

# RWorksheet#5\_group.Rmd

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IMDB

1. Each group needs to extract the top 50 tv shows in Imdb.com

```
library(rvest)
library(dplyr)
```

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

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

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

```
library(stringr)
library(polite)
library(kableExtra)
```

```
##
## Attaching package: 'kableExtra'

## The following object is masked from 'package:dplyr':
##
##   group_rows
```

```
library(knitr)
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v forcats   1.0.0      v readr     2.1.5
## v ggplot2    3.5.1      v tibble   3.2.1
## v lubridate  1.9.3      v tidyr    1.3.1
## v purrr      1.0.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter()      masks stats::filter()
## x kableExtra::group_rows() masks dplyr::group_rows()
## x readr::guess_encoding() masks rvest::guess_encoding()
## x dplyr::lag()         masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)
library(rmarkdown)
```

```

library(httr)

link = "https://www.imdb.com/chart/toptv/"
page = read_html(link)
session <- bow(link, user_agent = "Educational")
session

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

nam <- page %>% html_nodes(".ipc-title__text") %>% html_text()
name <- nam[!grepl("Top 250 TV Shows|IMDb Charts|Recently viewed|More to explore", nam, ignore.case = T), ]
name

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

rank <- str_extract(name, "^\\d+\\.")
rank

## [1] "1." "2." "3." "4." "5." "6." "7." "8." "9." "10." "11." "12."
## [13] "13." "14." "15." "16." "17." "18." "19." "20." "21." "22." "23." "24."
## [25] "25."

title <- str_replace(name, "^\\d+\\. ", "")
title

## [1] " Breaking Bad" " Planet Earth II"
## [3] " Planet Earth" " Band of Brothers"
## [5] " Chernobyl" " The Wire"
## [7] " Avatar: The Last Airbender" " Blue Planet II"

```

```

## [9] " The Sopranos"           " Cosmos: A Spacetime Odyssey"
## [11] " Cosmos"                 " Our Planet"
## [13] " Game of Thrones"        " Bluey"
## [15] " The World at War"        " Fullmetal Alchemist: Brotherhood"
## [17] " Rick and Morty"          " Life"
## [19] " The Last Dance"          " The Twilight Zone"
## [21] " The Vietnam War"         " Sherlock"
## [23] " Attack on Titan"         " Batman: The Animated Series"
## [25] " Arcane"

yea = page %>% html_nodes(".sc-300a8231-7.eaXxft.cli-title-metadata-item") %>% html_text()
year <- str_extract_all(yea, "\\b\\d{4}(?:-\\d{4})?\\b") %>% unlist()
year

## [1] "2008-2013" "2016" "2006" "2001" "2019" "2002-2008"
## [7] "2005-2008" "2017" "1999-2007" "2014" "1980" "2019-2023"
## [13] "2011-2019" "2018" "1973-1974" "2009-2010" "2013" "2009"
## [19] "2020" "1959-1964" "2017" "2010-2017" "2013-2023" "1992-1995"
## [25] "2021-2024"

rating = page %>% html_nodes(".ipc-rating-star--rating") %>% html_text()
rating

## [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"
## [13] "9.2" "9.3" "9.2" "9.1" "9.1" "9.1" "9.0" "9.0" "9.1" "9.1" "9.1" "9.0"
## [25] "9.0"

episode <- page %>% html_nodes(".sc-300a8231-7.eaXxft.cli-title-metadata-item") %>%
html_text()
episodes <- str_extract_all(episode, "\\b\\d+ eps\\b") %>% unlist()
episodes

## [1] "62 eps" "6 eps" "11 eps" "10 eps" "5 eps" "60 eps" "62 eps"
## [8] "7 eps" "86 eps" "13 eps" "13 eps" "12 eps" "74 eps" "194 eps"
## [15] "26 eps" "68 eps" "78 eps" "11 eps" "10 eps" "156 eps" "10 eps"
## [22] "15 eps" "98 eps" "85 eps" "18 eps"

vote = page %>% html_nodes(".ipc-rating-star--voteCount") %>% html_text()
vote

## [1] " (2.2M)" " (163K)" " (224K)" " (547K)" " (910K)" " (392K)" " (391K)"
## [8] " (49K)" " (500K)" " (132K)" " (46K)" " (54K)" " (2.4M)" " (34K)"
## [15] " (31K)" " (210K)" " (629K)" " (44K)" " (160K)" " (97K)" " (30K)"
## [22] " (1M)" " (565K)" " (123K)" " (332K)"

urls <- c("https://www.imdb.com/title/tt0903747/?ref=chttvtp_i_1",
"https://www.imdb.com/title/tt5491994/?ref=chttvtp_i_2",
"https://www.imdb.com/title/tt0795176/?ref=chttvtp_i_3",
"https://www.imdb.com/title/tt0185906/?ref=chttvtp_i_4",
"https://www.imdb.com/title/tt7366338/?ref=chttvtp_i_5",
"https://www.imdb.com/title/tt0306414/?ref=chttvtp_i_6",
"https://www.imdb.com/title/tt0417299/?ref=chttvtp_i_7",
"https://www.imdb.com/title/tt6769208/?ref=chttvtp_i_8",
"https://www.imdb.com/title/tt0141842/?ref=chttvtp_i_9",
"https://www.imdb.com/title/tt2395695/?ref=chttvtp_i_10",
"https://www.imdb.com/title/tt0081846/?ref=chttvtp_i_11",
"https://www.imdb.com/title/tt9253866/?ref=chttvtp_i_12",

```

```

"https://www.imdb.com/title/tt0944947/?ref=chtvtp_i_13",
"https://www.imdb.com/title/tt7678620/?ref=chtvtp_i_14",
"https://www.imdb.com/title/tt0071075/?ref=chtvtp_i_15",
"https://www.imdb.com/title/tt1355642/?ref=chtvtp_i_16",
"https://www.imdb.com/title/tt2861424/?ref=chtvtp_i_17",
"https://www.imdb.com/title/tt1533395/?ref=chtvtp_i_18",
"https://www.imdb.com/title/tt8420184/?ref=chtvtp_i_19",
"https://www.imdb.com/title/tt0052520/?ref=chtvtp_i_20",
"https://www.imdb.com/title/tt1877514/?ref=chtvtp_i_21",
"https://www.imdb.com/title/tt1475582/?ref=chtvtp_i_22",
"https://www.imdb.com/title/tt2560140/?ref=chtvtp_i_23",
"https://www.imdb.com/title/tt0103359/?ref=chtvtp_i_24",
"https://www.imdb.com/title/tt0386676/?ref=chtvtp_i_25")

```

```

user_reviews <- vector("numeric", length(urls))
critic_reviews <- vector("numeric", length(urls))
popularity <- vector("numeric", length(urls))

```

```

for (i in seq_along(urls)) {

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

  webpage <- scrape(session)

  popularity_text <- webpage %>% html_nodes(".sc-39d285cf-1.dxqvqi") %>% html_text()
  popularity[i] <- as.numeric(gsub(",", "", popularity_text[1]))

  reviewz <- webpage %>% html_nodes(".score") %>% html_text()

  if (length(reviewz) >= 2) {

    user_reviews[i] <- ifelse(grepl("K", reviewz[1]),
                              as.numeric(gsub("K", "", reviewz[1])) * 1000,
                              as.numeric(reviewz[1]))
    critic_reviews[i] <- as.numeric(reviewz[2])
  } else {
    user_reviews[i] <- NA
    critic_reviews[i] <- NA
  }
}

```

```
user_reviews
```

```
## [1] 5100 158 111 1000 3500 787 1000 53 966 205 80 245 5900 369 126
## [16] 468 910 12 542 214 175 1000 2300 219 1700
```

```
critic_reviews
```

```
## [1] 175 6 10 34 88 77 57 9 93 12 8 15 368 4 5 16 94 9 28
## [20] 85 13 121 64 25 76
```

```
popularity
```

```
## [1] 20 999 1778 153 146 104 357 4122 31 1571 3645 2401 16 373 2532
## [16] 474 125 3057 1403 337 1739 160 50 463 51
```

```

max_length <- max(length(rank), length(title), length(year), length(rating), length(epsodas), length(v
rank <- c(rank, rep(NA, max_length - length(rank)))
title <- c(title, rep(NA, max_length - length(title)))
year <- c(year, rep(NA, max_length - length(year)))
rating <- c(rating, rep(NA, max_length - length(rating)))
epsodas <- c(epsodas, rep(NA, max_length - length(epsodas)))
vote <- c(vote, rep(NA, max_length - length(vote)))
user_reviews <- c(user_reviews, rep(NA, max_length - length(user_reviews)))
critic_reviews <- c(critic_reviews, rep(NA, max_length - length(critic_reviews)))
popularity <- c(popularity, rep(NA, max_length - length(popularity)))
max_length

```

```
## [1] 25
```

```
movies = data.frame(rank, title, year, rating, epsodas, vote, user_reviews, critic_reviews, popularity)
```

```

write.csv(movies, "movies.csv")
print(head(movies))

```

```

##      rank      title      year rating epsodas      vote user_reviews
## 1      1.  Breaking Bad 2008-2013    9.5    62 eps   (2.2M)         5100
## 2      2.  Planet Earth II    2016    9.5     6 eps   (163K)          158
## 3      3.  Planet Earth      2006    9.4    11 eps   (224K)          111
## 4      4.  Band of Brothers    2001    9.4    10 eps   (547K)         1000
## 5      5.  Chernobyl          2019    9.3     5 eps   (910K)         3500
## 6      6.  The Wire 2002-2008    9.3    60 eps   (392K)          787
##      critic_reviews popularity
## 1                175         20
## 2                 6         999
## 3                10        1778
## 4                 34         153
## 5                 88         146
## 6                 77         104

```

```

movies %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")

```

2. From the 50tv shows, select at least 5 tv shows to scrape 20 user reviews

```

r1 <- c("https://www.imdb.com/title/tt0903747/reviews/?ref_=tt_ov_ql_2",
        "https://www.imdb.com/title/tt5491994/reviews/?ref_=tt_ov_ql_2",
        "https://www.imdb.com/title/tt0795176/reviews/?ref_=tt_ov_ql_2",
        "https://www.imdb.com/title/tt0185906/reviews/?ref_=tt_ov_ql_2",
        "https://www.imdb.com/title/tt7366338/reviews/?ref_=tt_ov_ql_2")

NAME <- vector("list", length(r1))
date_of_review <- vector("list", length(r1))
user_ratings <- vector("list", length(r1))
title_of_review <- vector("list", length(r1))
is_helpful <- vector("list", length(r1))
is_not_helpful <- vector("list", length(r1))
text_review <- vector("list", length(r1))
review_data_frames <- vector("list", length(r1))

```

rank	title	year	rating	episodes	vote	user_reviews	critic_reviews	popularity
1.	Breaking Bad	2008–2013	9.5	62 eps	(2.2M)	5100	175	20
2.	Planet Earth II	2016	9.5	6 eps	(163K)	158	6	999
3.	Planet Earth	2006	9.4	11 eps	(224K)	111	10	1778
4.	Band of Brothers	2001	9.4	10 eps	(547K)	1000	34	153
5.	Chernobyl	2019	9.3	5 eps	(910K)	3500	88	146
6.	The Wire	2002–2008	9.3	60 eps	(392K)	787	77	104
7.	Avatar: The Last Airbender	2005–2008	9.3	62 eps	(391K)	1000	57	357
8.	Blue Planet II	2017	9.3	7 eps	(49K)	53	9	4122
9.	The Sopranos	1999–2007	9.2	86 eps	(500K)	966	93	31
10.	Cosmos: A Spacetime Odyssey	2014	9.2	13 eps	(132K)	205	12	1571
11.	Cosmos	1980	9.3	13 eps	(46K)	80	8	3645
12.	Our Planet	2019–2023	9.2	12 eps	(54K)	245	15	2401
13.	Game of Thrones	2011–2019	9.2	74 eps	(2.4M)	5900	368	16
14.	Bluey	2018	9.3	194 eps	(34K)	369	4	373
15.	The World at War	1973–1974	9.2	26 eps	(31K)	126	5	2532
16.	Fullmetal Alchemist: Brotherhood	2009–2010	9.1	68 eps	(210K)	468	16	474
17.	Rick and Morty	2013	9.1	78 eps	(629K)	910	94	125
18.	Life	2009	9.1	11 eps	(44K)	12	9	3057
19.	The Last Dance	2020	9.0	10 eps	(160K)	542	28	1403
20.	The Twilight Zone	1959–1964	9.0	156 eps	(97K)	214	85	337
21.	The Vietnam War	2017	9.1	10 eps	(30K)	175	13	1739
22.	Sherlock	2010–2017	9.1	15 eps	(1M)	1000	121	160
23.	Attack on Titan	2013–2023	9.1	98 eps	(565K)	2300	64	50
24.	Batman: The Animated Series	1992–1995	9.0	85 eps	(123K)	219	25	463
25.	Arcane	2021–2024	9.0	18 eps	(332K)	1700	76	51

```
for (i in seq_along(rl)) {
  session <- bow(rl[i], user_agent = "Educational")
  webpage <- scrape(session)

  namez <- webpage %>% html_nodes(".ipc-link.ipc-link--base") %>% html_text(trim = TRUE) %>% head(40)
  NAME[[i]] <- namez[!grepl("Permalink", namez, ignore.case = TRUE)]

  date_of_review[[i]] <- webpage %>% html_nodes(".ipc-inline-list__item.review-date") %>% html_text(trim = TRUE)

  user_ratings[[i]] <- webpage %>% html_nodes(".ipc-rating-star--rating") %>% html_text(trim = TRUE) %>% head(1)

  title_of <- webpage %>% html_nodes(".ipc-title__text") %>% html_text(trim = TRUE) %>% head(21)
  title_of_review[[i]] <- title_of[!grepl("User reviews|More from this title|More to explore|Recently viewed", title_of)]

  text_review[[i]] <- webpage %>% html_nodes(".ipc-html-content-inner-div") %>% html_text(trim = TRUE) %>% head(1)
}
```

```
BreakingBad <- data.frame(NAME[[1]],
  Date = date_of_review[[1]],
  Rating = user_ratings[[1]],
  Title = title_of_review[[1]],
  stringsAsFactors = FALSE
)
write.csv(BreakingBad, "Breaking Bad reviews.csv")
print(head(BreakingBad))
```

```
##          NAME..1..      Date Rating          Title
## 1          FiRE010  Jul 3, 2021     10      Really Great
## 2      bruhperson  Mar 6, 2019     10      It's ok I guess
```

NAME..1..	Date	Rating	Title
FiRE010	Jul 3, 2021	10	Really Great
bruhperson	Mar 6, 2019	10	It's ok I guess
KinoKoopakid	Jul 29, 2021	10	99.1% pure
jehuschultz	Feb 18, 2020	10	The Best
Supermanfan-13	Nov 8, 2021	10	Damn near perfect!
manishsingh-03299	May 30, 2019	10	Those days ain't gonna come back..
Rob1331	Dec 8, 2022	10	Absolutely Brilliant!!
xpinerhd	Nov 15, 2019	10	Best TV show ever made.
dhamushreddy-14919	Jul 17, 2021	10	ABSOLUTE PERFECTION!!!!
tushv-31482	Dec 8, 2022	10	Once in a life time series
dyarutd	Sep 28, 2024	7	My Review For The Best TV Show Ever
reebokroot	Feb 14, 2021	5	mmmmm
Sovereign_Entity	Mar 5, 2014	10	Juggles between bad melodrama and captivating drug crime
TheLittleSongbird	Nov 12, 2017	10	Among the best and most addictive shows there is
gogoschka-1	Jan 11, 2014	10	If you mix Scarface, Robin Hood and maybe Tyler Durden with enough meth - you'll get a mean cocktail called 'Heisenberg'
FishDrowned	Nov 8, 2021	10	By far the greatest show I've ever watched
joegalgano	Aug 11, 2021	10	in a category all on its own.
agatt-87232	May 19, 2019	10	Since GOT is over, this is Officially the Greatest show ever made
Leofwine_draca	May 4, 2021	10	Every bit as good as you've heard
dristysultana	Jun 23, 2021	10	Masterpiece

```
## 3      KinoKoopakid Jul 29, 2021      10      99.1% pure
## 4      jehuschultz Feb 18, 2020      10      The Best
## 5      Supermanfan-13 Nov 8, 2021      10      Damn near perfect!
## 6 manishsingh-03299 May 30, 2019      10 Those days ain't gonna come back..
```

```
BreakingBad %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
TextReview1 <- text_review[[1]]
head(TextReview1, 20)
```

```
## [1] "I have never watched a show that is as consistently genuine and engaging as Breaking Bad. This
## [2] "Re-Watched it 7 times and counting. I guess I liked it."
## [3] "One of the greatest shows ever, the pacing is excellent. The characters are well developed and
## [4] "I cannot stress enough how good this show is. I've watched a lot of TV in my life and this show
## [5] "Breaking Bad is absolutely, without a doubt, one of the greatest tv shows ever created...it's c
## [6] "When you finish the show you'll never be the same..I guarantee you"
## [7] "Breaking Bad is every bit as good as everyone says it is. It's easily one of my favorites show
## [8] "I wanna delete my brain and watch it again like I never knew it."
## [9] "Direction- PERFECT!!Screenplay-PERFECT!!Writing-PERFECT!!Score-PERFECT!!Cinematography-PERFECT
## [10] "I have never watched any series which depicts emotions so exactly through camera angles, dialog
## [11] "In 29/9 and same time this Date is Final Episode Day ( Filena ) This is The Best Tv Show I have
## [12] "If i say that it was good , but not excellent , every fan will try to kill me , but it's my op
## [13] "'Breaking Bad' is one of the most popular rated shows on IMDb, is one of those rarities where c
## [14] "If you are among the few who haven't seen it yet: believe the hype, it really is THAT good. Br
## [15] "Breaking Bad feels like fever dream. A really REALLY good fever dream. The directing is absolu
## [16] "Nothing compares. Nothing comes close.I may currently be on my 20th dose of this show and it's
## [17] "I was waiting to see how GOT ended. It should be the greatest but they failed miserably in the
## [18] "If there is any show deserves a 10/10, it's Breaking Bad, Simply the greatest."
## [19] "I usually don't comment on here but this show is the best I've seen in my life. And I've seen a
## [20] "Pros: well cast, great acting and mostly highly entertaining. Lots of interesting characters, :
```

```
PlanetEarthII <- data.frame(NAME[[2]],
  Date = date_of_review[[2]],
  Rating = user_ratings[[2]],
  Title = title_of_review[[2]],
  stringsAsFactors = FALSE
)
write.csv(PlanetEarthII, "PlanetEarthII reviews.csv")
```

NAME..2..	Date	Rating	Title
arjanhulkema	Nov 7, 2016	10	>10
Wentloog	Nov 5, 2016	10	At once awe-inspiring and terrifying!
john-m-madsen	Nov 5, 2016	10	Yet another masterpiece from BBC Nature & David Attenborough
thespookybuz	Nov 9, 2016	10	Mesmerizing
pjdickinson	Nov 5, 2016	10	Astounding
dbijis33	Nov 8, 2016	10	Dangerously beautiful
dhanrajjughead	Nov 17, 2016	10	Greatest documentary ever created.
NeilBarnett	Nov 13, 2016	10	Best thing on TV since last Planet Earth
salmanu-27386	Nov 6, 2016	10	Excellent
panagiotiskatsanos	Dec 31, 2016	10	One of the best documentaries I've ever seen
ianrobo	Nov 19, 2016	10	In times of climate deniers, hope
adamonIMDb	Dec 28, 2016	7	Breathtaking
tinyfordst	May 19, 2019	10	More irritated with IMDb for the bias than with the show
larask-21775	Oct 20, 2018	10	Love it!
BobFillmore	Sep 29, 2017	10	Should be required viewing in schools
farshidkarimi	Nov 22, 2016	10	What a Beautiful Planet- Bewitching !
TheLittleSongbird	Oct 12, 2017	10	Like the first 'Planet Earth', does for nature and our planet as 'Walking with Dinosaurs' did with the dinosaurs
myerse-165-4350	Dec 4, 2016	10	This masterpiece deserves higher scores
fierceagle-40009	Apr 23, 2020	10	Absolutely amazing.
adam-whitmore	Jan 5, 2017	10	Peerless evocation of nature across the globe

```
print(head(PlanetEarthII))
```

```
##      NAME..2..      Date Rating
## 1  arjanhulkema Nov 7, 2016    10
## 2      Wentloog Nov 5, 2016    10
## 3 john-m-madsen Nov 5, 2016    10
## 4  thespookybuz Nov 9, 2016    10
## 5    pjdickinson Nov 5, 2016    10
## 6      dbijis33 Nov 8, 2016    10
##
##                                     Title
## 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
```

```
PlanetEarthII %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
TextReview2 <- text_review[[2]]
head(TextReview2, 20)
```

```
## [1] "As Planet Earth I was released about ten years ago, a visual improvement could have been expected."
## [2] "I have just finished watching the first episode on BBC 1 and I am amazed to find that Planet Earth I was the best nature documentary ever made."
## [3] "What to say about Planet Earth II which has not already been said about so many other fantastic nature documentaries."
## [4] "The original Planet Earth back in 2006 was an astounding and refreshing series that tore down the walls of nature documentaries."
## [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 I can't compare it to the second."
## [7] "By far the greatest and best nature documentaries ever made. Everyone needs to watch this. I have watched it twice."
## [8] "This is without doubt the best thing I have seen on television for years. The photography, narration, and music are all top notch."
## [9] "The opening image of Planet Earth II contained the promise of everything to come. It was spectacular."
## [10] "One of the best documentaries I've ever seen. Every episode is a new wonderful experience, getting to see the world from a different perspective."
## [11] "Planet Earth 2 was everything you would expect and more. Every scene, every vista shows that humans are a part of nature."
## [12] "I never thought the original 'Planet Earth' could be topped, but 10 years on and Attenborough has done it again."
## [13] "Was Planet Earth 2 good? Absolutely, it was a visual masterpiece with locations that not even the original could match."
## [14] "Stunning photography, excellent music, and the unique narration Attenborough brings make this a truly exceptional documentary."
```



```
## [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 documenta
## [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 show
```

```
PlanetEarth <- data.frame(NAME[[3]],
  Date = date_of_review[[3]],
  Rating = user_ratings[[3]],
  Title = title_of_review[[3]],
  stringsAsFactors = FALSE
)
write.csv(PlanetEarth, "PlanetEarth reviews.csv")
print(head(PlanetEarth))
```

```
##      NAME..3..      Date Rating
## 1  robert-kamer Feb 8, 2007    10
## 2    jim-1409 Nov 19, 2008    10
## 3 ccthemoviem-1 Jan 4, 2009    10
## 4    cmcoveos Dec 15, 2006    10
## 5    Loordssm Sep 1, 2007     10
## 6    ultimorn Aug 27, 2006    10
##
##                                     Title
## 1                                     11 out of 10
## 2                                A masterpiece of a documentary
## 3                                In A Word: Amazing
## 4 The most amazing achievement in natural history TV has ever given
## 5                                Simply put, stunning
## 6                                An amazing trip around our beautiful planet.
```

```
PlanetEarth %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
TextReview3 <- text_review[[3]]
head(TextReview3, 20)
```

```
## [1] "I don't think I can add anything to the previous 10 out of 10 comments, other than that I'd gi
## [2] "The camera work is truly breathtaking. Such amazing wonders captured on film, areas of the plan
## [3] "Thankfully, I caught a couple of these episodes on American television, which led me to this 1
## [4] "The subtitle of the series is not an exaggeration; it has a literal meaning: This is indeed ou
## [5] "I have never, ever given any title a perfect ten. Mainly because I never thought that there wi
## [6] "I have seen many nature documentaries in my life and none have left me in such amazement of ou
## [7] "As the influence of man expands across the globe, fewer and fewer truly untouched wilderness e
## [8] "This is a beautifully shot series looking at nature in all it's natural wonder, showcasing a b
## [9] "I'm just laughing at all these negative comments. I know it's hard for you PETA freaks to belie
## [10] "Yes, I have watched all 11 Episodes. My favourite are Ep 1,3,6 and 10. I love the way the show
## [11] "This is going to be an unpopular review. But if even just one of you find it helpful, then the
## [12] "Planet Earth is a worthy documentary series that looks not just at the animals and plants in r
## [13] "OK, I'm writing this to explain few things to people who wrote their reviews and gave this doc
## [14] "The production value is absolutely amazing and is so informative. You honestly can't believe w
## [15] "Simply put, I have never seen a better series, or film for that matter. After re-watching the
## [16] "There is nothing beautiful in the world! The shooting is so delicate that every frame can be u
## [17] "I have always been a huge fan of documentaries and nature TV shows and I consider the BBC the g
```

NAME..3..	Date	Rating	Title
robert-kamer	Feb 8, 2007	10	11 out of 10
jim-1409	Nov 19, 2008	10	A masterpiece of a documentary
ccthemoviemani-1	Jan 4, 2009	10	In A Word: Amazing
cmcoveos	Dec 15, 2006	10	The most amazing achievement in natural history TV has ever given
Loordssm	Sep 1, 2007	10	Simply put, stunning
ultimorn	Aug 27, 2006	10	An amazing trip around our beautiful planet.
bob the moo	Apr 30, 2006	10	A visually impressive and memorable look at the world that we live in
alfeu	Jun 29, 2015	9	Is it real? I mean, actual footage?
Cabrone	Jul 20, 2006	10	Beautiful
berndt65	Jan 28, 2009	10	Are you kidding me people?
planktonrules	Jun 1, 2015	7	It doesn't get any better than this.
dakuchonekobing	Oct 8, 2020	3	Only 4 Eps can touch my soul!
rooprect	Dec 4, 2007	10	Should be called "BBC - Yeah, animals suck"
bs3dc	Jan 15, 2007	10	Brilliant Documentary Series
Nerte	Jul 30, 2008	10	Explanation to those low-rating reviews...
ortz3	Dec 25, 2017	9	Truly Astonishing
solon-stewart	Sep 14, 2009	10	The Greatest Series Ever
krational-66550	May 31, 2020	9	beauty
bellino-angelo2014	Sep 20, 2020	10	Words fail me to describe such greatness
grantss	Jan 4, 2023	9	Excellent documentary series

```
## [18] "A documentary series on the wildlife found on Earth. Each episode covers a different habitat: c
## [19] "This series is probably one of the best series I have ever watched. This fascinating documenta
## [20] "This series is incredible. It took 5 years to shoot the footage, and it really shows that they
```

```
BondOfBrothers <- data.frame(NAME[[4]],
  Date = date_of_review[[4]],
  Rating = user_ratings[[4]],
  Title = title_of_review[[4]],
  stringsAsFactors = FALSE
)
write.csv(BondOfBrothers, "BondOfBrothers reviews.csv")
print(head(BondOfBrothers))
```

```
##      NAME..4..      Date Rating
## 1      Rob1331 Sep 27, 2022    10
## 2 sanderson777 Oct 14, 2001    10
## 3 wildcatt268 Jan 18, 2002    10
## 4      arjay24 Apr 18, 2004    10
## 5      rbverhoef Feb 13, 2003   10
## 6 yodaschoda Jan 23, 2005    10
##
##                               Title
## 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
```

```
BondOfBrothers %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

NAME..4..	Date	Rating	Title
Rob1331	Sep 27, 2022	10	Incredible!!
sanderson777	Oct 14, 2001	10	Possibly the finest 10 hours ever created
wildcatt268	Jan 18, 2002	10	One of the best war movies/series ever
arjay24	Apr 18, 2004	10	Realistic
rbverhoef	Feb 13, 2003	10	Excellent
yodaschoda	Jan 23, 2005	10	One of, if not the best, mini series' ever made
philip_vanderveken	Sep 16, 2004	10	This series is so unbelievably realistic, so authentic.
Supermanfan-13	May 6, 2022	10	One of the best mini-series ever created!
thiagoutp	Nov 4, 2019	10	Probably the best ever
bsmith5552	Nov 5, 2001	10	Realistic WWII Drama With Warts Included
faded_english_monkey	Aug 25, 2004	10	war, no frills
planktonrules	May 30, 2015	7	You can't beat this....
stilonkostrzyn	Apr 10, 2021	5	Overrated??
faded_Glory	May 2, 2006	10	Not very realistic at all
jazmodo	Jun 3, 2019	10	Without Doubt, the Best Mini-Series Ever Recorded
kait2007	Jan 26, 2005	10	Great Miniseries
mickman91-1	May 3, 2022	10	A series like this won't be made again (see below), so treasure it
kipmcmillan	Oct 24, 2018	9	Share With Your Children
erwan_ticheler	Dec 7, 2002	10	Best Mini series ever
grahamsj3	Nov 25, 2002	10	A-1, TOPS, the BOMB what else can I say?

```
TextReview4 <- text_review[[4]]
head(TextReview4, 20)
```

```
## [1] "Band of Brothers absolutely one of the best miniseries of all-time...period. Not only that but
## [2] "Band of Brothers is the best Movie/Mega Mini series that has ever been made. It has all the pr
## [3] "I have read virtually all of Ambrose's WWII books, and this mini-series faithfully follows one
## [4] "I am an 80 year old combat veteran (88th Inf. Div. Italy).I watched BOB on the History Channel
## [5] "This week I saw three things based on WW-II novels. The first was 'The Pianist' about the Wars
## [6] "Band of Brothers finds us following the exploits of Easy Company throughout their campaign in
## [7] "There aren't much TV-series which have left such an impression on me as Band of Brothers did.
## [8] "Band of Brothers absolutely one of the best miniseries of all-time...period. Not only that but
## [9] "Band of Brothers shows the world the ugly truth of World War II.As it was a TV series, sometime
## [10] "\"Band of Brothers\" in a word is awesome. I couldn't wait to see each episode. Co-Executive P
## [11] "I absolutely love this miniseries.As a keen amateur historian, I got sick and tired of books an
## [12] "\"Band of Brothers\" is a nearly 12 hour long show about the experiences of a group of soldier
## [13] "I understand why ppl rate it so high, but imo this show is aimed mostly to american audience t
## [14] "Lots of people applaud this series for its realism, but I can't really agree. I think there is
## [15] "As near to perfection as a TV Series can be, I cannot put into words the gravity & importance
## [16] "I was a little hesitant to watch this miniseries because i'm not too fond of war movies, but t
## [17] "After 20 years it remains rightfully one of the highest rated things on IMDB. This is because
## [18] "This is an incredibly poignant and important show that everyone should watch once. It's so rea
## [19] "Judging by other comments, it seems that this miniseries struck a chord with many viewers. I a
## [20] "This is the true story of Easy Company, 506th Parachute Infantry Regiment, 101st Airborne Divi
```

```
Chernobyl <- data.frame(NAME[[5]],
  Date = date_of_review[[5]],
  Rating = user_ratings[[5]],
  Title = title_of_review[[5]],
  stringsAsFactors = FALSE
)
write.csv(Chernobyl, "Chernobyl reviews.csv")
print(head(Chernobyl))
```

NAME..5..	Date	Rating	Title
curiosityonmars	May 23, 2019	10	They got it right
stelmakh	May 10, 2019	10	Goosebumps and tears
natashapekar	May 9, 2019	10	I highly recommend this film!
m-porpaczi	May 14, 2019	10	No hero wakes up wanting to die
Lladerat	May 7, 2019	10	So far looks excellent
jfirebug	May 20, 2019	10	Incredible
thegldt	May 6, 2019	10	Bleak, Unsettling, Haunting All Throughout
alexander-phoenix	May 13, 2019	10	Unbelievable
wmeduardownm	May 6, 2019	10	HBO did it again!
Leofwine_draca	Nov 27, 2019	10	Exemplary
Jamie_Seaton	May 23, 2019	5	Amazing!
tutajdaniel	Jun 15, 2019	8	The movie is far from thuth. A lot of fake info to create a drama...
frimark	May 20, 2019	10	Emotionally drained...
krzysztof-18241	May 30, 2019	10	Just watch it (!)
ahmetkozan	Jun 7, 2019	9	Now you look like the minister of coal!
Rob1331	Sep 27, 2022	10	Must Watch!
stephenpdodds	May 6, 2019	9	Cracking.
Supermanfan-13	Jul 10, 2022	9	Brilliant!
emholberg	May 26, 2019	10	It is hard to overestimate the importance of this show.
josephwhitton	May 15, 2019	7	Amazing

```
##          NAME..5..      Date Rating      Title
## 1 curiosityonmars May 23, 2019      10      They got it right
## 2      stelmakh May 10, 2019      10      Goosebumps and tears
## 3   natashapekar May 9, 2019      10      I highly recommend this film!
## 4     m-porpaczi May 14, 2019      10      No hero wakes up wanting to die
## 5         Lladerat May 7, 2019      10      So far looks excellent
## 6         jfirebug May 20, 2019      10      Incredible
```

```
Chernobyl %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
TextReview5 <- text_review[[5]]
head(TextReview5, 20)
```

```
## [1] "I was born in Pripyat. I was four years old when the accident happened. Watching it is more hor
## [2] "A Belarusian here, born in 1983. Parents were scientists, knew everything on the 27th. Chernobyl
## [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 cloud
## [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 civilian
## [7] "'Chernobyl' is scarier than most horror movies in that it is a dramatization of actual, real-l
## [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 bi
## [10] "Quite possibly the most intense and powerful experience in television history! Very well could
## [11] "These reviews only show how naive people are... And how easy it is to manipulate them as long
## [12] "I'm Russian, my father went to Chernobyl as a physicist quite a while after the explosion (a f
## [13] "30th of April, 1986, was a cloudless, sunny day in southern Poland. I was 13 years old, and we
## [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
## [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 m
## [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 thi
## [20] "As a person who comes from a country that was ruled by the Communism, I have a good idea of how
```

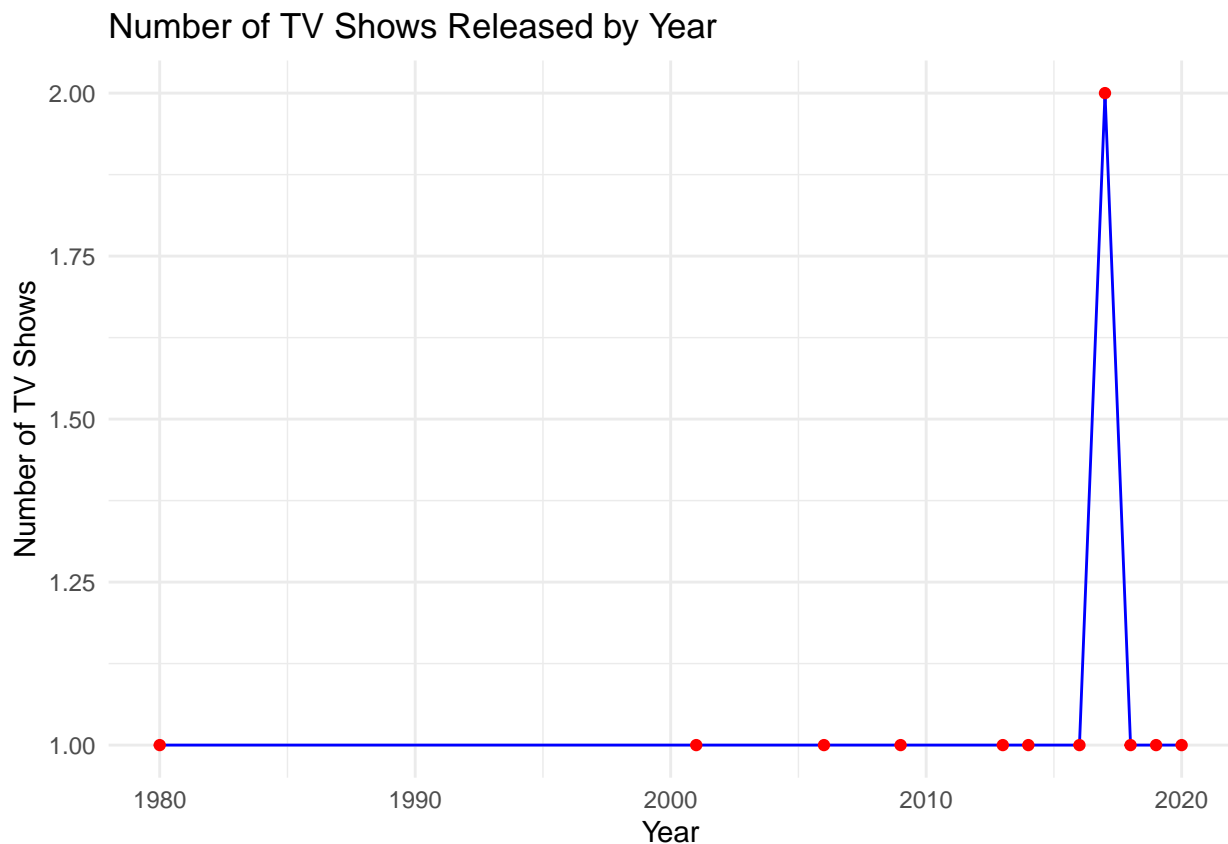
3. Create a time series graph for the tv shows released by year.

```
movies$year <- as.numeric(movies$year)
```

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

```
year_counts <- movies %>%
  filter(!is.na(year)) %>%
  count(year)

ggplot(year_counts, aes(x = year, y = n)) +
  geom_line(color = "blue") +
  geom_point(color = "red") +
  labs(title = "Number of TV Shows Released by Year",
       x = "Year",
       y = "Number of TV Shows") +
  theme_minimal()
```



```
most_releases <- year_counts[which.max(year_counts$n), ]
print(most_releases)
```

```
##   year n
## 8 2017 2
```

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

```

urls <- c('https://www.amazon.com/s?k=skin+care&crd=3FODLJK4URUE9&sprefix=skin%2Caps%2C510&ref=nb_sb_s

nameofproduct <- vector("list", length(urls))
price <- vector("list", length(urls))
description <- vector("list", length(urls))
Ratings <- vector("list", length(urls))
Reviews <- vector("list", length(urls))

df <- list()

for (i in seq_along(urls)) {
  session <- bow(urls[i], user_agent = "Educational")
  webpage <- scrape(session)

  nameofproduct[[i]] <- webpage %>%
    html_nodes('.a-size-base-plus.a-color-base') %>%
    html_text() %>%
    head(30)

  price[[i]] <- webpage %>%
    html_nodes('.a-price-whole') %>%
    html_text() %>%
    head(30)

  description[[i]] <- webpage %>%
    html_nodes('.a-size-mini.a-spacing-none.a-color-base s-line-clamp-3') %>%
    html_text() %>%
    head(30)

  Ratings[[i]] <- webpage %>%
    html_nodes('.a-icon.a-icon-star-small.a-star-small-4-5') %>%
    html_text() %>%
    head(30)

  Reviews[[i]] <- webpage %>%
    html_nodes('.a-size-base-plus.a-color-base') %>%
    html_text() %>%
    head(30)
}

```

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

```

skincare <- data.frame(nameofproduct[[1]],
  Price = price[[1]],
  Ratings = Ratings[[1]],
  stringsAsFactors = FALSE
)
head(skincare, 50)

```

```
##
```

```
## 1
```

```
## 2
```

```
## 3
```

```
## 4
```

```
## 5
```

Snail Mucin 96% Power Face Serum 3.38 fl

SKIN Hydrated Ever After Skincare I

## 6	
## 7	SKIN PERFECTING 2% BHA
## 8	
## 9	Bio-Collag
## 10	
## 11	Age-R Booster Pro   6-in-1 Real Glass Glow Device   Looking Glass Skin
## 12	Under Eye Patches, 40 Pairs Eye Mask for Dark Circles, Puffy Eyes, Undereye Bags,Wrinkles,Eye Mas
## 13	
## 14	Heartleaf Pore Control Cleans
## 15	
## 16	Face Masks Skincare, Facial Masks for Women Skin Care, Sheet Masks Beauty with Natural
## 17	Under Eye Patches - 30 Pairs - 24K Gold Eye Mask- Puffy Ey
## 18	
## 19	Vitar
## 20	
## 21	Snail Mucin 92% Face Moisturizer, 3.52
## 22	
## 23	Moisturizing Cream   Body and Face Moisturizer for Dry Skin   Body Cream with Hya
## 24	
## 25	Facial Spr
## 26	
## 27	Makeup Headbands, 1pcs Black Spa Headband Fluffy Bow Tie Headband
## 28	Pimple Patches for Face, Hydrocolloid Acne Patches, Cute Star Zit Covers, C
## 29	
## 30	Revive Eye Serum with Retinal Niac

##	Price	Ratings
## 1	27.	4.6 out of 5 stars
## 2	12.	4.5 out of 5 stars
## 3	20.	4.5 out of 5 stars
## 4	28.	4.3 out of 5 stars
## 5	12.	4.5 out of 5 stars
## 6	150.	4.3 out of 5 stars
## 7	8.	4.6 out of 5 stars
## 8	13.	4.7 out of 5 stars
## 9	7.	4.5 out of 5 stars
## 10	6.	4.7 out of 5 stars
## 11	8.	4.5 out of 5 stars
## 12	12.	4.5 out of 5 stars
## 13	17.	4.4 out of 5 stars
## 14	4.	4.3 out of 5 stars
## 15	5.	4.3 out of 5 stars
## 16	5.	4.5 out of 5 stars
## 17	11.	4.6 out of 5 stars
## 18	21.	4.7 out of 5 stars
## 19	15.	4.3 out of 5 stars
## 20	27.	4.4 out of 5 stars
## 21	14.	4.6 out of 5 stars
## 22	12.	4.4 out of 5 stars
## 23	13.	4.5 out of 5 stars
## 24	13.	4.3 out of 5 stars
## 25	4.	4.5 out of 5 stars
## 26	13.	4.6 out of 5 stars
## 27	7.	4.3 out of 5 stars
## 28	12.	4.7 out of 5 stars

nameofproduct...1..	Price	Ratings
COSRX	27.	4.6 out of 5 stars
Snail Mucin 96% Power Face Serum 3.38 fl oz 100ml, Hydrating Serum for Face, Self Care, Glow Skin under Makeup, Korean Skin Care, Korean Beauty	12.	4.5 out of 5 stars
Amazon's Choice: Overall Pick	20.	4.5 out of 5 stars
e.l.f.	28.	4.3 out of 5 stars
SKIN Hydrated Ever After Skincare Mini Kit, Cleanser, Makeup Remover, Moisturiser & Eye Cream For Hydrating Skin, Airplane-Friendly Sizes	12.	4.5 out of 5 stars
Paula's Choice	150.	4.3 out of 5 stars
SKIN PERFECTING 2% BHA Liquid Salicylic Acid Exfoliant-Facial Exfoliant for Blackheads, Enlarged Pores, Wrinkles & Fine Lines	8.	4.6 out of 5 stars
BIODANCE	13.	4.7 out of 5 stars
Bio-Collagen Real Deep Mask, Hydrating Overnight Hydrogel Mask, Pore Minimizing, Elasticity Improvement, 34g x4ea	7.	4.5 out of 5 stars
Medicube	6.	4.7 out of 5 stars
Age-R Booster Pro   6-in-1 Real Glass Glow Device   Looking Glass Skin with Enhanced Absorption, Radiance, Elasticity,Pore Care   LED Anti-Wrinkle Device   Korean Skin Care	8.	4.5 out of 5 stars
Under Eye Patches, 40 Pairs Eye Mask for Dark Circles, Puffy Eyes, Undereye Bags,Wrinkles,Eye Mask Patches with 24K Gold, Hyaluronic Acid,Rose & Aloe Vera, Eye Treatment Skin Care for Men & Women Gift	12.	4.5 out of 5 stars
ANUA	17.	4.4 out of 5 stars
Heartleaf Pore Control Cleansing Oil, Oil Cleanser for Face, Makeup Blackhead Remover, Korean Skin Care 6.76 fl oz(200ml) (original)	4.	4.3 out of 5 stars
ZoalSea	5.	4.3 out of 5 stars
Face Masks Skincare, Facial Masks for Women Skin Care, Sheet Masks Beauty with Natural Ingredients, Birthday Party Spa Gift for Kids Teens Girls, Hydrate and Soothe for All Skin Types 7 Pack	5.	4.5 out of 5 stars
Under Eye Patches - 30 Pairs - 24K Gold Eye Mask- Puffy Eyes & Dark Circles Treatments,Reduce Under Eye Bags and Smooth Wrinkles,Eye Skin Care Pads With Collagen	11.	4.6 out of 5 stars
Tree Hut	21.	4.7 out of 5 stars
Vitamin C Shea Sugar Scrub, 18 oz, Ultra Hydrating and Exfoliating Scrub for Nourishing Essential Body Care	15.	4.3 out of 5 stars
COSRX	27.	4.4 out of 5 stars
Snail Mucin 92% Face Moisturizer, 3.52 Oz, Lightweight Moisturizing Cream for Soft, Glowly Skin, Korean Skin Care, Korean Moisturizer Face Cream	14.	4.6 out of 5 stars
CeraVe	12.	4.4 out of 5 stars
Moisturizing Cream   Body and Face Moisturizer for Dry Skin   Body Cream with Hyaluronic Acid and Ceramides   Daily Moisturizer   Oil-Free   Fragrance Free   Non-Comedogenic   19 Ounce	13.	4.5 out of 5 stars
Mario Badescu	13.	4.3 out of 5 stars
Facial Spray with Aloe, Herbs and Rose Water for All Skin Types, Face Mist that Hydrates, Rejuvenates & Clarifies	4.	4.5 out of 5 stars
WSYUB	13.	4.6 out of 5 stars
Makeup Headbands, 1pcs Black Spa Headband Fluffy Bow Tie Headband Microfiber Face Headband, and 2Pcs Wrist Spa Wash Band Absorbent Wristbands, for Washing Face Skin Care	7.	4.3 out of 5 stars
Pimple Patches for Face, Hydrocolloid Acne Patches, Cute Star Zit Covers, Colorful Spot Stickers with Tea Tree, Salicylic Acid & Cica Oil  3 Sizes (10mm, 12mm & 14mm)  200 Count	12.	4.7 out of 5 stars
Beauty of Joseon	29.	4.5 out of 5 stars
Revive Eye Serum with Retinal Niacinamide Correction for Puffy Eye Bags Fine Lines Dark Circles Wrinkles, Korean Skin Care 30ml, 1 fl.oz	59.	4.5 out of 5 stars

```
## 29    29. 4.5 out of 5 stars
```

```
## 30    59. 4.5 out of 5 stars
```

```
skincare %>%
```

```
  kable("latex", booktabs = TRUE) %>%
```

```
  kable_styling(latex_options = "scale_down")
```

```
perfume <- data.frame(nameofproduct[[2]],
                      Price = price[[2]],
                      Ratings = Ratings[[2]],
                      stringsAsFactors = FALSE
                      )
```

```
head(perfume, 30)
```

```
##
```

```
## 1
```

```
## 2
```

```
## 3
```

```
## 4
```

```
## 5          Dossier - Fruity Brown Sugar - Eau de Parfum - Inspired by YSt L's Mon Paris - Perfume Luxury
```

```
## 6          Calvin Klein Eternity Eau de Toilette - Fougère Men's Cologne -
```

```
With Notes of Mandarin, Sage, Cedarwood & Amber - Luxury Perfumes for Men - Long Lasting Fragrance
```

```
## 7          Dime Beauty Perfume Lovely Sweet Dreams, 1.7 oz / 50 ml - Warm Vanilla and Flo
```

```
## 8          Clinique Happy Heart Eau de Parfum Spray - Perfume
```

```
## 9 Dossier - Eau de Parfum - Ambery Cherry - Inspired by T.Ford Lost Cherry - Perfume Luxury - Pure
```

```
## 10
```

```
## 11
```

```
## 12
```

```
## 13
```

```
## 14
```

```
## 15
```

```
## 16
```

```
## 17
```

```
## 18          Lucky You Perfume
```

```
## 19          Victoria's Secret Mini Eau de Pa
```

```
## 20
```

```
## 21
```

```
## 22
```



```
## 23 Ariana Grande Cloud Eau de Parfum -
Warm Gourmand Fragrance for Women - Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear
## 24
## 25
## 26 Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Lo
## 27
## 28 Billie Eilish No. 2 Eau de Parfum Perfume for W
## 29
## 30 MUGLER Alien Goddess Intense - Eau de Parfum - Women's
```

	Price	Ratings
## 1	23.	4.4 out of 5 stars
## 2	26.	4.4 out of 5 stars
## 3	62.	4.7 out of 5 stars
## 4	20.	4.6 out of 5 stars
## 5	80.	4.7 out of 5 stars
## 6	36.	4.6 out of 5 stars
## 7	75.	4.6 out of 5 stars
## 8	34.	4.3 out of 5 stars
## 9	36.	4.6 out of 5 stars
## 10	78.	4.5 out of 5 stars
## 11	17.	4.6 out of 5 stars
## 12	13.	4.5 out of 5 stars
## 13	11.	4.5 out of 5 stars
## 14	62.	4.5 out of 5 stars
## 15	22.	4.5 out of 5 stars
## 16	15.	4.7 out of 5 stars
## 17	55.	4.6 out of 5 stars
## 18	30.	4.6 out of 5 stars
## 19	19.	4.3 out of 5 stars
## 20	18.	4.5 out of 5 stars
## 21	19.	4.4 out of 5 stars
## 22	48.	4.5 out of 5 stars
## 23	119.	4.6 out of 5 stars
## 24	20.	4.5 out of 5 stars
## 25	16.	4.6 out of 5 stars
## 26	18.	4.7 out of 5 stars
## 27	34.	4.6 out of 5 stars
## 28	25.	4.7 out of 5 stars
## 29	47.	4.4 out of 5 stars
## 30	21.	4.6 out of 5 stars

```
perfume %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
bags <- data.frame(nameofproduct[[3]],
                    Price = price[[3]],
                    Ratings = Ratings[[3]],
                    stringsAsFactors = FALSE
)
head(bags, 30)
```

```
##
## 1
## 2
```

nameofproduct..2..	Price	Ratings
Amazon's Choice: Overall Pick	23.	4.4 out of 5 stars
Lattafa Yara for Women Eau de Parfum Spray, 3.40 Ounce / 100 ml	26.	4.4 out of 5 stars
Vera Wang Eau de Parfum for Women - Delicate, Floral Scent - Notes of Iris, Lillies, & Sandalwood - Feminine & Subtle - 3.4 Fl Oz	62.	4.7 out of 5 stars
Marc Jacobs Daisy Eau So Fresh Eau de Toilette Spray-125ml/4.25 oz.	20.	4.6 out of 5 stars
Dossier - Fruity Brown Sugar - Eau de Parfum - Inspired by YSL L's Mon Paris - Perfume Luxury - Pure Infused - Paraben-Free - Vegan - For Women - Fragrance 1.7 Fl oz (Spray 50ml)	80.	4.7 out of 5 stars
Calvin Klein Eternity Eau de Toilette - Fougère Men's Cologne - With Notes of Mandarin, Sage, Cedarwood & Amber - Luxury Perfumes for Men - Long Lasting Fragrance	36.	4.6 out of 5 stars
Dine Beauty Perfume Lovely Sweet Dreams, 1.7 oz / 50 ml - Warm Vanilla and Floral Scent, Hypoallergenic, Clean Perfume, Eau de Toilette For Women (Packaging May Vary)	75.	4.6 out of 5 stars
Clinique Happy Heart Eau de Parfum Spray - Perfume for Women   Notes of Mandarin, Cucumber, Yellow Primrose, Water Hyacinth + Blonde Wood	34.	4.3 out of 5 stars
Dossier - Eau de Parfum - Ambery Cherry - Inspired by T.Ford Lost Cherry - Perfume Luxury - Pure Infused - Paraben Free - Vegan - For Women Men Unisex - Fragrance 1.7 Fl oz (Spray 50ml)	36.	4.6 out of 5 stars
Billie Eilish Eau de Parfum Perfume for Women, Travel Size, Notes of Sugared Petals	78.	4.5 out of 5 stars
Versace Bright Crystal by Versace for Women 6.7 oz Eau de Toilette Spray	17.	4.6 out of 5 stars
KHADLAJ PERFUMES Hareem Al Sultan Gold Concentrated Perfume Oil for Unisex, 1.18 Ounce	13.	4.5 out of 5 stars
Victoria's Secret Bare Vanilla Body Mist, Body Spray for Women (8.4 oz)	11.	4.5 out of 5 stars
Versace, Bright Crystal Eau de Toilette Mini for Women, 0.17 Ounce	62.	4.5 out of 5 stars
Marc Jacobs Perfect for Women Eau de Parfum Spray, 1.6 Ounce	22.	4.5 out of 5 stars
Vera Wang Princess Eau de Toilette Spray for Women, Vanilla, 3.4 Fl Ounce	15.	4.7 out of 5 stars
Lucky You Perfume for Women, Eau De Toilette Day or Night Spray with Fresh Flower Citrus Scent, 3.4 fl oz	55.	4.6 out of 5 stars
Victoria's Secret Mini Eau de Parfum Discovery Gift Set: Bombshell, Bombshell Magic, Tease, Bare, Very Sexy, & Heavenly	30.	4.6 out of 5 stars
Lattafa Perfumes Khamrah for Unisex Eau de Parfum Spray, 3.4 Ounce	19.	4.3 out of 5 stars
Perfume High End Designer Fragrance Sampler Set for Women - (Pack of 12 Sample Vials)	18.	4.5 out of 5 stars
Ed Hardy Women's Perfume Fragrance by Christian Audigier, Eau De Parfum, 3.4 Fl Oz	19.	4.4 out of 5 stars
Lattafa Yara Moi Eau de Parfum Spray for Women, 3.4 Ounce	48.	4.5 out of 5 stars
Ariana Grande Cloud Eau de Parfum - Warm Gourmand Fragrance for Women - Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear	119.	4.6 out of 5 stars
Valentino Valentino Donna Born In Roma EDP Spray Women 3.4 oz	20.	4.5 out of 5 stars
Dossier - Eau de Parfum - Ambery Vanilla - Feminine - 1.7Oz (50ml)	16.	4.6 out of 5 stars
Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Long Lasting Arabian Perfume for Women - Exotic, Fruity, Floral, Alcohol Free EDP - 0.5 oz	18.	4.7 out of 5 stars
Lattafa Rave Now Eau de Parfum Spray for Women, 3.4 Ounce	34.	4.6 out of 5 stars
Billie Eilish No. 2 Eau de Parfum Perfume for Women, Woody + Floral Fragrance, Notes of Apple Blossom, Wild Poppy Flower and Palo Santo	25.	4.7 out of 5 stars
Sol de Janeiro Hair & Body Fragrance Mist Travel Size 90mL/3.0 fl oz.	47.	4.4 out of 5 stars
MUGLER Alien Goddess Intense - Eau de Parfum - Women's Perfume - Floral & Woody - With Bergamot, Jasmine, and Vanilla - Long Lasting Fragrance	21.	4.6 out of 5 stars

## 3

## 4

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## 17

## 18

## 19

## 20

## 21

## 22

## 23

## 24

## 25

## 26

## 27

## 28

## 29

## 30

## Price Ratings

## 1 19. 4.4 out of 5 stars

## 2 19. 4.6 out of 5 stars

## 3 23. 4.4 out of 5 stars

## 4 58. 4.5 out of 5 stars

## 5 26. 4.6 out of 5 stars

## 6 27. 4.6 out of 5 stars

## 7 28. 4.7 out of 5 stars

Large Canvas Tote Bag for Women,Womens Laptop Work Book M

Tote Bag for Women, Lightweight Puffy Tote Bag w

NICAT

Lightw

3L TRIPLE ZIP Fanny Packs Belt Bag For Women Men Crossbody Waist Pack S

Monogrammed Gifts for Women - Fanny Pack for Kids Teen,Crossbody Bag for Women Trendy Everywhere M

3PCS Purses and Handbags for

Color-Block Crossbody Bags for Women Leather C

Purses and Handbags for Women, Tote Shoul

nameofproduct..3..	Price	Ratings
Amazon's Choice: Overall Pick	19.	4.4 out of 5 stars
Michael Kors	19.	4.6 out of 5 stars
( Crossbody	23.	4.4 out of 5 stars
ZHMO	58.	4.5 out of 5 stars
Large Canvas Tote Bag for Women,Womens Laptop Work Book Bags Crossbody Purse Handbag Shoulder Travel Messenger Gym Totes	26.	4.6 out of 5 stars
Click to see price	27.	4.6 out of 5 stars
BAGSMART	28.	4.7 out of 5 stars
Tote Bag for Women, Lightweight Puffy Tote Bag with Compartments, Quilted Shoulder Bag Handbag for Travel, Work	27.	4.6 out of 5 stars
INICAT	18.	4.3 out of 5 stars
NICAT Summer Straw Bag Small Sling Beach Bag Crossbody Bags for Women	15.	4.4 out of 5 stars
FashionPuzzle	19.	4.5 out of 5 stars
Lightweight Small Triangle Pebbled Soft PU Leather Sling Crossbody Bag	52.	4.6 out of 5 stars
INICAT	59.	4.6 out of 5 stars
Travel Small Sling Bag Crossbody Bags for Women 1 Liter	34.	4.6 out of 5 stars
LATMAP	29.	4.7 out of 5 stars
3L TRIPLE ZIP Fanny Packs Belt Bag For Women Men Crossbody Waist Pack Sling Chest Bum Travel Bag Purse Faux Leather Fashion Cute Beige	21.	4.5 out of 5 stars
Uygafly	20.	4.5 out of 5 stars
Monogrammed Gifts for Women - Fanny Pack for Kids Teen,Crossbody Bag for Women Trendy Everywhere Belt Bag Fashion Monogrammed Crossbody Bag Waist Packs   Cream,H	150.	4.7 out of 5 stars
Kipling	27.	4.7 out of 5 stars
Sabian Printed Crossbody Mini Bag	7.	4.4 out of 5 stars
Calvin Klein	28.	4.4 out of 5 stars
Reyna Novelty Triple Compartment Shoulder Bag	31.	4.3 out of 5 stars
Calvin Klein	22.	4.7 out of 5 stars
Hadley Triple Compartment Crossbody	15.	4.5 out of 5 stars
Montana West	28.	4.4 out of 5 stars
3PCS Purses and Handbags for Women Tote Purse and Wallet Set Shoulder Satchel Bag for Women	66.	4.6 out of 5 stars
TOP BAND	12.	4.5 out of 5 stars
Color-Block Crossbody Bags for Women Leather Cross Body Purses Cute Designer Handbags Shoulder Bag Medium Size	19.	4.6 out of 5 stars
LOVEVOOK	25.	4.6 out of 5 stars
Purses and Handbags for Women, Tote Shoulder Bag Satchel Black Purse and PU Leather Top Handle for ladies	159.	4.6 out of 5 stars

```
## 8      27. 4.6 out of 5 stars
## 9      18. 4.3 out of 5 stars
## 10     15. 4.4 out of 5 stars
## 11     19. 4.5 out of 5 stars
## 12     52. 4.6 out of 5 stars
## 13     59. 4.6 out of 5 stars
## 14     34. 4.6 out of 5 stars
## 15     29. 4.7 out of 5 stars
## 16     21. 4.5 out of 5 stars
## 17     20. 4.5 out of 5 stars
## 18    150. 4.7 out of 5 stars
## 19     27. 4.7 out of 5 stars
## 20      7. 4.4 out of 5 stars
## 21     28. 4.4 out of 5 stars
## 22     31. 4.3 out of 5 stars
## 23     22. 4.7 out of 5 stars
## 24     15. 4.5 out of 5 stars
## 25     28. 4.4 out of 5 stars
## 26     66. 4.6 out of 5 stars
## 27     12. 4.5 out of 5 stars
## 28     19. 4.6 out of 5 stars
## 29     25. 4.6 out of 5 stars
## 30    159. 4.6 out of 5 stars
```

```
bags %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
shoes <- data.frame(nameofproduct[[4]],
                    Price = price[[4]],
                    Ratings = Ratings[[4]],
                    stringsAsFactors = FALSE
                    )
head(shoes, 30)
```

```
##                                                                    nameofproduct..4..
```

## 1		Reebok
## 2		Women's Princess Sneaker
## 3		Under Armour
## 4		Men's Charged Surge 4 Sneaker
## 5		adidas
## 6		Men's Lite Racer Adapt 7.0 Sneaker
## 7		Amazon's Choice: Overall Pick
## 8		Under Armour
## 9		Men's Charged Assert 10
## 10		Hey Dude
## 11	Men's Wally Stretch   Men's Loafers   Men's Slip On Shoes   Comfortable & Light-Weight	
## 12		New Balance
## 13		Men's 608 V5 Casual Comfort Cross Trainer
## 14		Bruno Marc
## 15	Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes	
## 16		adidas
## 17		Men's Daily 4.0 Shoes
## 18		adidas
## 19		Men's Grand Court 2.0
## 20		Skechers
## 21		Women's Summits Sneaker
## 22		Reebok
## 23		Men's BB4500 Hi 2 Sneaker
## 24		Skechers
## 25		Men's Go Walk Max Effort
## 26		Reebok
## 27		Women's Court Advance Sneaker
## 28		adidas
## 29		Men's Daily 3.0 Sneaker
## 30		Columbia

##	Price	Ratings
## 1	35.	4.4 out of 5 stars
## 2	45.	4.4 out of 5 stars
## 3	39.	4.3 out of 5 stars
## 4	50.	4.5 out of 5 stars
## 5	44.	4.7 out of 5 stars
## 6	64.	4.6 out of 5 stars
## 7	31.	4.6 out of 5 stars
## 8	42.	4.6 out of 5 stars
## 9	52.	4.7 out of 5 stars
## 10	34.	4.5 out of 5 stars
## 11	37.	4.5 out of 5 stars
## 12	39.	4.6 out of 5 stars
## 13	30.	4.3 out of 5 stars
## 14	55.	4.7 out of 5 stars
## 15	52.	4.6 out of 5 stars
## 16	33.	4.5 out of 5 stars
## 17	27.	4.4 out of 5 stars
## 18	71.	4.3 out of 5 stars
## 19	45.	4.6 out of 5 stars
## 20	52.	4.4 out of 5 stars
## 21	65.	4.6 out of 5 stars
## 22	56.	4.3 out of 5 stars
## 23	54.	4.6 out of 5 stars

nameofproduct..4..	Price	Ratings
Reebok	35.	4.4 out of 5 stars
Women's Princess Sneaker	45.	4.4 out of 5 stars
Under Armour	39.	4.3 out of 5 stars
Men's Charged Surge 4 Sneaker	50.	4.5 out of 5 stars
adidas	44.	4.7 out of 5 stars
Men's Lite Racer Adapt 7.0 Sneaker	64.	4.6 out of 5 stars
Amazon's Choice: Overall Pick	31.	4.6 out of 5 stars
Under Armour	42.	4.6 out of 5 stars
Men's Charged Assert 10	52.	4.7 out of 5 stars
Hey Dude	34.	4.5 out of 5 stars
Men's Wally Stretch   Men's Loafers   Men's Slip On Shoes   Comfortable & Light-Weight	37.	4.5 out of 5 stars
New Balance	39.	4.6 out of 5 stars
Men's 608 V5 Casual Comfort Cross Trainer	30.	4.3 out of 5 stars
Bruno Marc	55.	4.7 out of 5 stars
Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes	52.	4.6 out of 5 stars
adidas	33.	4.5 out of 5 stars
Men's Daily 4.0 Shoes	27.	4.4 out of 5 stars
adidas	71.	4.3 out of 5 stars
Men's Grand Court 2.0	45.	4.6 out of 5 stars
Skechers	52.	4.4 out of 5 stars
Women's Summits Sneaker	65.	4.6 out of 5 stars
Reebok	56.	4.3 out of 5 stars
Men's BB4500 Hi 2 Sneaker	54.	4.6 out of 5 stars
Skechers	48.	4.5 out of 5 stars
Men's Go Walk Max Effort	48.	4.5 out of 5 stars
Reebok	40.	4.5 out of 5 stars
Women's Court Advance Sneaker	35.	4.7 out of 5 stars
adidas	100.	4.3 out of 5 stars
Men's Daily 3.0 Sneaker	40.	4.6 out of 5 stars
Columbia	44.	4.6 out of 5 stars

```
## 24 48. 4.5 out of 5 stars
## 25 48. 4.5 out of 5 stars
## 26 40. 4.5 out of 5 stars
## 27 35. 4.7 out of 5 stars
## 28 100. 4.3 out of 5 stars
## 29 40. 4.6 out of 5 stars
## 30 44. 4.6 out of 5 stars
```

```
shoes %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")

pants <- data.frame(nameofproduct[[5]],
                     Price = price[[5]],
                     Ratings = Ratings[[5]],
                     stringsAsFactors = FALSE
                     )
head(pants, 30)
```

```
##
## 1
## 2 Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings f
## 3 Amazon's Choice: Over
```

## 4		Wrangler Au
## 5		Men's Relaxed Fit Stretch Ca
## 6		
## 7		Men's Relaxed Fit Straight-Leg Duck Carpen
## 8		Ultra Per
## 9	3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper	
## 10		G
## 11	Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging,	
## 12		Amazon Es
## 13	Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big	
## 14		
## 15		ComfortSoft EcoSmart Men's Fleece Sw
## 16		(
## 17	Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big	
## 18		
## 19		Men's Original 874 Wo
## 20		(
## 21	Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for M	
## 22		Wrangler Au
## 23		Authentics Men's Regular Fit Comfort Flex Wa
## 24		Fruit of '
## 25	Men's Eversoft Fleece Open Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Br	
## 26		
## 27		Men's Extreme Motion Flat Front Regular Strai
## 28		Under
## 29		Men's Woven Vita
## 30		

##	Price	Ratings
## 1	24.	4.4 out of 5 stars
## 2	24.	4.5 out of 5 stars
## 3	25.	4.4 out of 5 stars
## 4	18.	4.5 out of 5 stars
## 5	23.	4.4 out of 5 stars
## 6	25.	4.3 out of 5 stars
## 7	38.	4.3 out of 5 stars
## 8	25.	4.4 out of 5 stars
## 9	29.	4.6 out of 5 stars
## 10	9.	4.3 out of 5 stars
## 11	17.	4.5 out of 5 stars
## 12	20.	4.3 out of 5 stars
## 13	17.	4.3 out of 5 stars
## 14	30.	4.3 out of 5 stars
## 15	8.	4.5 out of 5 stars
## 16	34.	4.3 out of 5 stars
## 17	28.	4.3 out of 5 stars
## 18	19.	4.6 out of 5 stars
## 19	11.	4.4 out of 5 stars
## 20	32.	4.5 out of 5 stars
## 21	24.	4.5 out of 5 stars
## 22	20.	4.4 out of 5 stars
## 23	23.	4.6 out of 5 stars
## 24	11.	4.5 out of 5 stars
## 25	26.	4.5 out of 5 stars
## 26	22.	4.3 out of 5 stars

nameofproduct..5..	Price	Ratings
THE GYM PEOPLE	24.	4.4 out of 5 stars
Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings for Women	24.	4.5 out of 5 stars
Amazon's Choice: Overall Pick	25.	4.4 out of 5 stars
Wrangler Authentics	18.	4.5 out of 5 stars
Men's Relaxed Fit Stretch Cargo Pant	23.	4.4 out of 5 stars
Dickies	25.	4.3 out of 5 stars
Men's Relaxed Fit Straight-Leg Duck Carpenter Jean	38.	4.3 out of 5 stars
Ultra Performance	25.	4.4 out of 5 stars
3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper Pockets	29.	4.6 out of 5 stars
G Gradual	9.	4.3 out of 5 stars
Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging, Running	17.	4.5 out of 5 stars
Amazon Essentials	20.	4.3 out of 5 stars
Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big & Tall)	17.	4.3 out of 5 stars
Hanes	30.	4.3 out of 5 stars
ComfortSoft EcoSmart Men's Fleece Sweatpants	8.	4.5 out of 5 stars
Champion	34.	4.3 out of 5 stars
Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big & Tall)	28.	4.3 out of 5 stars
Dickies	19.	4.6 out of 5 stars
Men's Original 874 Work Pants	11.	4.4 out of 5 stars
Champion	32.	4.5 out of 5 stars
Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for Men, 31"	24.	4.5 out of 5 stars
Wrangler Authentics	20.	4.4 out of 5 stars
Authentics Men's Regular Fit Comfort Flex Waist Jean	23.	4.6 out of 5 stars
Fruit of the Loom	11.	4.5 out of 5 stars
Men's Eversoft Fleece Open Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Breathable	26.	4.5 out of 5 stars
Lee	22.	4.3 out of 5 stars
Men's Extreme Motion Flat Front Regular Straight Pant	8.	4.3 out of 5 stars
Under Armour	25.	4.5 out of 5 stars
Men's Woven Vital Pants	41.	4.6 out of 5 stars
Sunzel	49.	4.6 out of 5 stars

```
## 27      8. 4.3 out of 5 stars
## 28     25. 4.5 out of 5 stars
## 29     41. 4.6 out of 5 stars
## 30     49. 4.6 out of 5 stars
```

```
pants %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

6. Describe the data you have extracted.

The extracted dataset contains key details about products across five categories: Skincare, Perfume, Bags, Shoes, and Pants. Here's an overview:

Product Name: The titles of the 30 products per category, retrieved from the website.

Price: Numerical values indicating the price, cleaned and standardized for analysis.

Description: Short descriptions highlighting the features of each product.

Ratings: Average star ratings (1 to 5) given by customers, reflecting product quality or satisfaction.

Category: A label indicating which category the product belongs to.

Size: A total of 150 products, with 30 from each category.

The data reveals insights into product characteristics and consumer feedback, aiding in trend analysis and decision-making.

7. What will be your use case for the data you have extracted?

The extracted data can be applied in several practical contexts:

Market Analysis:

- Identifying price trends and outliers in each category.
- Analyzing consumer preferences based on product ratings and reviews.

Customer Insights:

- Recommending products with the best quality-price ratio. Highlighting top-rated or most affordable products in each category.

Retail Strategies: -Informing inventory stocking by analyzing trends in popular products.

- Pricing strategies for competitive positioning.

Visualization and Reporting:

- Using the data to create visual insights for presentations or reports.

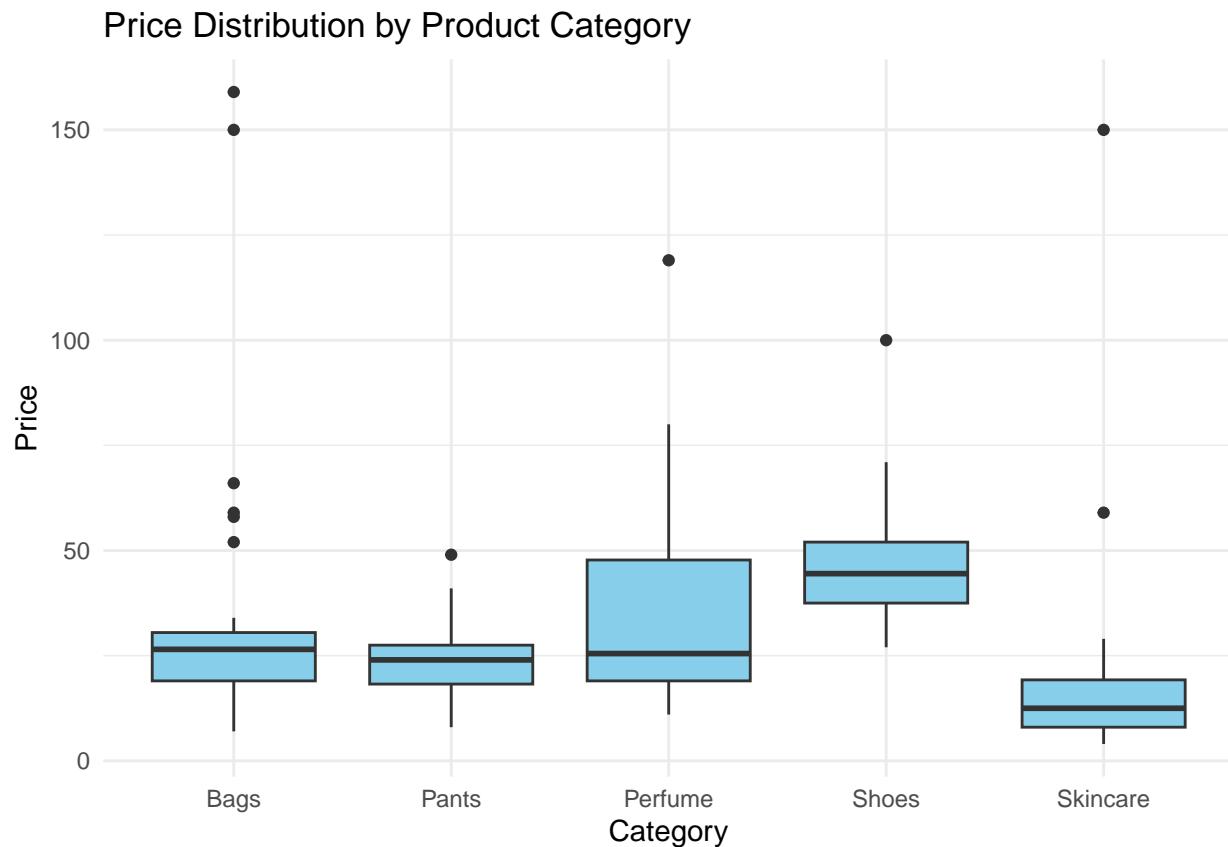
8. Create graphs regarding the use case. And briefly explain it.

```
category_names <- c("Skincare", "Perfume", "Bags", "Shoes", "Pants")
all_data <- bind_rows(
  skincare %>% mutate(Category = "Skincare"),
  perfume %>% mutate(Category = "Perfume"),
  bags %>% mutate(Category = "Bags"),
  shoes %>% mutate(Category = "Shoes"),
  pants %>% mutate(Category = "Pants")
)

all_data$Price <- as.numeric(gsub(",", "", all_data$Price))

ggplot(all_data, aes(x = Category, y = Price)) +
  geom_boxplot(fill = "skyblue") +
  labs(title = "Price Distribution by Product Category", x = "Category", y = "Price") +
  theme_minimal()
```





The boxplot visualizes the distribution of product prices across categories.

Insights:

- The spread of prices varies significantly by category.
- Categories like Bags and Shoes may have higher median prices and broader ranges compared to Skincare or Perfume.

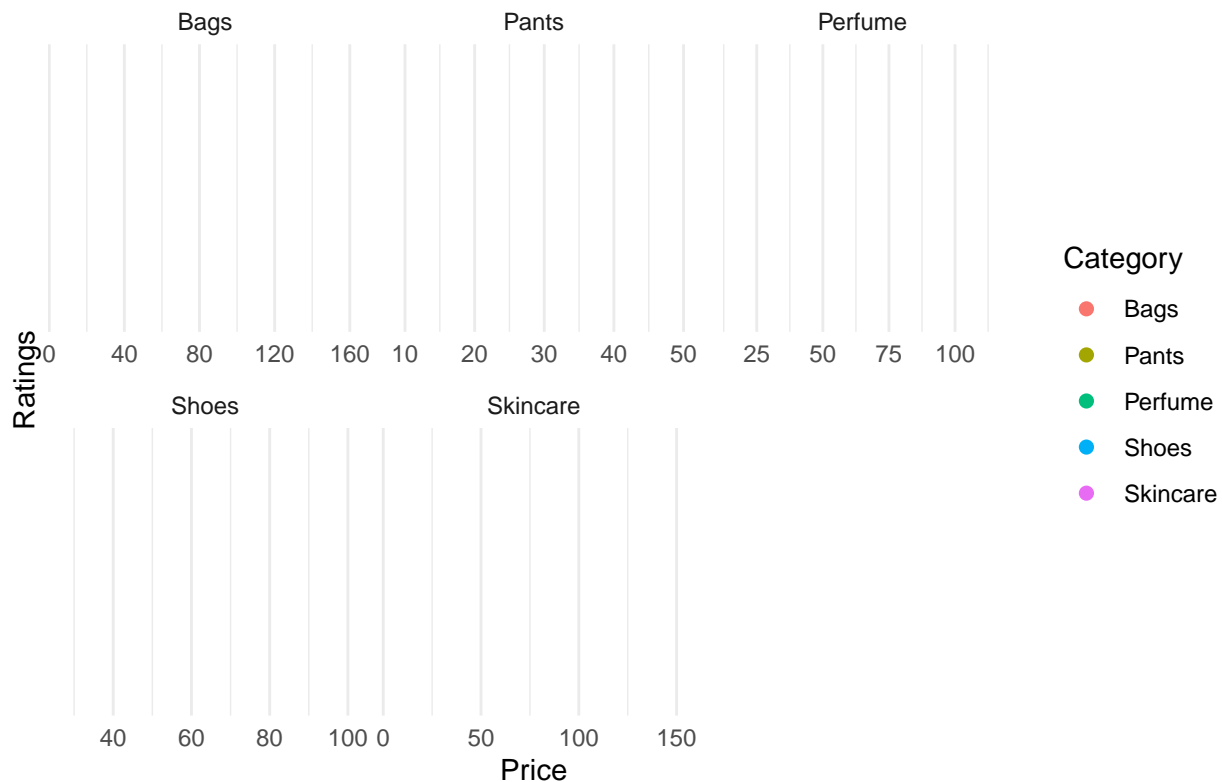
9. Graph the price and the ratings for each category. Use basic plotting functions and ggplot2 package.

```
ggplot(all_data, aes(x = Price, y = as.numeric(Ratings))) +
  geom_point(aes(color = Category), size = 2) +
  labs(title = "Price vs Ratings by Category", x = "Price", y = "Ratings") +
  theme_minimal() +
  facet_wrap(~ Category, scales = "free")
```

```
## Warning in FUN(X[[i]], ...): NAs introduced by coercion
```

```
## Warning: Removed 150 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

## Price vs Ratings by Category



The scatter plot illustrates the relationship between price and ratings for each category.

Explanation:

- The relationship is plotted per category using `facet_wrap`.
- The plot highlights clusters or trends, such as whether higher prices correlate with higher ratings.
- Outliers or inconsistencies in pricing or ratings are easily spotted.

10. Rank the products of each category by price and ratings. Explain briefly.

```
skincare$Price <- as.numeric(gsub(",", "", skincare$Price))
perfume$Price <- as.numeric(gsub(",", "", perfume$Price))
bags$Price <- as.numeric(gsub(",", "", bags$Price))
shoes$Price <- as.numeric(gsub(",", "", shoes$Price))
pants$Price <- as.numeric(gsub(",", "", pants$Price))

skincare_ranked <- skincare %>% arrange(desc(Price), desc(Ratings))
perfume_ranked <- perfume %>% arrange(desc(Price), desc(Ratings))
bags_ranked <- bags %>% arrange(desc(Price), desc(Ratings))
shoes_ranked <- shoes %>% arrange(desc(Price), desc(Ratings))
pants_ranked <- pants %>% arrange(desc(Price), desc(Ratings))

head(skincare_ranked, 30)
```

```
##
## 1
## 2
## 3
## 4
```

Revive Eye Serum with Retinal Niacinamide

## 5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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nameofproduct...1..	Price	Ratings
Paula's Choice	150	4.3 out of 5 stars
Revive Eye Serum with Retinal Niacinamide Correction for Puffy Eye Bags Fine Lines Dark Circles Wrinkles, Korean Skin Care 30ml, 1 fl.oz	59	4.5 out of 5 stars
Beauty of Joseon	29	4.5 out of 5 stars
e.l.f.	28	4.3 out of 5 stars
COSRX	27	4.6 out of 5 stars
COSRX	27	4.4 out of 5 stars
Tree Hut	21	4.7 out of 5 stars
Amazon's Choice: Overall Pick	20	4.5 out of 5 stars
ANUA	17	4.4 out of 5 stars
Vitamin C Shea Sugar Scrub, 18 oz, Ultra Hydrating and Exfoliating Scrub for Nourishing Essential Body Care	15	4.3 out of 5 stars
Snail Mucin 92% Face Moisturizer, 3.52 Oz, Lightweight Moisturing Cream for Soft, Glowly Skin, Korean Skin Care, Korean Moisturizer Face Cream	14	4.6 out of 5 stars
BIODANCE	13	4.7 out of 5 stars
WYSYUB	13	4.6 out of 5 stars
Moisturizing Cream   Body and Face Moisturizer for Dry Skin   Body Cream with Hyaluronic Acid and Ceramides   Daily Moisturizer   Oil-Free   Fragrance Free   Non-Comedogenic   19 Ounce	13	4.5 out of 5 stars
Mario Badescu	13	4.3 out of 5 stars
Pimple Patches for Face, Hydrocolloid Acne Patches, Cute Star Ziti Covers, Colorful Spot Stickers with Tea Tree, Salicylic Acid & Cica Oil  3 Sizes (10mm, 12mm & 14mm)  200 Count	12	4.7 out of 5 stars
Snail Mucin 96% Power Face Serum 3.38 fl oz 100ml, Hydrating Serum for Face, Self Care, Glow Skin under Makeup, Korean Skin Care, Korean Beauty	12	4.5 out of 5 stars
SKIN Hydrated Ever After Skincare Mini Kit, Cleanser, Makeup Remover, Moisturiser & Eye Cream For Hydrating Skin, Airplane-Friendly Sizes	12	4.5 out of 5 stars
Under Eye Patches, 40 Pairs Eye Mask for Dark Circles, Puffy Eyes, Undereye Bags,Wrinkles,Eye Mask Patches with 24K Gold, Hyaluronic Acid,Rose & Aloe Vera, Eye Treatment Skin Care for Men & Women Gift	12	4.5 out of 5 stars
CeraVe	12	4.4 out of 5 stars
Under Eye Patches - 30 Pairs - 24K Gold Eye Mask- Puffy Eyes & Dark Circles Treatments,Reduce Under Eye Bags and Smooth Wrinkles,Eye Skin Care Pads With Collagen	11	4.6 out of 5 stars
SKIN PERFECTING 2% BHA Liquid Salicylic Acid Exfoliant-Facial Exfoliant for Blackheads, Enlarged Pores, Wrinkles & Fine Lines	8	4.6 out of 5 stars
Age-R Booster Pro   6-in-1 Real Glass Glow Device   Looking Glass Skin with Enhanced Absorption, Radiance, Elasticity,Pore Care   LED Anti-Wrinkle Device   Korean Skin Care	8	4.5 out of 5 stars
Bio-Collagen Real Deep Mask, Hydrating Overnight Hydrogel Mask, Pore Minimizing, Elasticity Improvement, 34g x4ea	7	4.5 out of 5 stars
Makeup Headbands, 1pcs Black Spa Headband Fluffy Bow Tie Headband Microfiber Face Headband, and 2Pcs Wrist Spa Wash Band Absorbent Wristbands, for Washing Face Skin Care	7	4.3 out of 5 stars
Medicube	6	4.7 out of 5 stars
Face Masks Skincare, Facial Masks for Women Skin Care, Sheet Masks Beauty with Natural Ingredients, Birthday Party Spa Gift for Kids Teens Girls, Hydrate and Soothe for All Skin Types 7 Pack	5	4.5 out of 5 stars
ZealSoo	5	4.3 out of 5 stars
Facial Spray with Aloe, Herbs and Rose Water for All Skin Types, Face Mist that Hydrates, Rejuvenates & Clarifies	4	4.5 out of 5 stars
Heartleaf Pore Control Cleansing Oil, Oil Cleanser for Face, Makeup Blackhead Remover, Korean Skin Care 6.76 fl oz(200ml) (original)	4	4.3 out of 5 stars

```
## 28      5 4.3 out of 5 stars
## 29      4 4.5 out of 5 stars
## 30      4 4.3 out of 5 stars
```

```
skincare_ranked %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")

head(perfume_ranked, 30)
```

```
##
## 1      Ariana Grande Cloud Eau de Parfum -
Warm Gourmand Fragrance for Women - Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear
## 2      Dossier - Fruity Brown Sugar - Eau de Parfum - Inspired by YSt L's Mon Paris - Perfume Luxury
## 3
## 4      Dime Beauty Perfume Lovely Sweet Dreams, 1.7 oz / 50 ml - Warm Vanilla and Flo
## 5      Vera Wang Eau de Parfum for Women - Delic
## 6
## 7      Lucky You Perfume
## 8
## 9
## 10     Calvin Klein Eternity Eau de Toilette - Fougère Men's Cologne -
With Notes of Mandarin, Sage, Cedarwood & Amber - Luxury Perfumes for Men - Long Lasting Fragrance
## 11 Dossier - Eau de Parfum - Amberry Cherry - Inspired by T.Ford Lost Cherry - Perfume Luxury - Pure
## 12
## 13     Clinique Happy Heart Eau de Parfum Spray - Perfume
## 14     Victoria's Secret Mini Eau de Pa
## 15
## 16     Billie Eilish No. 2 Eau de Parfum Perfume for W
## 17
## 18
## 19     MUGLER Alien Goddess Intense - Eau de Parfum - Women's
## 20
## 21
## 22
## 23
## 24     Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Lor
## 25
```

```
## 26
## 27
## 28
## 29
## 30
##      Price      Ratings
## 1      119 4.6 out of 5 stars
## 2       80 4.7 out of 5 stars
## 3       78 4.5 out of 5 stars
## 4       75 4.6 out of 5 stars
## 5       62 4.7 out of 5 stars
## 6       62 4.5 out of 5 stars
## 7       55 4.6 out of 5 stars
## 8       48 4.5 out of 5 stars
## 9       47 4.4 out of 5 stars
## 10      36 4.6 out of 5 stars
## 11      36 4.6 out of 5 stars
## 12      34 4.6 out of 5 stars
## 13      34 4.3 out of 5 stars
## 14      30 4.6 out of 5 stars
## 15      26 4.4 out of 5 stars
## 16      25 4.7 out of 5 stars
## 17      23 4.4 out of 5 stars
## 18      22 4.5 out of 5 stars
## 19      21 4.6 out of 5 stars
## 20      20 4.6 out of 5 stars
## 21      20 4.5 out of 5 stars
## 22      19 4.4 out of 5 stars
## 23      19 4.3 out of 5 stars
## 24      18 4.7 out of 5 stars
## 25      18 4.5 out of 5 stars
## 26      17 4.6 out of 5 stars
## 27      16 4.6 out of 5 stars
## 28      15 4.7 out of 5 stars
## 29      13 4.5 out of 5 stars
## 30      11 4.5 out of 5 stars
```

```
perfume_ranked %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
head(bags_ranked, 30)
```

```
##
## 1 Purses and Handbags for Women, Tote Should
## 2 Monogrammed Gifts for Women - Fanny Pack for Kids Teen,Crossbody Bag for Women Trendy Everywhere
## 3 3PCS Purses and Handbags for
## 4
## 5
## 6 Lightw
## 7
## 8
## 9
## 10
## 11
```

nameofproduct..2..	Price	Ratings
Ariana Grande Cloud Eau de Parfum - Warm Gourmand Fragrance for Women - Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear	119	4.6 out of 5 stars
Dossier - Fruity Brown Sugar - Eau de Parfum - Inspired by YSL's Mon Paris - Perfume Luxury - Pure Infused - Paraben-Free - Vegan - For Women - Fragrance 1.7 Fl oz (Spray 50ml)	80	4.7 out of 5 stars
Billie Eilish Eau de Parfum Perfume for Women, Travel Size, Notes of Sugared Petals	78	4.5 out of 5 stars
Dime Beauty Perfume Lovely Sweet Dreams, 1.7 oz / 50 ml - Warm Vanilla and Floral Scent, Hypoallergenic, Clean Perfume, Eau de Toilette For Women (Packaging May Vary)	75	4.6 out of 5 stars
Vera Wang Eau de Parfum for Women - Delicate, Floral Scent - Notes of Iris, Lillies, & Sandalwood - Feminine & Subtle - 3.4 Fl Oz	62	4.7 out of 5 stars
Versace, Bright Crystal Eau de Toilette Mini for Women, 0.17 Ounce	62	4.5 out of 5 stars
Lucky You Perfume for Women, Eau De Toilette Day or Night Spray with Fresh Flower Citrus Scent, 3.4 fl oz	55	4.6 out of 5 stars
Lattafa Yara Moi Eau de Parfum Spray for Women, 3.4 Ounce	48	4.5 out of 5 stars
Sol de Janeiro Hair & Body Fragrance Mist Travel Size 90mL/3.0 fl oz.	47	4.4 out of 5 stars
Calvin Klein Eternity Eau de Toilette - Fougère Men's Cologne - With Notes of Mandarin, Sage, Cedarwood & Amber - Luxury Perfumes for Men - Long Lasting Fragrance	36	4.6 out of 5 stars
Dossier - Eau de Parfum - Ambery Cherry - Inspired by T.Ford Lost Cherry - Perfume Luxury - Pure Infused - Paraben Free - Vegan - For Women Men Unisex - Fragrance 1.7 Fl oz (Spray 50ml)	36	4.6 out of 5 stars
Lattafa Rave Now Eau de Parfum Spray for Women, 3.4 Ounce	34	4.6 out of 5 stars
Clinique Happy Heart Eau de Parfum Spray - Perfume for Women   Notes of Mandarin, Cucumber, Yellow Primrose, Water Hyacinth + Blonde Wood	34	4.3 out of 5 stars
Victoria's Secret Mini Eau de Parfum Discovery Gift Set: Bombshell, Bombshell Magic, Tease, Bare, Very Sexy, & Heavenly	30	4.6 out of 5 stars
Lattafa Yara for Women Eau de Parfum Spray, 3.40 Ounce / 100 ml	26	4.4 out of 5 stars
Billie Eilish No. 2 Eau de Parfum Perfume for Women, Woody + Floral Fragrance, Notes of Apple Blossom, Wild Poppy Flower and Palo Santo	25	4.7 out of 5 stars
Amazon's Choice: Overall Pick	23	4.4 out of 5 stars
Marc Jacobs Perfect for Women Eau de Parfum Spray, 1.6 Ounce	22	4.5 out of 5 stars
MUGLER Alien Goddess Intense - Eau de Parfum - Women's Perfume - Floral & Woody - With Bergamot, Jasmine, and Vanilla - Long Lasting Fragrance	21	4.6 out of 5 stars
Marc Jacobs Daisy Eau So Fresh Eau de Toilette Spray-125ml/4.25 oz.	20	4.6 out of 5 stars
Valentino Valentino Donna Born In Roma EDP Spray Women 3.4 oz	20	4.5 out of 5 stars
Ed Hardy Women's Perfume Fragrance by Christian Audigier, Eau De Parfum, 3.4 Fl Oz	19	4.4 out of 5 stars
Lattafa Perfumes Khamrah for Unisex Eau de Parfum Spray, 3.4 Ounce	19	4.3 out of 5 stars
Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Long Lasting Arabian Perfume for Women - Exotic, Fruity, Floral, Alcohol Free EDP - 0.5 oz	18	4.7 out of 5 stars
Perfume High End Designer Fragrance Sampler Set for Women - (Pack of 12 Sample Vials)	18	4.5 out of 5 stars
Versace Bright Crystal by Versace for Women 6.7 oz Eau de Toilette Spray	17	4.6 out of 5 stars
Dossier - Eau de Parfum - Ambery Vanilla - Feminine - 1.7Oz (50ml)	16	4.6 out of 5 stars
Vera Wang Princess Eau de Toilette Spray for Women, Vanilla, 3.4 Fl Ounce	15	4.7 out of 5 stars
KHADLAJ PERFUMES Haroem Al Sultan Gold Concentrated Perfume Oil for Unisex, 1.18 Ounce	13	4.5 out of 5 stars
Victoria's Secret Bare Vanilla Body Mist, Body Spray for Women (8.4 oz)	11	4.5 out of 5 stars

## 12

## 13

## 14

## 15

Tote Bag for Women, Lightweight Puffy Tote Bag v  
Large Canvas Tote Bag for Women,Womens Laptop Work Book B

## 16

## 17

## 18

## 19

## 20

3L TRIPLE ZIP Fanny Packs Belt Bag For Women Men Crossbody Waist Pack S

## 21

## 22

## 23

Color-Block Crossbody Bags for Women Leather C

## 24

## 25

## 26

## 27

## 28

NICAT

## 29

## 30

## Price Ratings

## 1 159 4.6 out of 5 stars

## 2 150 4.7 out of 5 stars

## 3 66 4.6 out of 5 stars

## 4 59 4.6 out of 5 stars

## 5 58 4.5 out of 5 stars

## 6 52 4.6 out of 5 stars

## 7 34 4.6 out of 5 stars

## 8 31 4.3 out of 5 stars

## 9 29 4.7 out of 5 stars

## 10 28 4.7 out of 5 stars

## 11 28 4.4 out of 5 stars

## 12 28 4.4 out of 5 stars

## 13 27 4.7 out of 5 stars

## 14 27 4.6 out of 5 stars

## 15 27 4.6 out of 5 stars

## 16 26 4.6 out of 5 stars

nameofproduct..3..	Price	Ratings
Purses and Handbags for Women, Tote Shoulder Bag Satchel Black Purse and PU Leather Top Handle for ladies	159	4.6 out of 5 stars
Monogrammed Gifts for Women - Fanny Pack for Kids Teen.Crossbody Bag for Women Trendy Everywhere Belt Bag Fashion Monogrammed Crossbody Bag Waist Packs   Cream,H	150	4.7 out of 5 stars
3PCS Purses and Handbags for Women Tote Purse and Wallet Set Shoulder Satchel Bag for Women	66	4.6 out of 5 stars
INICAT	59	4.6 out of 5 stars
ZHMO	58	4.5 out of 5 stars
Lightweight Small Triangle Pebbled Soft PU Leather Sling Crossbody Bag	52	4.6 out of 5 stars
Travel Small Sling Bag Crossbody Bags for Women 1 Liter	34	4.6 out of 5 stars
Reyna Novelty Triple Compartment Shoulder Bag	31	4.3 out of 5 stars
LATMAP	29	4.7 out of 5 stars
BAGSMART	28	4.7 out of 5 stars
Calvin Klein	28	4.4 out of 5 stars
Montana West	28	4.4 out of 5 stars
Kipling	27	4.7 out of 5 stars
Click to see price	27	4.6 out of 5 stars
Tote Bag for Women, Lightweight Puffy Tote Bag with Compartments, Quilted Shoulder Bag Handbag for Travel, Work	27	4.6 out of 5 stars
Large Canvas Tote Bag for Women,Womens Laptop Work Book Bags Crossbody Purse Handbag Shoulder Travel Messenger Gym Totes	26	4.6 out of 5 stars
LOVEVOOK	25	4.6 out of 5 stars
( Crossbody	23	4.4 out of 5 stars
Calvin Klein	22	4.7 out of 5 stars
3L TRIPLE ZIP Fanny Packs Belt Bag For Women Men Crossbody Waist Pack Sling Chest Bum Travel Bag Purse Faux Leather Fashion Cute Beige	21	4.5 out of 5 stars
Uygally	20	4.5 out of 5 stars
Michael Kors	19	4.6 out of 5 stars
Color-Block Crossbody Bags for Women Leather Cross Body Purses Cute Designer Handbags Shoulder Bag Medium Size	19	4.6 out of 5 stars
FashionPuzzle	19	4.5 out of 5 stars
Amazon's Choice: Overall Pick	19	4.4 out of 5 stars
INICAT	18	4.3 out of 5 stars
Hadley Triple Compartment Crossbody	15	4.5 out of 5 stars
NICAT Summer Straw Bag Small Sling Beach Bag Crossbody Bags for Women	15	4.4 out of 5 stars
TOP BAND	12	4.5 out of 5 stars
Sabian Printed Crossbody Mini Bag	7	4.4 out of 5 stars

```
## 17      25 4.6 out of 5 stars
## 18      23 4.4 out of 5 stars
## 19      22 4.7 out of 5 stars
## 20      21 4.5 out of 5 stars
## 21      20 4.5 out of 5 stars
## 22      19 4.6 out of 5 stars
## 23      19 4.6 out of 5 stars
## 24      19 4.5 out of 5 stars
## 25      19 4.4 out of 5 stars
## 26      18 4.3 out of 5 stars
## 27      15 4.5 out of 5 stars
## 28      15 4.4 out of 5 stars
## 29      12 4.5 out of 5 stars
## 30       7 4.4 out of 5 stars
```

```
bags_ranked %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
head(shoes_ranked, 30)
```

```
##                                     nameofproduct..4..
## 1                                     adidas
## 2                                     adidas
## 3                                     Women's Summits Sneaker
## 4                                     Men's Lite Racer Adapt 7.0 Sneaker
## 5                                     Reebok
## 6                                     Bruno Marc
## 7                                     Men's BB4500 Hi 2 Sneaker
## 8                                     Men's Charged Assert 10
## 9      Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes
## 10                                     Skechers
## 11                                     Men's Charged Surge 4 Sneaker
## 12                                     Skechers
## 13                                     Men's Go Walk Max Effort
## 14                                     Men's Grand Court 2.0
```

```
## 15 Women's Princess Sneaker
## 16 adidas
## 17 Columbia
## 18 Under Armour
## 19 Men's Daily 3.0 Sneaker
## 20 Reebok
## 21 New Balance
## 22 Under Armour
## 23 Men's Wally Stretch | Men's Loafers | Men's Slip On Shoes | Comfortable & Light-Weight
## 24 Women's Court Advance Sneaker
## 25 Reebok
## 26 Hey Dude
## 27 adidas
## 28 Amazon's Choice: Overall Pick
## 29 Men's 608 V5 Casual Comfort Cross Trainer
## 30 Men's Daily 4.0 Shoes
```

```
## Price Ratings
## 1 100 4.3 out of 5 stars
## 2 71 4.3 out of 5 stars
## 3 65 4.6 out of 5 stars
## 4 64 4.6 out of 5 stars
## 5 56 4.3 out of 5 stars
## 6 55 4.7 out of 5 stars
## 7 54 4.6 out of 5 stars
## 8 52 4.7 out of 5 stars
## 9 52 4.6 out of 5 stars
## 10 52 4.4 out of 5 stars
## 11 50 4.5 out of 5 stars
## 12 48 4.5 out of 5 stars
## 13 48 4.5 out of 5 stars
## 14 45 4.6 out of 5 stars
## 15 45 4.4 out of 5 stars
## 16 44 4.7 out of 5 stars
## 17 44 4.6 out of 5 stars
## 18 42 4.6 out of 5 stars
## 19 40 4.6 out of 5 stars
## 20 40 4.5 out of 5 stars
## 21 39 4.6 out of 5 stars
## 22 39 4.3 out of 5 stars
## 23 37 4.5 out of 5 stars
## 24 35 4.7 out of 5 stars
## 25 35 4.4 out of 5 stars
## 26 34 4.5 out of 5 stars
## 27 33 4.5 out of 5 stars
## 28 31 4.6 out of 5 stars
## 29 30 4.3 out of 5 stars
## 30 27 4.4 out of 5 stars
```

```
shoes_ranked %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

```
head(pants_ranked, 30)
```

```
##
```

```
nameofprod
```



nameofproduct..4..	Price	Ratings
adidas	100	4.3 out of 5 stars
adidas	71	4.3 out of 5 stars
Women's Summits Sneaker	65	4.6 out of 5 stars
Men's Lite Racer Adapt 7.0 Sneaker	64	4.6 out of 5 stars
Reebok	56	4.3 out of 5 stars
Bruno Marc	55	4.7 out of 5 stars
Men's BB4500 Hi 2 Sneaker	54	4.6 out of 5 stars
Men's Charged Assert 10	52	4.7 out of 5 stars
Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes	52	4.6 out of 5 stars
Skechers	52	4.4 out of 5 stars
Men's Charged Surge 4 Sneaker	50	4.5 out of 5 stars
Skechers	48	4.5 out of 5 stars
Men's Go Walk Max Effort	48	4.5 out of 5 stars
Men's Grand Court 2.0	45	4.6 out of 5 stars
Women's Princess Sneaker	45	4.4 out of 5 stars
adidas	44	4.7 out of 5 stars
Columbia	44	4.6 out of 5 stars
Under Armour	42	4.6 out of 5 stars
Men's Daily 3.0 Sneaker	40	4.6 out of 5 stars
Reebok	40	4.5 out of 5 stars
New Balance	39	4.6 out of 5 stars
Under Armour	39	4.3 out of 5 stars
Men's Wally Stretch   Men's Loafers   Men's Slip On Shoes   Comfortable & Light-Weight	37	4.5 out of 5 stars
Women's Court Advance Sneaker	35	4.7 out of 5 stars
Reebok	35	4.4 out of 5 stars
Hey Dude	34	4.5 out of 5 stars
adidas	33	4.5 out of 5 stars
Amazon's Choice: Overall Pick	31	4.6 out of 5 stars
Men's 608 V5 Casual Comfort Cross Trainer	30	4.3 out of 5 stars
Men's Daily 4.0 Shoes	27	4.4 out of 5 stars

## 1  
## 2 Men's Woven Vita  
## 3 Men's Relaxed Fit Straight-Leg Duck Carpen  
## 4  
## 5  
## 6  
## 7 3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper  
## 8 Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big  
## 9 Men's Eversoft Fleece Open Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Br  
## 10 Under  
## 11 Amazon's Choice: Over  
## 12 Ultra Per  
## 13  
## 14 Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings f  
## 15 Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for M  
## 16 THE GYM  
## 17 Authentics Men's Regular Fit Comfort Flex Wa  
## 18 Men's Relaxed Fit Stretch Ca  
## 19  
## 20 Wrangler Au  
## 21 Amazon Es  
## 22  
## 23 Wrangler Au  
## 24 Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging,  
## 25 Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big  
## 26 Fruit of  
## 27 Men's Original 874 Wo  
## 28 G  
## 29 ComfortSoft EcoSmart Men's Fleece Sw  
## 30 Men's Extreme Motion Flat Front Regular Strai  
## Price Ratings  
## 1 49 4.6 out of 5 stars  
## 2 41 4.6 out of 5 stars  
## 3 38 4.3 out of 5 stars  
## 4 34 4.3 out of 5 stars  
## 5 32 4.5 out of 5 stars  
## 6 30 4.3 out of 5 stars  
## 7 29 4.6 out of 5 stars  
## 8 28 4.3 out of 5 stars  
## 9 26 4.5 out of 5 stars  
## 10 25 4.5 out of 5 stars  
## 11 25 4.4 out of 5 stars  
## 12 25 4.4 out of 5 stars  
## 13 25 4.3 out of 5 stars  
## 14 24 4.5 out of 5 stars  
## 15 24 4.5 out of 5 stars  
## 16 24 4.4 out of 5 stars  
## 17 23 4.6 out of 5 stars  
## 18 23 4.4 out of 5 stars  
## 19 22 4.3 out of 5 stars  
## 20 20 4.4 out of 5 stars  
## 21 20 4.3 out of 5 stars  
## 22 19 4.6 out of 5 stars  
## 23 18 4.5 out of 5 stars

nameofproduct..5..	Price	Ratings
Sunzel	49	4.6 out of 5 stars
Men's Woven Vital Pants	41	4.6 out of 5 stars
Men's Relaxed Fit Straight-Leg Duck Carpenter Jean	38	4.3 out of 5 stars
Champion	34	4.3 out of 5 stars
Champion	32	4.5 out of 5 stars
Hanes	30	4.3 out of 5 stars
3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper Pockets	29	4.6 out of 5 stars
Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big & Tall)	28	4.3 out of 5 stars
Men's Eversoft Fleece Open Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Breathable	26	4.5 out of 5 stars
Under Armour	25	4.5 out of 5 stars
Amazon's Choice: Overall Pick	25	4.4 out of 5 stars
Ultra Performance	25	4.4 out of 5 stars
Dickies	25	4.3 out of 5 stars
Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings for Women	24	4.5 out of 5 stars
Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for Men, 31"	24	4.5 out of 5 stars
THE GYM PEOPLE	24	4.4 out of 5 stars
Authentic Men's Regular Fit Comfort Flex Waist Jean	23	4.6 out of 5 stars
Men's Relaxed Fit Stretch Cargo Pant	23	4.4 out of 5 stars
Lee	22	4.3 out of 5 stars
Wrangler Authentics	20	4.4 out of 5 stars
Amazon Essentials	20	4.3 out of 5 stars
Dickies	19	4.6 out of 5 stars
Wrangler Authentics	18	4.5 out of 5 stars
Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging, Running	17	4.5 out of 5 stars
Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big & Tall)	17	4.3 out of 5 stars
Fruit of the Loom	11	4.5 out of 5 stars
Men's Original 874 Work Pants	11	4.4 out of 5 stars
G Gradual	9	4.3 out of 5 stars
ComfortSoft EcoSmart Men's Fleece Sweatpants	8	4.5 out of 5 stars
Men's Extreme Motion Flat Front Regular Straight Pant	8	4.3 out of 5 stars

```
## 24    17 4.5 out of 5 stars
## 25    17 4.3 out of 5 stars
## 26    11 4.5 out of 5 stars
## 27    11 4.4 out of 5 stars
## 28     9 4.3 out of 5 stars
## 29     8 4.5 out of 5 stars
## 30     8 4.3 out of 5 stars
```

```
pants_ranked %>%
  kable("latex", booktabs = TRUE) %>%
  kable_styling(latex_options = "scale_down")
```

High Price + High Rating: Products ranked at the top of each list with high prices and ratings are generally regarded as premium and popular choices within the category. Lower Price + High Rating: Products with lower prices but high ratings indicate affordable yet well-received options, highlighting value for money. #ok