review is aimed at anyone who has never seen the wire, but may have heard about it from al
##  [2] "I don't even no where to begin to explain how much I love The Wire! It's a crime drama that tal
##  [3] "Along with TV-shows like 'Oz', 'Deadwood', 'The Sopranos' and 'Six Feet Under', David Simon's
##  [4] "The Wire absolutely, without a doubt, lives up to all the hype and love it gets. The storytell:
##  [5] "This series not winning an Emmy, is why awards are nonsense. Andre Royo alone deserves one for
##  [6] "I don't subscribe to HBO. A couple of weeks ago I heard an interview with a young actor from tl
##  [7] "I first attempted to watch this series over a decade ago when I started getting interested in
```

```
##  [8] "Definetly the most realistic show I have ever watch. You can feel for all of the characters, t|
##  [9] "I have seen many brilliant shows, and The Wire is one of them. Even the word brilliant isn't e|
## [10] "Here's my rating with some little review for every season:Season 1: 8.5/10 (Impressive start, |
## [11] "I heard that during it's initial run that The Wire's creator David Simon had to convince execu|
## [12] "Possibly the best thing written for television ever; certainly the best to come out in the las|
## [13] "I find it surprising to see everyone likes this show so much. Sure, the cast, direction, camer|
## [14] "I seriously don't get the hype regarding this show. It was so slow moving and boring. When I w|
## [15] "I say that without a shred of hyperbole. The Wire's importance, beyond setting the standard fo|
## [16] "HBO's \"The Wire\", another ground breaking TV crime series from David Simon who grandfathered|
## [17] "Millennials will laugh at this time capsule of the 00's; Pay phones, pagers, the 00's cars, ti|
## [18] "Hate to be rude but don't pay attention to the moronic post below. That was some of the most l|
## [19] "The show's writing is nothing short of masterful. David Simon, a former journalist, brings a l|
## [20] "You want to get close to the streets? This is it, and what a true American tragedy it plays ou|
```

```r
Reviewers_name4 <-  window4 %>%
  html_nodes("a.ipc-link.ipc-link--base") %>%
  html_text()

Reviewers_names4 <-Reviewers_name4[Reviewers_name4 != "Permalink"]
Reviewers_names4[c(1:20)]
```

```
##  [1] "SuttonButtercup"    "cuzzinman"          "mjplysaght"         "Bluereviews4you"
##  [5] "ericjcant-1"        "theblackscythe"     "Trixie_reviews"     "Quinoa1984"
##  [9] "joshkej-84077"      "A_Different_Drummer" "KineticSeoul"       "xrachelsomeonex"
## [13] "gbulmash"           "ninjawaiter"        "salinaqvi"          "HeirToPendragon"
## [17] "srikantkanchi"      "poseyfan"           "BadgerStorm4345"    "olliescool"
```

```r
Date_of_Reviewed4 <-  window4 %>%
  html_nodes("li.ipc-inline-list__item.review-date") %>%
  html_text()

Date_of_Reviewed4[c(1:20)]
```

```
##  [1] "May 20, 2020" "Sep 20, 2018" "Feb 1, 2017"  "Jul 28, 2020" "Oct 29, 2005" "Aug 14, 2014" "Oct |
##  [8] "Aug 15, 2009" "Feb 9, 2018"  "Sep 17, 2016" "Oct 10, 2010" "Dec 1, 2005"  "Oct 20, 2010" "Dec |
## [15] "May 12, 2020" "Jan 6, 2006"  "Sep 13, 2014" "Jun 10, 2022" "May 22, 2020" "Aug 14, 2018"
```

```r
Ratings4 <-  window4 %>%
  html_nodes("span.ipc-rating-star--rating") %>%
  html_text()

Ratings4[c(1:20)]
```

```
##  [1] "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "10" "7"  "5"  "10" "10" "10" "10" "10" "10" |
```

```r
Title4 <-  window4 %>%
  html_nodes("h3.ipc-title__text") %>%
  html_text()

Title4[c(1:20)]
```

```
##  [1] "14 Years Later, 25 Years Old, Sitting Here In Quarantine, Drinking Wine and Crying"
##  [2] "Great show with fantastic messages, lessons, philosophical discussions, character development,|
##  [3] "The best show Nickelodeon has aired"
##  [4] "Saw for the first time age 25: one of my fav shows now"
##  [5] "The best in animated storytelling..."
```

```
##  [6] "A Statement On Perfection. True Unequaled Bliss."
##  [7] "Breathtaking"
##  [8] "not just a great animated show or 'kids' show, it's a major show of this decade"
##  [9] "It's 2018 and I still watch this show"
## [10] "I just rewatched the best TV series in the history of the world"
## [11] "One of the best animated shows I seen"
## [12] "Well done"
## [13] "Good for the family"
## [14] "Baffling"
## [15] "That's Rough Buddy"
## [16] "Very Great story"
## [17] "I could never forget."
## [18] "The greatest TV show of all time. Yep, i said it."
## [19] "The Greatest American Animation of All Time"
## [20] "The one show/piece of art that hasn't and never will be topped by anything."
```

```r
Helpful4 <- window4 %>%
  html_nodes("scan.ipc-voting__label__count ipc-voting__label__count--up") %>%
  html_text()
Helpful4
```

```
## character(0)
```

```r
Not_Helpful4 <- window4 %>%
  html_nodes("span.ipc-voting__label__count ipc-voting__label__count--up")  %>%
  html_text()
Not_Helpful4
```

```
## character(0)
```

```r
Review_text4 <- window4 %>%
   html_nodes("div.ipc-html-content-inner-div")  %>%
  html_text()
Review_text4
```

```
##  [1] "I don't know when, but for me, Netflix started streaming Avatar and I was like my childhood, I
##  [2] "This is show is one of the best shows ever created. There are many great lessons in this show
##  [3] "OK, so I was 12 when this show came out and needless to say, I was completely enamored by it.
##  [4] "I'm not big on cartoons or the like but my husband had been asking me for years to watch the a
##  [5] "Even though Avatar is of American origin, it has a lot of Japanese anime influence, particularl
##  [6] "This review will be very long. I adore this show with every fibre of my being, and view it to
##  [7] "I love it, it's amazing. It did have a few weaker episodes, but overall I can easily say this
##  [8] "Avatar The Last Airbender shouldn't be underestimated. For a while I didn't even look twice at
##  [9] "I grew up with this show and I can't imagine my life without it. It truly is not only the best
## [10] "Hi there.It is September 2016, more than a decade this this series was done, and I will be your
## [11] "This is a anime style cartoon that kids and adults will enjoy watching. It really is one of the
## [12] "I thought that Avatar when it first came out was gonna be another Nick Show flop. When the firs
## [13] "I've been watching this with my 5-year-old and find it's watchable by both adults and kids. The
## [14] "It's a well-written children's show. And if I were eight, I'd probably have rated it considera
## [15] "Where to begin with this series, despite being a series made for children, this is one of those
## [16] "The art and research put into this story matches the quality of the plot and character developm
## [17] "The series that I watched once and thought it was the greatest thing since sliced Pao (Indian
## [18] "Utterly fantastic show. Here are the things i love the most (trust me there are even more)\nCha
## [19] "Avatar: The Last Airbender is a very mature show that can be enjoyed at any age. This show has
## [20] "I just re-watched this series that was my childhood and feel the need to express some feelings
## [21] "It is amazing. Truly amazing.No matter what episode you start on, you get instantly hooked and
```

```
## [22] "Recently, I replied to a thread on the Rocko's Modern Life boards, and I was absolutely shocked
## [23] "I never thought I'd say this, but this is one of the best things ever on TV. It is so mature,
## [24] "I remember watching this show when I was a kid, and I used to midly enjoy it (meaning if it wa
```

#3. Create a time series graph for the tv shows released by year. Which year has the most number of tv shows released?

```r
library(ggplot2)
tv_data_grouped <- Imdb %>%
  group_by(year_data) %>%
  summarize(Titles = n())

ggplot(tv_data_grouped, aes(x = year_data, y = Titles)) +
  geom_line() +
  geom_point() +
  labs(x = "Year", y = "Number of TV Shows", title = "TV Shows Released by Year") +
  theme_minimal()
```


TV Shows Released by Year
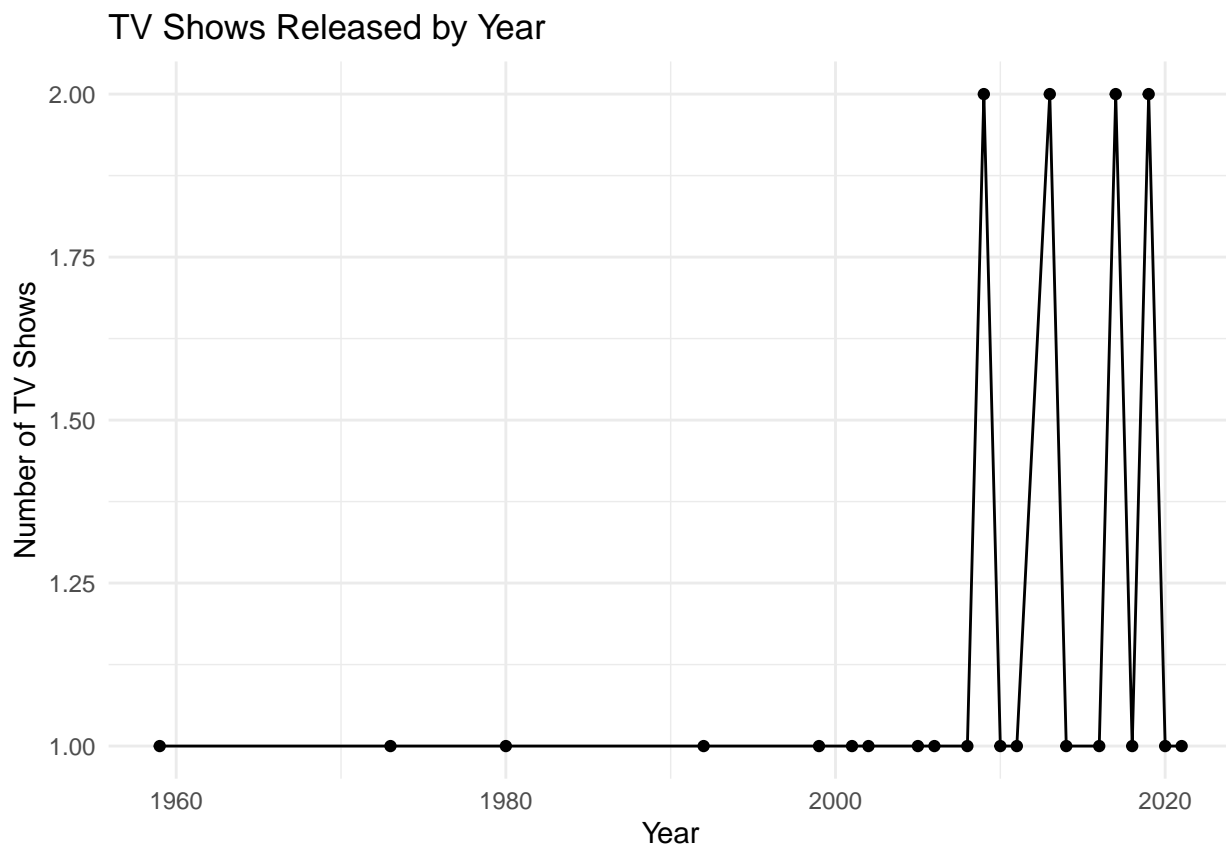
The year that has the most number of tv shows released are 2009,2013,2017,2019

#——————————————————————————————————— #AMAZON

#4. Select 5 categories from Amazon and select 30 products from each category.

```r
library(polite)
polite::use_manners(save_as = 'polite_scrape.R')

url <- 'https://www.amazon.com'
```

```r
session <- bow(url,
               user_agent = "Educational")
session
```

```
## <polite session> https://www.amazon.com
##     User-agent: Educational
##     robots.txt: 138 rules are defined for 5 bots
##    Crawl delay: 5 sec
##   The path is scrapable for this user-agent
```

#5. Extract the price, description, ratings and reviews of each product.

```r
library(rvest)
library(dplyr)
library(httr)

scrape_amazon_products <- function(base_url, category, num_products = 30) {
  all_data <- data.frame()
  page_number <- 1

  while (nrow(all_data) < num_products) {

    url <- paste0(base_url, "&page=", page_number)
    message("Scraping: ", url)

    page <- read_html(url)

    product_titles <- page %>%
      html_nodes("span.a-text-normal") %>%
      html_text(trim = TRUE)

    product_titles <- product_titles[product_titles != "Check each product page for other buying option

    price <- page %>%
      html_nodes('.a-price .a-offscreen') %>%
      html_text(trim = TRUE)

    ratings <- page %>%
      html_nodes('span.a-icon-alt') %>%
      html_text(trim = TRUE) %>%
      str_extract("\\d\\.\\d") %>%
      as.numeric()


    reviews <- page %>%
      html_nodes('.s-link-style .s-underline-text') %>%
      html_text(trim = TRUE)

    descriptions <- page %>%
      html_nodes("span.a-text-normal") %>%
      html_text(trim = TRUE)

    descriptions <- descriptions[descriptions != "Check each product page for other buying options."]

    min_length <- min(length(product_titles), length(price), length(ratings), length(descriptions), leng
```

```r
    if (min_length == 0) break

    data <- data.frame(
      ProductTitle = head(product_titles, min_length),
      Price = head(price, min_length),
      Category = rep(category, min_length),
      Ratings = head(ratings, min_length),
      Reviews = head(reviews, min_length),
      Description = head(descriptions, min_length)
    )


    all_data <- bind_rows(all_data, data)

    page_number <- page_number + 1
  }

  all_data <- head(all_data, num_products)


  all_data$ProductTitle <- paste0(seq_len(nrow(all_data)), ". ", all_data$ProductTitle)

  return(all_data)
}

bike_url <- "https://www.amazon.com/s?k=bicycle"
watch_url <- "https://www.amazon.com/s?k=watch"
mousepad_url <- "https://www.amazon.com/s?k=mouse+pad"
laptop_url <- "https://www.amazon.com/s?k=laptop"
gamingchair_url <- "https://www.amazon.com/s?k=gaming+chair"



bike_products <- scrape_amazon_products(bike_url, "Bicycle", 30)
```

Scraping: https://www.amazon.com/s?k=bicycle&page=1

Error in open.connection(x, "rb"): cannot open the connection

```r
watch_products <- scrape_amazon_products(watch_url, "Watch", 30)
```

Scraping: https://www.amazon.com/s?k=watch&page=1

Error in open.connection(x, "rb"): cannot open the connection

```r
mousepad_products <- scrape_amazon_products(mousepad_url, "MousePad", 30)
```

Scraping: https://www.amazon.com/s?k=mouse+pad&page=1

Error in open.connection(x, "rb"): cannot open the connection

```r
laptop_products <- scrape_amazon_products(laptop_url, "Laptop", 30)
```

Scraping: https://www.amazon.com/s?k=laptop&page=1

Error in open.connection(x, "rb"): cannot open the connection

```
gamingchair_products <- scrape_amazon_products(gamingchair_url, "GamingChair", 30)
```

Scraping: https://www.amazon.com/s?k=gaming+chair&page=1

Error in open.connection(x, "rb"): cannot open the connection

```
all_products <- bind_rows(bike_products, watch_products, mousepad_products, laptop_products, gamingchai
```

Error: object 'bike_products' not found

```
all_products
```

```
##    X.6 X.5 X.4 X.3 X.2 X.1   X
## 1    1   1   1   1   1   1   1
## 2    2   2   2   2   2   2   2
## 3    3   3   3   3   3   3   3
## 4    4   4   4   4   4   4   4
## 5    5   5   5   5   5   5   5
## 6    6   6   6   6   6   6   6
## 7    7   7   7   7   7   7   7
## 8    8   8   8   8   8   8   8
## 9    9   9   9   9   9   9   9
## 10  10  10  10  10  10  10  10
## 11  11  11  11  11  11  11  11
## 12  12  12  12  12  12  12  12
## 13  13  13  13  13  13  13  13
## 14  14  14  14  14  14  14  14
## 15  15  15  15  15  15  15  15
## 16  16  16  16  16  16  16  16
## 17  17  17  17  17  17  17  17
## 18  18  18  18  18  18  18  18
## 19  19  19  19  19  19  19  19
## 20  20  20  20  20  20  20  20
## 21  21  21  21  21  21  21  21
## 22  22  22  22  22  22  22  22
## 23  23  23  23  23  23  23  23
## 24  24  24  24  24  24  24  24
## 25  25  25  25  25  25  25  25
## 26  26  26  26  26  26  26  26
## 27  27  27  27  27  27  27  27
## 28  28  28  28  28  28  28  28
## 29  29  29  29  29  29  29  29
## 30  30  30  30  30  30  30  30
## 31  31  31  31  31  31  31  31
## 32  32  32  32  32  32  32  32
## 33  33  33  33  33  33  33  33
## 34  34  34  34  34  34  34  34
## 35  35  35  35  35  35  35  35
## 36  36  36  36  36  36  36  36
## 37  37  37  37  37  37  37  37
## 38  38  38  38  38  38  38  38
## 39  39  39  39  39  39  39  39
## 40  40  40  40  40  40  40  40
## 41  41  41  41  41  41  41  41
## 42  42  42  42  42  42  42  42
## 43  43  43  43  43  43  43  43
```

```
## 44  44  44  44  44  44  44 44
## 45  45  45  45  45  45  45 45
## 46  46  46  46  46  46  46 46
## 47  47  47  47  47  47  47 47
## 48  48  48  48  48  48  48 48
## 49  49  49  49  49  49  49 49
## 50  50  50  50  50  50  50 50
## 51  51  51  51  51  51  51 51
## 52  52  52  52  52  52  52 52
## 53  53  53  53  53  53  53 53
## 54  54  54  54  54  54  54 54
## 55  55  55  55  55  55  55 55
## 56  56  56  56  56  56  56 56
## 57  57  57  57  57  57  57 57
## 58  58  58  58  58  58  58 58
## 59  59  59  59  59  59  59 59
## 60  60  60  60  60  60  60 60
## 61  61  61  61  61  61  61 61
## 62  62  62  62  62  62  62 62
## 63  63  63  63  63  63  63 63
## 64  64  64  64  64  64  64 64
## 65  65  65  65  65  65  65 65
## 66  66  66  66  66  66  66 66
## 67  67  67  67  67  67  67 67
## 68  68  68  68  68  68  68 68
## 69  69  69  69  69  69  69 69
## 70  70  70  70  70  70  70 70
## 71  71  71  71  71  71  71 71
## 72  72  72  72  72  72  72 72
## 73  73  73  73  73  73  73 73
## 74  74  74  74  74  74  74 74
## 75  75  75  75  75  75  75 75
## 76  76  76  76  76  76  76 76
##
## 1                                                                          1. Check ea
## 2     2. WEIZE Mountain Bike, 24/26/27.5 inch Outdoor Cycling Bike,18-Speed/High-Carbon Steel/Dual Ful
## 3       3. WEIZE Beach Cruiser Bike, 26 inch Commuter Bicycle for Adult Men and Women, 7-Speed/High-Ca
## 4                      4. Huffy Stone Mountain Hardtail Mountain Bike for Boys/Girls/Men/Women, 20"/2
## 5     5. Huffy Cruiser Bike, Fairmont or Woodhaven Model, 20/24/26 Inch Sizes, Perfect for Casual Ri
## 6                                                 6. WEIZE Kids Bike, 14 18 20 Inch Children
## 7                                                    7. HILAND 26 27.5 Inch Mounta
## 8                                               8. HILAND 24 26 Inch Adult Hybrid Bike
## 9                                              9. WEIZE Kids Bike,16 20 Inch Children
## 10                                 10. Hiland 20 inch Freestyle Kids BMX Bike,Beginner-
## 11                                                    11. Mountain Bike 24/2
## 12                                                  12. Hiland 20 Inch Kids Mou
## 13                               13. Dynacraft Magna Echo Ridge Mountain Bike -
Rugged and Durable Design, Perfect for Teens and Adults Learning to Ride, Sturdy and Easy to Assemble,
## 14                                              14. Kids Bike Bicycle 14 Inches Kid Bicycle for Boys Girls w
## 15              15. E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Ad
## 16                                                                     16. Check ea
## 17              17. Razor Agitator BMX/Freestyle Bike - 20 Inch Bike for Boys - Quick Release A
## 18   18. Schwinn Traxion Mountain Bike for Adult Men Women, 29-Inch Wheels, Full Suspension, 24-Spee
## 19                                                     19. JOYSTAR Brockway Freestyle Kids BMX
```

20 20. Jasion EBX Electric Bike for Adults, 26" Electric Mountain Bike with 850W Peak Brushless Motor
21   21. Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicyc
22   22. Schwinn Koen & Elm
23   23. Mongoose Salvo Comp, Trail, or Sport Mountain Bike for Adult Me
24   24. Mongoose Tyax Comp, Sport, and Expert A
25   25. isinwheel U1 Electric Bike for Adults 500W Motor, 20 mph Folding Ebike, 14" Adults
26   26. Schwinn High Timber Mountain Bike for Adult Youth Men
27   27. BalanceFrom Dinos Kids Bike Kids Bicycle u
28   28. JOYSTAR Pluto 12 14 16 18 20 Inch Kids Bike u
29   29. Pacific Vortax BMX Style Kids Bike for Boys and Girls, Single Speed, 12 to 20-Inch Wheel Op
30
31
32   2. Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case with
33   3. F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC S
34   4. Minimalist l
35   5. Smart Watch, Fitness Tracker with Heart Rate Monitor, Blood Oxygen, Sleep Tracking, 1.5 Inc
36
37
38   8. Apple Watch Series 10 [GPS 46mm case] Smartwatch with Jet Black Alumi
39   9. Illuminate
40   10. Men
41   11. F108WH Series | Men's Digital Watch | Illuminator | Water Resistant | LED Light | Da
42   12. MQ24 Series | Quartz Analog Watch for Men | Water Resistant |
43 13. Samsung Galaxy Watch Ultra 47mm LTE AI Smartwatch w/Energy Score, Wellness Tips, Heart Rate T
44   14. Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart
45   15. A158WA Series | Unisex Digital Watch | Vintage | WR | 100 SEC Stop
46 16. Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress l
47
48   18. Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch w
49
50
51
52
53
54   24.
55   25. Garmin Instinct 2X Solar - Tactical Edition
56   26. TOZO S2 44mm Smart Watch Alexa Built-in Fitness Tracker with Heart Rate and Blood Oxy
57
58
59   29. Garmin D2 Mach 1 Pro, Aviator Smartwatch wi
60   30. Garmin fenix 7, adventure smartwatch, rugged
61
62   2. Aothia Leather Desk Pad Protector,Mouse Pad,Office Desk Mat, Non-Slip PU
63   3. TECKNET Mouse Pad with Anti-fray Stitching, Waterproof Surface & Non-Slip l
64   4. Ergonomic Mouse Pad Wrist Support, Comfortable Mouse Pad Wrist Rest, Relieve Wrist
65   5. MROCO Ergonomic Mouse Pad with Gel Wrist Rest, Comfortable Mousepad with Smooth Wrist Suppo
66
67   7. JIKIOU 3 Pack Mouse Pad with Stitched Edge, Comfortable Mouse Pads with Non-Slip Rubber Bas
68   8. MROCO Mouse Pad [30% Larger] with Anti-fray Stitching, Premium-Textured & Waterproof Con
69   9. Japanese Sea Wave Large Mouse Pad, Anime Bl
70   10. KTRIO Large Gaming Mouse Pad with Superior Micro-Weave Cloth, Extended Desk Mousepad wi
71   1
72   12. Leather Mouse Pad - Wood Mouse Pad, Double Side Mouse Pad with Stitched Edg
73   13. Soqool Mouse Pad, Ergonomic Mouse Pad with Comfortable Ge

76
Extended XL - Black

```
##          Price Category Ratings Reviews
## 1   $1,295.00  Bicycle     4.0     124
## 2   $1,445.00  Bicycle     4.3       5
## 3   $2,695.00  Bicycle     4.0   4,567
## 4   $2,995.00  Bicycle     4.1   1,399
## 5   $3,295.00  Bicycle     4.4      99
## 6     $179.99  Bicycle     4.6       6
## 7     $199.99  Bicycle     4.4      17
## 8     $199.99  Bicycle     4.4     310
## 9     $229.99  Bicycle     4.2     486
## 10    $161.54  Bicycle     5.0       1
## 11    $249.99  Bicycle     4.0     461
## 12    $119.99  Bicycle     4.0   1,807
## 13    $178.49  Bicycle     4.4     113
## 14    $239.99  Bicycle     4.0   1,225
## 15    $189.99  Bicycle     4.5  17,982
## 16 $1,295.00  Bicycle     3.9      81
## 17 $1,445.00  Bicycle     4.3     484
## 18 $2,695.00  Bicycle     4.1     143
## 19 $2,995.00  Bicycle     4.3      90
## 20 $3,295.00  Bicycle     4.4   1,462
## 21    $169.99  Bicycle     4.5   4,105
## 22    $648.43  Bicycle     4.1      80
## 23    $229.99  Bicycle     4.1     114
## 24    $389.98  Bicycle     4.6     398
## 25    $492.99  Bicycle     4.0   2,966
## 26    $519.99  Bicycle     3.2     280
## 27    $219.99  Bicycle     4.3   1,923
## 28 $1,400.80  Bicycle     4.3     552
## 29 $1,999.99  Bicycle     4.5     114
## 30    $910.59  Bicycle     4.4      32
## 31    $249.99    Watch     4.4   1,044
## 32    $429.99    Watch     4.6  53,468
## 33    $473.98    Watch     4.5   9,611
## 34    $729.98    Watch     4.0   2,760
## 35    $234.00    Watch     4.1   1,196
## 36    $239.17    Watch     4.6  18,492
## 37     $13.16    Watch     4.5     724
## 38     $18.95    Watch     4.6  17,825
## 39     $91.00    Watch     4.5   2,655
## 40    $130.00    Watch     4.6  25,670
## 41     $19.99    Watch     4.4  28,113
## 42     $21.99    Watch     4.4     978
## 43    $440.00    Watch     4.3  12,588
## 44    $469.00    Watch     4.6  49,784
## 45     $88.00    Watch     4.2   1,300
## 46    $160.00    Watch     4.6   1,719
## 47    $359.99    Watch     4.7     398
## 48    $429.00    Watch     4.7  10,961
## 49     $17.97    Watch     4.2  27,237
```

```
## 50   $26.95    Watch    4.4   5,418
## 51   $15.45    Watch    4.2  18,643
## 52   $15.00    Watch    4.4  16,031
## 53   $22.95    Watch    4.6     957
## 54   $14.91    Watch    4.5     260
## 55   $22.95    Watch    4.1  10,610
## 56  $449.01    Watch    4.4  26,284
## 57  $649.99    Watch    4.6  10,986
## 58  $119.95    Watch    4.0      27
## 59  $199.95    Watch    4.6   2,600
## 60   $19.99    Watch    4.5   8,229
## 61    $8.99 MousePad    4.7  61,393
## 62   $13.99 MousePad    4.7  73,985
## 63   $16.99 MousePad    4.6  10,051
## 64    $5.98 MousePad    4.6     416
## 65    $9.99 MousePad    4.6  26,598
## 66    $9.99 MousePad    4.5  97,074
## 67   $15.49 MousePad    4.6  14,516
## 68   $28.02 MousePad    4.7  27,065
## 69   $29.99 MousePad    4.7   1,230
## 70    $7.99 MousePad    4.7  38,319
## 71    $2.66 MousePad    4.7  32,182
## 72    $4.99 MousePad    4.7     157
## 73    $8.99 MousePad    4.6   4,521
## 74   $15.99 MousePad    4.2      18
## 75   $16.99 MousePad    4.3   1,942
## 76   $13.97 MousePad    4.7   2,948
## 
## 1                                                                      Check each p:
## 2    WEIZE Mountain Bike, 24/26/27.5 inch Outdoor Cycling Bike,18-Speed/High-Carbon Steel/Dual Full Su
## 3      WEIZE Beach Cruiser Bike, 26 inch Commuter Bicycle for Adult Men and Women, 7-Speed/High-Carbo
## 4                         Huffy Stone Mountain Hardtail Mountain Bike for Boys/Girls/Men/Women, 20"/24"/:
## 5    Huffy Cruiser Bike, Fairmont or Woodhaven Model, 20/24/26 Inch Sizes, Perfect for Casual Rides,
## 6                                                WEIZE Kids Bike, 14 18 20 Inch Children Bic:
## 7                                                 HILAND 26 27.5 Inch Mountain B:
## 8                                           HILAND 24 26 Inch Adult Hybrid Bike, 2:
## 9                                           WEIZE Kids Bike,16 20 Inch Children Bic:
## 10                             Hiland 20 inch Freestyle Kids BMX Bike,Beginner-Level
## 11                                                   Mountain Bike 24/26 Inc
## 12                                                 Hiland 20 Inch Kids Mounta:
## 13                          Dynacraft Magna Echo Ridge Mountain Bike - Rugged and Durable De:
## 14                             Kids Bike Bicycle 14 Inches Kid Bicycle for Boys Girls with 
## 15         E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Adults
## 16                                                                      Check each p:
## 17            Razor Agitator BMX/Freestyle Bike - 20 Inch Bike for Boys - Quick Release Adjus:
## 18   Schwinn Traxion Mountain Bike for Adult Men Women, 29-Inch Wheels, Full Suspension, 24-Speed Sh:
## 19                                               JOYSTAR Brockway Freestyle Kids BMX Bik:
## 20 Jasion EBX Electric Bike for Adults, 26" Electric Mountain Bike with 850W Peak Brushless Motor, Ma
## 21                             Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicycle 
## 22                                                           Schwinn Koen & Elm BMX
## 23                              Mongoose Salvo Comp, Trail, or Sport Mountain Bike for Adult Men a:
## 24                                          Mongoose Tyax Comp, Sport, and Expert Adul:
## 25            isinwheel U1 Electric Bike for Adults 500W Motor, 20 mph Folding Ebike, 14" Adults Elec:
## 26                                              Schwinn High Timber Mountain Bike for Adult Youth Men Wome
```

```
## 27                                                    BalanceFrom Dinos Kids Bike Kids Bicycle with
## 28                                          JOYSTAR Pluto 12 14 16 18 20 Inch Kids Bike with
## 29       Pacific Vortax BMX Style Kids Bike for Boys and Girls, Single Speed, 12 to 20-Inch Wheel Optior
## 30
## 31
## 32                        Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case with Sta
## 33                            F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC Stopu
## 34                                                                                  Minimalist Men's
## 35       Smart Watch, Fitness Tracker with Heart Rate Monitor, Blood Oxygen, Sleep Tracking, 1.5 Inch To
## 36
## 37
## 38                                Apple Watch Series 10 [GPS 46mm case] Smartwatch with Jet Black Aluminiu
## 39                                                                              Illuminator Al
## 40                                                                              Men's Di
## 41          F108WH Series | Men's Digital Watch | Illuminator | Water Resistant | LED Light | Daily
## 42                                MQ24 Series | Quartz Analog Watch for Men | Water Resistant | Resi
## 43   Samsung Galaxy Watch Ultra 47mm LTE AI Smartwatch w/Energy Score, Wellness Tips, Heart Rate Trac]
## 44                        Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart Ra
## 45                        A158WA Series | Unisex Digital Watch | Vintage | WR | 100 SEC Stop Wat
## 46   Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress Manag
## 47
## 48    Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch with
## 49
## 50
## 51
## 52
## 53
## 54                                                                                            Garm
## 55                                            Garmin Instinct 2X Solar - Tactical Edition, Ru
## 56          TOZO S2 44mm Smart Watch Alexa Built-in Fitness Tracker with Heart Rate and Blood Oxygen
## 57
## 58
## 59                                  Garmin D2  Mach 1 Pro, Aviator Smartwatch with C
## 60                                  Garmin fenix 7, adventure smartwatch, rugged outde
## 61
## 62                    Aothia Leather Desk Pad Protector,Mouse Pad,Office Desk Mat, Non-Slip PU Lea
## 63                    TECKNET Mouse Pad with Anti-fray Stitching, Waterproof Surface & Non-Slip Rubbe
## 64          Ergonomic Mouse Pad Wrist Support, Comfortable Mouse Pad Wrist Rest, Relieve Wrist Pair
## 65    MROCO Ergonomic Mouse Pad with Gel Wrist Rest, Comfortable Mousepad with Smooth Wrist Support Su
## 66
## 67    JIKIOU 3 Pack Mouse Pad with Stitched Edge, Comfortable Mouse Pads with Non-Slip Rubber Base, l
## 68       MROCO Mouse Pad [30% Larger] with Anti-fray Stitching, Premium-Textured & Waterproof Compute
## 69                                              Japanese Sea Wave Large Mouse Pad, Anime Black
## 70       KTRIO Large Gaming Mouse Pad with Superior Micro-Weave Cloth, Extended Desk Mousepad with St
## 71                                                                                              Ar
## 72                    Leather Mouse Pad - Wood Mouse Pad, Double Side Mouse Pad with Stitched Edge, Wa
## 73                        Soqool Mouse Pad, Ergonomic Mouse Pad with Comfortable Gel Wr
## 74                                                                              Cheetah
## 75                        Excel Shortcut Keys Mouse Pad - Exter
## 76
Extended XL - Black
##  [ reached 'max' / getOption("max.print") -- omitted 74 rows ]
```

```r
write.csv(all_products, "Amazon_products.csv")
```

#6. The data gave 30 products each for 5 categories, the data was extracted from Amazon and saved into a csv. The data shows the price, description, ratings for every products in a category.

#7. The use case for the data we have extracted is for the market research for the products in Amazon.

#8. The graphs gave information about the prices, popularity, customer satisfaction and reviews which reveals the relation between ratings and reviews that indicates which products are the most popular and most purchased among that category.

```r
library(ggplot2)
library(dplyr)


all_products <- read.csv("Amazon_products.csv")


all_products$Price <- as.numeric(gsub("[$,]", "", all_products$Price))


all_products <- all_products %>%
  filter(!is.na(Price), !is.na(Ratings), !is.na(Reviews))


ggplot(all_products, aes(x = Price)) +
  geom_histogram(binwidth = 50, fill = "skyblue", color = "black") +
  labs(title = "Distribution of Product Prices", x = "Price ($)", y = "Count") +
  theme_minimal()
```

Distribution of Product Prices
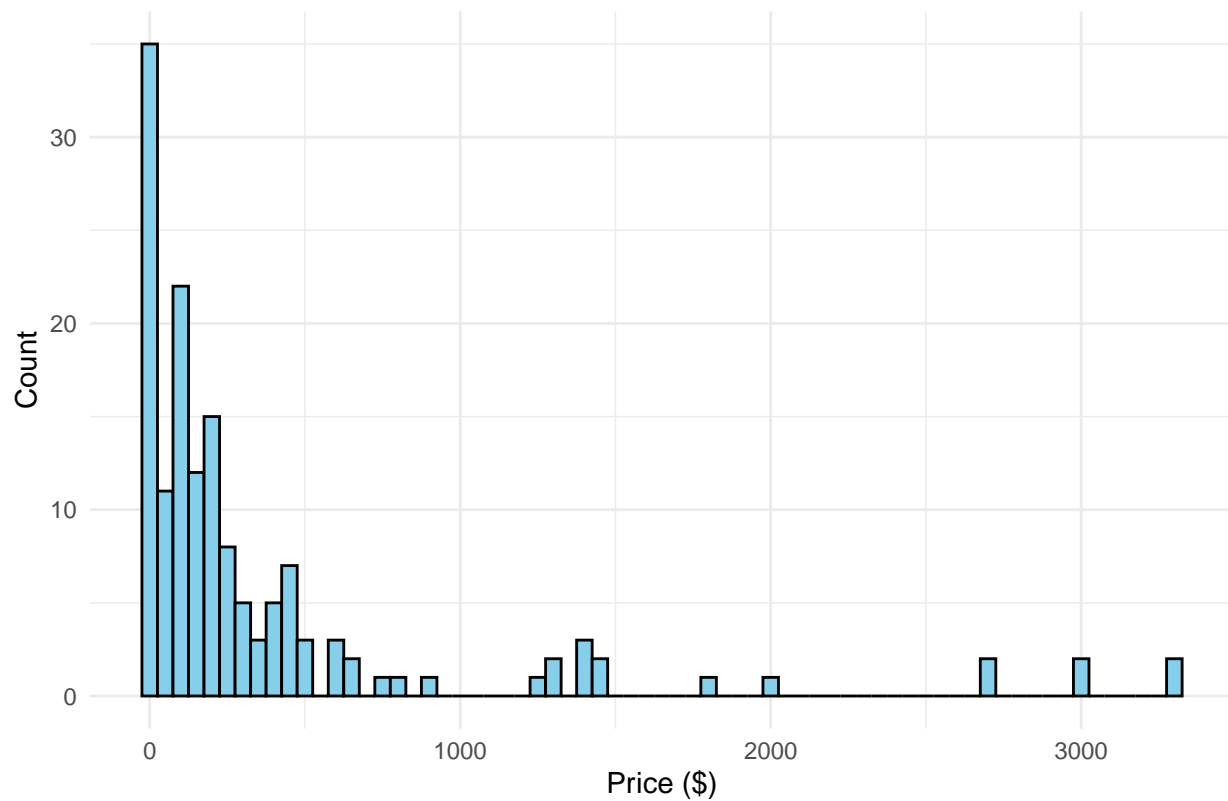

```r
avg_ratings <- all_products %>%
  group_by(Category) %>%
  summarize(AverageRating = mean(Ratings, na.rm = TRUE))

ggplot(avg_ratings, aes(x = Category, y = AverageRating, fill = Category)) +
  geom_bar(stat = "identity", color = "black") +
  labs(title = "Average Ratings by Category", x = "Category", y = "Average Rating") +
  theme_minimal()
```

Average Ratings by Category
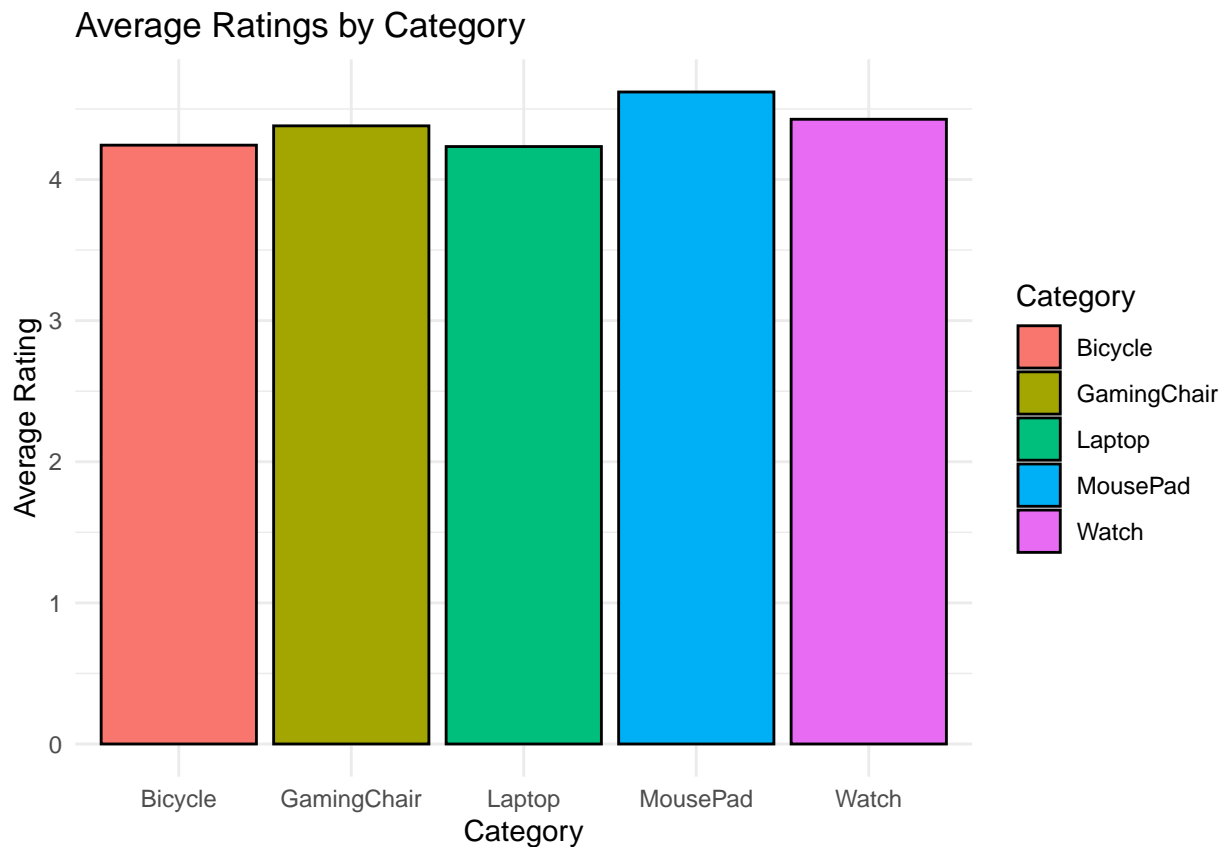

```
total_reviews <- all_products %>%
  group_by(Category) %>%
  summarize(TotalReviews = sum(as.numeric(gsub("[^0-9]", "", Reviews)), na.rm = TRUE))

ggplot(total_reviews, aes(x = Category, y = TotalReviews, fill = Category)) +
  geom_bar(stat = "identity", color = "black") +
  labs(title = "Total Number of Reviews by Category", x = "Category", y = "Total Reviews") +
  theme_minimal()
```

Total Number of Reviews by Category
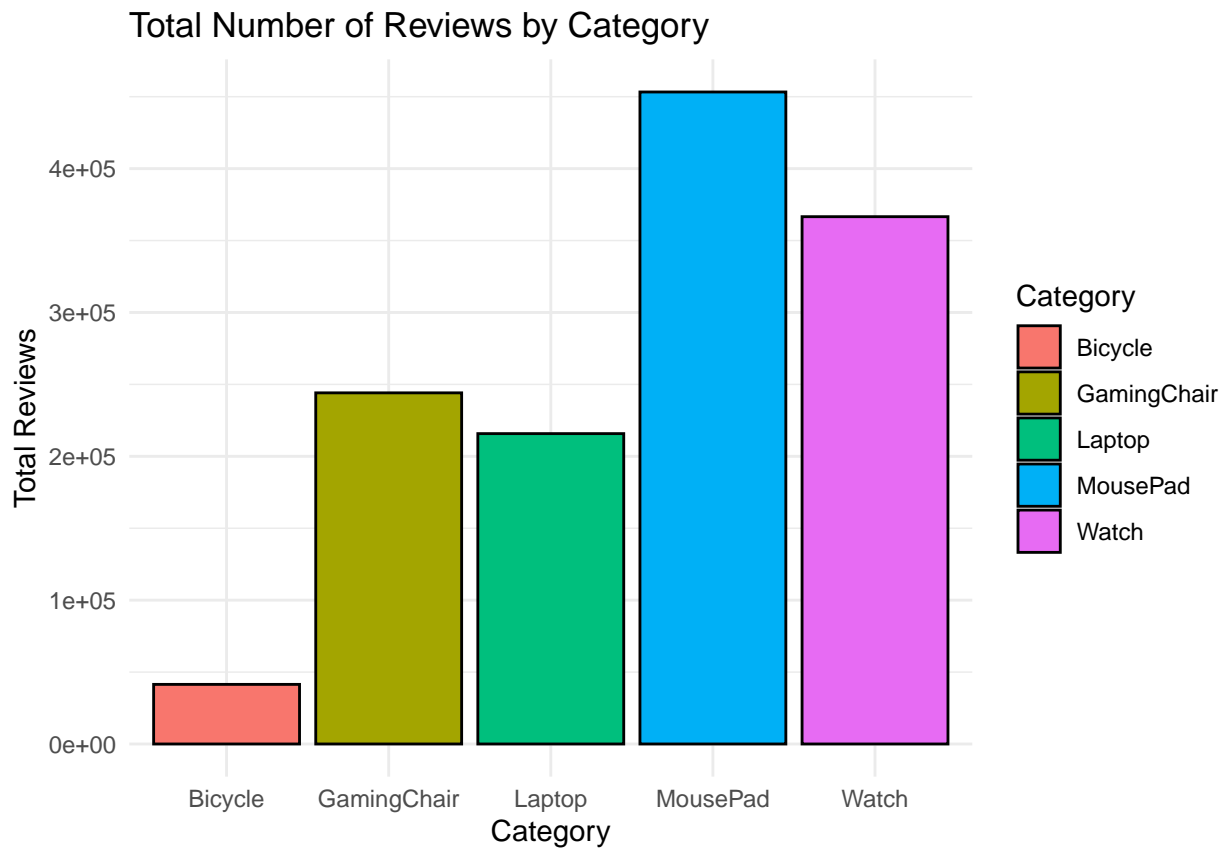

```
ggplot(all_products, aes(x = Ratings, y = as.numeric(gsub("[^0-9]", "", Reviews)))) +
  geom_point(alpha = 0.6, color = "purple") +
  labs(title = "Correlation Between Ratings and Reviews", x = "Ratings", y = "Number of Reviews") +
  theme_minimal()
```

Correlation Between Ratings and Reviews

9.
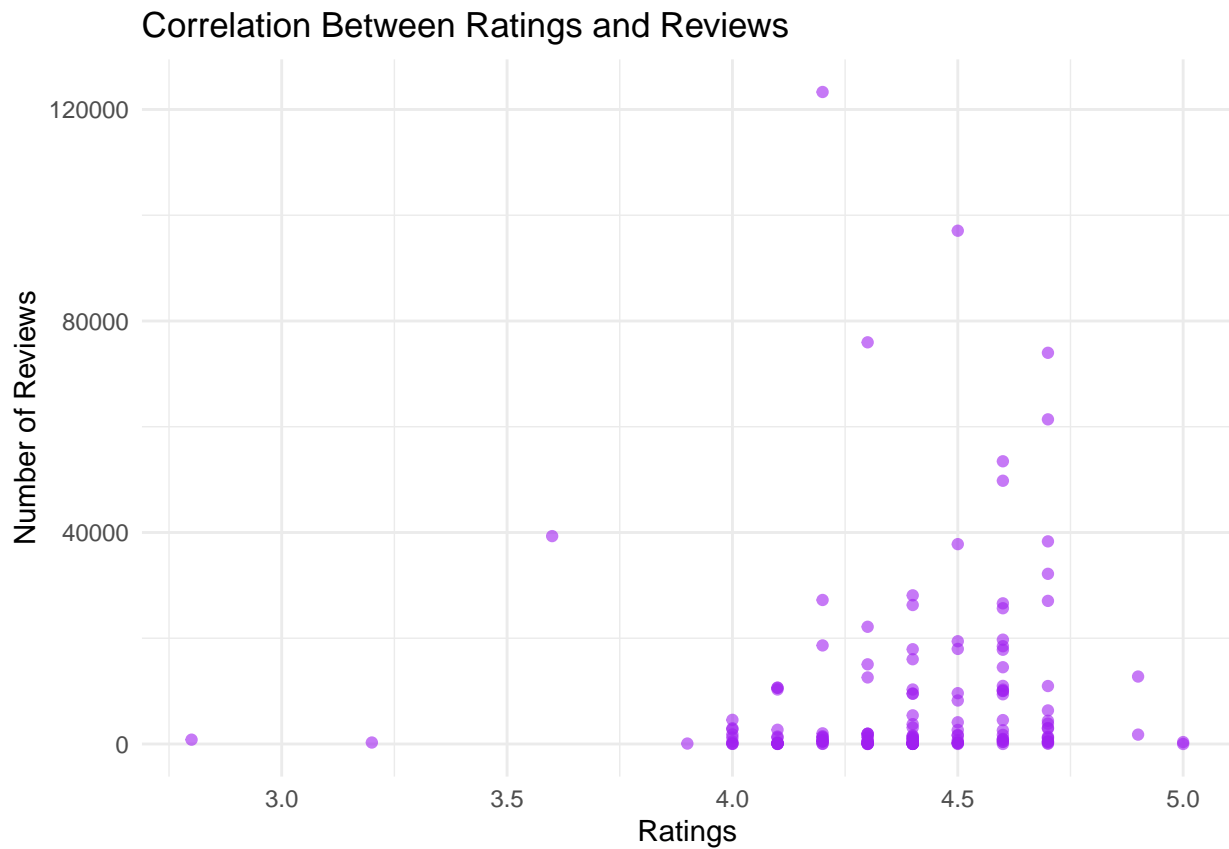
```r
library(ggplot2)

ggplot(all_products, aes(x = Price, y = Ratings, color = Category)) +
  geom_point() +
  facet_wrap(~ Category, scales = "free") +
  labs(title = "Ratings vs Price for Each Category",
       x = "Price ($)",
       y = "Ratings") +
  theme_minimal() +
  theme(legend.position = "none")
```

Ratings vs Price for Each Category
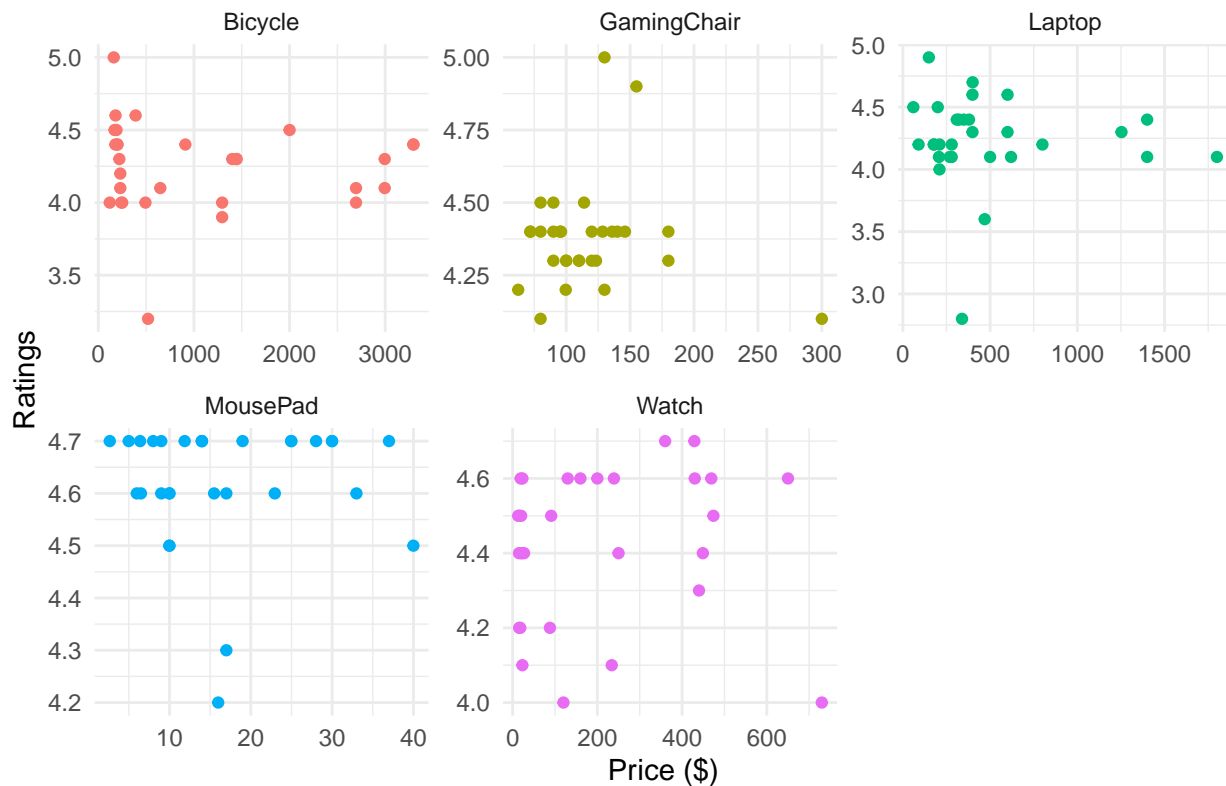
#10. The ranking of products in each category sorts it from highest to lowest, showing which product has the most reviews and purchases. These products can be customize into ascending and descending order that helps the users in selecting products that fits their taste. It also gives info in which products can be the most correct choice and which product shall be avoided.

```
all_products <- read.csv("Amazon_products.csv")
```

```
str(all_products)
```

```
## 'data.frame':    150 obs. of  14 variables:
## $ X.7         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.6         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.5         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.4         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.3         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.2         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X.1         : int  1 2 3 4 5 6 7 8 9 10 ...
## $ X           : int  1 2 3 4 5 6 7 8 9 10 ...
## $ ProductTitle: chr  "1. Check each product page for other buying options. Price and other details r
## $ Price       : chr  "$1,295.00" "$1,445.00" "$2,695.00" "$2,995.00" ...
## $ Category    : chr  "Bicycle" "Bicycle" "Bicycle" "Bicycle" ...
## $ Ratings     : num  4 4.3 4 4.1 4.4 4.6 4.4 4.4 4.2 5 ...
## $ Reviews     : chr  "124" "5" "4,567" "1,399" ...
## $ Description : chr  "Check each product page for other buying options. Price and other details may
```

```
all_goods <- read.csv("Amazon_products.csv")
```

```
all_goods$Ratings <- as.numeric(all_goods$Ratings)
```

```
library(dplyr)

ranked_by_ratings <- all_goods %>%
  arrange(desc(Ratings))

head(ranked_by_ratings, 150)
```

```
##     X.7 X.6 X.5 X.4 X.3 X.2 X.1   X
## 1    10  10  10  10  10  10  10  10
## 2   139 139 139 139 139 139 139 139
## 3   101 101 101 101 101 101 101 101
## 4   148 148 148 148 148 148 148 148
## 5    47  47  47  47  47  47  47  47
## 6    48  48  48  48  48  48  48  48
## 7    61  61  61  61  61  61  61  61
## 8    62  62  62  62  62  62  62  62
## 9    68  68  68  68  68  68  68  68
## 10   69  69  69  69  69  69  69  69
## 11   70  70  70  70  70  70  70  70
## 12   71  71  71  71  71  71  71  71
## 13   72  72  72  72  72  72  72  72
## 14   76  76  76  76  76  76  76  76
## 15   77  77  77  77  77  77  77  77
## 16   78  78  78  78  78  78  78  78
## 17   81  81  81  81  81  81  81  81
## 18   82  82  82  82  82  82  82  82
## 19   84  84  84  84  84  84  84  84
## 20   85  85  85  85  85  85  85  85
## 21   87  87  87  87  87  87  87  87
## 22   88  88  88  88  88  88  88  88
## 23  120 120 120 120 120 120 120 120
## 24    6   6   6   6   6   6   6   6
## 25   24  24  24  24  24  24  24  24
## 26   32  32  32  32  32  32  32  32
## 27   36  36  36  36  36  36  36  36
## 28   38  38  38  38  38  38  38  38
## 29   40  40  40  40  40  40  40  40
## 30   44  44  44  44  44  44  44  44
## 31   46  46  46  46  46  46  46  46
## 32   53  53  53  53  53  53  53  53
## 33   57  57  57  57  57  57  57  57
## 34   59  59  59  59  59  59  59  59
## 35   63  63  63  63  63  63  63  63
## 36   64  64  64  64  64  64  64  64
## 37   65  65  65  65  65  65  65  65
## 38   67  67  67  67  67  67  67  67
## 39   73  73  73  73  73  73  73  73
## 40   80  80  80  80  80  80  80  80
## 41   83  83  83  83  83  83  83  83
```

```
## 42  89  89  89  89  89  89  89  89
## 43  90  90  90  90  90  90  90  90
## 44  98  98  98  98  98  98  98  98
## 45 104 104 104 104 104 104 104 104
## 46  15  15  15  15  15  15  15  15
## 47  21  21  21  21  21  21  21  21
## 48  29  29  29  29  29  29  29  29
## 49  33  33  33  33  33  33  33  33
## 50  37  37  37  37  37  37  37  37
## 51  39  39  39  39  39  39  39  39
## 52  54  54  54  54  54  54  54  54
## 53  60  60  60  60  60  60  60  60
## 54  66  66  66  66  66  66  66  66
## 55  79  79  79  79  79  79  79  79
## 56  86  86  86  86  86  86  86  86
## 57 100 100 100 100 100 100 100 100
## 58 102 102 102 102 102 102 102 102
## 59 133 133 133 133 133 133 133 133
## 60 138 138 138 138 138 138 138 138
## 61 142 142 142 142 142 142 142 142
## 62   5   5   5   5   5   5   5   5
## 63   7   7   7   7   7   7   7   7
## 64   8   8   8   8   8   8   8   8
## 65  13  13  13  13  13  13  13  13
## 66  20  20  20  20  20  20  20  20
## 67  30  30  30  30  30  30  30  30
## 68  31  31  31  31  31  31  31  31
## 69  41  41  41  41  41  41  41  41
## 70  42  42  42  42  42  42  42  42
## 71  50  50  50  50  50  50  50  50
##
## 1                           10. Hiland 20 inch Freestyle Kids BMX Bike,Beginner-
## 2                 19. BestOffice PC Gaming Chair Ergonomic Office Chair Desk Chair with Lumba
## 3                    11. HP Portable Laptop, Student and Business, 14" HD Display, Intel Quad-C
## 4            28. RESPAWN 900 Gaming Recliner - Video Games Console Recliner Chair, Computer Recli
## 5
## 6     18. Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch w
## 7
## 8                           2. Aothia Leather Desk Pad Protector,Mouse Pad,Office Desk Mat, Non-Slip PU
## 9          8. MROCO Mouse Pad [30% Larger] with Anti-fray Stitching, Premium-Textured & Waterproof Co
## 10                          9. Japanese Sea Wave Large Mouse Pad, Anime B
## 11      10. KTRIO Large Gaming Mouse Pad with Superior Micro-Weave Cloth, Extended Desk Mousepad wi
## 12                                                                   1
## 13             12. Leather Mouse Pad - Wood Mouse Pad, Double Side Mouse Pad with Stitched Edg
## 14
Extended XL - Black
## 15          17. GIM Wireless Charging RGB Gaming Mouse Pad 15W, LED Mouse Mat 800x300x4MM, 10 Light
## 16         18. Gimars RGB Gaming Mouse Pad,15W Wireless Charging Mousepad with 10 Light Modes, Larg
## 17                       21. Mouse Pad with Wrist Rest Support,Cute Custom Gaming Ma
## 18        22. JIKIOU Mouse Pad with Non-Slip Rubber Base, Premium-Textured & Washable Computer
## 19
## 20                       25. Japanese Mouse Pad, Large Japanese Desk Mat, Xl
## 21
## 22                                       28. CORSAIR MM700 RGB Ext
```

```
## 23                                                          30. HP 17 Laptop, 17.3" HD+ Touchscreen Display, 12th Gen Ir
## 24                                                          6. WEIZE Kids Bike, 14 18 20 Inch Children
## 25                                                          24. Mongoose Tyax Comp, Sport, and Expert
## 26                  2. Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case wit
## 27
## 28                        8. Apple Watch Series 10 [GPS 46mm case] Smartwatch with Jet Black Alum
## 29                                                                                   10. Men
## 30                        14. Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart
## 31  16. Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress
## 32
## 33
## 34                                                          29. Garmin D2 Mach 1 Pro, Aviator Smartwatch wi
## 35                  3. TECKNET Mouse Pad with Anti-fray Stitching, Waterproof Surface & Non-Slip
## 36                  4. Ergonomic Mouse Pad Wrist Support, Comfortable Mouse Pad Wrist Rest, Relieve Wrist
## 37     5. MROCO Ergonomic Mouse Pad with Gel Wrist Rest, Comfortable Mousepad with Smooth Wrist Suppo
## 38     7. JIKIOU 3 Pack Mouse Pad with Stitched Edge, Comfortable Mouse Pads with Non-Slip Rubber Bas
## 39                                  13. Soqool Mouse Pad, Ergonomic Mouse Pad with Comfortable Ge
## 40                                         20. Mouse Pad, Mouse Pad with Abstract Art Design,
## 41              23. ITNRSIIET Marble Round Mouse Pad, Pink Marble Customized Premium-Textured Mouse
## 42        29. MROCO Mouse Pad [30% Larger] with Stitched Edges, 3 Pack Premium-Textured & Waterproof
## 43                        30. EooCoo Ergonomic Mouse Pad with Wrist Support, Mousepad with Memory
## 44                             8. acer Gateway Chromebook 311 CB0311-1H-C1MX Laptop | Intel Celeron
## 45     14. Lenovo IdeaPad 1 Student Laptop, Intel Dual Core Processor, 20GB RAM, 1TB SSD + 128GB eMM
## 46           15. E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Ad
## 47                        21. Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicyc
## 48     29. Pacific Vortax BMX Style Kids Bike for Boys and Girls, Single Speed, 12 to 20-Inch Wheel O
## 49                        3. F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC S
## 50
## 51                                                                                   9. Illuminat
## 52                                                                                   24.
## 53                        30. Garmin fenix 7, adventure smartwatch, rugged
## 54
## 55  19. Cute Mouse Pad Wrist Support,Ergonomic Mouse Pad with Wrist Rest,Comfortable Mousepad with Sm
## 56                        26. Japanese Gaming Mouse Pad Black Mouse Pad Kanagawa Large Mousep
## 57           10. Lenovo Essential Touchscreen Laptop | Ideapad 3i | 40GB RAM | 15.6" FHD Touch Sc
## 58
## 59                             13. LEMBERI Video Game Chairs with footrest, Big and
## 60                  18. Big and Tall Gaming Chair 350lbs-Racing Style Computer Gamer Chair,E:
## 61           22. Dowinx Gaming Chair with Pocket Spring Cushion and Footrest, Ergonomic Computer Chai
## 62     5. Huffy Cruiser Bike, Fairmont or Woodhaven Model, 20/24/26 Inch Sizes, Perfect for Casual Ri
## 63                                                          7. HILAND 26 27.5 Inch Mounta
## 64                                                          8. HILAND 24 26 Inch Adult Hybrid Bike
## 65                        13. Dynacraft Magna Echo Ridge Mountain Bike -
Rugged and Durable Design, Perfect for Teens and Adults Learning to Ride, Sturdy and Easy to Assemble,
## 66 20. Jasion EBX Electric Bike for Adults, 26" Electric Mountain Bike with 850W Peak Brushless Moto
## 67
## 68
## 69           11. F108WH Series | Men's Digital Watch | Illuminator | Water Resistant | LED Light | Da
## 70                        12. MQ24 Series | Quartz Analog Watch for Men | Water Resistant |
## 71
##          Price    Category Ratings Reviews
## 1     $161.54     Bicycle     5.0       1
## 2     $129.99 GamingChair     5.0     358
## 3     $149.00      Laptop     4.9   1,773
```

30

```
## 4     $154.99 GamingChair    4.9   12,758
## 5     $359.99       Watch    4.7      398
## 6     $429.00       Watch    4.7   10,961
## 7       $8.99    MousePad    4.7   61,393
## 8      $13.99    MousePad    4.7   73,985
## 9      $28.02    MousePad    4.7   27,065
## 10     $29.99    MousePad    4.7    1,230
## 11      $7.99    MousePad    4.7   38,319
## 12      $2.66    MousePad    4.7   32,182
## 13      $4.99    MousePad    4.7      157
## 14     $13.97    MousePad    4.7    2,948
## 15     $18.99    MousePad    4.7    3,854
## 16     $11.87    MousePad    4.7    1,365
## 17     $13.99    MousePad    4.7      497
## 18      $6.39    MousePad    4.7      997
## 19     $24.95    MousePad    4.7    3,019
## 20     $24.99    MousePad    4.7       50
## 21     $36.99    MousePad    4.7    6,344
## 22     $29.98    MousePad    4.7    4,390
## 23    $399.99      Laptop    4.7      408
## 24    $179.99     Bicycle    4.6        6
## 25    $389.98     Bicycle    4.6      398
## 26    $429.99       Watch    4.6   53,468
## 27    $239.17       Watch    4.6   18,492
## 28     $18.95       Watch    4.6   17,825
## 29    $130.00       Watch    4.6   25,670
## 30    $469.00       Watch    4.6   49,784
## 31    $160.00       Watch    4.6    1,719
## 32     $22.95       Watch    4.6      957
## 33    $649.99       Watch    4.6   10,986
## 34    $199.95       Watch    4.6    2,600
## 35     $16.99    MousePad    4.6   10,051
## 36      $5.98    MousePad    4.6      416
## 37      $9.99    MousePad    4.6   26,598
## 38     $15.49    MousePad    4.6   14,516
## 39      $8.99    MousePad    4.6    4,521
## 40      $6.49    MousePad    4.6      725
## 41     $22.95    MousePad    4.6   19,730
## 42     $32.99    MousePad    4.6    9,402
## 43      $9.99    MousePad    4.6   10,011
## 44    $399.00      Laptop    4.6   10,278
## 45    $599.99      Laptop    4.6      887
## 46    $189.99     Bicycle    4.5   17,982
## 47    $169.99     Bicycle    4.5    4,105
## 48 $1,999.99     Bicycle    4.5      114
## 49    $473.98       Watch    4.5    9,611
## 50     $13.16       Watch    4.5      724
## 51     $91.00       Watch    4.5    2,655
## 52     $14.91       Watch    4.5      260
## 53     $19.99       Watch    4.5    8,229
## 54      $9.99    MousePad    4.5   97,074
## 55      $9.99    MousePad    4.5      149
## 56     $39.99    MousePad    4.5      313
## 57     $59.99      Laptop    4.5        4
```

```
## 58    $199.99    Laptop    4.5    1,603
## 59    $113.99 GamingChair    4.5    1,705
## 60     $89.99 GamingChair    4.5   37,795
## 61     $79.99 GamingChair    4.5   19,431
## 62 $3,295.00    Bicycle    4.4       99
## 63    $199.99    Bicycle    4.4       17
## 64    $199.99    Bicycle    4.4      310
## 65    $178.49    Bicycle    4.4      113
## 66 $3,295.00    Bicycle    4.4    1,462
## 67    $910.59    Bicycle    4.4       32
## 68    $249.99     Watch    4.4    1,044
## 69     $19.99     Watch    4.4   28,113
## 70     $21.99     Watch    4.4      978
## 71     $26.95     Watch    4.4    5,418
##
## 1                                               Hiland 20 inch Freestyle Kids BMX Bike,Beginner-Level
## 2                             BestOffice PC Gaming Chair Ergonomic Office Chair Desk Chair with Lumbar Su
## 3                              HP Portable Laptop, Student and Business, 14" HD Display, Intel Quad-Core
## 4                    RESPAWN 900 Gaming Recliner - Video Games Console Recliner Chair, Computer Recliner
## 5
## 6    Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch with
## 7
## 8                             Aothia Leather Desk Pad Protector,Mouse Pad,Office Desk Mat, Non-Slip PU Lea
## 9       MROCO Mouse Pad [30% Larger] with Anti-fray Stitching, Premium-Textured & Waterproof Compute
## 10                                              Japanese Sea Wave Large Mouse Pad, Anime Black
## 11      KTRIO Large Gaming Mouse Pad with Superior Micro-Weave Cloth, Extended Desk Mousepad with S
## 12                                                                                                  An
## 13                    Leather Mouse Pad - Wood Mouse Pad, Double Side Mouse Pad with Stitched Edge, Wa
## 14
## Extended XL - Black
## 15         GIM Wireless Charging RGB Gaming Mouse Pad 15W, LED Mouse Mat 800x300x4MM, 10 Light Modes
## 16          Gimars RGB Gaming Mouse Pad,15W Wireless Charging Mousepad with 10 Light Modes, Large Mo
## 17                                      Mouse Pad with Wrist Rest Support,Cute Custom Gaming Made
## 18         JIKIOU Mouse Pad with Non-Slip Rubber Base, Premium-Textured & Washable Computer Mous
## 19
## 20                                        Japanese Mouse Pad, Large Japanese Desk Mat, XL Ani
## 21
## 22                                              CORSAIR MM700 RGB Extende
## 23                              HP 17 Laptop, 17.3" HD+ Touchscreen Display, 12th Gen Intel
## 24                                      WEIZE Kids Bike, 14 18 20 Inch Children Bicy
## 25                                      Mongoose Tyax Comp, Sport, and Expert Adul
## 26        Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case with Sta
## 27
## 28                       Apple Watch Series 10 [GPS 46mm case] Smartwatch with Jet Black Aluminium
## 29                                                                              Men's Di
## 30                          Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart Rat
## 31  Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress Manag
## 32
## 33
## 34                                        Garmin D2 Mach 1 Pro, Aviator Smartwatch with G
## 35                    TECKNET Mouse Pad with Anti-fray Stitching, Waterproof Surface & Non-Slip Rubbe
## 36              Ergonomic Mouse Pad Wrist Support, Comfortable Mouse Pad Wrist Rest, Relieve Wrist Pai
## 37    MROCO Ergonomic Mouse Pad with Gel Wrist Rest, Comfortable Mousepad with Smooth Wrist Support Su
## 38     JIKIOU 3 Pack Mouse Pad with Stitched Edge, Comfortable Mouse Pads with Non-Slip Rubber Base, W
```

```
## 39                                          Soqool Mouse Pad, Ergonomic Mouse Pad with Comfortable Gel W:
## 40                                          Mouse Pad, Mouse Pad with Abstract Art Design, Squa
## 41              ITNRSIIET Marble Round Mouse Pad, Pink Marble Customized Premium-Textured Mouse Mat,W
## 42    MROCO Mouse Pad [30% Larger] with Stitched Edges, 3 Pack Premium-Textured & Waterproof Mous
## 43                  EooCoo Ergonomic Mouse Pad with Wrist Support, Mousepad with Memory Foam
## 44                     acer Gateway Chromebook 311 CBO311-1H-C1MX Laptop | Intel Celeron N450(
## 45     Lenovo IdeaPad 1 Student Laptop, Intel Dual Core Processor, 20GB RAM, 1TB SSD + 128GB eMMC, :
## 46             E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Adults
## 47                     Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicycle \
## 48     Pacific Vortax BMX Style Kids Bike for Boys and Girls, Single Speed, 12 to 20-Inch Wheel Optio
## 49                     F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC Stopw
## 50
## 51                                                             Illuminator A[
## 52                                                                 Garm
## 53                                      Garmin fenix 7, adventure smartwatch, rugged outd¢
## 54
## 55  Cute Mouse Pad Wrist Support,Ergonomic Mouse Pad with Wrist Rest,Comfortable Mousepad with Smootl
## 56                         Japanese Gaming Mouse Pad Black Mouse Pad Kanagawa Large Mousepad |
## 57             Lenovo Essential Touchscreen Laptop | Ideapad 3i | 40GB RAM | 15.6" FHD Touch Screen
## 58
## 59                                          LEMBERI Video Game Chairs with footrest, Big and Tal
## 60                         Big and Tall Gaming Chair 350lbs-Racing Style Computer Gamer Chair,Ergone
## 61             Dowinx Gaming Chair with Pocket Spring Cushion and Footrest, Ergonomic Computer Chair wi
## 62    Huffy Cruiser Bike, Fairmont or Woodhaven Model, 20/24/26 Inch Sizes, Perfect for Casual Rides,
## 63                                          HILAND 26 27.5 Inch Mountain B:
## 64                                          HILAND 24 26 Inch Adult Hybrid Bike, 2:
## 65                         Dynacraft Magna Echo Ridge Mountain Bike - Rugged and Durable Des
## 66  Jasion EBX Electric Bike for Adults, 26" Electric Mountain Bike with 850W Peak Brushless Motor, Ma
## 67
## 68
## 69             F108WH Series | Men's Digital Watch | Illuminator | Water Resistant | LED Light | Daily
## 70                         MQ24 Series | Quartz Analog Watch for Men | Water Resistant | Res:
## 71
##  [ reached 'max' / getOption("max.print") -- omitted 79 rows ]
```

```r
all_goods <- read.csv("Amazon_products.csv")


all_goods$Price <- as.numeric(gsub("\\$", "", all_goods$Price))
```

```
## Warning: NAs introduced by coercion
```

```r
library(dplyr)
ranked_by_price_ascending <- all_goods %>%
  arrange(Price)


ranked_by_price_descending <- all_goods %>%
  arrange(desc(Price))


head(ranked_by_price_descending, 150)
```

```
##    X.7 X.6 X.5 X.4 X.3 X.2 X.1   X
## 1   30  30  30  30  30  30  30  30
```

```
## 2   105 105 105 105 105 105 105 105
## 3    34  34  34  34  34  34  34  34
## 4    57  57  57  57  57  57  57  57
## 5    22  22  22  22  22  22  22  22
## 6   113 113 113 113 113 113 113 113
## 7   104 104 104 104 104 104 104 104
## 8   115 115 115 115 115 115 115 115
## 9    26  26  26  26  26  26  26  26
## 10  114 114 114 114 114 114 114 114
## 11   25  25  25  25  25  25  25  25
## 12   33  33  33  33  33  33  33  33
## 13   44  44  44  44  44  44  44  44
## 14   94  94  94  94  94  94  94  94
## 15   56  56  56  56  56  56  56  56
## 16   43  43  43  43  43  43  43  43
## 17   32  32  32  32  32  32  32  32
## 18   48  48  48  48  48  48  48  48
## 19  120 120 120 120 120 120 120 120
## 20   98  98  98  98  98  98  98  98
## 21  110 110 110 110 110 110 110 110
## 22   24  24  24  24  24  24  24  24
## 23   99  99  99  99  99  99  99  99
## 24   47  47  47  47  47  47  47  47
## 25   93  93  93  93  93  93  93  93
## 26  109 109 109 109 109 109 109 109
## 27   96  96  96  96  96  96  96  96
## 28   97  97  97  97  97  97  97  97
## 29  143 143 143 143 143 143 143 143
## 30   91  91  91  91  91  91  91  91
## 31   95  95  95  95  95  95  95  95
## 32  107 107 107 107 107 107 107 107
## 33   11  11  11  11  11  11  11  11
## 34   31  31  31  31  31  31  31  31
## 35   14  14  14  14  14  14  14  14
## 36   36  36  36  36  36  36  36  36
## 37   35  35  35  35  35  35  35  35
## 38    9   9   9   9   9   9   9   9
## 39   23  23  23  23  23  23  23  23
## 40   27  27  27  27  27  27  27  27
## 41  112 112 112 112 112 112 112 112
## 42  117 117 117 117 117 117 117 117
## 43  106 106 106 106 106 106 106 106
## 44    7   7   7   7   7   7   7   7
## 45    8   8   8   8   8   8   8   8
## 46  102 102 102 102 102 102 102 102
## 47   59  59  59  59  59  59  59  59
## 48   15  15  15  15  15  15  15  15
## 49    6   6   6   6   6   6   6   6
## 50  126 126 126 126 126 126 126 126
## 51  145 145 145 145 145 145 145 145
## 52  111 111 111 111 111 111 111 111
## 53   13  13  13  13  13  13  13  13
## 54  116 116 116 116 116 116 116 116
## 55   21  21  21  21  21  21  21  21
```

```
## 56  10  10  10  10  10  10  10  10
## 57  46  46  46  46  46  46  46  46
## 58 148 148 148 148 148 148 148 148
## 59 101 101 101 101 101 101 101 101
## 60 135 135 135 135 135 135 135 135
## 61 137 137 137 137 137 137 137 137
## 62 129 129 129 129 129 129 129 129
## 63  40  40  40  40  40  40  40  40
## 64 128 128 128 128 128 128 128 128
## 65 139 139 139 139 139 139 139 139
## 66 147 147 147 147 147 147 147 147
## 67 123 123 123 123 123 123 123 123
## 68  12  12  12  12  12  12  12  12
## 69 124 124 124 124 124 124 124 124
## 70 144 144 144 144 144 144 144 144
## 71  58  58  58  58  58  58  58  58
##
## 1
## 2                                                        15. ASUS Chromebook CX1, 14"
## 3                                                               4. Minimalist Mo
## 4
## 5                                                   22. Schwinn Koen & Elm
## 6                                              23. HP 15.6" FHD Business Laptop, 32GB RAM,1TB
## 7     14. Lenovo IdeaPad 1 Student Laptop, Intel Dual Core Processor, 20GB RAM, 1TB SSD + 128GB eMMC
## 8       25. HP 14 Laptop, Intel Celeron N4020, 4 GB RAM, 64 GB Storage, 14-inch Micro-edge HD Display
## 9                                 26. Schwinn High Timber Mountain Bike for Adult Youth Men U
## 10        24. HP Newest 255 G10 Laptop for Home or Work, 16GB RAM, 1TB SSD, 15.6" Full HD, Ryzen
## 11        25. isinwheel U1 Electric Bike for Adults 500W Motor, 20 mph Folding Ebike, 14" Adults E
## 12                                3. F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC S
## 13                            14. Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart
## 14     4. Acer Aspire 3 A315-24P-R7VH Slim Laptop | 15.6" Full HD IPS Display | AMD Ryzen 3 7320U Qua
## 15          26. TOZO S2 44mm Smart Watch Alexa Built-in Fitness Tracker with Heart Rate and Blood Oxyge
## 16 13. Samsung Galaxy Watch Ultra 47mm LTE AI Smartwatch w/Energy Score, Wellness Tips, Heart Rate T
## 17                 2. Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case with
## 18  18. Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch wi
## 19                                30. HP 17 Laptop, 17.3" HD+ Touchscreen Display, 12th Gen In
## 20                          8. acer Gateway Chromebook 311 CB0311-1H-C1MX Laptop | Intel Celeron N4
## 21 20. HP Stream 14" HD Lightweight Laptop, Intel Celeron N4120, 16GB RAM, 224GB Storage(64GB eMMC +
## 22                                24. Mongoose Tyax Comp, Sport, and Expert Ad
## 23                                9. HP Lastest 255 G10 15.6" FHD Business
## 24
## 25                                                        3. Lenovo V15 G2 Laptop, 15
## 26                 19. HP Newest 15.6" Essential Laptop, 32GB RAM, 1TB SSD(512GB PCIe & P500 50
## 27     6. Lenovo V15 Newest 15.6" FHD Business Laptop Computer, Intel Dual-Core Processor, 32GB DDR4
## 28                                                        7. Amazon
## 29             23. BestOffice Ergonomic Office, PC Gaming Chair Cheap Desk Chair Executive PU
## 30     1. Amazon Fire Max 11 tablet (newest model) vivid 11" display, all-in-one for streaming, rea
## 31   5. HP Stream 14" HD BrightView Laptop, Intel Celeron N4120, 16GB RAM, 288GB Storage (128GB eMMC
## 32   17. Lenovo 15.6" IdeaPad Essential Laptop Computer, Windows 11 Pro with Microsoft Office Lifet
## 33                                                        11. Mountain Bike 24/26
## 34
## 35                                 14. Kids Bike Bicycle 14 Inches Kid Bicycle for Boys Girls wi
## 36
## 37     5. Smart Watch, Fitness Tracker with Heart Rate Monitor, Blood Oxygen, Sleep Tracking, 1.5 Inc
```

```
## 38                                                9. WEIZE Kids Bike,16 20 Inch Children
## 39                       23. Mongoose Salvo Comp, Trail, or Sport Mountain Bike for Adult Me
## 40                                 27. BalanceFrom Dinos Kids Bike Kids Bicycle w
## 41
## 42             27. NIMO 15.6'' FHD IPS Student Laptop, 16GB RAM 1TB SSD, Intel Pentium Quad-Core N10
## 43   16. Dell Inspiron Touchscreen Laptop, 15.6" Business & Student Laptop Computer, Windows 11 Pro L
## 44                                          7. HILAND 26 27.5 Inch Mountai
## 45                                          8. HILAND 24 26 Inch Adult Hybrid Bike
## 46
## 47                                 29. Garmin D2  Mach 1 Pro, Aviator Smartwatch wit
## 48         15. E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Adul
## 49                                      6. WEIZE Kids Bike, 14 18 20 Inch Children
## 50                         6. Homall Gaming Chair, Video Game Chair with Footrest an
## 51             25. BestOffice High-Back Gaming Chair PC Office Chair Computer Racing Chair PU D
## 52             21. LENOVO IdeaPad 1 Laptop, 15.6" FHD Display, Intel Celeron N4500 Processor,
## 53                         13. Dynacraft Magna Echo Ridge Mountain Bike –
Rugged and Durable Design, Perfect for Teens and Adults Learning to Ride, Sturdy and Easy to Assemble,
## 54             26. ASUS ROG Strix G16 (2024) Gaming Laptop, 16" 16:10 FHD 165Hz Display, NVIDIA®
## 55                     21. Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicyc
## 56                                 10. Hiland 20 inch Freestyle Kids BMX Bike,Beginner-L
## 57 16. Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress M
## 58             28. RESPAWN 900 Gaming Recliner – Video Games Console Recliner Chair, Computer Reclin
## 59                     11. HP Portable Laptop, Student and Business, 14" HD Display, Intel Quad-C
## 60                         15. Ergonomic Gaming Chair with Footrest Big and Tall Game Cl
## 61             17. Swivel Gaming Floor Chair – Enjoy 6 Different Positions, Adjustable Lu
## 62                         9. Shahoo Gaming Chair with Footrest and Massage Luml
## 63                                          10. Men's
## 64         8. DUMOS Ergonomic Computer Gaming Chair – Home Office Desk with PU Leather Lumbar S
## 65                     19. BestOffice PC Gaming Chair Ergonomic Office Chair Desk Chair with Lumba
## 66                     27. Dowinx Gaming Chair Breathable Fabric Computer Chair with Pocket Sp
## 67                     3. Homall Gaming Chair, Office Chair High Back Computer Chair Leather D
## 68                                      12. Hiland 20 Inch Kids Mou
## 69                 4. GTRACING Gaming Chair with Footrest, Ergonomic Computer Game De
## 70             24. GTPLAYER Gaming Chair with Footrest, Big and Tall Game Chair 350lb Raci
## 71
##     Price   Category Ratings Reviews
## 1  910.59   Bicycle    4.4      32
## 2  799.99    Laptop    4.2     478
## 3  729.98     Watch    4.0   2,760
## 4  649.99     Watch    4.6  10,986
## 5  648.43   Bicycle    4.1      80
## 6  619.99    Laptop    4.1      21
## 7  599.99    Laptop    4.6     887
## 8  599.99    Laptop    4.3   1,935
## 9  519.99   Bicycle    3.2     280
## 10 499.99    Laptop    4.1     137
## 11 492.99   Bicycle    4.0   2,966
## 12 473.98     Watch    4.5   9,611
## 13 469.00     Watch    4.6  49,784
## 14 469.00    Laptop    3.6  39,313
## 15 449.01     Watch    4.4  26,284
## 16 440.00     Watch    4.3  12,588
## 17 429.99     Watch    4.6  53,468
## 18 429.00     Watch    4.7  10,961
```

```
## 19 399.99       Laptop   4.7      408
## 20 399.00       Laptop   4.6   10,278
## 21 399.00       Laptop   4.3    1,236
## 22 389.98      Bicycle   4.6      398
## 23 379.00       Laptop   4.4       14
## 24 359.99        Watch   4.7      398
## 25 349.00       Laptop   4.4       53
## 26 339.00       Laptop   2.8      818
## 27 321.99       Laptop   4.4       52
## 28 309.00       Laptop   4.4   17,919
## 29 299.99 GamingChair   4.1    2,689
## 30 279.99       Laptop   4.1   10,667
## 31 279.99       Laptop   4.2    2,012
## 32 269.00       Laptop   4.1        3
## 33 249.99      Bicycle   4.0      461
## 34 249.99        Watch   4.4    1,044
## 35 239.99      Bicycle   4.0    1,225
## 36 239.17        Watch   4.6   18,492
## 37 234.00        Watch   4.1    1,196
## 38 229.99      Bicycle   4.2      486
## 39 229.99      Bicycle   4.1      114
## 40 219.99      Bicycle   4.3    1,923
## 41 209.99       Laptop   4.2 123,307
## 42 209.99       Laptop   4.0       16
## 43 206.99       Laptop   4.1       88
## 44 199.99      Bicycle   4.4       17
## 45 199.99      Bicycle   4.4      310
## 46 199.99       Laptop   4.5    1,603
## 47 199.95        Watch   4.6    2,600
## 48 189.99      Bicycle   4.5   17,982
## 49 179.99      Bicycle   4.6        6
## 50 179.98 GamingChair   4.4      561
## 51 179.98 GamingChair   4.3       34
## 52 179.97       Laptop   4.2      458
## 53 178.49      Bicycle   4.4      113
## 54 176.69       Laptop   4.2    1,461
## 55 169.99      Bicycle   4.5    4,105
## 56 161.54      Bicycle   5.0        1
## 57 160.00        Watch   4.6    1,719
## 58 154.99 GamingChair   4.9   12,758
## 59 149.00       Laptop   4.9    1,773
## 60 145.98 GamingChair   4.4       23
## 61 139.99 GamingChair   4.4    1,281
## 62 135.99 GamingChair   4.4    3,105
## 63 130.00        Watch   4.6   25,670
## 64 129.99 GamingChair   4.2      702
## 65 129.99 GamingChair   5.0      358
## 66 128.52 GamingChair   4.4    3,746
## 67 123.34 GamingChair   4.3      214
## 68 119.99      Bicycle   4.0    1,807
## 69 119.99 GamingChair   4.4      794
## 70 119.98 GamingChair   4.3   22,167
## 71 119.95        Watch   4.0       27
##
```

```
## 1
## 2                                                                ASUS Chromebook CX1, 14" FHD
## 3                                                                    Minimalist Men's
## 4
## 5                                                              Schwinn Koen & Elm BMX S
## 6                                                    HP 15.6" FHD Business Laptop, 32GB RAM,1TB PCI
## 7     Lenovo IdeaPad 1 Student Laptop, Intel Dual Core Processor, 20GB RAM, 1TB SSD + 128GB eMMC, 1
## 8      HP 14 Laptop, Intel Celeron N4020, 4 GB RAM, 64 GB Storage, 14-inch Micro-edge HD Display, W
## 9                                             Schwinn High Timber Mountain Bike for Adult Youth Men Wome
## 10          HP Newest 255 G10 Laptop for Home or Work, 16GB RAM, 1TB SSD, 15.6" Full HD, Ryzen 3 73
## 11        isinwheel U1 Electric Bike for Adults 500W Motor, 20 mph Folding Ebike, 14" Adults Electr
## 12                        F91W Series | Digital Watch | Water Resistant | LED Light | 1/100 SEC Stopwa
## 13                        Fitbit Versa 4 Fitness Smartwatch with Daily Readiness, GPS, 24/7 Heart Rate
## 14   Acer Aspire 3 A315-24P-R7VH Slim Laptop | 15.6" Full HD IPS Display | AMD Ryzen 3 7320U Quad-Co
## 15          TOZO S2 44mm Smart Watch Alexa Built-in Fitness Tracker with Heart Rate and Blood Oxygen M
## 16 Samsung Galaxy Watch Ultra 47mm LTE AI Smartwatch w/Energy Score, Wellness Tips, Heart Rate Tracki
## 17             Apple Watch SE (2nd Gen) [GPS 40mm] Smartwatch with Starlight Aluminium Case with Sta
## 18  Jacoosa Smart Watch, 1.85" HD Smartwatch for Men Women (Answer/Make Calls), Fitness Watch with 1
## 19                                        HP 17 Laptop, 17.3" HD+ Touchscreen Display, 12th Gen Intel C
## 20              acer Gateway Chromebook 311 CB0311-1H-C1MX Laptop | Intel Celeron N4500
## 21 HP Stream 14" HD Lightweight Laptop, Intel Celeron N4120, 16GB RAM, 224GB Storage(64GB eMMC + 160
## 22                                             Mongoose Tyax Comp, Sport, and Expert Adult
## 23                                   HP Lastest 255 G10 15.6" FHD Business Lap
## 24
## 25                                                             Lenovo V15 G2 Laptop, 15.6"
## 26                        HP Newest 15.6" Essential Laptop, 32GB RAM, 1TB SSD(512GB PCIe & P500 500GB
## 27     Lenovo V15 Newest 15.6" FHD Business Laptop Computer, Intel Dual-Core Processor, 32GB DDR4 RA
## 28                                                                         Amazon Fire
## 29             BestOffice Ergonomic Office, PC Gaming Chair Cheap Desk Chair Executive PU Leath
## 30     Amazon Fire Max 11 tablet (newest model) vivid 11" display, all-in-one for streaming, reading
## 31  HP Stream 14" HD BrightView Laptop, Intel Celeron N4120, 16GB RAM, 288GB Storage (128GB eMMC + 1
## 32    Lenovo 15.6" IdeaPad Essential Laptop Computer, Windows 11 Pro with Microsoft Office Lifetime
## 33                                             Mountain Bike 24/26 Inch
## 34
## 35                          Kids Bike Bicycle 14 Inches Kid Bicycle for Boys Girls with T
## 36
## 37   Smart Watch, Fitness Tracker with Heart Rate Monitor, Blood Oxygen, Sleep Tracking, 1.5 Inch Tou
## 38                                        WEIZE Kids Bike,16 20 Inch Children Bicy
## 39                    Mongoose Salvo Comp, Trail, or Sport Mountain Bike for Adult Men an
## 40                                        BalanceFrom Dinos Kids Bike Kids Bicycle with
## 41
## 42           NIMO 15.6'' FHD IPS Student Laptop, 16GB RAM 1TB SSD, Intel Pentium Quad-Core N100(Bea
## 43  Dell Inspiron Touchscreen Laptop, 15.6" Business & Student Laptop Computer, Windows 11 Pro Laptop
## 44                                             HILAND 26 27.5 Inch Mountain Bi
## 45                                             HILAND 24 26 Inch Adult Hybrid Bike, 21
## 46
## 47                                             Garmin D2 Mach 1 Pro, Aviator Smartwatch with GP
## 48          E Bikes for Adults Electric, Peak 1500W/2000W 37MPH Fat Tire Electric Bike for Adults,
## 49                                        WEIZE Kids Bike, 14 18 20 Inch Children Bicy
## 50                        Homall Gaming Chair, Video Game Chair with Footrest and Ma
## 51           BestOffice High-Back Gaming Chair PC Office Chair Computer Racing Chair PU Desk
## 52           LENOVO IdeaPad 1 Laptop, 15.6" FHD Display, Intel Celeron N4500 Processor, 20GB
## 53                        Dynacraft Magna Echo Ridge Mountain Bike - Rugged and Durable Des
## 54           ASUS ROG Strix G16 (2024) Gaming Laptop, 16" 16:10 FHD 165Hz Display, NVIDIA® GeFo
```

```
## 55                             Mongoose Malus Mens and Women Fat Tire Mountain Bike, 26-Inch Bicycle Wh
## 56                                       Hiland 20 inch Freestyle Kids BMX Bike,Beginner-Level
## 57 Google Pixel Watch 2 (Previous Model) with the Best of Fitbit - Heart Rate Tracking, Stress Manage
## 58                     RESPAWN 900 Gaming Recliner - Video Games Console Recliner Chair, Computer Recliner,
## 59                            HP Portable Laptop, Student and Business, 14" HD Display, Intel Quad-Core
## 60                                        Ergonomic Gaming Chair with Footrest Big and Tall Game Chair
## 61                      Swivel Gaming Floor Chair - Enjoy 6 Different Positions, Adjustable Lumbar
## 62                                       Shahoo Gaming Chair with Footrest and Massage Lumbar
## 63                                                                                   Men's Dig
## 64              DUMOS Ergonomic Computer Gaming Chair - Home Office Desk with PU Leather Lumbar Suppo
## 65                        BestOffice PC Gaming Chair Ergonomic Office Chair Desk Chair with Lumbar Su
## 66                         Dowinx Gaming Chair Breathable Fabric Computer Chair with Pocket Spring
## 67                       Homall Gaming Chair, Office Chair High Back Computer Chair Leather Desk
## 68                                                            Hiland 20 Inch Kids Mountai
## 69                       GTRACING Gaming Chair with Footrest, Ergonomic Computer Game Desk Ch
## 70                     GTPLAYER Gaming Chair with Footrest, Big and Tall Game Chair 350lb Racing S
## 71
##  [ reached 'max' / getOption("max.print") -- omitted 79 rows ]
```

```r
library(rvest)
library(dplyr)
library(stringr)


product_links <- c(
  "https://www.amazon.com/RoyalBaby-Stargirl-Bicycle-Children-Kickstand/dp/B0B4JVHWNK/ref=sr_1_1_sspa",
  "https://www.amazon.com/JOYSTAR-Princess-Children-Kickstand-Bicycles/dp/B0CQP79W9R/ref=sr_1_2_sspa",
  "https://www.amazon.com/Huffy-Mountain-21-Speed-Hardtail-24-inch/dp/B0CF76V8KX/ref=sr_1_3",
  "https://www.amazon.com/JOYSTAR-Handbrake-Children-Princess-Training/dp/B08Q7P1QGN/ref=sr_1_4",
  "https://www.amazon.com/JOYSTAR-Freestyle-Beginner-Riders-Bicycles/dp/B0CJ8STYD7/ref=sr_1_5",
  "https://www.amazon.com/HH-HILAND-Mountain-High-Tensile-Hardtail/dp/B0DDPYJ42Q/ref=sr_1_6",
  "https://www.amazon.com/HH-HILAND-Toddlers-Training-Wheels/dp/B0D8332CLB/ref=sr_1_7_sspa",
  "https://www.amazon.com/JOYSTAR-Bicycle-Training-Coaster-Assembled/dp/B07QYLWKHM/ref=sr_1_8",
  "https://www.amazon.com/JOYSTAR-Bicycle-Training-Wheels-Assembled/dp/B07PGD7X2Q/ref=sr_1_9",
  "https://www.amazon.com/Mountain-1-Speed-Handbrakes-Children-Bicycle/dp/B08BYLG1QR/ref=sr_1_10"
)


product_names <- c(
  "Royalbaby Stargirl Kids Bike Girls",
  "JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years",
  "Huffy Stone Mountain Hardtail Mountain Bike for Boys/Girls/Men/Women",
  "JOYSTAR Little Daisy Kids Bike for Girls Boys Ages 2-7 Years",
  "JOYSTAR Brockway Freestyle Kids BMX Bikes",
  "HILAND 26 27.5 Inch Mountain Bike",
  "HILAND Girls Bike for Toddlers and Kids Ages 2-7 Years Old",
  "JOYSTAR Kids Bike for Ages 2-12 Years Old Boys Girls",
  "JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old",
  "Hiland 20 Inch Kids Mountain Bike for Boys"
)

category <- "Bicycle"


all_reviews <- data.frame()
```

```r
for (i in seq_along(product_links)) {

  url <- product_links[i]
  product_name <- product_names[i]


  try({
    webpage <- read_html(url)


    reviews <- webpage %>%
      html_nodes(".review")


    reviewer_names <- reviews %>%
      html_nodes(".a-profile-name") %>%
      html_text(trim = TRUE)


    review_dates <- reviews %>%
      html_nodes(".review-date") %>%
      html_text(trim = TRUE)


    review_titles <- reviews %>%
      html_nodes(".review-title span") %>%
      html_text(trim = TRUE)


    review_comments <- reviews %>%
      html_nodes(".review-text-content span") %>%
      html_text(trim = TRUE) %>%
  str_remove("5.0 out of 5 stars")%>%
  str_remove("4.0 out of 5 stars") %>%
  str_remove("1.0 out of 5 stars") %>%
  str_remove("3.0 out of 5 stars")


    verified_purchases <- reviews %>%
      html_nodes("span.a-size-mini a-color-state a-text-bold") %>%
      html_text(trim = TRUE)

    star_ratings <- reviews %>%
      html_nodes(".a-icon-alt") %>%
      html_text(trim = TRUE) %>%
      str_extract("\\d\\.\\d") %>%  # Extract the numeric rating
      as.numeric()

    max_reviews <- min(20, length(reviewer_names))
    reviewer_names <- reviewer_names[1:max_reviews]
    review_dates <- review_dates[1:max_reviews]
    review_titles <- review_titles[1:max_reviews]
```

```
    review_comments <- review_comments[1:max_reviews]
    verified_purchases <- verified_purchases[1:max_reviews]
    star_ratings <- star_ratings[1:max_reviews]


    review_data <- data.frame(
      Category = rep(category, max_reviews),
      ProductName = rep(product_name, max_reviews),
      Reviewer = reviewer_names,
      Date = review_dates,
      Title = review_titles,
      Comment = review_comments,
      StarRating = star_ratings,
      VerifiedPurchase = verified_purchases,
      stringsAsFactors = FALSE
    )



    all_reviews <- bind_rows(all_reviews, review_data)
  }, silent = TRUE)
}

print(all_reviews)
```

```
##    Category                                                    ProductName
## 1   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 2   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                Amina
## 3   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                Amina
## 4   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 5   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 6   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                   Jul
## 7   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                 R. L
## 8   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 9   Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                   Kin
## 10  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 11  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                   Bel
## 12  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 13  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 14  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years
## 15  Bicycle       JOYSTAR Girls Bike for Toddlers and Kids Age 3-10 Years                   Nea
## 16  Bicycle                          HILAND 26 27.5 Inch Mountain Bike          Custome
## 17  Bicycle                          HILAND 26 27.5 Inch Mountain Bike
## 18  Bicycle                          HILAND 26 27.5 Inch Mountain Bike
## 19  Bicycle                          HILAND 26 27.5 Inch Mountain Bike  Essential Sailing In
## 20  Bicycle                          HILAND 26 27.5 Inch Mountain Bike  Essential Sailing In
## 21  Bicycle                          HILAND 26 27.5 Inch Mountain Bike
## 22  Bicycle                          HILAND 26 27.5 Inch Mountain Bike
## 23  Bicycle                          HILAND 26 27.5 Inch Mountain Bike        Cynthia K. Heft
## 24  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 25  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 26  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 27  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old                Prakas
## 28  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 29  Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
```

```
## 30   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 31   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 32   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 33   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 34   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 35   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 36   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old
## 37   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old Martine Chanceline Ma
## 38   Bicycle JOYSTAR Angel Girls Bike for Toddlers and Kids Ages 2-13 Years Old           Jacquet jea
## 39   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys            MICHAE
## 40   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys             Dotti
## 41   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 42   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 43   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys            Matthe
## 44   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys           Amazon
## 45   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 46   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 47   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 48   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 49   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 50   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
## 51   Bicycle                 Hiland 20 Inch Kids Mountain Bike for Boys
##                                              Date                      Title
## 1    Reviewed in the United States on November 4, 2024       5.0 out of 5 stars
## 2        Reviewed in the United States on March 5, 2023
## 3        Reviewed in the United States on June 9, 2024         Lovely little bike
## 4  Reviewed in the United States on September 13, 2023       5.0 out of 5 stars
## 5        Reviewed in the United States on June 1, 2024
## 6     Reviewed in the United States on March 23, 2022                 Everything
## 7    Reviewed in the United States on January 4, 2020       4.0 out of 5 stars
## 8        Reviewed in the United States on May 29, 2024
## 9             Reviewed in Canada on July 10, 2023           Very good bike
## 10            Reviewed in Canada on May 20, 2022         5.0 out of 5 stars
## 11        Reviewed in Mexico on November 17, 2020
## 12          Reviewed in Mexico on January 8, 2021            Worth the money!
## 13            Reviewed in Canada on May 31, 2020         5.0 out of 5 stars
## 14                                            <NA>
## 15                                            <NA>             Daughter loves it
## 16   Reviewed in the United States on November 5, 2024       5.0 out of 5 stars
## 17 Reviewed in the United States on November 14, 2024
## 18 Reviewed in the United States on November 20, 2024   Really great mountain bike
## 19  Reviewed in the United States on October 30, 2024       4.0 out of 5 stars
## 20 Reviewed in the United States on November 12, 2024
## 21  Reviewed in the United States on October 28, 2024                  Good bike
## 22                                            <NA>       5.0 out of 5 stars
## 23                                            <NA>
## 24 Reviewed in the United States on November 24, 2024       5.0 out of 5 stars
## 25 Reviewed in the United States on November 12, 2024
## 26     Reviewed in the United States on August 5, 2024   Bike Customer Service
## 27   Reviewed in the United States on November 9, 2024       5.0 out of 5 stars
## 28 Reviewed in the United States on September 20, 2024
## 29  Reviewed in the United States on October 21, 2024             Beautiful bike
## 30 Reviewed in the United States on September 15, 2024       5.0 out of 5 stars
## 31       Reviewed in the United States on July 6, 2024
```

```
## 32                        Reviewed in Canada on October 24, 2024                     Beautiful bike
## 33                     Reviewed in France on September 21, 2024               4.0 out of 5 stars
## 34                        Reviewed in Poland on April 30, 2024
## 35                      Reviewed in Germany on April 29, 2024                             Cute
## 36                      Reviewed in Belgium on April 5, 2024               5.0 out of 5 stars
## 37                                                        <NA>
## 38                                                        <NA>   Nice bike for my 6 year old…
## 39    Reviewed in the United States on September 1, 2024               5.0 out of 5 stars
## 40    Reviewed in the United States on February 28, 2024
## 41        Reviewed in the United States on June 25, 2020        QUALITY/CONDITION/CONTENT
## 42         Reviewed in the United States on July 1, 2024               5.0 out of 5 stars
## 43         Reviewed in the United States on April 3, 2021
## 44    Reviewed in the United States on November 29, 2020          Bought in a damaged  box
## 45                      Reviewed in Canada on October 23, 2024               4.0 out of 5 stars
## 46                      Reviewed in Canada on October 17, 2024
## 47                       Reviewed in Canada on March 5, 2021 Decent bike acquired during COVID.
## 48                      Reviewed in Canada on April 23, 2023               1.0 out of 5 stars
## 49                         Reviewed in Canada on May 5, 2024
## 50                                                        <NA>   Don't waste your money and time.
## 51                                                        <NA>               5.0 out of 5 stars
##
## 1
## 2
## 3
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
## 31
## 32
## 33
```

```
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 41
## 42
## 43
## 44
## 45
## 46 First and foremost, I should note that you need to know something about bike maintenance....well,
## 47
## 48
## 49
## 50
## 51
##    StarRating VerifiedPurchase
## 1          5            <NA>
## 2          5            <NA>
## 3          5            <NA>
## 4          4            <NA>
## 5          5            <NA>
## 6          5            <NA>
## 7          5            <NA>
## 8          5            <NA>
## 9          1            <NA>
## 10         5            <NA>
## 11         2            <NA>
## 12         5            <NA>
## 13         5            <NA>
## 14         5            <NA>
## 15         5            <NA>
## 16         5            <NA>
## 17         4            <NA>
## 18         5            <NA>
## 19         5            <NA>
## 20         5            <NA>
## 21         4            <NA>
## 22         4            <NA>
## 23         5            <NA>
## 24         5            <NA>
## 25         5            <NA>
## 26         5            <NA>
## 27         5            <NA>
## 28         4            <NA>
## 29         5            <NA>
## 30         5            <NA>
## 31         1            <NA>
## 32         5            <NA>
## 33         5            <NA>
## 34         5            <NA>
## 35         5            <NA>
```

```
## 36              5              <NA>
## 37              2              <NA>
## 38              5              <NA>
## 39              5              <NA>
## 40              5              <NA>
## 41              4              <NA>
## 42              4              <NA>
## 43              1              <NA>
## 44              5              <NA>
## 45              3              <NA>
## 46              5              <NA>
## 47              3              <NA>
## 48              5              <NA>
## 49              5              <NA>
## 50              3              <NA>
## 51              3              <NA>
```

```r
write.csv(all_reviews, "Bicycle_reviews.csv")
```

```r
library(rvest)
library(dplyr)
library(stringr)

product_links <- c(
  "https://www.amazon.com/Amazon-Essentials-Digital-Chronograph-Black/dp/B07YQFY579/ref=sr_1_1_ffob_sspa",
  "https://www.amazon.com/Fitness-Activity-Trackers-Waterproof-Smartwatch/dp/B0D2NJ3SKP/ref=sr_1_2_sspa",
  "https://www.amazon.com/OLEVS-Watches-Silver-Stainless-Luxury/dp/B0C3CRFZJC/ref=sr_1_3_sspa",
  "https://www.amazon.com/TOOBUR-Pedometer-Waterproof-Smartwatch-Compatible/dp/B0D7HNZM63/ref=sr_1_4_ssp
  "https://www.amazon.com/Casio-AE-1500WH-5AVCF-10-Year-Battery/dp/B08VMTXZP1/ref=sr_1_5",
  "https://www.amazon.com/Fossil-Quartz-Stainless-Leather-Chronograph/dp/B017SN1OI8/ref=sr_1_6",
  "https://www.amazon.com/Timex-T49963-Expedition-Scout-Leather/dp/B00HF49WXK/ref=sr_1_7",
  "https://www.amazon.com/Fossil-Minimalist-Quartz-Stainless-Leather/dp/B079DD13WB/ref=sr_1_8",
  "https://www.amazon.com/Casio-F108WH-Illuminator-Collection-Digital/dp/B0053HBJBE/ref=sr_1_9",
  "https://www.amazon.com/Casio-Vintage-Quartz-Resistant-Classic/dp/B000GB0G7A/ref=sr_1_10"
)

product_names <- c(
  "Amazon Essentials Men's Digital Chronograph Black Resin Strap Water Resistant Watch",
  "Smart Watch for Women Answer/Make Calls, 1.9 HD Fitness Watch with Heart Rate Monitor Sleep Monitor"
  "OLEVS Men Watch,Big Dial Watches for Men Stainless Steel",
  "Smart Watch for Women Men, Alexa Built-in, Answer/Make Calls, 1.83 Fitness Tracker Watch with Heart
  "Casio Illuminator AE1500WH Series",
  "Fossil Grant Men's Watch with Chronograph or Automatic Display and Genuine Leather or Stainless Stee
  "Timex Men's Expedition Scout 40mm Watch",
  "Fossil Minimalist Men's Watch with Leather or Stainless Steel Band",
  "Casio F108WH Series",
  "Casio MQ24 Series"
)

category <- "watch"

all_reviews <- data.frame()

for (i in seq_along(product_links)) {
  # Get the product link and name
```

```r
url <- product_links[i]
product_name <- product_names[i]

try({
  webpage <- read_html(url)

  reviews <- webpage %>%
    html_nodes(".review")

  reviewer_names <- reviews %>%
    html_nodes(".a-profile-name") %>%
    html_text(trim = TRUE)

  review_dates <- reviews %>%
    html_nodes(".review-date") %>%
    html_text(trim = TRUE)

  review_titles <- reviews %>%
    html_nodes(".review-title span") %>%
    html_text(trim = TRUE) %>%
str_remove("5.0 out of 5 stars")%>%
str_remove("4.0 out of 5 stars") %>%
str_remove("1.0 out of 5 stars") %>%
str_remove("3.0 out of 5 stars")

  review_comments <- reviews %>%
    html_nodes(".review-text-content span") %>%
    html_text(trim = TRUE)

  verified_purchases <- reviews %>%
    html_nodes(".review-vp-label") %>%
    html_text(trim = TRUE)

  star_ratings <- reviews %>%
    html_nodes(".a-icon-alt") %>%
    html_text(trim = TRUE) %>%
    str_extract("\\d\\.\\d") %>%
    as.numeric()

  max_reviews <- min(20, length(reviewer_names))
  reviewer_names <- reviewer_names[1:max_reviews]
  review_dates <- review_dates[1:max_reviews]
  review_titles <- review_titles[1:max_reviews]
  review_comments <- review_comments[1:max_reviews]
  verified_purchases <- verified_purchases[1:max_reviews]
  star_ratings <- star_ratings[1:max_reviews]

  review_data <- data.frame(
    Category = rep(category, max_reviews),
    ProductName = rep(product_name, max_reviews),
    Reviewer = reviewer_names,
    Date = review_dates,
    Title = review_titles,
```

```r
        Comment = review_comments,
        StarRating = star_ratings,
        VerifiedPurchase = verified_purchases,
        stringsAsFactors = FALSE
    )

    all_reviews <- bind_rows(all_reviews, review_data)
  }, silent = TRUE)
}

print(all_reviews)
```

```
##    Category                       ProductName                  Reviewer
## 1     watch Casio Illuminator AE1500WH Series                   Dru Ha
## 2     watch Casio Illuminator AE1500WH Series                   D.W. D.
## 3     watch Casio Illuminator AE1500WH Series                    Lissy
## 4     watch Casio Illuminator AE1500WH Series                    Lissy
## 5     watch Casio Illuminator AE1500WH Series              J35U5 SAV3S
## 6     watch Casio Illuminator AE1500WH Series              J35U5 SAV3S
## 7     watch Casio Illuminator AE1500WH Series                      JRC
## 8     watch Casio Illuminator AE1500WH Series            Refined Raven
## 9     watch Casio Illuminator AE1500WH Series                   Quique
## 10    watch Casio Illuminator AE1500WH Series                 Pedro A.
## 11    watch Casio Illuminator AE1500WH Series                 Pedro A.
## 12    watch Casio Illuminator AE1500WH Series                  Cliente
## 13    watch Casio Illuminator AE1500WH Series                 yasir a.
## 14    watch Casio Illuminator AE1500WH Series                Miguel A.
## 15    watch                Casio MQ24 Series             A. J. Safian
## 16    watch                Casio MQ24 Series     Eduardo Cuello Suazo
## 17    watch                Casio MQ24 Series     San Francisco Bagger
## 18    watch                Casio MQ24 Series                ameliapond
## 19    watch                Casio MQ24 Series                ameliapond
## 20    watch                Casio MQ24 Series           Sheldon Forman
## 21    watch                Casio MQ24 Series                     Mike
## 22    watch                Casio MQ24 Series                      Leo
## 23    watch                Casio MQ24 Series         Ulises Hernández
## 24    watch                Casio MQ24 Series                  Ricardo
## 25    watch                Casio MQ24 Series                     D.J.
##                                                      Date
## 1       Reviewed in the United States on July 30, 2023
## 2     Reviewed in the United States on October 25, 2024
## 3   Reviewed in the United States on September 13, 2024
## 4    Reviewed in the United States on November 28, 2024
## 5   Reviewed in the United States on September 17, 2024
## 6     Reviewed in the United States on October 27, 2024
## 7               Reviewed in Canada on November 13, 2024
## 8                Reviewed in Brazil on November 12, 2024
## 9                 Reviewed in Brazil on November 4, 2024
## 10                Reviewed in Mexico on October 15, 2024
## 11                Reviewed in Mexico on October 11, 2024
## 12                                                  <NA>
## 13                                                  <NA>
## 14                                                  <NA>
## 15    Reviewed in the United States on February 7, 2016
```

```
## 16   Reviewed in the United States on December 26, 2023
## 17   Reviewed in the United States on November 14, 2024
## 18          Reviewed in the United States on June 5, 2024
## 19    Reviewed in the United States on October 10, 2024
## 20               Reviewed in Canada on November 7, 2024
## 21               Reviewed in Mexico on October 30, 2024
## 22               Reviewed in Mexico on October 24, 2024
## 23                Reviewed in Brazil on October 21, 2024
## 24               Reviewed in Canada on October 19, 2024
## 25                                                  <NA>
##                                                                   Title
## 1
## 2
## 3        Very nice, GIANT display! Best model I've seen in the price-range.
## 4
## 5
## 6                                                    Great basic watch..
## 7
## 8
## 9                         Stylish tactical watch at an unbeatable price!
## 10
## 11
## 12                                                Very nice tactical watch
## 13
## 14
## 15
## 16
## 17 Great Men/Women's Watch - thick-armed/wristed individuals beware though!
## 18
## 19
## 20                     Simple Yet Reliable Timepiece - A Great Purchase!
## 21
## 22
## 23                                                    Inexpensive Elegance
## 24
## 25
##
## 1  I have used my cell phone instead of a watch since about 2001.  Decided to start wearing cheap, qu
## 2
## 3
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
```

48

```
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
##    StarRating VerifiedPurchase
## 1          5             <NA>
## 2          5             <NA>
## 3          5             <NA>
## 4          5             <NA>
## 5          4             <NA>
## 6          4             <NA>
## 7          5             <NA>
## 8          5             <NA>
## 9          5             <NA>
## 10         5             <NA>
## 11         5             <NA>
## 12         5             <NA>
## 13         5             <NA>
## 14         5             <NA>
## 15         5             <NA>
## 16         5             <NA>
## 17         5             <NA>
## 18         4             <NA>
## 19         4             <NA>
## 20         5             <NA>
## 21         5             <NA>
## 22         5             <NA>
## 23         5             <NA>
## 24         5             <NA>
## 25         5             <NA>
```

```r
write.csv(all_reviews, "Watches_reviews.csv")
```

```r
library(rvest)
library(dplyr)
library(stringr)

product_links <- c(
  "https://www.amazon.com/Amazon-Basics-Square-Rubberized-Standard/dp/B06X3W3YQD/ref=sr_1_1_ffob_sspa",
  "https://www.amazon.com/Varsamp-Ergonomic-Mousepad-Comfortable-Non-Slip/dp/B0CNBS4HT3/ref=sr_1_2_sspa",
  "https://www.amazon.com/JIKIOU-Ergonomic-Comfortable-Non-Slip-Computer/dp/B081DHV2PW/ref=sr_1_3_sspa",
  "https://www.amazon.com/eulps-Ergonomic-Comfortable-Computer-Mousepad/dp/B0BWMXZPGQ/ref=sr_1_4_sspa",
  "https://www.amazon.com/SteelSeries-Heavy-Cloth-Gaming-Mouse/dp/B00WAA2704/ref=sr_1_5",
  "https://www.amazon.com/MROCO-Ergonomic-Comfortable-Mousepad-Non-Slip/dp/B07DVCGX7G/ref=sr_1_6",
  "https://www.amazon.com/Foroffice-Comfortable-Wholesale-Mousepads-10-2x8-3x0-12inch/dp/B07C3XZMC6/ref=
  "https://www.amazon.com/Japanese-Gaming-Extended-Kanagawa-Non-Slip/dp/B0BB3B8G45/ref=sr_1_8",
  "https://www.amazon.com/Ergonomic-Support-Mousepad-Computer-Wireless/dp/B0C4636DG1/ref=sxin_13_pa_sp_s
  "https://www.amazon.com/Hokafenle-Ergonomic-Stepped-Wedge-Mousepad-Wireless/dp/B0CM2CWHWD/ref=sxin_13_
)

product_names <- c(
```

```
    "Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black",
    "Ergonomic Mouse Pad with Wrist Rest Support",
    "JIKIOU Mouse Pad, 2 Pack Ergonomic Mouse Pads with Comfortable Gel Wrist Rest Support and Lycra Cloth
    "eulps Mouse Pad Wrist Support, Ergonomic Gel Mouse Pad with Wrist Rest",
    "SteelSeries QcK Gaming Mouse Pad - XXL Thick Cloth - Sized to Cover Desks",
    "MROCO Ergonomic Mouse Pad with Gel Wrist Rest",
    "JIKIOU 3 Pack Mouse Pad with Stitched Edge",
    "Japanese Sea Wave Large Mouse Pad, Anime Black Gaming",
    "Ergonomic Mouse Pad Wrist Support with Memory Foam Massage Bulge",
    "Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design"
)

category <- "MousePad"

all_reviews <- data.frame()

for (i in seq_along(product_links)) {

  url <- product_links[i]
  product_name <- product_names[i]

  try({
    webpage <- read_html(url)

    reviews <- webpage %>%
      html_nodes(".review")

    reviewer_names <- reviews %>%
      html_nodes(".a-profile-name") %>%
      html_text(trim = TRUE)

    review_dates <- reviews %>%
      html_nodes(".review-date") %>%
      html_text(trim = TRUE)

    review_titles <- reviews %>%
      html_nodes(".review-title span") %>%
      html_text(trim = TRUE) %>%
  str_remove("5.0 out of 5 stars")%>%
  str_remove("4.0 out of 5 stars") %>%
  str_remove("1.0 out of 5 stars") %>%
  str_remove("3.0 out of 5 stars")

    review_comments <- reviews %>%
      html_nodes(".review-text-content span") %>%
      html_text(trim = TRUE)

    verified_purchases <- reviews %>%
      html_nodes(".review-vp-label") %>%
      html_text(trim = TRUE)

    star_ratings <- reviews %>%
      html_nodes(".a-icon-alt") %>%
```

```
        html_text(trim = TRUE) %>%
        str_extract("\\d\\.\\d") %>%  # Extract the numeric rating
        as.numeric()

    max_reviews <- min(20, length(reviewer_names))
    reviewer_names <- reviewer_names[1:max_reviews]
    review_dates <- review_dates[1:max_reviews]
    review_titles <- review_titles[1:max_reviews]
    review_comments <- review_comments[1:max_reviews]
    verified_purchases <- verified_purchases[1:max_reviews]
    star_ratings <- star_ratings[1:max_reviews]

    review_data <- data.frame(
      Category = rep(category, max_reviews),
      ProductName = rep(product_name, max_reviews),
      Reviewer = reviewer_names,
      Date = review_dates,
      Title = review_titles,
      Comment = review_comments,
      StarRating = star_ratings,
      VerifiedPurchase = verified_purchases,
      stringsAsFactors = FALSE
    )

    all_reviews <- bind_rows(all_reviews, review_data)
  }, silent = TRUE)
}

print(all_reviews)
```

```
##    Category                                                    ProductName
## 1  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 2  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 3  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black           Beach
## 4  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 5  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black        Peter
## 6  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 7  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black        Gary
## 8  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black           ka
## 9  MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 10 MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black        Jua
## 11 MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 12 MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black
## 13 MousePad Amazon Basics Square Mouse Pad, Cloth with Rubberized Base, Standard, Black Super rien à
## 14 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 15 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 16 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 17 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 18 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 19 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 20 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 21 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 22 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest        S
## 23 MousePad                               MROCO Ergonomic Mouse Pad with Gel Wrist Rest        A
```

```
## 24 MousePad                          MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 25 MousePad                          MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 26 MousePad                          MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 27 MousePad                          MROCO Ergonomic Mouse Pad with Gel Wrist Rest
## 28 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design        Willow
## 29 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design
## 30 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design     Katherine
## 31 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design
## 32 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design
## 33 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design          kir
## 34 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design
## 35 MousePad      Hokafenle Ergonomic Mouse Pad Wrist Support with Stepped-Wedge Design
##                                                         Date
## 1          Reviewed in the United States on September 26, 2023
## 2            Reviewed in the United States on October 20, 2024
## 3          Reviewed in the United States on September 16, 2024                         Amazon basic does it
## 4            Reviewed in the United States on November 4, 2024
## 5             Reviewed in the United States on August 22, 2024
## 6            Reviewed in the United States on November 6, 2024       Great Mouse Pad - Large and High Qu
## 7          Reviewed in the United States on September 29, 2024
## 8            Reviewed in the United States on October 24, 2024
## 9                          Reviewed in Canada on July 28, 2024 PERFECT MOUSE PAD!  BIGGER THAN REGULAR
## 10                          Reviewed in Mexico on April 3, 2022
## 11                          Reviewed in Italy on November 6, 2024
## 12                 Reviewed in Saudi Arabia on October 31, 2024                                  Does th
## 13                        Reviewed in France on October 27, 2024
## 14           Reviewed in the United States on August 30, 2024
## 15            Reviewed in the United States on October 1, 2024
## 16           Reviewed in the United States on October 15, 2024                                      Exc
## 17             Reviewed in the United States on May 30, 2024
## 18           Reviewed in the United States on November 2, 2024
## 19           Reviewed in the United States on October 10, 2024          Very nice, better than exp
## 20         Reviewed in the United States on September 15, 2024
## 21         Reviewed in the United States on November 21, 2024
## 22                      Reviewed in Canada on February 25, 2023          Great mouse pad...Grea
## 23               Reviewed in Saudi Arabia on August 24, 2024
## 24       Reviewed in the United Kingdom on December 31, 2022
## 25 Reviewed in the United Arab Emirates on December 31, 2022                       Good Bye Carpel tu
## 26                      Reviewed in Japan on August 20, 2023
## 27                                                       <NA>
## 28           Reviewed in the United States on November 7, 2024
## 29           Reviewed in the United States on October 31, 2024
## 30             Reviewed in the United States on April 4, 2024                           It looks silly
## 31            Reviewed in the United States on August 22, 2024
## 32            Reviewed in the United States on August 14, 2024
## 33              Reviewed in the United States on June 11, 2024                          Form and func
## 34         Reviewed in the United States on September 5, 2024
## 35            Reviewed in the United States on August 24, 2024
##
## 1
## 2
## 3
## 4
## 5
```

```
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17 Design and Comfort:The MROCO Ergonomic Mouse Pad is designed with user comfort in mind. The prima
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
## 31
## 32
## 33
## 34
## 35
##     StarRating VerifiedPurchase
## 1           5            <NA>
## 2           5            <NA>
## 3           5            <NA>
## 4           4            <NA>
## 5           5            <NA>
## 6           5            <NA>
## 7           5            <NA>
## 8           5            <NA>
## 9           5            <NA>
## 10          5            <NA>
## 11          5            <NA>
## 12          5            <NA>
## 13          5            <NA>
## 14          5            <NA>
## 15          5            <NA>
## 16          5            <NA>
## 17          5            <NA>
## 18          4            <NA>
## 19          5            <NA>
## 20          5            <NA>
## 21          5            <NA>
## 22          5            <NA>
## 23          5            <NA>
```

```
## 24            1              <NA>
## 25            1              <NA>
## 26            5              <NA>
## 27            3              <NA>
## 28            5              <NA>
## 29            5              <NA>
## 30            5              <NA>
## 31            4              <NA>
## 32            5              <NA>
## 33            1              <NA>
## 34            5              <NA>
## 35            5              <NA>
```

```r
write.csv(all_reviews, "MousePad_reviews.csv")
```

```r
library(rvest)
library(dplyr)
library(stringr)

product_links <- c(
  "https://www.amazon.com/Amazon-powerful-octa-core-processor-lockscreen/dp/B0B2SFTGQ6/ref=sr_1_1_ffob_s
  "https://www.amazon.com/Certified-Refurbished-tablet-latest-release/dp/B08F5LRHB4/ref=sr_1_2_ffob_sspa
  "https://www.amazon.com/HP-Stream-BrightView-N4120-Graphics/dp/B0CZKPF2QH/ref=sr_1_3",
  "https://www.amazon.com/A315-24P-R7VH-Display-Quad-Core-Processor-Graphics/dp/B0BS4BP8FB/ref=sr_1_4",
  "https://www.amazon.com/ASUS-Chromebook-Processor-Transparent-CX1400CKA-AS88F/dp/B0CRTJ1LZ4/ref=sr_1_5
  "https://www.amazon.com/ASUS-Chromebook-Processor-Transparent-CX1500CKA-AS84F/dp/B0CRD43GY6/ref=sr_1_6
  "https://www.amazon.com/Fire-7-Tablet/dp/B096WKKK2K/ref=sr_1_7_ffob_sspa",

  "https://www.amazon.com/Lenovo-Business-Dual-Core-Processor-Bluetooth/dp/B0DLGXYX8Z/ref=sr_1_8",
  "https://www.amazon.com/Naclud-Computers-Quad-Core-Portable-Notebook/dp/B0DK5R79LM/ref=sr_1_9",
  "https://www.amazon.com/Naclud-Laptops-Computer-Quad-Core-Computers/dp/B0DK5NNMHG/ref=sr_1_10"
)

product_names <- c(
  "Amazon Fire Max 11 tablet (newest model) vivid 11" display",
  "Certified Refurbished Fire HD 10 tablet",
  "HP Stream 14 HD BrightView Laptop, Intel Celeron N4120, 16GB RAM, 288GB Storage (128GB eMMC + 160GB
  "Acer Aspire 3 A315-24P-R7VH Slim Laptop",
  "ASUS Chromebook CX1, 14 FHD",
  "ASUS Chromebook CX1",
  "Amazon Fire 7 tablet (newest model) 7",
  "Lenovo V15 Newest 15.6",
  "Windows 11 Laptop Computers",
  "15.6 Inch Laptops"
)

category <- "Laptop"

all_reviews <- data.frame()

for (i in seq_along(product_links)) {

  url <- product_links[i]
  product_name <- product_names[i]
```

```r
try({
  webpage <- read_html(url)

  reviews <- webpage %>%
    html_nodes(".review")

  reviewer_names <- reviews %>%
    html_nodes(".a-profile-name") %>%
    html_text(trim = TRUE)

  review_dates <- reviews %>%
    html_nodes(".review-date") %>%
    html_text(trim = TRUE)

  review_titles <- reviews %>%
    html_nodes(".review-title span") %>%
    html_text(trim = TRUE) %>%
str_remove("5.0 out of 5 stars")%>%
str_remove("4.0 out of 5 stars") %>%
str_remove("1.0 out of 5 stars") %>%
str_remove("3.0 out of 5 stars")

  review_comments <- reviews %>%
    html_nodes(".review-text-content span") %>%
    html_text(trim = TRUE)

  verified_purchases <- reviews %>%
    html_nodes(".review-vp-label") %>%
    html_text(trim = TRUE)

  star_ratings <- reviews %>%
    html_nodes(".a-icon-alt") %>%
    html_text(trim = TRUE) %>%
    str_extract("\\d\\.\\d") %>%  # Extract the numeric rating
    as.numeric()

  max_reviews <- min(20, length(reviewer_names))
  reviewer_names <- reviewer_names[1:max_reviews]
  review_dates <- review_dates[1:max_reviews]
  review_titles <- review_titles[1:max_reviews]
  review_comments <- review_comments[1:max_reviews]
  verified_purchases <- verified_purchases[1:max_reviews]
  star_ratings <- star_ratings[1:max_reviews]

  review_data <- data.frame(
    Category = rep(category, max_reviews),
    ProductName = rep(product_name, max_reviews),
    Reviewer = reviewer_names,
    Date = review_dates,
    Title = review_titles,
    Comment = review_comments,
    StarRating = star_ratings,
    VerifiedPurchase = verified_purchases,
```

```
    stringsAsFactors = FALSE
  )

  all_reviews <- bind_rows(all_reviews, review_data)
}, silent = TRUE)
}

print(all_reviews)
```

```
##      Category                                           ProductName              Reviewer
## 1     Laptop Amazon Fire Max 11 tablet (newest model) vivid 11" display      DoomOfSarnath
## 2     Laptop Amazon Fire Max 11 tablet (newest model) vivid 11" display              MS. O
## 3     Laptop Amazon Fire Max 11 tablet (newest model) vivid 11" display  The Bearded Mystic
## 4     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop        David Fisher
## 5     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop        David Fisher
## 6     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop              thomas
## 7     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop         Bob Reviews
## 8     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop       Wolfgang kron
## 9     Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop      Derrick Kilfoy
## 10    Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop              Jos SR
## 11    Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop              Jos SR
## 12    Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop         stuart shaw
## 13    Laptop                  Acer Aspire 3 A315-24P-R7VH Slim Laptop                maha
## 14    Laptop                             ASUS Chromebook CX1, 14 FHD            D. Blair
## 15    Laptop                             ASUS Chromebook CX1, 14 FHD               Ginny
## 16    Laptop                             ASUS Chromebook CX1, 14 FHD        Erin Blair S
## 17    Laptop                             ASUS Chromebook CX1, 14 FHD      Kathryn Weldon
## 18    Laptop                             ASUS Chromebook CX1, 14 FHD      Christopher P.
## 19    Laptop                             ASUS Chromebook CX1, 14 FHD            franny12
## 20    Laptop                             ASUS Chromebook CX1, 14 FHD        John W. Beyer
## 21    Laptop                             ASUS Chromebook CX1, 14 FHD      EDZ COLLECTIONS
## 22    Laptop                             ASUS Chromebook CX1, 14 FHD      EDZ COLLECTIONS
## 23    Laptop                             ASUS Chromebook CX1, 14 FHD           leslie k.
## 24    Laptop              Amazon Fire 7 tablet (newest model) 7           Juilianna
## 25    Laptop              Amazon Fire 7 tablet (newest model) 7         Careful_User
##                                                  Date
## 1   Reviewed in the United States on September 17, 2023
## 2    Reviewed in the United States on November 22, 2024
## 3   Reviewed in the United States on September 5, 2023
## 4       Reviewed in the United States on August 3, 2019
## 5      Reviewed in the United States on August 10, 2024
## 6        Reviewed in the United States on July 30, 2023
## 7               Reviewed in Canada on November 20, 2024
## 8                  Reviewed in Canada on April 26, 2024
## 9             Reviewed in Mexico on September 21, 2023
## 10 Reviewed in the United Kingdom on November 12, 2024
## 11          Reviewed in Saudi Arabia on May 24, 2024
## 12                                               <NA>
## 13                                               <NA>
## 14  Reviewed in the United States on February 13, 2023
## 15      Reviewed in the United States on July 24, 2023
## 16    Reviewed in the United States on August 11, 2022
## 17       Reviewed in the United States on March 7, 2024
## 18   Reviewed in the United States on October 20, 2024
```

```
## 19         Reviewed in the United States on May 2, 2024
## 20       Reviewed in the United States on April 23, 2024
## 21       Reviewed in the United States on August 4, 2023
## 22             Reviewed in Singapore on April 2, 2023
## 23                                              <NA>
## 24   Reviewed in the United States on October 24, 2022
## 25    Reviewed in the United States on August 23, 2023
##                                                                                   Title
## 1
## 2
## 3  It's good enough at everything, for people who want one device to do anything.
## 4
## 5
## 6                                         This is NOT a Budget Laptop!
## 7
## 8
## 9                                         Everything I was looking for
## 10
## 11
## 12       Basic use, 4 GB ram is not enough, makes a good Linux VPN share laptop.
## 13                                              Great for the home user
## 14
## 15
## 16                                         BEST Bang for buck for Chromebook
## 17
## 18
## 19                                                           won't turn on
## 20
## 21
## 22                                 Large display, but Color and Speakers just ok
## 23
## 24
## 25
##
## 1
## 2
perfect for streaming movies, reading eBooks, or gaming. The colors are vibrant, and the resolution make
## 3
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
## 18
## 19
```

```
## 20
## 21
## 22
## 23
## 24
## 25 So I only just got this and thought I'd share my initial review and hopefully answer questions tha
##    StarRating VerifiedPurchase
## 1          5             <NA>
## 2          5             <NA>
## 3          5             <NA>
## 4          5             <NA>
## 5          5             <NA>
## 6          5             <NA>
## 7          4             <NA>
## 8          5             <NA>
## 9          5             <NA>
## 10         5             <NA>
## 11         5             <NA>
## 12         5             <NA>
## 13         5             <NA>
## 14         5             <NA>
## 15         5             <NA>
## 16         4             <NA>
## 17         5             <NA>
## 18         1             <NA>
## 19         3             <NA>
## 20         5             <NA>
## 21         5             <NA>
## 22         5             <NA>
## 23         4             <NA>
## 24         5             <NA>
## 25         5             <NA>
```

```r
write.csv(all_reviews, "Laptop_reviews.csv")
```

```r
library(rvest)
library(dplyr)
library(stringr)

product_links <- c(
  "https://www.amazon.com/GTRACING-Footrest-Bluetooth-Speakers-Ergonomic/dp/B08915T3KF/ref=sr_1_2_sspa",
  "https://www.amazon.com/RESPAWN-110-Ergonomic-Gaming-Chair/dp/B09V89KMTZ/ref=sr_1_3_sspa",
  "https://www.amazon.com/AA-Products-Ergonomic-Computer-Adjustable/dp/B0D863FWCT/ref=sr_1_4_sspa",
  "https://www.amazon.com/GTRACING-Footrest-Ergonomic-Reclining-Adjustment/dp/B0CD7XGLGD/ref=sr_1_5",
  "https://www.amazon.com/BestOffice-Gaming-Executive-Headrest-Computer/dp/B07KJYY9BD/ref=sr_1_6",
  "https://www.amazon.com/PZDO-Footrest-Computer-Ergonomic-Recliner/dp/B0DFWQPW4J/ref=sr_1_7",
  "https://www.amazon.com/GTRACING-Footrest-Bluetooth-Chair%E3%80%90Patented-Ergonomic/dp/B07QGY4VGK/re
  "https://www.amazon.com/ECOTOUGE-Headrest-Massage-Ergonomic-Recliner/dp/B0939ZDNDL/ref=sr_1_9",
  "https://www.amazon.com/OneGame-Computer-155%C2%B0Adjustable-Backrest-Ergonomic/dp/B0CNZ19YTS/ref=sr_
  "https://www.amazon.com/Vixtvvn-Ergonomic-Adjustable-Headrest-Executive/dp/B0DNTCG7G8/ref=sr_1_12_sspa
)

product_names <- c(
  "GTRACING Gaming Chair with Footrest",
  "RESPAWN 110 Gaming Chair",
```

```r
  "AA Products Gaming Chair High Back Ergonomic Computer",
  "GTRACING Gaming Chair with Footrest, Ergonomic Computer",
  "BestOffice High-Back Gaming Chair PC",
  "Gaming Chair, Gaming Chairs for Adults with Footrest",
  "GTRACING Gaming Chair with Footrest Speakers Video Game",
  "ECOTOUGE PC Gaming Chair",
  "OneGame Gaming Chair",
  "X Rocker PC Computer Video Gaming"
)

category <- "GamingChair"

all_reviews <- data.frame()

for (i in seq_along(product_links)) {

  url <- product_links[i]
  product_name <- product_names[i]

  try({
    webpage <- read_html(url)

    reviews <- webpage %>%
      html_nodes(".review")

    reviewer_names <- reviews %>%
      html_nodes(".a-profile-name") %>%
      html_text(trim = TRUE)

    review_dates <- reviews %>%
      html_nodes(".review-date") %>%
      html_text(trim = TRUE)

    review_titles <- reviews %>%
      html_nodes(".review-title span") %>%
      html_text(trim = TRUE) %>%
  str_remove("5.0 out of 5 stars")%>%
  str_remove("4.0 out of 5 stars") %>%
  str_remove("1.0 out of 5 stars") %>%
  str_remove("3.0 out of 5 stars")

    review_comments <- reviews %>%
      html_nodes(".review-text-content span") %>%
      html_text(trim = TRUE)

    verified_purchases <- reviews %>%
      html_nodes(".review-vp-label") %>%
      html_text(trim = TRUE)

    star_ratings <- reviews %>%
      html_nodes(".a-icon-alt") %>%
      html_text(trim = TRUE) %>%
      str_extract("\\d\\.\\d") %>%
```

```
        as.numeric()

    max_reviews <- min(20, length(reviewer_names))
    reviewer_names <- reviewer_names[1:max_reviews]
    review_dates <- review_dates[1:max_reviews]
    review_titles <- review_titles[1:max_reviews]
    review_comments <- review_comments[1:max_reviews]
    verified_purchases <- verified_purchases[1:max_reviews]
    star_ratings <- star_ratings[1:max_reviews]

    review_data <- data.frame(
      Category = rep(category, max_reviews),
      ProductName = rep(product_name, max_reviews),
      Reviewer = reviewer_names,
      Date = review_dates,
      Title = review_titles,
      Comment = review_comments,
      StarRating = star_ratings,
      VerifiedPurchase = verified_purchases,
      stringsAsFactors = FALSE


    )

    all_reviews <- bind_rows(all_reviews, review_data)
  }, silent = TRUE)
}

print(all_reviews)
```

```
##          Category                                                 ProductName              Reviewer
## 1  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer          Alex Desmarais
## 2  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                    Dave
## 3  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                    Dave
## 4  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer          Lindsay Walters
## 5  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                   Doris
## 6  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                     JPL
## 7  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                     JAK
## 8  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer      Richard VanTreuren
## 9  GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                  Kennia
## 10 GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                  Kennia
## 11 GamingChair    AA Products Gaming Chair High Back Ergonomic Computer           Kevin  Faunch
## 12 GamingChair    AA Products Gaming Chair High Back Ergonomic Computer                     Sal
## 13 GamingChair    AA Products Gaming Chair High Back Ergonomic Computer               Andypandy
## 14 GamingChair    AA Products Gaming Chair High Back Ergonomic Computer            Dalen Kambur
## 15 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer          Amazon Customer
## 16 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer     Jasonandkristidavis
## 17 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer          Prewar Mangold
## 18 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer                    DomS
## 19 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer        RICHARD RITCH SR
## 20 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer                Casey W.
## 21 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer                  Esther
## 22 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer                  Esther
## 23 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer            Magic's lady
```

```
## 24 GamingChair GTRACING Gaming Chair with Footrest, Ergonomic Computer         Magic's lady
## 25 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest             Nirmal
## 26 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest             Nirmal
## 27 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest           primehalo
## 28 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest           primehalo
## 29 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest            Travis W
## 30 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest            Travis W
## 31 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest              Teddy
## 32 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest              Teddy
## 33 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest      Leopardlover503
## 34 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest             Mark S
## 35 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest             Mark S
## 36 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest          Sefa fidan
## 37 GamingChair     Gaming Chair, Gaming Chairs for Adults with Footrest            Nilotpal
## 38 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game            Hyperion
## 39 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game            Hyperion
## 40 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game                mike
## 41 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game     Amazon Customer
## 42 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game     Amazon Customer
## 43 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game  Amazon
## 44 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game                   T
## 45 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game
## 46 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game
## 47 GamingChair GTRACING Gaming Chair with Footrest Speakers Video Game                Tach
## 48 GamingChair                                      OneGame Gaming Chair                SL
## 49 GamingChair                                      OneGame Gaming Chair                SL
## 50 GamingChair                                      OneGame Gaming Chair             hyson
## 51 GamingChair                                      OneGame Gaming Chair             hyson
## 52 GamingChair                                      OneGame Gaming Chair             Mills
## 53 GamingChair                                      OneGame Gaming Chair             Mills
## 54 GamingChair                                      OneGame Gaming Chair   Amazon Customer
## 55 GamingChair                                      OneGame Gaming Chair      Qiyong Zhang
## 56 GamingChair                                      OneGame Gaming Chair      Qiyong Zhang
## 57 GamingChair                                      OneGame Gaming Chair       Jim Kelley
## 58 GamingChair                                      OneGame Gaming Chair             Emily
## 59 GamingChair                                      OneGame Gaming Chair             Emily
## 60 GamingChair                                      OneGame Gaming Chair            Eugene
## 61 GamingChair                                      OneGame Gaming Chair            Eugene
## 62 GamingChair                                      OneGame Gaming Chair         GodlyGecko
## 63 GamingChair                                      OneGame Gaming Chair         GodlyGecko
## 64 GamingChair                                      OneGame Gaming Chair           Despina
## 65 GamingChair                                      OneGame Gaming Chair       Qiu,Weiwei
## 66 GamingChair                                      OneGame Gaming Chair       Qiu,Weiwei
## 67 GamingChair                                      OneGame Gaming Chair             Damon
##                                                       Date
## 1       Reviewed in the United States on July 18, 2019
## 2      Reviewed in the United States on December 7, 2021
## 3       Reviewed in the United States on April 16, 2022
## 4     Reviewed in the United States on September 5, 2024
## 5     Reviewed in the United States on February 14, 2024
## 6         Reviewed in the United States on May 7, 2022
## 7       Reviewed in the United States on March 16, 2024
## 8              Reviewed in Mexico on October 17, 2023
## 9     Reviewed in the United Kingdom on April 29, 2024
```

```
## 10    Reviewed in the United Kingdom on January 29, 2024
## 11    Reviewed in the United Kingdom on October 23, 2023
## 12  Reviewed in the United Kingdom on September 20, 2023
## 13                                                   <NA>
## 14                                                   <NA>
## 15     Reviewed in the United States on November 7, 2024
## 16     Reviewed in the United States on November 2, 2024
## 17        Reviewed in the United States on April 23, 2024
## 18    Reviewed in the United States on November 25, 2024
## 19    Reviewed in the United States on November 17, 2024
## 20     Reviewed in the United States on October 20, 2024
## 21     Reviewed in the United States on October 24, 2024
## 22     Reviewed in the United States on October 28, 2024
## 23                                                   <NA>
## 24                                                   <NA>
## 25    Reviewed in the United States on November 19, 2024
## 26    Reviewed in the United States on November 21, 2024
## 27    Reviewed in the United States on November 27, 2024
## 28    Reviewed in the United States on November 10, 2024
## 29    Reviewed in the United States on November 20, 2024
## 30    Reviewed in the United States on November 10, 2024
## 31    Reviewed in the United States on November 20, 2024
## 32    Reviewed in the United States on November 24, 2024
## 33                                                   <NA>
## 34                                                   <NA>
## 35                                                   <NA>
## 36                                                   <NA>
## 37                                                   <NA>
## 38        Reviewed in the United States on April 1, 2022
## 39          Reviewed in the United States on May 12, 2022
## 40        Reviewed in the United States on June 29, 2024
## 41               Reviewed in Japan on November 17, 2024
## 42                Reviewed in Japan on November 1, 2024
## 43              Reviewed in Japan on September 24, 2024
## 44                Reviewed in Japan on October 21, 2024
## 45              Reviewed in Japan on September 30, 2024
## 46                                                   <NA>
## 47                                                   <NA>
## 48  Reviewed in the United States on September 15, 2024
## 49  Reviewed in the United States on September 16, 2024
## 50     Reviewed in the United States on August 27, 2024
## 51     Reviewed in the United States on August 19, 2024
## 52     Reviewed in the United States on October 3, 2024
## 53      Reviewed in the United States on March 23, 2024
## 54    Reviewed in the United States on October 12, 2024
## 55  Reviewed in the United States on September 30, 2024
## 56               Reviewed in Canada on June 23, 2024
## 57           Reviewed in Australia on September 7, 2024
## 58             Reviewed in Canada on September 6, 2024
## 59            Reviewed in Canada on September 19, 2024
## 60               Reviewed in Canada on August 5, 2024
## 61                                                   <NA>
## 62                                                   <NA>
## 63                                                   <NA>
```

```
## 64                                               <NA>
## 65                                               <NA>
## 66                                               <NA>
## 67                                               <NA>
##                                                 Title
## 1
## 2
## 3                        GREAT CHAIR FOR THE PRICE
## 4
## 5
## 6                       The most bang for the buck!
## 7
## 8
## 9                       Perfect starter chair for gamers!
## 10
## 11
## 12            Great Chair - Comfortable and Easy to Assemble!
## 13
## 14
## 15
## 16
## 17                                  Love it so far
## 18
## 19
## 20                           Great chair for the price
## 21
## 22
## 23                                  Super comfy chair
## 24
## 25
## 26
## 27 perfect gift for any girl or woman who has desk job or loves gaming
## 28
## 29
## 30                        Great chair if you're on a budget
## 31
## 32
## 33                                  Soft n squishy
## 34
## 35
## 36                       Premium build quality and materials
## 37
## 38
## 39
## 40              Excellent Chair, Easy Assembly, Great Price
## 41
## 42
## 43                                  Very impressed
## 44
## 45
## 46                        GREAT CHAIR FOR A GREAT PRICE!
## 47
## 48
## 49
```

```
## 50                            Stylish and Ergonomic Gaming Chair
## 51
## 52
## 53                                  This is the best gaming chair
## 54
## 55
## 56                                                       So comfy
## 57
## 58
## 59                            Comfy but tricky putting together
## 60
## 61
## 62                         Comfortable and Stylish Gaming Chair
## 63
## 64
## 65                                                    Poorly made
## 66
## 67
##
## 1
## 2
## 3
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
## 31
## 32
## 33
## 34
## 35
```

```
## 36
## 37
## 38 I purchased this to set up my new office. After combing through the vast selection of other chairs
## 39
## 40
## 41
## 42
## 43
## 44
## 45
## 46
## 47
## 48
## 49
## 50
## 51
## 52
## 53
## 54
## 55
## 56
## 57
## 58
## 59
## 60
## 61
## 62
## 63
## 64
## 65
## 66
## 67
##    StarRating VerifiedPurchase
## 1          5            <NA>
## 2          5            <NA>
## 3          5            <NA>
## 4          4            <NA>
## 5          5            <NA>
## 6          1            <NA>
## 7          3            <NA>
## 8          5            <NA>
## 9          5            <NA>
## 10         5            <NA>
## 11         5            <NA>
## 12         5            <NA>
## 13         4            <NA>
## 14         1            <NA>
## 15         5            <NA>
## 16         5            <NA>
## 17         4            <NA>
## 18         5            <NA>
## 19         5            <NA>
## 20         3            <NA>
## 21         5            <NA>
```

```
## 22          5              <NA>
## 23          4              <NA>
## 24          4              <NA>
## 25          5              <NA>
## 26          5              <NA>
## 27          5              <NA>
## 28          5              <NA>
## 29          5              <NA>
## 30          5              <NA>
## 31          5              <NA>
## 32          5              <NA>
## 33          5              <NA>
## 34          4              <NA>
## 35          4              <NA>
## 36          5              <NA>
## 37          5              <NA>
## 38          5              <NA>
## 39          5              <NA>
## 40          5              <NA>
## 41          5              <NA>
## 42          5              <NA>
## 43          4              <NA>
## 44          5              <NA>
## 45          4              <NA>
## 46          5              <NA>
## 47          5              <NA>
## 48          5              <NA>
## 49          5              <NA>
## 50          5              <NA>
## 51          5              <NA>
## 52          5              <NA>
## 53          5              <NA>
## 54          4              <NA>
## 55          5              <NA>
## 56          5              <NA>
## 57          1              <NA>
## 58          5              <NA>
## 59          5              <NA>
## 60          5              <NA>
## 61          5              <NA>
## 62          5              <NA>
## 63          5              <NA>
## 64          4              <NA>
## 65          5              <NA>
## 66          5              <NA>
## 67          4              <NA>
```

```r
write.csv(all_reviews, "GamingChair_reviews.csv")
```