

RWorksheet#5_group.Rmd

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```
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
```

```
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"
## [3] " Planet Earth"
## [5] " Chernobyl"
## [7] " Avatar: The Last Airbender"
## [9] " The Sopranos"
## [11] " Cosmos"
## [13] " Game of Thrones"
## [15] " The World at War"
## [17] " Rick and Morty"
## [19] " The Last Dance"
## [21] " The Vietnam War"
## [23] " Attack on Titan"

## [2] " Planet Earth II"
## [4] " Band of Brothers"
## [6] " The Wire"
## [8] " Blue Planet II"
## [10] " Cosmos: A Spacetime Odyssey"
## [12] " Our Planet"
## [14] " Bluey"
## [16] " Fullmetal Alchemist: Brotherhood"
## [18] " Life"
## [20] " The Twilight Zone"
## [22] " Sherlock"
## [24] " Batman: The Animated Series"

```

```

## [25] " Arcane"

yea = page %>% html_nodes(".sc-5bc66c50-6.00dsw.cli-title-metadata-item") %>% html_text()
year <- str_extract_all(yea, "\\b\\d{4}(?:-\\d{4})?\\b") %>% unlist()
year

## NULL

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-5bc66c50-6.00dsw.cli-title-metadata-item") %>%
html_text()
episodes <- str_extract_all(episode, "\\b\\d+ eps\\b") %>% unlist()
episodes

## NULL

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

## [1] " (2.2M)" " (162K)" " (224K)" " (546K)" " (908K)" " (391K)" " (390K)"
## [8] " (49K)" " (499K)" " (132K)" " (46K)" " (54K)" " (2.4M)" " (34K)"
## [15] " (31K)" " (209K)" " (628K)" " (44K)" " (160K)" " (97K)" " (30K)"
## [22] " (1M)" " (562K)" " (122K)" " (307K)"

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=chttvtp_i_13",
"https://www.imdb.com/title/tt7678620/?ref=chttvtp_i_14",
"https://www.imdb.com/title/tt0071075/?ref=chttvtp_i_15",
"https://www.imdb.com/title/tt1355642/?ref=chttvtp_i_16",
"https://www.imdb.com/title/tt2861424/?ref=chttvtp_i_17",
"https://www.imdb.com/title/tt1533395/?ref=chttvtp_i_18",
"https://www.imdb.com/title/tt8420184/?ref=chttvtp_i_19",
"https://www.imdb.com/title/tt0052520/?ref=chttvtp_i_20",
"https://www.imdb.com/title/tt1877514/?ref=chttvtp_i_21",
"https://www.imdb.com/title/tt1475582/?ref=chttvtp_i_22",
"https://www.imdb.com/title/tt2560140/?ref=chttvtp_i_23",
"https://www.imdb.com/title/tt0103359/?ref=chttvtp_i_24",
"https://www.imdb.com/title/tt0386676/?ref=chttvtp_i_25")

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

```

```
critic_reviews <- vector("numeric", length(urls))
for (i in seq_along(urls)) {

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

  webpage <- scrape(session)

  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] 5000 158 111 1000 3500 787 1000 53 964 205 80 245 5900 368 126
## [16] 466 911 12 541 213 175 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
```

```
max_length <- max(length(rank), length(title), length(year), length(rating), length(episodes), length(vote))
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)))
episodes <- c(episodes, rep(NA, max_length - length(episodes)))
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)))
max_length
```

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

```
movies = data.frame(rank, title, year, rating, episodes, vote, user_reviews, critic_reviews, stringsAsFactors = FALSE)
write.csv(movies, "movies.csv")
print(head(movies))
```

```
## rank title year rating episodes vote user_reviews
## 1 1. Breaking Bad NA 9.5 NA (2.2M) 5000
## 2 2. Planet Earth II NA 9.5 NA (162K) 158
## 3 3. Planet Earth NA 9.4 NA (224K) 111
## 4 4. Band of Brothers NA 9.4 NA (546K) 1000
## 5 5. Chernobyl NA 9.3 NA (908K) 3500
## 6 6. The Wire NA 9.3 NA (391K) 787
## critic_reviews
```

rank	title	year	rating	episodes	vote	user_reviews	critic_reviews
1.	Breaking Bad	NA	9.5	NA	(2.2M)	5000	175
2.	Planet Earth II	NA	9.5	NA	(162K)	158	6
3.	Planet Earth	NA	9.4	NA	(224K)	111	10
4.	Band of Brothers	NA	9.4	NA	(546K)	1000	34
5.	Chernobyl	NA	9.3	NA	(908K)	3500	88
6.	The Wire	NA	9.3	NA	(391K)	787	77
7.	Avatar: The Last Airbender	NA	9.3	NA	(390K)	1000	57
8.	Blue Planet II	NA	9.3	NA	(49K)	53	9
9.	The Sopranos	NA	9.2	NA	(499K)	964	93
10.	Cosmos: A Spacetime Odyssey	NA	9.2	NA	(132K)	205	12
11.	Cosmos	NA	9.3	NA	(46K)	80	8
12.	Our Planet	NA	9.2	NA	(54K)	245	15
13.	Game of Thrones	NA	9.2	NA	(2.4M)	5900	368
14.	Bluey	NA	9.3	NA	(34K)	368	4
15.	The World at War	NA	9.2	NA	(31K)	126	5
16.	Fullmetal Alchemist: Brotherhood	NA	9.1	NA	(209K)	466	16
17.	Rick and Morty	NA	9.1	NA	(628K)	911	94
18.	Life	NA	9.1	NA	(44K)	12	9
19.	The Last Dance	NA	9.0	NA	(160K)	541	28
20.	The Twilight Zone	NA	9.0	NA	(97K)	213	85
21.	The Vietnam War	NA	9.1	NA	(30K)	175	13
22.	Sherlock	NA	9.1	NA	(1M)	1000	121
23.	Attack on Titan	NA	9.1	NA	(562K)	2300	64
24.	Batman: The Animated Series	NA	9.0	NA	(122K)	219	25
25.	Arcane	NA	9.0	NA	(307K)	1700	76

```
## 1      175
## 2        6
## 3       10
## 4       34
## 5       88
## 6       77
```

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

```
link2 = "https://www.imdb.com/title/tt0903747/reviews/?ref_=tt_ov_ql_2"
page2 = read_html(link)
session2 <- bow(link, user_agent = "Educational")
session2
```

```
## <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
```

```
reviews <- page2 %>% html_nodes(".ipc-link--base") %>%
  html_text()
reviews
```

```
## [1] "Learn more about how list ranking is determined."
```

```

date <- page2 %>% html_nodes(".ipc-inline-list_item.review-date") %>%
  html_text()
date

```

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

```

user_rating <- page2 %>% html_nodes(".sc-a2ac93e5-4.gyib0i") %>%
  html_text()
user_rating

```

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

```

link1 = "https://www.imdb.com/chart/toptv/"
page1 = read_html(link)
session1 <- bow(link1, user_agent = "Educational")
session1

```

```

## <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

```

```

user_review = page %>% html_nodes(".score") %>% html_text()
user_review

```

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

```
library(ggplot2)
```

```

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

```

Number of TV Shows Released by Year

Number of TV Shows

Year

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

```
## [1] year n  
## <0 rows> (or 0-length row.names)
```

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

```
library(polite)  
library(kableExtra)  
library(rmarkdown)  
library(httr)  
library(rvest)  
library(dplyr)  
library(stringr)  
library(ggplot2)
```

```
urls <- c('https://www.amazon.com/s?k=skin+care&crid=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 Snail Mucin 96% Power Face Serum 3.38 fl
## 3
## 4
## 5 SKIN PERFECTING 2% BHA
## 6
## 7 SKIN Hydrated Ever After Skincare
## 8
## 9 Moisturizing Cream | Body and Face Moisturizer for Dry Skin | Body Cream with Hyal
## 10
## 11 Bio-Collagen
## 12
## 13 Toleriane Double Repair Face Moisturizer | Da
## 14
## 15 Facial Spr
## 16 Under Eye Patches, 40 Pairs Eye Mask for Dark Circles, Puffy Eyes, Undereye Bags,Wrinkles, Eye Mas
## 17 Pimple Patches for Face, Hydrocolloid Acne Patches, Cute Star Zit Covers,

```



```
## 18
## 19
## 20
## 21           Hydrating Facial Cleanser | Moisturizing Face Wash For Dry Skin | Hyaluronic Acid + C
## 22
## 23                                           Squeeze Me Lip Balm, Moisturiz
## 24
## 25           Makeup Headbands, 1pcs Black Spa Headband Fluffy Bow Tie Headband M
## 26
## 27                                           Vitar
## 28
## 29           Toleriane Purifying Foaming Facial Cleanser, Oil Free Face V
## 30

##      Price      Ratings
## 1      19. 4.6 out of 5 stars
## 2      35. 4.5 out of 5 stars
## 3      19. 4.5 out of 5 stars
## 4      17. 4.7 out of 5 stars
## 5      19. 4.3 out of 5 stars
## 6      23. 4.6 out of 5 stars
## 7       5. 4.5 out of 5 stars
## 8       8. 4.5 out of 5 stars
## 9       9. 4.4 out of 5 stars
## 10     21. 4.6 out of 5 stars
## 11     15. 4.7 out of 5 stars
## 12      4. 4.5 out of 5 stars
## 13      5. 4.5 out of 5 stars
## 14      8. 4.7 out of 5 stars
## 15     17. 4.7 out of 5 stars
## 16      8. 4.7 out of 5 stars
## 17     17. 4.3 out of 5 stars
## 18      5. 4.7 out of 5 stars
## 19      5. 4.6 out of 5 stars
## 20     17. 4.7 out of 5 stars
## 21     15. 4.5 out of 5 stars
## 22      4. 4.5 out of 5 stars
## 23     18. 4.5 out of 5 stars
## 24     18. 4.5 out of 5 stars
## 25      8. 4.3 out of 5 stars
## 26     14. 4.3 out of 5 stars
## 27     13. 4.6 out of 5 stars
## 28     22. 4.7 out of 5 stars
## 29      9. 4.6 out of 5 stars
## 30     13. 4.6 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)
```

nameofproduct_1..	Price	Ratings
COSRX	19.	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	35.	4.5 out of 5 stars
Amazon's Choice: Overall Pick	19.	4.5 out of 5 stars
Paula's Choice	17.	4.7 out of 5 stars
SKIN PERFECTING 2% BHA Liquid Salicylic Acid Exfoliant-Facial Exfoliant for Blackheads, Enlarged Pores, Wrinkles & Fine Lines	19.	4.3 out of 5 stars
e.l.f.	23.	4.6 out of 5 stars
SKIN Hydrated Ever After Skincare Mini Kit, Cleanser, Makeup Remover, Moisturiser & Eye Cream For Hydrating Skin, Airplane-Friendly Sizes	5.	4.5 out of 5 stars
CeraVe	8.	4.5 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	9.	4.4 out of 5 stars
BIODANCE	21.	4.6 out of 5 stars
Bio-Collagen Real Deep Mask, Hydrating Overnight Hydrogel Mask, Pore Minimizing, Elasticity Improvement, 34g x4ea	15.	4.7 out of 5 stars
La Roche-Posay	4.	4.5 out of 5 stars
Toleriane Double Repair Face Moisturizer Daily Moisturizer Face Cream with Ceramide and Niacinamide for All Skin Types Oil Free Fragrance Free	5.	4.5 out of 5 stars
Mario Badescu	8.	4.7 out of 5 stars
Facial Spray with Aloe, Herbs and Rose Water for All Skin Types, Face Mist that Hydrates, Rejuvenates & Clarifies	17.	4.7 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	8.	4.7 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	17.	4.3 out of 5 stars
LANEIGE	5.	4.7 out of 5 stars
Lip Sleeping Mask: Nourish, Hydrate, Vitamin C, Murumuru & Shea Butter, Antioxidants, Flaky, Dry Lips	5.	4.6 out of 5 stars
CeraVe	17.	4.7 out of 5 stars
Hydrating Facial Cleanser Moisturizing Face Wash For Dry Skin Hyaluronic Acid + Ceramides + Glycerin Hydrating Cleanser For Normal To Dry Skin National Eczema Association Certified	15.	4.5 out of 5 stars
e.l.f.	4.	4.5 out of 5 stars
Squeeze Me Lip Balm, Moisturizing Lip Balm For A Sheer Tint Of Color, Infused With Hyaluronic Acid, Vegan & Cruelty-free, Strawberry	18.	4.5 out of 5 stars
WSYUB	18.	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	8.	4.3 out of 5 stars
Tree Hut	14.	4.3 out of 5 stars
Vitamin C Shea Sugar Scrub, 18 oz, Ultra Hydrating and Exfoliating Scrub for Nourishing Essential Body Care	13.	4.6 out of 5 stars
La Roche-Posay	22.	4.7 out of 5 stars
Toleriane Purifying Foaming Facial Cleanser, Oil Free Face Wash for Oily Skin and for Sensitive Skin with Niacinamide, Pore Cleanser Won't Dry Out Skin, Unscented	9.	4.6 out of 5 stars
eos	13.	4.6 out of 5 stars

##	
## 1	
## 2	
## 3	
## 4	Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Long Lasting Arabian Perfume
## 5	Vera Wang P
## 6	Vera Wang Eau de Parfum for Women - Delicate, Floral Scent - Notes of
## 7	Versace Br
## 8	Ed Hardy Women's Perf
## 9	Victoria's
## 10	
## 11	Billie Eilish Eau de Parfum Spray Perfume for Women, Notes of Sugared Petals, Vanilla & Warm
## 12	
## 13	
## 14	Perfume High End Design
## 15	Victoria's Secret Bombshell Seduction Eau de Parfum, Notes of
## 16	Versace
## 17	KHADLAJ PERFUMES Hareem A
## 18	Marc .
## 19	Lucky You Perfume for Women, Eau De Toilette
## 20	Sol de .
## 21	Ariana Grande Cloud Eau de Parfum - Warm Gourmand Fragrance for Women -
## 22	Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear
## 23	
## 24	Al-Rehab Cho
## 25	
## 26	
## 27	Nautica Voyage Eau De Toilette for Men - Fresh, Romantic, Fruity Scent Woody, Aquatic Notes of App
## 28	Victoria's Secret Bombshell Mini Fragrance Mist, Notes of Purple Passion Fruit, Shangri-La Peon
## 29	Latta
## 30	
##	Price Ratings
## 1	22. 4.4 out of 5 stars
## 2	9. 4.5 out of 5 stars
## 3	22. 4.4 out of 5 stars

nameofproduct..2..	Price	Ratings
Amazon's Choice: Overall Pick	22.	4.4 out of 5 stars
Lattafa Yara for Women Eau de Parfum Spray, 3.40 Ounce / 100 ml	9.	4.5 out of 5 stars
Al-Rehab Choco Musk Eau de Parfum Spray for Women, 1.7 Ounce	22.	4.4 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	27.	4.6 out of 5 stars
Vera Wang Princess Eau de Toilette Spray for Women, Vanilla, 3.4 Fl Ounce	27.	4.7 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	73.	4.6 out of 5 stars
Versace Bright Crystal by Versace for Women 6.7 oz Eau de Toilette Spray	18.	4.6 out of 5 stars
Ed Hardy Women's Perfume Fragrance by Christian Audigier, Eau De Parfum, 3.4 Fl Oz	16.	4.6 out of 5 stars
Victoria's Secret Bare Vanilla Body Mist, Body Spray for Women (8.4 oz)	72.	4.6 out of 5 stars
Marc Jacobs Perfect Women 3.3 oz EDP Spray	52.	4.7 out of 5 stars
Billie Eilish Eau de Parfum Spray Perfume for Women, Notes of Sugared Petals, Vanilla & Warm Musk, Amber Gourmand Fragrance, Long Lasting, Everyday Scent	20.	4.4 out of 5 stars
Lattafa Yara Moi Eau de Parfum Spray for Women, 3.4 Ounce	18.	4.3 out of 5 stars
Hollister Wave Women Eau De Parfum, 3.4 Ounce	19.	4.7 out of 5 stars
Perfume High End Designer Fragrance Sampler Set for Women - (Pack of 12 Sample Vials)	42.	4.5 out of 5 stars
Victoria's Secret Bombshell Seduction Eau de Parfum, Notes of White Peony, Sage & Velvet Musk, Perfumes for Women (1.7 oz)	32.	4.5 out of 5 stars
Versace Miniature Variety Trio Collection Perfume Gift Set for Women	17.	4.6 out of 5 stars
KHADLAJ PERFUMES Hareem Al Sultan Gold Concentrated Perfume Oil for Unisex, 1.18 Ounce	69.	4.6 out of 5 stars
Marc Jacobs Daisy Eau So Fresh Eau de Toilette Spray-125ml/4.25 oz.	18.	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	25.	4.6 out of 5 stars
Sol de Janeiro Hair & Body Fragrance Mist Travel Size 90mL/3.0 fl oz.	48.	4.3 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	52.	4.6 out of 5 stars
Versace Bright Crystal Absolu Eau de Perfume Spray, 3.0 Ounce	6.	4.5 out of 5 stars
Al-Rehab Choco Musk Concentrated Perfume Rollerball for Unisex, 0.2 Ounce	17.	4.5 out of 5 stars
JAFRA Tender Moments Fresh Baby Cologne	82.	4.6 out of 5 stars
Gucci Bloom for Women Eau de Parfum Spray, 3.3 Ounce, Multi	19.	4.7 out of 5 stars
Lattafa Rave Now Eau de Parfum Spray for Women, 3.4 Ounce	18.	4.7 out of 5 stars
Nautica Voyage Eau De Toilette for Men - Fresh, Romantic, Fruity Scent Woody, Aquatic Notes of Apple, Water Lotus, Cedarwood, and Musk Ideal Day Wear 3.3 Fl Oz	13.	4.5 out of 5 stars
Victoria's Secret Bombshell Mini Fragrance Mist, Notes of Purple Passion Fruit, Shangri-La Peony & Vanilla Orchid, Travel Size Body Spray for Women (2.5 oz)	28.	4.4 out of 5 stars
Lattafa Perfumes Khamrah for Unisex Eau de Parfum Spray, 3.4 Ounce	3.	4.6 out of 5 stars
Perfume: The Story of a Murderer	47.	4.6 out of 5 stars

```
## 4    27. 4.6 out of 5 stars
## 5    27. 4.7 out of 5 stars
## 6    73. 4.6 out of 5 stars
## 7    18. 4.6 out of 5 stars
## 8    16. 4.6 out of 5 stars
## 9    72. 4.6 out of 5 stars
## 10   52. 4.7 out of 5 stars
## 11   20. 4.4 out of 5 stars
## 12   18. 4.3 out of 5 stars
## 13   19. 4.7 out of 5 stars
## 14   42. 4.5 out of 5 stars
## 15   32. 4.5 out of 5 stars
## 16   17. 4.6 out of 5 stars
## 17   69. 4.6 out of 5 stars
## 18   18. 4.7 out of 5 stars
## 19   25. 4.6 out of 5 stars
## 20   48. 4.3 out of 5 stars
## 21   52. 4.6 out of 5 stars
## 22    6. 4.5 out of 5 stars
## 23   17. 4.5 out of 5 stars
## 24   82. 4.6 out of 5 stars
## 25   19. 4.7 out of 5 stars
## 26   18. 4.7 out of 5 stars
## 27   13. 4.5 out of 5 stars
## 28   28. 4.4 out of 5 stars
## 29    3. 4.6 out of 5 stars
## 30   47. 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
## 3
## 4
## 5
## 6
## 7 Travel Backpack for Women, Carry On Backpack with USB Charging Port & Shoe Pouch, TSA 15.6inch Laptop Bag
## 8
## 9 Tote Bag for Women, Large Canvas Tote Bag for Women, Large Canvas Tote Bag for Women
## 10
## 11
## 12
## 13 Large Canvas Tote Bag for Women, Large Canvas Tote Bag for Women
## 14
## 15 Corduroy Tote Bag Cute Tote Bag for Women, Large Canvas Tote Bag for Women
## 16
## 17
## 18
## 19
## 20
## 21
## 22
## 23 Color-Block Crossbody Bag, Large Canvas Tote Bag for Women
## 24
## 25 Small Sling Backpack Crossbody Bag, Large Canvas Tote Bag for Women
## 26
## 27
## 28
## 29
## 30
## Price Ratings
## 1 29. 4.4 out of 5 stars
## 2 32. 4.7 out of 5 stars
## 3 58. 4.6 out of 5 stars
## 4 16. 4.7 out of 5 stars
## 5 17. 4.4 out of 5 stars
## 6 34. 4.5 out of 5 stars
## 7 61. 4.7 out of 5 stars
## 8 21. 4.6 out of 5 stars
## 9 8. 4.7 out of 5 stars
## 10 62. 4.6 out of 5 stars
## 11 24. 4.3 out of 5 stars
## 12 64. 4.5 out of 5 stars
## 13 29. 4.7 out of 5 stars
## 14 8. 4.3 out of 5 stars
## 15 39. 4.7 out of 5 stars
## 16 148. 4.4 out of 5 stars
## 17 35. 4.5 out of 5 stars
## 18 29. 4.6 out of 5 stars
```

nameofproduct..3.	Price	Ratings
Amazon's Choice: Overall Pick	29.	4.4 out of 5 stars
Michael Kors	32.	4.7 out of 5 stars
(Crossbody	58.	4.6 out of 5 stars
CYHTWSDJ	16.	4.7 out of 5 stars
Shoulder Bags for Women, Cute Hobo Tote Handbag Mini Clutch Purse with Zipper Closure	17.	4.4 out of 5 stars
Taygeer	34.	4.5 out of 5 stars
Travel Backpack for Women, Carry On Backpack with USB Charging Port & Shoe Pouch, TSA 15.6inch Laptop Backpack Flight Approved, Nurse Bag Casual Daypack for Weekender Business Hiking, Pink	61.	4.7 out of 5 stars
BAGSMART	21.	4.6 out of 5 stars
Tote Bag for Women, Lightweight Puffy Tote Bag with Compartments, Quilted Shoulder Bag Handbag for Travel, Work	8.	4.7 out of 5 stars
Michael Kors	62.	4.6 out of 5 stars
Crossbody, Brown	24.	4.3 out of 5 stars
ZHMO	64.	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	29.	4.7 out of 5 stars
TOPASION	8.	4.3 out of 5 stars
Corduroy Tote Bag Cute Tote Bags for Women Shoulder Bag with Inner Pocket for Work Beach Travel and Shopping Grocery	39.	4.7 out of 5 stars
Michael Kors	148.	4.4 out of 5 stars
Jet Set Travel Medium Logo Crossbody Bag	35.	4.5 out of 5 stars
Kipling	29.	4.6 out of 5 stars
Sabian Printed Crossbody Mini Bag	24.	4.5 out of 5 stars
Michael Kors	12.	4.5 out of 5 stars
Jet Set Travel Medium Logo Crossbody Bag	18.	4.7 out of 5 stars
TOP BAND	24.	4.6 out of 5 stars
Color-Block Crossbody Bags for Women Leather Cross Body Purses Cute Designer Handbags Shoulder Bag Medium Size	29.	4.5 out of 5 stars
Banelu	19.	4.6 out of 5 stars
Small Sling Backpack Crossbody Sling Bag, Chest Bag Daypack Fanny Pack Cross Body Bag for Outdoors Hiking Traveling	69.	4.6 out of 5 stars
Montana West	19.	4.4 out of 5 stars
Purses and Handbags for Women Tote Purse and Wallet Set Shoulder Satchel Bag for Women 3PCS	99.	4.6 out of 5 stars
Michael Kors	29.	4.6 out of 5 stars
Charlotte Large 3-in-1 Tote Crossbody Handbag Leather	65.	4.7 out of 5 stars
LOVEVOOK	29.	4.6 out of 5 stars

```
## 19    24. 4.5 out of 5 stars
## 20    12. 4.5 out of 5 stars
## 21    18. 4.7 out of 5 stars
## 22    24. 4.6 out of 5 stars
## 23    29. 4.5 out of 5 stars
## 24    19. 4.6 out of 5 stars
## 25    69. 4.6 out of 5 stars
## 26    19. 4.4 out of 5 stars
## 27    99. 4.6 out of 5 stars
## 28    29. 4.6 out of 5 stars
## 29    65. 4.7 out of 5 stars
## 30    29. 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                        Amazon's Choice: Overall Pick
## 2                        Under Armour
## 3                        Men's Charged Assert 10
## 4                        New Balance
## 5                        Men's 608 V5 Casual Comfort Cross Trainer
## 6                        adidas
## 7                        Men's Daily 3.0 Sneaker
## 8                        adidas
## 9                        Men's Lite Racer Adapt 7.0 Sneaker
## 10                       Hey Dude
## 11 Men's Wally Stretch | Men's Loafers | Men's Slip On Shoes | Comfortable & Light-Weight
## 12                       New Balance
## 13                       Women's 574 Core Sneaker
```

```

## 14
## 15
## 16
## 17 Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30
## Price Ratings
## 1 56. 4.5 out of 5 stars
## 2 64. 4.6 out of 5 stars
## 3 48. 4.7 out of 5 stars
## 4 47. 4.3 out of 5 stars
## 5 44. 4.7 out of 5 stars
## 6 89. 4.6 out of 5 stars
## 7 159. 4.5 out of 5 stars
## 8 40. 4.6 out of 5 stars
## 9 55. 4.6 out of 5 stars
## 10 38. 4.4 out of 5 stars
## 11 27. 4.4 out of 5 stars
## 12 48. 4.6 out of 5 stars
## 13 61. 4.4 out of 5 stars
## 14 45. 4.5 out of 5 stars
## 15 51. 4.6 out of 5 stars
## 16 63. 4.3 out of 5 stars
## 17 41. 4.5 out of 5 stars
## 18 69. 4.5 out of 5 stars
## 19 57. 4.4 out of 5 stars
## 20 39. 4.3 out of 5 stars
## 21 15. 4.6 out of 5 stars
## 22 69. 4.3 out of 5 stars
## 23 32. 4.5 out of 5 stars
## 24 55. 4.6 out of 5 stars
## 25 50. 4.3 out of 5 stars
## 26 44. 4.6 out of 5 stars
## 27 38. 4.4 out of 5 stars
## 28 41. 4.5 out of 5 stars
## 29 69. 4.3 out of 5 stars
## 30 85. 4.5 out of 5 stars

```

```

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

```

```

pants <- data.frame(nameofproduct[[5]],
  Price = price[[5]],

```

nameofproduct..4..	Price	Ratings
Amazon's Choice: Overall Pick	56.	4.5 out of 5 stars
Under Armour	64.	4.6 out of 5 stars
Men's Charged Assert 10	48.	4.7 out of 5 stars
New Balance	47.	4.3 out of 5 stars
Men's 608 V5 Casual Comfort Cross Trainer	44.	4.7 out of 5 stars
adidas	89.	4.6 out of 5 stars
Men's Daily 3.0 Sneaker	159.	4.5 out of 5 stars
adidas	40.	4.6 out of 5 stars
Men's Lite Racer Adapt 7.0 Sneaker	55.	4.6 out of 5 stars
Hey Dude	38.	4.4 out of 5 stars
Men's Wally Stretch Men's Loafers Men's Slip On Shoes Comfortable & Light-Weight	27.	4.4 out of 5 stars
New Balance	48.	4.6 out of 5 stars
Women's 574 Core Sneaker	61.	4.4 out of 5 stars
UGG	45.	4.5 out of 5 stars
Women's Classic Ultra Mini Platform Boot	51.	4.6 out of 5 stars
Bruno Marc	63.	4.3 out of 5 stars
Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes	41.	4.5 out of 5 stars
Under Armour	69.	4.5 out of 5 stars
Men's Charged Assert 9 Running Shoe	57.	4.4 out of 5 stars
Crocs	39.	4.3 out of 5 stars
Unisex Adult Classic Clog	15.	4.6 out of 5 stars
Levi's	69.	4.3 out of 5 stars
Men's Drive Lo Sneaker	32.	4.5 out of 5 stars
Under Armour	55.	4.6 out of 5 stars
Men's Charged Surge 4 Sneaker	50.	4.3 out of 5 stars
adidas	44.	4.6 out of 5 stars
mens Daily 4.0	38.	4.4 out of 5 stars
Skechers	41.	4.5 out of 5 stars
Men's Afterburn M. Fit	69.	4.3 out of 5 stars
Skechers	85.	4.5 out of 5 stars

```

Ratings = Ratings[[5]],
stringsAsFactors = FALSE
)
head(pants, 30)

```

```

##
## 1 Amazon's Choice for Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pattern
## 2 Wrangler Men's Relaxed Fit Straight Leg Chino Pant (Available in Multiple Colors)
## 3 U.S. Polo Assn. Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Multiple Colors)
## 4 3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Pockets, Relaxed Fit, Moisture Wicking Fabric
## 5 Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings, High-Waisted, Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waisted
## 6 Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pattern
## 7 ComfortSoft EcoSmart Men's Fleece Joggers, Lightweight Lounge Pants, Jersey Graphic Pattern
## 8 Eversoft Fleece Elastic Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking Fabric
## 9 High Waisted Leggings for Women - No See Through Tummy Control Cycling Workout Yoga Pants with Pockets, Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waisted
## 10 Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Regular Fit)
## 11 Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging, Running, Gym, Casual Wear
## 12 Men's Wrangler Authentics Men's Regular Fit Comfortable Chino Pant (Available in Multiple Colors)
## 13 3 Packs Leggings with Pockets for Women, Soft High Waisted Tummy Control Workout Yoga Pants with Pockets, Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waisted
##
## Price Ratings
## 1 25. 4.5 out of 5 stars
## 2 36. 4.4 out of 5 stars
## 3 24. 4.4 out of 5 stars
## 4 19. 4.4 out of 5 stars
## 5 17. 4.4 out of 5 stars
## 6 11. 4.3 out of 5 stars
## 7 12. 4.3 out of 5 stars
## 8 11. 4.3 out of 5 stars
## 9 19. 4.5 out of 5 stars
## 10 17. 4.3 out of 5 stars
## 11 29. 4.6 out of 5 stars
## 12 30. 4.3 out of 5 stars
## 13 30. 4.5 out of 5 stars
## 14 28. 4.5 out of 5 stars
## 15 13. 4.4 out of 5 stars
## 16 25. 4.3 out of 5 stars
## 17 28. 4.3 out of 5 stars

```


nameofproduct..5..	Price	Ratings
Amazon's Choice: Overall Pick	25.	4.5 out of 5 stars
Wrangler Authentics	36.	4.4 out of 5 stars
Men's Relaxed Fit Stretch Cargo Pant	24.	4.4 out of 5 stars
Ultra Performance	19.	4.4 out of 5 stars
3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper Pockets	17.	4.4 out of 5 stars
THE GYM PEOPLE	11.	4.3 out of 5 stars
Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings for Women	12.	4.3 out of 5 stars
Amazon Essentials	11.	4.3 out of 5 stars
Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big & Tall)	19.	4.5 out of 5 stars
Champion	17.	4.3 out of 5 stars
Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for Men, 31"	29.	4.6 out of 5 stars
Hanes	30.	4.3 out of 5 stars
ComfortSoft EcoSmart Men's Fleece Sweatpants	30.	4.5 out of 5 stars
Fruit of the Loom	28.	4.5 out of 5 stars
Eversoft Fleece Elastic Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Breathable	13.	4.4 out of 5 stars
TNNZEET	25.	4.3 out of 5 stars
High Waisted Leggings for Women - No See Through Tummy Control Cycling Workout Yoga Pants with Pockets Reg & Plus	28.	4.3 out of 5 stars
Sunzel	25.	4.6 out of 5 stars
Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waisted and Wide Leg	27.	4.3 out of 5 stars
Champion	18.	4.5 out of 5 stars
Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big & Tall)	22.	4.3 out of 5 stars
G Gradual	12.	4.4 out of 5 stars
Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging, Running	26.	4.3 out of 5 stars
Under Armour	34.	4.3 out of 5 stars
Men's Woven Vital Pants	34.	4.6 out of 5 stars
Wrangler Authentics	16.	4.5 out of 5 stars
Authentics Men's Regular Fit Comfort Flex Waist Jean	39.	4.3 out of 5 stars
Syrinx	19.	4.5 out of 5 stars
3 Packs Leggings with Pockets for Women, Soft High Waisted Tummy Control Workout Yoga Pants	29.	4.3 out of 5 stars
Rustler	49.	4.4 out of 5 stars

```
## 18    25. 4.6 out of 5 stars
## 19    27. 4.3 out of 5 stars
## 20    18. 4.5 out of 5 stars
## 21    22. 4.3 out of 5 stars
## 22    12. 4.4 out of 5 stars
## 23    26. 4.3 out of 5 stars
## 24    34. 4.3 out of 5 stars
## 25    34. 4.6 out of 5 stars
## 26    16. 4.5 out of 5 stars
## 27    39. 4.3 out of 5 stars
## 28    19. 4.5 out of 5 stars
## 29    29. 4.3 out of 5 stars
## 30    49. 4.4 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:

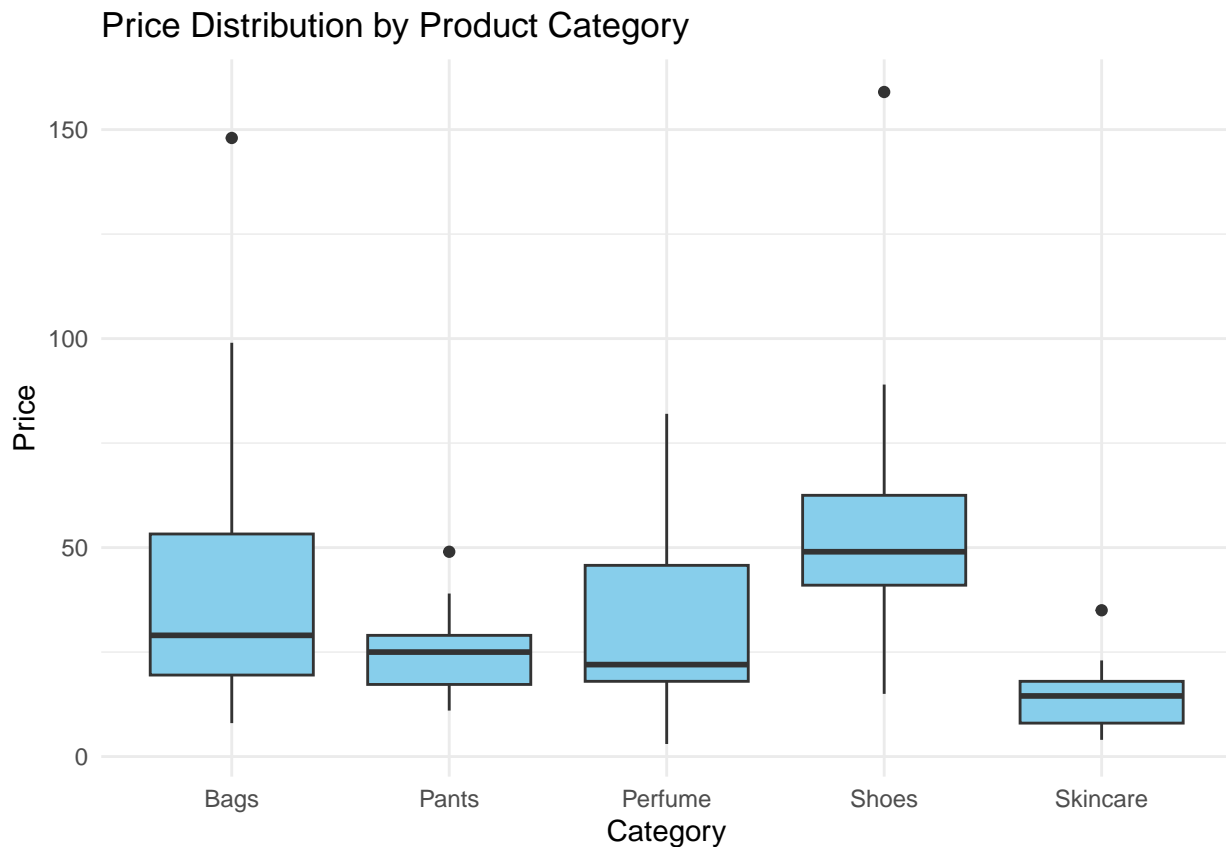
- Using the data to create visual insights for presentations or reports.

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.

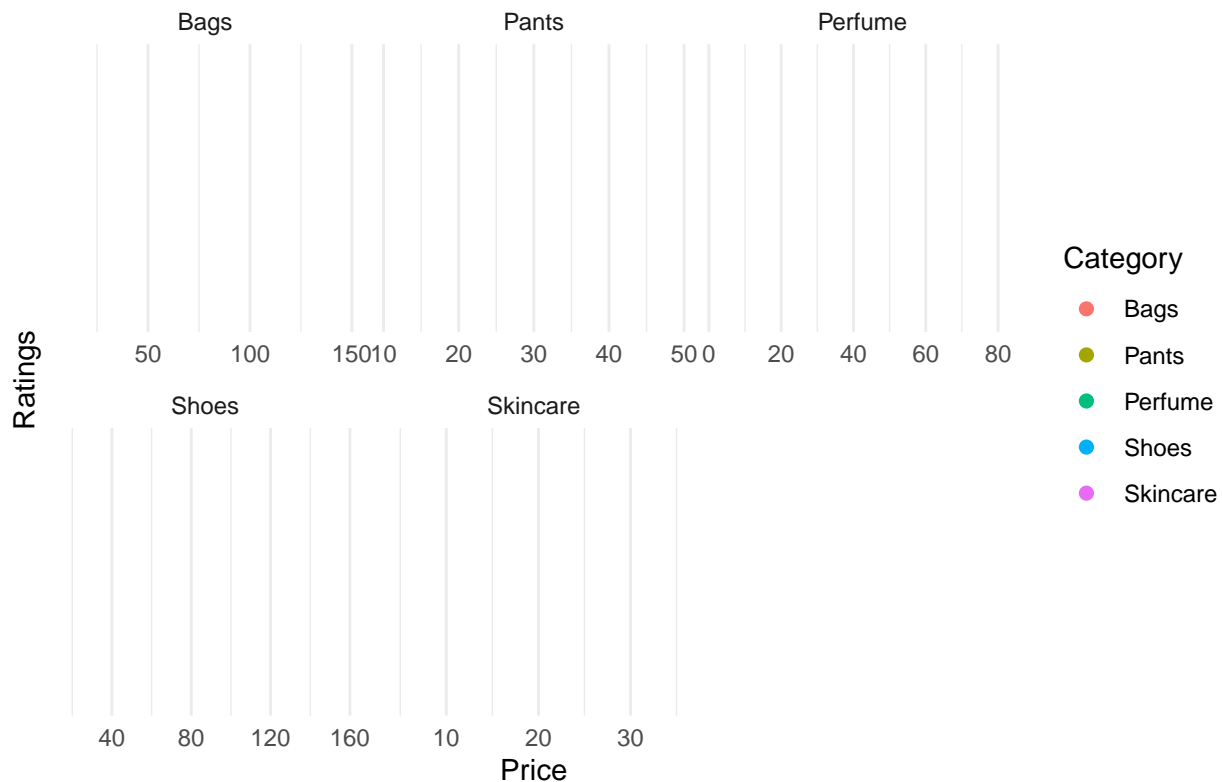
9. Graph the price and the ratings for each category. Use basic plotting functions and ggplot2 package.

```
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
```

```
Snail Mucin 96% Power Face Serum 3.38 fl
```

```
## 2
```

```
## 3
```

```
## 4
```

## 5	
## 6	
## 7	SKIN PERFECTING 2% BHA
## 8	Squeeze Me Lip Balm, Moisturizing
## 9	
## 10	
## 11	Facial Spray
## 12	
## 13	Pimple Patches for Face, Hydrocolloid Acne Patches, Cute Star Zit Covers, (
## 14	Bio-Collagen
## 15	Hydrating Facial Cleanser Moisturizing Face Wash For Dry Skin Hyaluronic Acid + C
## 16	
## 17	Vitamin
## 18	
## 19	Toleriane Purifying Foaming Facial Cleanser, Oil Free Face W
## 20	Moisturizing Cream Body and Face Moisturizer for Dry Skin Body Cream with Hya
## 21	
## 22	Under Eye Patches, 40 Pairs Eye Mask for Dark Circles, Puffy Eyes, Undereye Bags,Wrinkles, Eye Mas
## 23	
## 24	Makeup Headbands, 1pcs Black Spa Headband Fluffy Bow Tie Headband
## 25	
## 26	
## 27	SKIN Hydrated Ever After Skincare
## 28	Toleriane Double Repair Face Moisturizer Da
## 29	
## 30	
##	Price Ratings
## 1	35 4.5 out of 5 stars
## 2	23 4.6 out of 5 stars
## 3	22 4.7 out of 5 stars
## 4	21 4.6 out of 5 stars
## 5	19 4.6 out of 5 stars
## 6	19 4.5 out of 5 stars
## 7	19 4.3 out of 5 stars
## 8	18 4.5 out of 5 stars
## 9	18 4.5 out of 5 stars
## 10	17 4.7 out of 5 stars
## 11	17 4.7 out of 5 stars
## 12	17 4.7 out of 5 stars
## 13	17 4.3 out of 5 stars
## 14	15 4.7 out of 5 stars
## 15	15 4.5 out of 5 stars
## 16	14 4.3 out of 5 stars
## 17	13 4.6 out of 5 stars
## 18	13 4.6 out of 5 stars
## 19	9 4.6 out of 5 stars
## 20	9 4.4 out of 5 stars
## 21	8 4.7 out of 5 stars
## 22	8 4.7 out of 5 stars
## 23	8 4.5 out of 5 stars
## 24	8 4.3 out of 5 stars
## 25	5 4.7 out of 5 stars
## 26	5 4.6 out of 5 stars
## 27	5 4.5 out of 5 stars

nameofproduct...1..	Price	Ratings
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 e.l.f.	35	4.5 out of 5 stars
La Roche-Posay BIODANCE COSRX	23	4.6 out of 5 stars
Amazon's Choice: Overall Pick SKIN PERFECTING 2% BHA Liquid Salicylic Acid Exfoliant-Facial Exfoliant for Blackheads, Enlarged Pores, Wrinkles & Fine Lines	22	4.7 out of 5 stars
Squeeze Me Lip Balm, Moisturizing Lip Balm For A Sheer Tint Of Color, Infused With Hyaluronic Acid, Vegan & Cruelty-free, Strawberry WSYUB	21	4.6 out of 5 stars
Paula's Choice	19	4.6 out of 5 stars
Facial Spray with Aloe, Herbs and Rose Water for All Skin Types, Face Mist that Hydrates, Rejuvenates & Clarifies CeraVe	19	4.5 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	19	4.3 out of 5 stars
Bio-Collagen Real Deep Mask, Hydrating Overnight Hydrogel Mask, Pore Minimizing, Elasticity Improvement, 34g x4ea	17	4.3 out of 5 stars
Hydrating Facial Cleanser Moisturizing Face Wash For Dry Skin Hyaluronic Acid + Ceramides + Glycerin Hydrating Cleanser For Normal To Dry Skin National Eczema Association Certified	15	4.7 out of 5 stars
Tree Hut	15	4.5 out of 5 stars
Vitamin C Shea Sugar Scrub, 18 oz, Ultra Hydrating and Exfoliating Scrub for Nourishing Essential Body Care eos	14	4.3 out of 5 stars
Toleriane Purifying Foaming Facial Cleanser, Oil Free Face Wash for Oily Skin and for Sensitive Skin with Niacinamide, Pore Cleanser Won't Dry Out Skin, Unscented	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	9	4.6 out of 5 stars
Mario Badescu	9	4.4 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	8	4.7 out of 5 stars
CeraVe	8	4.7 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	8	4.5 out of 5 stars
LANEIGE	8	4.3 out of 5 stars
Lip Sleeping Mask: Nourish, Hydrate, Vitamin C, Murumuru & Shea Butter, Antioxidants, Flaky, Dry Lips	5	4.7 out of 5 stars
SKIN Hydrated Ever After Skincare Mini Kit, Cleanser, Makeup Remover, Moisturiser & Eye Cream For Hydrating Skin, Airplane-Friendly Sizes	5	4.6 out of 5 stars
Toleriane Double Repair Face Moisturizer Daily Moisturizer Face Cream with Ceramide and Niacinamide for All Skin Types Oil Free Fragrance Free	5	4.5 out of 5 stars
La Roche-Posay e.l.f.	4	4.5 out of 5 stars

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

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

```
head(perfume_ranked, 30)
```

```
##
## 1
## 2      Vera Wang Eau de Parfum for Women - Delicate, Floral Scent - Notes of
## 3      Victoria's Secret Bombshell Eau de Parfum, Notes of Purple Passion Fruit, Shangri-La Peonies
## 4      KHADLAJ PERFUMES Hareem Aoud, Notes of Cardamom, Saffron, and Amber
## 5
## 6      Ariana Grande Cloud Eau de Parfum - Warm Gourmand Fragrance for Women -
Women's Perfume with Notes of Lavender, Coconut, Vanilla & Pear
## 7      Sol de Janeiro Nectar of the Gods Eau de Parfum, Notes of Tiramisu,
## 8
## 9      Perfume High End Designers
## 10     Victoria's Secret Bombshell Seduction Eau de Parfum, Notes of Purple
## 11     Victoria's Secret Bombshell Mini Fragrance Mist, Notes of Purple Passion Fruit, Shangri-La Peonies
## 12     Vera Wang Pearl of the East Eau de Parfum, Notes of Cardamom, Saffron, and Amber
## 13     Swiss Arabian Layali Rouge - Luxury Arabian Perfume Oil from Dubai - Long Lasting Arabian Perfume
## 14     Lucky You Perfume for Women, Eau De Toilette
## 15
## 16
## 17     Billie Eilish Eau de Parfum Spray Perfume for Women, Notes of Sugared Petals, Vanilla & Warm
## 18
## 19
## 20     Marc Jacobs Daisy Eau de Toilette
## 21
## 22     Versace Bright Crystal Eau de Toilette
## 23
## 24     Versace Eros Eau de Toilette
## 25     Al-Rehab Charcoal Body Wash
## 26     Ed Hardy Women's Perfume
```

```
## 27 Nautica Voyage Eau De Toilette for Men - Fresh, Romantic, Fruity Scent Woody, Aquatic Notes of Apples,
## 28
## 29
## 30
##      Price      Ratings
## 1      82 4.6 out of 5 stars
## 2      73 4.6 out of 5 stars
## 3      72 4.6 out of 5 stars
## 4      69 4.6 out of 5 stars
## 5      52 4.7 out of 5 stars
## 6      52 4.6 out of 5 stars
## 7      48 4.3 out of 5 stars
## 8      47 4.6 out of 5 stars
## 9      42 4.5 out of 5 stars
## 10     32 4.5 out of 5 stars
## 11     28 4.4 out of 5 stars
## 12     27 4.7 out of 5 stars
## 13     27 4.6 out of 5 stars
## 14     25 4.6 out of 5 stars
## 15     22 4.4 out of 5 stars
## 16     22 4.4 out of 5 stars
## 17     20 4.4 out of 5 stars
## 18     19 4.7 out of 5 stars
## 19     19 4.7 out of 5 stars
## 20     18 4.7 out of 5 stars
## 21     18 4.7 out of 5 stars
## 22     18 4.6 out of 5 stars
## 23     18 4.3 out of 5 stars
## 24     17 4.6 out of 5 stars
## 25     17 4.5 out of 5 stars
## 26     16 4.6 out of 5 stars
## 27     13 4.5 out of 5 stars
## 28      9 4.5 out of 5 stars
## 29      6 4.5 out of 5 stars
## 30      3 4.6 out of 5 stars
```

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

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

```
##
## 1
## 2
## 3 Small Sling Backpack Crossbody Bag
## 4
## 5
## 6
## 7 Travel Backpack for Women, Carry On Backpack with USB Charging Port & Shoe Pouch, TSA 15.6inch Laptop Bag
## 8
## 9 Corduroy Tote Bag Cute Tote Bag
## 10
## 11
## 12
```

nameofproduct..2..	Price	Ratings
JAFRA Tender Moments Fresh Baby Cologne	82	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	73	4.6 out of 5 stars
Victoria's Secret Bare Vanilla Body Mist, Body Spray for Women (8.4 oz)	72	4.6 out of 5 stars
KHADLAJ PERFUMES Hareem Al Sultan Gold Concentrated Perfume Oil for Unisex, 1.18 Ounce	69	4.6 out of 5 stars
Marc Jacobs Perfect Women 3.3 oz EDP Spray	52	4.7 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	52	4.6 out of 5 stars
Sol de Janeiro Hair & Body Fragrance Mist Travel Size 90mL/3.0 fl oz.	48	4.3 out of 5 stars
Perfume: The Story of a Murderer	47	4.6 out of 5 stars
Perfume High End Designer Fragrance Sampler Set for Women - (Pack of 12 Sample Vials)	42	4.5 out of 5 stars
Victoria's Secret Bombshell Seduction Eau de Parfum, Notes of White Peony, Sage & Velvet Musk, Perfumes for Women (1.7 oz)	32	4.5 out of 5 stars
Victoria's Secret Bombshell Mini Fragrance Mist, Notes of Purple Passion Fruit, Shangri-La Peony & Vanilla Orchid, Travel Size Body Spray for Women (2.5 oz)	28	4.4 out of 5 stars
Vera Wang Princess Eau de Toilette Spray for Women, Vanilla, 3.4 Fl Ounce	27	4.7 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	27	4.6 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	25	4.6 out of 5 stars
Amazon's Choice: Overall Pick	22	4.4 out of 5 stars
Al-Rehab Choco Musk Eau de Parfum Spray for Women, 1.7 Ounce	22	4.4 out of 5 stars
Billie Eilish Eau de Parfum Spray Perfume for Women, Notes of Sugared Petals, Vanilla & Warm Musk, Amber Gourmand Fragrance, Long Lasting, Everyday Scent	20	4.4 out of 5 stars
Hollister Wave Women Eau De Parfum, 3.4 Ounce	19	4.7 out of 5 stars
Gucci Bloom for Women Eau de Parfum Spray, 3.3 Ounce, Multi	19	4.7 out of 5 stars
Marc Jacobs Daisy Eau So Fresh Eau de Toilette Spray-125ml/4.25 oz.	18	4.7 out of 5 stars
Lattafa Rave Now Eau de Parfum Spray for Women, 3.4 Ounce	18	4.7 out of 5 stars
Versace Bright Crystal by Versace for Women 6.7 oz Eau de Toilette Spray	18	4.6 out of 5 stars
Lattafa Yara Moi Eau de Parfum Spray for Women, 3.4 Ounce	18	4.3 out of 5 stars
Versace Miniature Variety Trio Collection Perfume Gift Set for Women	17	4.6 out of 5 stars
Al-Rehab Choco Musk Concentrated Perfume Rollerball for Unisex, 0.2 Ounce	17	4.5 out of 5 stars
Ed Hardy Women's Perfume Fragrance by Christian Audigier, Eau De Parfum, 3.4 Fl Oz	16	4.6 out of 5 stars
Nautica Voyage Eau De Toilette for Men - Fresh, Romantic, Fruity Scent Woody, Aquatic Notes of Apple, Water Lotus, Cedarwood, and Musk Ideal Day Wear 3.3 Fl Oz	13	4.5 out of 5 stars
Lattafa Yara for Women Eau de Parfum Spray, 3.40 Ounce / 100 ml	9	4.5 out of 5 stars
Versace Bright Crystal Absolu Eau de Perfume Spray, 3.0 Ounce	6	4.5 out of 5 stars
Lattafa Perfumes Khamrah for Unisex Eau de Parfum Spray, 3.4 Ounce	3	4.6 out of 5 stars

13

14

15

16

17

18

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20

21

22

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24

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Price Ratings

1 148 4.4 out of 5 stars

2 99 4.6 out of 5 stars

3 69 4.6 out of 5 stars

4 65 4.7 out of 5 stars

5 64 4.5 out of 5 stars

6 62 4.6 out of 5 stars

7 61 4.7 out of 5 stars

8 58 4.6 out of 5 stars

9 39 4.7 out of 5 stars

10 35 4.5 out of 5 stars

11 34 4.5 out of 5 stars

12 32 4.7 out of 5 stars

13 29 4.7 out of 5 stars

14 29 4.6 out of 5 stars

15 29 4.6 out of 5 stars

Large Canvas Tote Bag for Women

Color-Block Crossbody Bag

Tote Bag for Women, Large

nameofproduct..3..	Price	Ratings
Michael Kors	148	4.4 out of 5 stars
Purses and Handbags for Women Tote Purse and Wallet Set Shoulder Satchel Bag for Women 3PCS	99	4.6 out of 5 stars
Small Sling Backpack Crossbody Sling Bag, Chest Bag Daypack Fanny Pack Cross Body Bag for Outdoors Hiking Traveling	69	4.6 out of 5 stars
Charlotte Large 3-in-1 Tote Crossbody Handbag Leather	65	4.7 out of 5 stars
ZHMO	64	4.5 out of 5 stars
Michael Kors	62	4.6 out of 5 stars
Travel Backpack for Women, Carry On Backpack with USB Charging Port & Shoe Pouch, TSA 15.6inch Laptop Backpack Flight Approved, Nurse Bag Casual Daypack for Weekender Business Hiking, Pink	61	4.7 out of 5 stars
(Crossbody	58	4.6 out of 5 stars
Corduroy Tote Bag Cute Tote Bags for Women Shoulder Bag with Inner Pocket for Work Beach Travel and Shopping Grocery	39	4.7 out of 5 stars
Jet Set Travel Medium Logo Crossbody Bag	35	4.5 out of 5 stars
Taygeer	34	4.5 out of 5 stars
Michael Kors	32	4.7 out of 5 stars
Large Canvas Tote Bag for Women,Womens Laptop Work Book Bags Crossbody Purse Handbag Shoulder Travel Messenger Gym Totes	29	4.7 out of 5 stars
Kipling	29	4.6 out of 5 stars
Michael Kors	29	4.6 out of 5 stars
LOVEVOOK	29	4.6 out of 5 stars
Color-Block Crossbody Bags for Women Leather Cross Body Purses Cute Designer Handbags Shoulder Bag Medium Size	29	4.5 out of 5 stars
Amazon's Choice: Overall Pick	29	4.4 out of 5 stars
TOP BAND	24	4.6 out of 5 stars
Sabian Printed Crossbody Mini Bag	24	4.5 out of 5 stars
Crossbody, Brown	24	4.3 out of 5 stars
BAGSMART	21	4.6 out of 5 stars
Banehu	19	4.6 out of 5 stars
Montana West	19	4.4 out of 5 stars
Jet Set Travel Medium Logo Crossbody Bag	18	4.7 out of 5 stars
Shoulder Bags for Women, Cute Hobo Tote Handbag Mini Clutch Purse with Zipper Closure	17	4.4 out of 5 stars
CYHTWSDJ	16	4.7 out of 5 stars
Michael Kors	12	4.5 out of 5 stars
Tote Bag for Women, Lightweight Puffy Tote Bag with Compartments, Quilted Shoulder Bag Handbag for Travel, Work	8	4.7 out of 5 stars
TOPASION	8	4.3 out of 5 stars

```
## 16      29 4.6 out of 5 stars
## 17      29 4.5 out of 5 stars
## 18      29 4.4 out of 5 stars
## 19      24 4.6 out of 5 stars
## 20      24 4.5 out of 5 stars
## 21      24 4.3 out of 5 stars
## 22      21 4.6 out of 5 stars
## 23      19 4.6 out of 5 stars
## 24      19 4.4 out of 5 stars
## 25      18 4.7 out of 5 stars
## 26      17 4.4 out of 5 stars
## 27      16 4.7 out of 5 stars
## 28      12 4.5 out of 5 stars
## 29         8 4.7 out of 5 stars
## 30         8 4.3 out of 5 stars
```

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

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

```
##                                nameofproduct..4..
## 1                        Men's Daily 3.0 Sneaker
## 2                                adidas
## 3                                Skechers
## 4                        Under Armour
## 5                                Levi's
## 6                        Men's Afterburn M. Fit
## 7                        Under Armour
## 8                                Bruno Marc
## 9                        Women's 574 Core Sneaker
## 10                       Men's Charged Assert 9 Running Shoe
## 11                       Amazon's Choice: Overall Pick
## 12                       Men's Lite Racer Adapt 7.0 Sneaker
## 13                                Under Armour
## 14                       Women's Classic Ultra Mini Platform Boot
## 15                       Men's Charged Surge 4 Sneaker
```

```

## 16                                     Men's Charged Assert 10
## 17                                     New Balance
## 18                                     New Balance
## 19                                     UGG
## 20                                     Men's 608 V5 Casual Comfort Cross Trainer
## 21                                     adidas
## 22   Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes
## 23                                     Skechers
## 24                                     adidas
## 25                                     Crocs
## 26                                     Hey Dude
## 27                                     mens Daily 4.0
## 28                                     Men's Drive Lo Sneaker
## 29 Men's Wally Stretch | Men's Loafers | Men's Slip On Shoes | Comfortable & Light-Weight
## 30                                     Unisex Adult Classic Clog
##      Price           Ratings
## 1      159 4.5 out of 5 stars
## 2       89 4.6 out of 5 stars
## 3       85 4.5 out of 5 stars
## 4       69 4.5 out of 5 stars
## 5       69 4.3 out of 5 stars
## 6       69 4.3 out of 5 stars
## 7       64 4.6 out of 5 stars
## 8       63 4.3 out of 5 stars
## 9       61 4.4 out of 5 stars
## 10      57 4.4 out of 5 stars
## 11      56 4.5 out of 5 stars
## 12      55 4.6 out of 5 stars
## 13      55 4.6 out of 5 stars
## 14      51 4.6 out of 5 stars
## 15      50 4.3 out of 5 stars
## 16      48 4.7 out of 5 stars
## 17      48 4.6 out of 5 stars
## 18      47 4.3 out of 5 stars
## 19      45 4.5 out of 5 stars
## 20      44 4.7 out of 5 stars
## 21      44 4.6 out of 5 stars
## 22      41 4.5 out of 5 stars
## 23      41 4.5 out of 5 stars
## 24      40 4.6 out of 5 stars
## 25      39 4.3 out of 5 stars
## 26      38 4.4 out of 5 stars
## 27      38 4.4 out of 5 stars
## 28      32 4.5 out of 5 stars
## 29      27 4.4 out of 5 stars
## 30      15 4.6 out of 5 stars

```

```

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

head(pants_ranked, 30)

```

```

##
## 1

```

na

nameofproduct..4..	Price	Ratings
Men's Daily 3.0 Sneaker	159	4.5 out of 5 stars
adidas	89	4.6 out of 5 stars
Skechers	85	4.5 out of 5 stars
Under Armour	69	4.5 out of 5 stars
Levi's	69	4.3 out of 5 stars
Men's Afterburn M. Fit	69	4.3 out of 5 stars
Under Armour	64	4.6 out of 5 stars
Bruno Marc	63	4.3 out of 5 stars
Women's 574 Core Sneaker	61	4.4 out of 5 stars
Men's Charged Assert 9 Running Shoe	57	4.4 out of 5 stars
Amazon's Choice: Overall Pick	56	4.5 out of 5 stars
Men's Lite Racer Adapt 7.0 Sneaker	55	4.6 out of 5 stars
Under Armour	55	4.6 out of 5 stars
Women's Classic Ultra Mini Platform Boot	51	4.6 out of 5 stars
Men's Charged Surge 4 Sneaker	50	4.3 out of 5 stars
Men's Charged Assert 10	48	4.7 out of 5 stars
New Balance	48	4.6 out of 5 stars
New Balance	47	4.3 out of 5 stars
UGG	45	4.5 out of 5 stars
Men's 608 V5 Casual Comfort Cross Trainer	44	4.7 out of 5 stars
adidas	44	4.6 out of 5 stars
Men's KnitFlex Breeze Mesh Sneakers Oxfords Lace-Up Lightweight Casual Walking Shoes	41	4.5 out of 5 stars
Skechers	41	4.5 out of 5 stars
adidas	40	4.6 out of 5 stars
Crocs	39	4.3 out of 5 stars
Hey Dude	38	4.4 out of 5 stars
mens Daily 4.0	38	4.4 out of 5 stars
Men's Drive Lo Sneaker	32	4.5 out of 5 stars
Men's Wally Stretch Men's Loafers Men's Slip On Shoes Comfortable & Light-Weight	27	4.4 out of 5 stars
Unisex Adult Classic Clog	15	4.6 out of 5 stars

2 Authentics Men's Regular Fit Comfort
 ## 3 Wrangle
 ## 4 Men's Wrangle
 ## 5
 ## 6 ComfortSoft EcoSmart Men's F
 ## 7
 ## 8 Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pa
 ## 9 3 Packs Leggings with Pockets for Women, Soft High Waisted Tummy Control Wo
 ## 10 F
 ## 11 High Waisted Leggings for Women - No See Through Tummy Control Cycling Workout Yoga Pants with Po
 ## 12 Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waist
 ## 13 Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, J
 ## 14
 ## 15 Amazon's Choi
 ## 16
 ## 17 Men's Relaxed Fit St
 ## 18 Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg
 ## 19 Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Availabl
 ## 20
 ## 21 U
 ## 22
 ## 23 3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with
 ## 24
 ## 25 Wrangle
 ## 26 Eversoft Fleece Elastic Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wick
 ## 27
 ## 28 Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leg
 ## 29
 ## 30 An
 ## Price Ratings
 ## 1 49 4.4 out of 5 stars
 ## 2 39 4.3 out of 5 stars
 ## 3 36 4.4 out of 5 stars
 ## 4 34 4.6 out of 5 stars
 ## 5 34 4.3 out of 5 stars
 ## 6 30 4.5 out of 5 stars
 ## 7 30 4.3 out of 5 stars
 ## 8 29 4.6 out of 5 stars
 ## 9 29 4.3 out of 5 stars
 ## 10 28 4.5 out of 5 stars
 ## 11 28 4.3 out of 5 stars
 ## 12 27 4.3 out of 5 stars
 ## 13 26 4.3 out of 5 stars
 ## 14 25 4.6 out of 5 stars
 ## 15 25 4.5 out of 5 stars
 ## 16 25 4.3 out of 5 stars
 ## 17 24 4.4 out of 5 stars
 ## 18 22 4.3 out of 5 stars
 ## 19 19 4.5 out of 5 stars
 ## 20 19 4.5 out of 5 stars
 ## 21 19 4.4 out of 5 stars
 ## 22 18 4.5 out of 5 stars
 ## 23 17 4.4 out of 5 stars
 ## 24 17 4.3 out of 5 stars

nameofproduct..5..	Price	Ratings
Rustler	49	4.4 out of 5 stars
Authentic Men's Regular Fit Comfort Flex Waist Jean	39	4.3 out of 5 stars
Wrangler Authentics	36	4.4 out of 5 stars
Men's Woven Vital Pants	34	4.6 out of 5 stars
Under Armour	34	4.3 out of 5 stars
ComfortSoft EcoSmart Men's Fleece Sweatpants	30	4.5 out of 5 stars
Hanes	30	4.3 out of 5 stars
Men's Joggers, Lightweight Lounge Pants, Jersey Graphic Pants for Men, 31"	29	4.6 out of 5 stars
3 Packs Leggings with Pockets for Women, Soft High Waisted Tummy Control Workout Yoga Pants	29	4.3 out of 5 stars
Fruit of the Loom	28	4.5 out of 5 stars
High Waisted Leggings for Women - No See Through Tummy Control Cycling Workout Yoga Pants with Pockets Reg & Plus	28	4.3 out of 5 stars
Flare Leggings, Crossover Yoga Pants with Tummy Control, High-Waisted and Wide Leg	27	4.3 out of 5 stars
Men's Sweatpants with Zipper Pockets Tapered Joggers for Men Athletic Pants for Workout, Jogging, Running	26	4.3 out of 5 stars
Sunzel	25	4.6 out of 5 stars
Amazon's Choice: Overall Pick	25	4.5 out of 5 stars
TNNZEET	25	4.3 out of 5 stars
Men's Relaxed Fit Stretch Cargo Pant	24	4.4 out of 5 stars
Men's Pants, Lightweight Open-Hem Lounge Pants for Men, Jersey Pants (Reg. or Big & Tall)	22	4.3 out of 5 stars
Men's Classic-Fit Wrinkle-Resistant Flat-Front Chino Pant (Available in Big & Tall)	19	4.5 out of 5 stars
Syrinx	19	4.5 out of 5 stars
Ultra Performance	19	4.4 out of 5 stars
Champion	18	4.5 out of 5 stars
3 Pack Fleece Active Tech Joggers for Men, Mens Sweatpants with Zipper Pockets	17	4.4 out of 5 stars
Champion	17	4.3 out of 5 stars
Wrangler Authentics	16	4.5 out of 5 stars
Eversoft Fleece Elastic Bottom Sweatpants with Pockets, Relaxed Fit, Moisture Wicking, Breathable	13	4.4 out of 5 stars
G Gradual	12	4.4 out of 5 stars
Thick High Waist Yoga Pants with Pockets, Tummy Control Workout Running Yoga Leggings for Women	12	4.3 out of 5 stars
THE GYM PEOPLE	11	4.3 out of 5 stars
Amazon Essentials	11	4.3 out of 5 stars

```
## 25    16 4.5 out of 5 stars
## 26    13 4.4 out of 5 stars
## 27    12 4.4 out of 5 stars
## 28    12 4.3 out of 5 stars
## 29    11 4.3 out of 5 stars
## 30    11 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.

#ffdgbfhanafghrjfbfrfsjvbmsnfhdjsdg