COMPARING THE RECOMMENDATION SYSTEM OF LEADING ECOMMERCE WEBSITES AMAZON,BIGBASKET , FLIPKART ON INTEGRATED DATA

IMPORING THE LIBRARIES AND PACKAGES

```
!pip install scrapy
!pip install tabulate

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import os
import logging
import json
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import scrapy
from scrapy.crawler import CrawlerProcess
from glob import glob
import glob, os
from ipywidgets import widgets
from IPython.display import display, clear_output
from tabulate import tabulate
pd.set_option('display.max_colwidth', None)
import warnings
warnings.filterwarnings('ignore')
CONST_USER_AGENT = 'Mozilla/4.0 (compatible; MSIE 7.0; Windows NT
5.1)'

CONST_PRODUCT = 'Product'
CONST_URL = 'Url'
CONST_PLATFORM = 'Platform'

CONST_MAX_PAGE_COUNT = 'Max_Page_Count'
CONST_PRODUCT_NAME = 'Product_Name'
CONST_PRODUCT_COST = 'Product_Cost'

CONST_PRODUCT_BEVERAGES = 'Beverages'
CONST_PRODUCT_BEVERAGES_TEA = 'Tea'
CONST_PRODUCT_BEVERAGES_COFFEE = 'Coffee'
CONST_PRODUCT_GROCERRIES = 'Grocery'
CONST_PRODUCT_MASALA_AND_SPICES = 'Masala & Spices'

CONST_PLATFORM_BIGBASKET = 'BigBasket'
CONST_PLATFORM_AMAZON = 'Amazon'
CONST_PLATFORM_FLIPKART = 'Flipkart'

CONST_DF_FORMAT_CSV = '.csv'
```

```python
CONST_DF_FORMAT_JSON = '.json'

CONST_NOT_APPLICABLE = 'N/A'
```

Looking in indexes: https://pypi.org/simple, https://us-
python.pkg.dev/colab-wheels/public/simple/
Collecting scrapy
  Downloading Scrapy-2.7.1-py2.py3-none-any.whl (271 kB)
anylinux_2_24_x86_64.whl (4.1 MB)
ent already satisfied: lxml>=4.3.0 in /usr/local/lib/python3.7/dist-
packages (from scrapy) (4.9.1)
Collecting parsel>=1.5.0
  Downloading parsel-1.7.0-py2.py3-none-any.whl (14 kB)
Collecting tldextract
  Downloading tldextract-3.4.0-py3-none-any.whl (93 kB)
-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux
2010_x86_64.whl (254 kB)
loaders>=1.0.1
  Downloading itemloaders-1.0.6-py3-none-any.whl (11 kB)
Collecting queuelib>=1.4.2
  Downloading queuelib-1.6.2-py2.py3-none-any.whl (13 kB)
Collecting service-identity>=18.1.0
  Downloading service_identity-21.1.0-py2.py3-none-any.whl (12 kB)
Requirement already satisfied: setuptools in
/usr/local/lib/python3.7/dist-packages (from scrapy) (57.4.0)
Requirement already satisfied: packaging in
/usr/local/lib/python3.7/dist-packages (from scrapy) (21.3)
Collecting PyDispatcher>=2.0.5
  Downloading PyDispatcher-2.0.6.tar.gz (38 kB)
Collecting w3lib>=1.17.0
  Downloading w3lib-2.0.1-py3-none-any.whl (20 kB)
Collecting Twisted>=18.9.0
  Downloading Twisted-22.10.0-py3-none-any.whl (3.1 MB)
adapter>=0.1.0
  Downloading itemadapter-0.7.0-py3-none-any.whl (10 kB)
Requirement already satisfied: cffi>=1.12 in
/usr/local/lib/python3.7/dist-packages (from cryptography>=3.3-
>scrapy) (1.15.1)
Requirement already satisfied: pycparser in
/usr/local/lib/python3.7/dist-packages (from cffi>=1.12-
>cryptography>=3.3->scrapy) (2.21)
Collecting jmespath>=0.9.5
  Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)
Requirement already satisfied: six in /usr/local/lib/python3.7/dist-
packages (from protego>=0.1.15->scrapy) (1.15.0)
Requirement already satisfied: pyasn1 in
/usr/local/lib/python3.7/dist-packages (from service-identity>=18.1.0-
>scrapy) (0.4.8)
Requirement already satisfied: attrs>=19.1.0 in

```
/usr/local/lib/python3.7/dist-packages (from service-identity>=18.1.0-
>scrapy) (22.1.0)
Requirement already satisfied: pyasn1-modules in
/usr/local/lib/python3.7/dist-packages (from service-identity>=18.1.0-
>scrapy) (0.2.8)
Requirement already satisfied: typing-extensions>=3.6.5 in
/usr/local/lib/python3.7/dist-packages (from Twisted>=18.9.0->scrapy)
(4.1.1)
Collecting hyperlink>=17.1.1
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at>=0.8.0
  Downloading Automat-22.10.0-py2.py3-none-any.whl (26 kB)
Collecting constantly>=15.1
  Downloading constantly-15.1.0-py2.py3-none-any.whl (7.9 kB)
Collecting incremental>=21.3.0
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Requirement already satisfied: idna>=2.5 in
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>Twisted>=18.9.0->scrapy) (2.10)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in
/usr/local/lib/python3.7/dist-packages (from packaging->scrapy)
(3.0.9)
Requirement already satisfied: requests>=2.1.0 in
/usr/local/lib/python3.7/dist-packages (from tldextract->scrapy)
(2.23.0)
Requirement already satisfied: filelock>=3.0.8 in
/usr/local/lib/python3.7/dist-packages (from tldextract->scrapy)
(3.8.0)
Collecting requests-file>=1.4
  Downloading requests_file-1.5.1-py2.py3-none-any.whl (3.7 kB)
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1
in /usr/local/lib/python3.7/dist-packages (from requests>=2.1.0-
>tldextract->scrapy) (1.24.3)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.7/dist-packages (from requests>=2.1.0-
>tldextract->scrapy) (2022.9.24)
Requirement already satisfied: chardet<4,>=3.0.2 in
/usr/local/lib/python3.7/dist-packages (from requests>=2.1.0-
>tldextract->scrapy) (3.0.4)
Building wheels for collected packages: PyDispatcher
  Building wheel for PyDispatcher (setup.py) ... e=PyDispatcher-2.0.6-
py3-none-any.whl size=11958
sha256=7be5fc5e0e21ec9c6d86068f26a8016faaf05a665c8ad3cf42c99d12595512e
6
  Stored in directory:
/root/.cache/pip/wheels/c9/d6/6a/de198d890277cde60ca3dbebe7ae592d3b381
c7d9bb2455f4d
Successfully built PyDispatcher
Installing collected packages: w3lib, cssselect, zope.interface,
requests-file, parsel, jmespath, itemadapter, incremental, hyperlink,
```

```
cryptography, constantly, Automat, Twisted, tldextract, service-
identity, queuelib, pyOpenSSL, PyDispatcher, protego, itemloaders,
scrapy
Successfully installed Automat-22.10.0 PyDispatcher-2.0.6 Twisted-
22.10.0 constantly-15.1.0 cryptography-38.0.3 cssselect-1.2.0
hyperlink-21.0.0 incremental-22.10.0 itemadapter-0.7.0 itemloaders-
1.0.6 jmespath-1.0.1 parsel-1.7.0 protego-0.2.1 pyOpenSSL-22.1.0
queuelib-1.6.2 requests-file-1.5.1 scrapy-2.7.1 service-identity-
21.1.0 tldextract-3.4.0 w3lib-2.0.1 zope.interface-5.5.0
Looking in indexes: https://pypi.org/simple, https://us-
python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: tabulate in
/usr/local/lib/python3.7/dist-packages (0.8.10)
ERROR: Invalid requirement: 'scrapyn!pip'
```

PREPROCESSING AMAZON DATASET

```
df_amazon = pd.read_csv("/content/drive/MyDrive/product.csv")
df_amazon.head()
```

```
   Unnamed: 0        asin  avg.rating  avg.helpful.ratio  \
0           1  7806397051        2.50                NaN
1           2  9759091062        3.09                NaN
2           3  9788072216        5.00                NaN
3           4  9790790961        4.60                NaN
4           5  9790794231        4.50                NaN


also_bought  \
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'B00KS4FDL0', 'B00GBTX1GO', 'B00FYVOG1Y', 'B009WJCEMM', 'B00ID5PRQQ',
'B00IIG7UQ0', 'B0068Y0EXK', 'B00JFLRCOW', 'B009NAE91E', 'B00B4YVU4G',
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'B00K407VOO', 'B00GMDIKV0', 'B00KWSCOZO', 'B00EL1HZ34', 'B00HKA110G',
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'B002XQ1SQ4', 'B003HUP0H8', 'B008KS9VBS', 'B006C50HSI', 'B00727PMYS',
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'B000O2T3DY', 'B000U83UAY', 'B00502JMIY', 'B00AH5IOGA', 'B00FYVJ8FI',
'B00GZP041Y', 'B007P7OPQQ', 'B0072CYRKI', 'B00GZP076Q', 'B007TTFT1A',
'B0079VZFSA', 'B002GZVV96', 'B000KRZD4Q', 'B00EN6BR7W', 'B005YEMNJI',
'B004QN72CG', '9790791976', 'B000MX5NVQ', 'B0072CUKQS', 'B0072CTK5K',
'B004VUBNQU', 'B0084HM1DA', 'B000AQF50Y', 'B000U66I0A', 'B000XE5260',
'B001JQ6072', 'B0013FPN1W', 'B00BPZ1UJE', 'B0057ZFWA6', 'B0079VYMDY',
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 'B002JISTS6', 'B001D1ISOK', 'B0079VVTAS', 'B0072CTQHW', 'B00751QWQS',
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 'B0009N103E', 'B00BOJZE5M', 'B0079VS8M0', 'B0072CVWRE', 'B0079W1VJQ',
 'B000AQF50Y', 'B008HLP3WY', 'B00CPDJHU4']
```

```
            brand  \
0             COKA
1      Xtreme Brite
2            Prada
3          Versace
4
```

```
categories  \
0              [['Beauty', 'Makeup', 'Face', 'Concealers &
Neutralizers']]
1  [['Beauty', 'Hair Care', 'Styling Products', 'Creams, Gels &
Lotions']]
2                    [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]
3                    [['Beauty', 'Fragrance', "Women's", 'Eau de
Toilette']]
4                    [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]
```

```
description  \
0  An extensive range of 15 multiple vibrant long wear concealer
colour with different skin tones to create more than 10,000 amazing
looks. Using the most commonly applied shades, ensures the best skin
colour match and guarantees a traceless and natural finish. Enabling
layering and mixing, provides total camouflage for almost any skin
problem including blemishes, scars, birthmarks and black circles. It
is also suitable to use as bronzer. The light colour is suitable for
redness, acne and so on. The medium colour is perfect for dark shadows
in the under-eye area. The dark colour provides exceptional camouflage
and adheres well to the skin. Silky glossy colour and high quality
ingredients together to care skin around and can last for all day
long. It is perfect for Professional Salon, Wedding, Party and Home
use. Size: 15.4 x 10.2 x 1.3cm. Each Diameter: 2.6cm. Concealer: 15
Color Concealer.
1
Xtreme Brite  Brightening gel is a highly concentrated gel that helps
to obtain a clearer and brighter complexion. It helps remove
blackheads and cosmetic acne.
2
Prada Candy By Prada Eau De Parfum Spray 1.7 Oz For Women : Prada
Candy launched in 2011 has taken all vivacious young feminine hearts
in its grasp. The caramela, musky, and balmy accords are irresistible
```

for the graceful or the vivacious. A creation by the perfumer Daniela Andrier, it enlivens the young heart of the applicant and tantalizes the smeller. It is a companion of the flirtatious and the sensuous. The musky notes dominate over the top followed by the chypre benzoin. The gourmand caramel is a surprise at the base when you start feeling that you know the Prada trick. The exquisite flacon with embossed brand name and attractive stopper gives a start to the temptation.
3
Versace Bright Crystal Perfume for Women 3 oz Eau De Toilette Spray Inspired by a mixture of Donatella Versace's favorite floral fragrances, Bright Crystal is a fresh, sensual blend of refreshing chilled yuzu and pomegranate mingled with soothing blossoms of peony, magnolia, and lotus flower, warmed with notes of musk and amber. Notes: Iced Accord, Yuzu, Pomegranate, Peony, Magnolia, Lotus Flower, Acajou, Vegetal Amber, Musk. Style: Sheer. Sensual. Luminous. Recommend Use: Day, Evening, Night
4
STELLA For Women By STELLA MCCARTNEY 1.7 oz EDP Spray

```
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1   19.99    {'Beauty': 52254}
2   65.86    {'Beauty': 78916}
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```
title
0   WAWO 15 Color Professionl Makeup Eyeshadow Camouflage Facial
Concealer Neutral Palette
1                                              Xtreme Brite
Brightening Gel 1oz.
2                           Prada Candy By Prada Eau De Parfum
Spray 1.7 Oz For Women
3                  Versace Bright Crystal Eau de Toilette Spray
for Women, 3 Ounce
4
Stella McCartney Stella
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df_amazon['avg.rating'].unique()
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df_amazon['avg.rating'].unique()
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df_amazon.columns
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          brand  \
0          COKA
1   Xtreme Brite
2         Prada
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3          Versace
4

categories  \
0               [['Beauty', 'Makeup', 'Face', 'Concealers &
Neutralizers']]
1  [['Beauty', 'Hair Care', 'Styling Products', 'Creams, Gels &
Lotions']]
2                 [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]
3                 [['Beauty', 'Fragrance', "Women's", 'Eau de
Toilette']]
4                 [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]


description  \
0  An extensive range of 15 multiple vibrant long wear concealer
colour with different skin tones to create more than 10,000 amazing
looks. Using the most commonly applied shades, ensures the best skin
colour match and guarantees a traceless and natural finish. Enabling
layering and mixing, provides total camouflage for almost any skin
problem including blemishes, scars, birthmarks and black circles. It
is also suitable to use as bronzer. The light colour is suitable for
redness, acne and so on. The medium colour is perfect for dark shadows
in the under-eye area. The dark colour provides exceptional camouflage
and adheres well to the skin. Silky glossy colour and high quality
ingredients together to care skin around and can last for all day
long. It is perfect for Professional Salon, Wedding, Party and Home
use. Size: 15.4 x 10.2 x 1.3cm. Each Diameter: 2.6cm. Concealer: 15
Color Concealer.
1
Xtreme Brite  Brightening gel is a highly concentrated gel that helps
to obtain a clearer and brighter complexion. It helps remove
blackheads and cosmetic acne.
2
Prada Candy By Prada Eau De Parfum Spray 1.7 Oz For Women : Prada
Candy launched in 2011 has taken all vivacious young feminine hearts
in its grasp. The caramela, musky, and balmy accords are irresistible
for the graceful or the vivacious. A creation by the perfumer Daniela
Andrier, it enlivens the young heart of the applicant and tantalizes
the smeller. It is a companion of the flirtatious and the sensuous.
The musky notes dominate over the top followed by the chypre benzoin.
The gourmand caramel is a surprise at the base when you start feeling
that you know the Prada trick. The exquisite flacon with embossed
brand name and attractive stopper gives a start to the temptation.
3
Versace Bright Crystal Perfume for Women 3 oz Eau De Toilette Spray
Inspired by a mixture of Donatella Versace's favorite floral
```

fragrances, Bright Crystal is a fresh, sensual blend of refreshing chilled yuzu and pomegranate mingled with soothing blossoms of peony, magnolia, and lotus flower, warmed with notes of musk and amber. Notes: Iced Accord, Yuzu, Pomegranate, Peony, Magnolia, Lotus Flower, Acajou, Vegetal Amber, Musk. Style: Sheer. Sensual. Luminous. Recommend Use: Day, Evening, Night
4
STELLA For Women By STELLA MCCARTNEY 1.7 oz EDP Spray

```
    price          salesRank  \
0    5.04   {'Beauty': 10486}
1   19.99   {'Beauty': 52254}
2   65.86   {'Beauty': 78916}
3   52.33     {'Beauty': 764}
4     NaN  {'Beauty': 142503}


                                               title  \
0  WAWO 15 Color Professionl Makeup Eyeshadow Camouflage Facial
Concealer Neutral Palette
1                                         Xtreme Brite
Brightening Gel 1oz.
2                         Prada Candy By Prada Eau De Parfum
Spray 1.7 Oz For Women
3                    Versace Bright Crystal Eau de Toilette Spray
for Women, 3 Ounce
4
Stella McCartney Stella

    SpecialPrice  IsAvailable Platform
0           5.04         True   Amazon
1          19.99         True   Amazon
2          65.86         True   Amazon
3          52.33         True   Amazon
4            NaN         True   Amazon
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df_amazon.isna().any()

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brand                True
categories          False
description          True
price                True
salesRank           False
title               False
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SpecialPrice          True
IsAvailable           False
Platform              False
dtype: bool

df=df_amazon.dropna(axis=0)

df

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22            23   B000052Y5F         3.00                1.00
69            70   B0000530LV         5.00                1.00
71            72   B0000530NA         5.00                1.00
84            85   B00005333I         3.50                1.00
...          ...          ...          ...                 ...
11280      11281   B00JT74V1O         4.84                0.98
11284      11285   B00JYKBZ3I         5.00                0.89
11286      11287   B00JZ0L7VC         4.36                0.97
11289      11290   B00K1H6AY2         5.00                0.81
11339      11340   B00L5BXG36         5.00                1.00


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 'B00BOTZ5CE', 'B00IYQY3M8', 'B000MM2RZM', 'B0001CXUKY', 'B0013I1H9G',
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69
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 'B0037LG8JQ', 'B00A0IWTDI', 'B00H4P19TA', 'B00DTW7TP0', 'B0020100FM',
 'B000VPH5KW', 'B004X8JU5Q', 'B0000530G3', 'B00G2YDLXG', 'B009PIR8G2',
 'B00JOHUNBG', 'B0000530LP', 'B00DUS0BUS', 'B00H3Q0MTS', 'B00CLVJ03O',
 'B003LZQW26', 'B0013IXNCU', 'B009PIR100', 'B00CHL3KN4', 'B0098QN41Y',
 'B00GTBZ85Q', 'B000MJ79R6', 'B00JNXOJAC', 'B009PIR36W', 'B00A0IWRRG',
 'B0088W8WCA', 'B00B42N9B0', 'B00A0IWT9C', 'B00GCGFFXS', 'B00AZJ0AW4',
 'B00JMB8V1I', 'B000E0DF9K', 'B001EIYVGQ', 'B005CYKD06', 'B00KA6OXPC',
 'B0090840JQ', 'B007LGY34K', 'B000NPWQU4', 'B00B22BCJS', 'B004VGSVHS',
 'B000052YM7', 'B00D3KXNNU', 'B0072CT3I4']
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71   ['B004CR3D4W', 'B00DGCEUMI', 'B0088W8ZH2', 'B00E4MNPZ2',
'B005M31I4C', 'B00CLBY2VY', 'B002UUT39M', 'B00I7J5JWK', 'B00J7PAZMM',
'B00HDQ0NVK', 'B00GNU9MQE', 'B00J6VKHJS', 'B005M2O1WE', 'B000T9CBQS',
'B000052YQ2', 'B005PMLVTW', 'B007M81AAC', 'B00DDS9GK6', 'B001GGX0EK',
'B000052YQ0', 'B0076PEAX0', 'B007M819DU', 'B00IBDIK0U', 'B0009RFAOK',
'B00J7PL9F4', 'B0088W8RF2', 'B0081NLR0K', 'B008X8R9NM', 'B00JSLULNI',
'B00HDQ0KAE', 'B003LZ6KZA', 'B00BT7EX92', 'B0011DNX9K', 'B00D5ETV08',
'B002DPUXZ2', 'B009GEUPAG', 'B0047EPNNY', 'B0016BHLQS', 'B00D1XV4WG',
'B001W8W3SG', 'B001F51TR2', 'B0088W7Z00', 'B0088W8RMU', 'B000F65JSC',
'B003KWZ8VG', 'B002K8MK0I', 'B008QUOE1M', 'B00543733U', 'B0088W7UZA',
'B0088W9260', 'B0055FF2MG', 'B00CSKSOB2', 'B0034LR0R8', 'B0088W46W0',
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84   ['B00D8FK9F0', 'B0075HE6B0', 'B0055S4BZ2', 'B00CRHR0BG',
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'B0047F9820', 'B0089MUX80', 'B00D8F8B5A', 'B003A8GG8E', 'B001DO3CVG',
'B0072CV0UI', 'B002PBHQP4', 'B002JDUMF0', 'B006WQC0BI', 'B002JL1Y6C',
'B00760IXJ8', 'B00E4MJSOY', 'B006WQC022', 'B004YWRYUY', 'B0047F71SS',
'B00AYWN8OY', 'B002DPUY5Q', 'B00LDY8TU0', 'B003E0QF4I', 'B003RF82RI',
'B00ECU0A18', 'B000F65JSC', 'B0009RFB76', 'B0047F9622', 'B00B1IV2A2',
'B000NP7K1E', 'B00H3R7HSQ', 'B00496FW3G', 'B00IGLA8DY', 'B0047F70B6',
'B00CSKSD90', 'B00EIMH78E', 'B007M81A80', 'B00E96XELS', 'B008FZ562E',
'B005H1525A', 'B0055S4CRY', 'B00GP2N66W', 'B00CSKSH60', 'B001DPMETG',
'B005H1541C', 'B0073ANH14', 'B00GM31224', 'B00CYZPUU4', 'B002JL72AE',
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...
...
11280
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'B00BMLZGGE', 'B00I9QDRQG', 'B00KVCYK3K', 'B00KSTZGNE', 'B00KK6S52Y',
'B00BT7C9R0', 'B00JDJK4PK', 'B009XRM1YO', 'B00B1AIEPQ', 'B0092KJWW6',
'B003VJKIOA', 'B00DE8EVB4', 'B00B1ADPP0', 'B00GOQ8N3U', 'B00DRML5LG',
'B00II3KGFK', 'B00IZTX4W4', 'B00JJAYSDC', 'B00H9A42QC', 'B00JD9WTLM',
'B000E4C2MQ', 'B00GOQ8M7C', 'B00JUAA8US', 'B004NH2YLO', 'B00ING1Q4M',
'B0035IQ2RE', 'B00LMI4HWQ', 'B00JTHUQ3Q', 'B0094FV55Q', 'B001NPD7BK',
'B00K9WZSQK', 'B00JCSA1IW', 'B00JEJVXN6', 'B00L3JQ29K', 'B00FRFRSFI',
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11284
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'B00GFBWWWC', 'B00C7DYBX0', 'B0083FNJH0', 'B004NMLN1Q', 'B00IZQ66V8',
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'B00DI9VELE', 'B00K14TLZK', 'B00KCV24LK', 'B00JY45SUU', 'B009S99Z8W',
'B00LZYW8P0', 'B00H8ZU13G', 'B008KJMIOE', 'B0031ZV8OS', 'B00F5064ZU',
'B00JZK7QFS', 'B009S3PZB0', 'B00JS3FJZQ', 'B0072CUW02', 'B008MQG7U6',

'B00K4Q43ZS', 'B00CGN9LQ8', 'B00DLAY0LQ', 'B00FIZMWMG', 'B00JSU430G',
'B00K9S353M', 'B00GI1Y07E', 'B00ANTO6X0', 'B006FLLWXM', 'B00DLAXX3W',
'B00IXQH8E4', 'B00L9K80EI', 'B000056JPJ', 'B007XPBZPE', 'B00A1O72TW',
'B00JND4MC2', 'B00E8LUQRY', 'B001T8UFTS', 'B00AR03HRG', 'B001T8S7T8',
'B00K8LKZ1U', 'B00HNXW24Y', 'B0001M3KKY', 'B0007IFB2W', 'B00GNEKA1G',
'B00HDZ7AUS', 'B00GQQUC06', 'B00JG6UDG0', 'B00JQL3UVU', 'B0039P3G0A',
'B00CGRMXT6', 'B003XW1EZM', 'B005QTEGTQ', 'B00FA8726C', 'B00AWCNF9O']

11289
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'B00IBS9QC6', 'B00JH1D0SM', 'B00L3LBUGI', 'B00L3K91OW', 'B006ZA0A5Y',
'B004LJ0ZK6', 'B00KEXR5IS', 'B009A291L8', 'B00JQ12U0M', 'B000EPA4FW',
'B007004PZ0', 'B004GEXU5S', 'B00HJB180E', 'B00KH6F6TM', 'B006I9RQBI',
'B00ID22PGE', 'B001CLXNZ0', 'B00ADXRF7A', 'B001CM1XX8', 'B00J9SUTWS',
'B0057GUL5G', 'B008R1F00A', 'B00DTV14JS', 'B00JC77VEK', 'B00KHH2VOY',
'B0016836RY', 'B0040TW48Y', 'B00JL2TURM', 'B00KCFAZTE', 'B00H3VOHRG',
'B00ICIL1L4', 'B0072CZ05O', 'B00EU3QQJM', 'B001MA7QFO', 'B00KHV6TIE',
'B002CSPKSU', 'B001GIOW36', 'B00BVG9JF4', 'B007G5C2CG', 'B008LU7ZVI',
'B009NP0NN2', 'B001G7PJAC', 'B00EE79EZM', 'B00I4ZERGG', 'B005M31C2K',
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'B000JE2C9Y', 'B004MNRX4M', 'B001TUZSP2', 'B003GSKWRY', 'B0015NZ6FK',
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'B00JTY6WQ4', 'B00JUKOYG2', 'B00920ZC3E', 'B009X0J8TC', 'B000WNX21Y',
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'B00KGQ8Y2E', 'B00JSSZL7M', 'B003CGJRNK', 'B0080X1JF4', 'B005L811OK',
'B00KXEIWNU', 'B00GAXJLRE', 'B00HY3WFEU', 'B004BARCRY', 'B0032A4T7A',
'B00GID1TBW', 'B0027OUUFW', 'B00005TZU8', 'B004G9QEUQ', 'B00C75KITE',
'B000F3N6RG', 'B00C59JSP2', 'B00H5A513O', 'B00GS01D90', 'B00H09L558',
'B005YUW7A2', 'B001EPQ86A', 'B000DZF7T6', 'B00HXF7HZQ', 'B0044DEET2',
'B009653PPW', 'B0044DEESS', 'B007QVXWD8', 'B009416CVC', 'B00CE2JC9W']

```
                        brand  \
21                        DHS
22      KONSYL PHARMACEUTICALS
69                      Suave
71                       Olay
84          L&#39;Oreal Paris
...                        ...
11280
11284
11286
11289
11339
```

```
                                          categories  \
21                    [['Beauty', 'Hair Care', 'Conditioners']]
22      [['Beauty', 'Skin Care', 'Body', 'Moisturizers', 'Lotions']]
```

```
69                          [['Beauty', 'Hair Care', 'Shampoos']]
71         [['Beauty', 'Skin Care', 'Face', 'Toners & Astringents']]
84      [['Beauty', 'Skin Care', 'Eyes', 'Dark Circle Treatments']]
...                                                               ...
11280                                    [['Beauty', 'Skin Care']]
11284          [['Beauty', 'Skin Care', 'Face', 'Oils & Serums']]
11286        [['Beauty', 'Hair Care', 'Styling Tools', 'Brushes']]
11289              [['Beauty', 'Skin Care', 'Face', 'Cleansers']]
11339                    [['Beauty', 'Skin Care', 'Eyes', 'Masks']]
```

```
description  \
21
DHS Conditioning Rinse is specially formulated for dermatological hair
care.DHS Conditioning Rinse helps control static electricity,
eliminate tangles, mend split ends and improve elasticity.DHS
Conditioning Rinse helps make hair easier to comb and manage while
adding luster and body.
22
Natural fiber therapy bulk-forming laxativevery low sodiumno sugar or
sugar substitutes100% psylliumdoctor recommended for over 35 years
69
Gentle Cleansing with a Fragrant Natural Scent for All Hair
TypesSuave&reg; Naturals Fresh Mountain Strawberry Shampoocombines the
fragrance of freshly-picked mountain strawberries in a formula with
gentle cleansers to enhance fullness and bring out the natural beauty
of all hair types.  Treat yourself and your hair to the long-
lasting beauty and fresh fragrance of Fresh Mountain Strawberry.The
Suave Promise:We guarantee your full satisfaction or we will replace
or refund your purchase.  For details, comments or questions,
please visitwww.Suave.comor call 1-800-782-8301.
71
Cleans and Refreshes without Overdrying.Low Alcohol Formula.
Dermatologist Tested. Contains Aloe and Witch Hazel.Benefits:CLEANS -
Removes dirt, oil and make-up without stripping skin's essential
moisture.REFRESHES-Leaves skin feeling cool and wonderfully
fresh.TONES-Mild formula with added Aloe and Witch Hazel tones skin
gently.
84
This light, non-greasy gel-cream is specially formulated to defend
against signs of premature aging around the eyes.  Liposomes penetrate
the skin's surface to deliver hydrating and nurturing ingredients.
Reduces puffiness, smoothes fine line and wrinkles, and diminishes
dark circles around the eyes. Dermatologically tested for gentleness.
Ophthalmologist tested, safe for contact lens wearers.   Fragrance-
free.
...
...
11280
Potent Phytoceramide 350mg Formula by Bodishape for Fast Effective
```

Results*** 83% Decrease in Wrinkles and Fine Lines ****** 92% Increase in Collagen Production ****** 65% Decrease in the Appearance of Dark Circles ***Clinical studies have found Phytoceramides to:- Increase skin hydration - Promote Skin Smoothness- Reduce the appearance of crow's feet, fine lines & wrinkles- Repair Damaged Skin, Nourish, Restore, and Strengthen New Collagen- Improves skin firmness and elasticity making you look younger- Reduces Itchiness and Redness so your skin looks healthy• Our product is manufactured in the United States under Good Manufacturing Practices (GMP) and the highest level of quality control.Try Phytoceramides by Bodishape todayAll-natural face-lift in a bottle100% UNCONDITIONAL MONEY BACK GUARANTEEORDER NOW BEFORE STOCKS RUN OUT!
11284
Buy Our Matrixyl 3000 SERUM If You Are Looking For Great Result !!!Do You Suffer From the Following Skin Problems? • •Loose and Sagging skin around your face, eyes, neck and decollate. • •Fine Lines, wrinkles and Crow's feet. • •Dark circles and puffiness around the eyes. • •Dull and uneven Skin tone and complexion. • •Dry or Irritated Skin.Our Promise of What Our Serum Will Do To Your Skin: • •Achieve instant tightening, smoothing, firming and lifting of the Skin. • •Reduce and Prevent fine lines, wrinkles and crow's feet by increasing skin elasticity. • •Decrease, treat and Prevent Dark Circles and Puffiness around the eyes. • •Brighten and Even out Skin tone and Complexion. • •Visibly Hydrate the Skin for a younger and More radiant Skin. • Soft and radiant skin. ★ Our serum is made with 100% natural ingredients in the USA at an FDA approved facility. ★ We produce in small batches to guarantee freshness and potency. ★ Try it RISK-FREE with our 90 days 100% money back guarantee - even if the bottle is empty!Click The Yellow Add TO Cart Button TO Buy NOW Before it Runs Out. YOU'VE GOT NOTHING TO LOSE, BUT FABULICIOUS BEAUTY TO GAIN.
11286
Alaska Bear-Enhance your LifeDescription:No More Tangles, No More Pains for Teen Girls, Boys, Men & Women!Soft, Flexible Bristles Detangle Hair with Ease Works Great on Wet and Dry Hair, Perfect for Everyone.Eliminate tangles quickly and painlessly with Alaska Bear Shower Brush.
11289 When you wash that concealer off... you're still riddled with acne!No matter how much cover-up you use, it does not get rid of the problem.- All you've done is trick yourself into thinking no-one will notice- What they do see is humps and bumps caked over with cruddy makeup- You wash you face in front of the mirror and bright red ugly zits stare right back at youWhy suffer? There's a simple and effective answer.Our face cleanser is a specially balanced, deep cleansing formula featuring Salicylic Acid penetrates into pores to dramatically

decrease sebum production and fight acne causing bacteria. It soothes acne associated irritation, inflammation and redness with more than 15 nourishing botanical extracts and essential oils.Provides mild exfoliation of dead skin cells from within the follicle, keeping the pores clear of cellular debris thus reducing the number of breakouts.- Uses groundbreaking acne clearing ingredients that penetrate deep within the pores- Reduces 99% of acne-causing bacteria dead; preventing breakouts before they start- Clears away cellular debris and keeps the pores clear- Moisturizes and improves complexion to help retain a healthy glow, leaving skin smooth and softDon't just wash your face, sanitize it using this clinically proven product.Specifically formulated for acne sufferers to totally cleanse the facial area, and give you healing to be happy with.Hollywood Starshave paid dermatologists a fortune to obtain the benefits that our range of acne treatment products give. You don't have to pay that amount...You too can have clear, blemish free natural skin!Full 90-Day Money-Back Guarantee. So nothing to lose and a naturally clear complexion to gain!You deserve that Hollywood Star complexion too, don't you?Hit thatAdd to Cartbutton now

11339

Do You Want To Improve Your Sleep? Then get the Perfect Sleep Mask on the market which will help to Restore your Sleep and eventually Improve your Health & EnergyHave you ever purchased a sleep mask that let the light in, was uncomfortable and worst of all, broke after a few uses? Or do you struggle to sleep at night due to your partner watching TV or reading or even during the day due to your shift working hours?Problem Solved!With the Perfect Sleep Mask, you can block out the light and get to sleep quickly.Get the Best with Perfect Sleep MaskIt's the perfect solution to ensure that you get a good night's sleep and wake up feeling refreshed the next day.Get The Benefits of the Perfect Sleep/Eye Mask-It blocks out the light-It is soft and feather light-Ideal for men, women and children-Adjustable straps to fit all head sizes-Perfect for shift workers or a nap during the day-Easily fits into your bag-Has a fast and convenient velcro fastener-Includes Free Earplugs-The strap has 2 holders for your ear plugs, so they never get lost or misplaced-Hand washable with warm waterOur Guarantee To You.Your satisfaction is our top priority. If for any reason you are not 100% happy with your purchase, we have a 90-day, money back guarantee. Let us know and we will refund the full price of your order. No questions asked.Click Add To Cart at the top of this page and get yours NOW. While It's Still In Stock

	price	salesRank
21	10.12	{'Beauty': 8864}
22	14.29	{'Health & Personal Care': 11183}
69	3.71	{'Beauty': 63163}
71	4.95	{'Beauty': 118863}
84	5.30	{'Beauty': 18260}
...	...	...
11280	34.95	{'Beauty': 21659}

```
11284  29.99                    {'Beauty': 25986}
11286   6.99                    {'Beauty': 31834}
11289  35.77                     {'Beauty': 8809}
11339  10.75        {'Home &amp; Kitchen': 20597}


                                               title  \
21                 DHS Conditioning Rinse With Panthenol 8 fl oz
22                Konsyl Pharmaceuticals Psyllium Fiber 15.9 oz
69              Suave Naturals Shampoo, Sun Ripened Strawberry 22.5oz
71                Olay Daily Care Refreshing Toner, 7.2-Fluid Ounce
84                L'Oreal Paris Eye Defense, 0.5 Fluid Ounce
...                                                  ...
11280  Phytoceramides - Miracle Phytoceramides 350mg Softgel Capsules
as Recommended by DR Oz ***VEGAN SAFE, NON-GMO &amp; GLUTEN FREE *** -
Plant Derived Anti-aging Formula - 100% All Natural - Clinically
Proven Anti-Wrinkle Active Ingredients *** MADE IN USA *** Your
Ultimate Skin Restoring Supplement- Natural Facelift- Use With
Bodiskincare Hyaluronic Acid Serum and Matrixyl 3000 Moisurizer for
Optimum Results - ***THE ONLY ONE WITH AN UNCONDITIONAL 100% MONEY
BACK GUARANTEE***
11284
Best Anti- aging Cream to Curb Wrinkles. Anti -aging Moisturizers with
Peptides, Vitamin C and Hyaluronic Acid. #1 Anti-Wrinkle Cream. Use it
for Pain Free Rejuvenation and Restoration of Skin without Painful
Injections. Lifting and Firming Cream. Comes With 100 percent Money
Back Guarantee !!!.
11286
Alaska Bear&reg; Hot Pink Hair Brush Professional Detangling Shower
Brush for Wet or Dry Hair(Nice pack, best gift for Women and Teen
girls)
11289
Acne Face Wash - Acne Cleanser moisturizing, mild and effective
11339
Perfect Sleep Mask with Ear Plugs - Ideal Eye Mask for Shift Workers,
Long Flights, Short Naps, etc - A Perfect help during summer /
daylight time - Soft, Comfortable &amp; Extreme Quality - Prevents
light fully and facilitates a good sleep - A Natural Sleep Aid for
Sleep Disorders and Insomnia - Wide Strap with Velcro for perfect
adjustment and Earplugs Holder - Satisfaction Guaranteed


       SpecialPrice  IsAvailable Platform
21            10.12         True   Amazon
22            14.29         True   Amazon
```

```
69             3.71          True    Amazon
71             4.95          True    Amazon
84             5.30          True    Amazon
...            ...           ...     ...
11280         34.95          True    Amazon
11284         29.99          True    Amazon
11286          6.99          True    Amazon
11289         35.77          True    Amazon
11339         10.75          True    Amazon

[720 rows x 15 columns]
```

```
df.shape
```

```
(720, 15)
```

```
df.isnull().sum()
```

```
Unnamed: 0          0
asin                0
avg.rating          0
avg.helpful.ratio   0
also_bought         0
also_viewed         0
brand               0
categories          0
description         0
price               0
salesRank           0
title               0
SpecialPrice        0
IsAvailable         0
Platform            0
dtype: int64
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PREPROCESSING BIGBASKET DATASET

```
df_bigbasket =pd.read_csv("/content/drive/MyDrive/BigBasket
Products.csv")
df_bigbasket.head()
```

```
   index                                           product  \
0      1              Garlic Oil - Vegetarian Capsule 500 mg
1      2                               Water Bottle - Orange
2      3                         Brass Angle Deep - Plain, No.2
3      4   Cereal Flip Lid Container/Storage Jar - Assorted Colour
4      5                      Creme Soft Soap - For Hands & Body


              category          sub_category              brand  \
0       Beauty & Hygiene             Hair Care  Sri Sri Ayurveda
1  Kitchen, Garden & Pets  Storage & Accessories        Mastercook
```

```
2     Cleaning & Household         Pooja Needs              Trm
3     Cleaning & Household   Bins & Bathroom Ware          Nakoda
4         Beauty & Hygiene      Bath & Hand Wash           Nivea

   sale_price  market_price                         type  rating  \
0       220.0         220.0           Hair Oil & Serum     4.1
1       180.0         180.0       Water & Fridge Bottles   2.3
2       119.0         250.0            Lamp & Lamp Oil     3.4
3       149.0         176.0   Laundry, Storage Baskets     3.7
4       162.0         162.0       Bathing Bars & Soaps     4.4


                                                  description
0
This Product contains Garlic Oil that is known to help proper
digestion, maintain proper cholesterol levels, support cardiovascular
and also build immunity.  For Beauty tips, tricks & more visit
https://bigbasket.blog/
1
Each product is microwave safe (without lid), refrigerator safe,
dishwasher safe and can also be used for re-heating food and not for
cooking. All containers come with airtight lids and a wide variety of
attractive colours. Stack these stylish and colourful containers in
your kitchen with ease and for a look-good factor.
2
A perfect gift for all occasions, be it your mother, sister, in-laws,
boss or your friends, this beautiful designer piece wherever placed,
is sure to beautify the surroundings Traditional design This type diya
has been used for Diwali and All other Festivals for centuries. Sturdy
and easy to carry The feet keep it balanced to ensure safety.
Wonderful Oil Lamp made in Brass also called as Jyoti. This is a
handcrafted piece of Indian brass Deepak.
3  Multipurpose container with an attractive design and made from
food-grade plastic for your hygiene and safety ideal for storing
pulses. Grains, spices, and more with easy opening and closing flip-
open lid. Strong, durable and transparent body for longevity and easy
identification of contents. Multipurpose storage solution for your
daily needs stores your everyday food essentials in style with the
Nakoda container set. With transparent bodies, you can easily identify
your stored items without having to open the lids. These containers
are ideal for storing a large variety of items such as food grains,
snacks and pulses to sugar, spices, condiments and more. Featuring
unique flip-open lids, you can easily open and close this container
without any hassles.\nThe Nakoda container is made from high-quality
food-grade and BPA-free plastic that is 100% safe for storing food
items. You can safely store your food items in this container without
worrying about contamination and harmful toxins. As they are
constructed using highly durable virgin plastic, this container will
last for a long time even with regular use. This container can enhance
the overall look of your kitchen decor. Being dishwasher safe,
```

cleaning and maintaining this container is an easy task. You can also use a simple soap solution to manually wash and retain their looks for a long time.
4
Nivea Creme Soft Soap gives your skin the best care that it must get. The soft bar consists of Vitamins F and Almonds which are really skin gracious and help you get great skin. It provides the skin with moisture and leaves behind flawless and smooth skin. It makes sure that your body is totally free of germs & dirt and at the same time well nourished.For Beauty tips, tricks & more visit https://bigbasket.blog/

```python
df_bigbasket['rating'].unique()
```

```
array([4.1, 2.3, 3.4, 3.7, 4.4, 3.3, 3.6, 4. , 3.5, 4.3, 2.2, 5. ,
3.8,
       4.2, 4.9, 3.9, 1.5, 2.9, 2.6, 3. , 4.5, nan, 1. , 4.6, 4.8,
3.1,
       2. , 1.8, 2.8, 3.2, 4.7, 2.5, 2.4, 2.7, 2.1, 1.7, 1.9, 1.2,
1.3,
       1.4, 1.6])
```

```python
df_bigbasket['Category'] = CONST_PRODUCT_BEVERAGES
df_bigbasket['Platform']  = CONST_PLATFORM_BIGBASKET
```

```python
df_bigbasket.columns
```

```
Index(['index', 'product', 'category', 'sub_category', 'brand',
'sale_price',
       'market_price', 'type', 'rating', 'description', 'Category',
       'Platform'],
      dtype='object')
```

```python
df_bigbasket.dtypes
```

```
index                int64
product             object
category            object
sub_category        object
brand               object
sale_price         float64
market_price       float64
type                object
rating             float64
description         object
Category            object
Platform            object
dtype: object
```

```python
df_bigbasket[df_bigbasket['rating'] != CONST_NOT_APPLICABLE].head()
```

```
     index                                                       product  \
0        1                         Garlic Oil - Vegetarian Capsule 500 mg
1        2                                         Water Bottle - Orange
2        3                                   Brass Angle Deep - Plain, No.2
3        4   Cereal Flip Lid Container/Storage Jar - Assorted Colour
4        5                               Creme Soft Soap - For Hands & Body


                  category              sub_category                     brand  \
0          Beauty & Hygiene                 Hair Care   Sri Sri Ayurveda
1   Kitchen, Garden & Pets   Storage & Accessories            Mastercook
2    Cleaning & Household              Pooja Needs                     Trm
3    Cleaning & Household     Bins & Bathroom Ware                Nakoda
4          Beauty & Hygiene        Bath & Hand Wash                   Nivea


   sale_price   market_price                             type   rating  \
0      220.0          220.0           Hair Oil & Serum      4.1
1      180.0          180.0      Water & Fridge Bottles      2.3
2      119.0          250.0            Lamp & Lamp Oil      3.4
3      149.0          176.0   Laundry, Storage Baskets      3.7
4      162.0          162.0        Bathing Bars & Soaps      4.4



description  \
0
This Product contains Garlic Oil that is known to help proper
digestion, maintain proper cholesterol levels, support cardiovascular
and also build immunity.  For Beauty tips, tricks & more visit
https://bigbasket.blog/
1
Each product is microwave safe (without lid), refrigerator safe,
dishwasher safe and can also be used for re-heating food and not for
cooking. All containers come with airtight lids and a wide variety of
attractive colours. Stack these stylish and colourful containers in
your kitchen with ease and for a look-good factor.
2
A perfect gift for all occasions, be it your mother, sister, in-laws,
boss or your friends, this beautiful designer piece wherever placed,
is sure to beautify the surroundings Traditional design This type diya
has been used for Diwali and All other Festivals for centuries. Sturdy
and easy to carry The feet keep it balanced to ensure safety.
Wonderful Oil Lamp made in Brass also called as Jyoti. This is a
handcrafted piece of Indian brass Deepak.
3  Multipurpose container with an attractive design and made from
food-grade plastic for your hygiene and safety ideal for storing
pulses. Grains, spices, and more with easy opening and closing flip-
open lid. Strong, durable and transparent body for longevity and easy
identification of contents. Multipurpose storage solution for your
daily needs stores your everyday food essentials in style with the
Nakoda container set. With transparent bodies, you can easily identify
your stored items without having to open the lids. These containers
```

are ideal for storing a large variety of items such as food grains, snacks and pulses to sugar, spices, condiments and more. Featuring unique flip-open lids, you can easily open and close this container without any hassles.\nThe Nakoda container is made from high-quality food-grade and BPA-free plastic that is 100% safe for storing food items. You can safely store your food items in this container without worrying about contamination and harmful toxins. As they are constructed using highly durable virgin plastic, this container will last for a long time even with regular use. This container can enhance the overall look of your kitchen decor. Being dishwasher safe, cleaning and maintaining this container is an easy task. You can also use a simple soap solution to manually wash and retain their looks for a long time.
4
Nivea Creme Soft Soap gives your skin the best care that it must get. The soft bar consists of Vitamins F and Almonds which are really skin gracious and help you get great skin. It provides the skin with moisture and leaves behind flawless and smooth skin. It makes sure that your body is totally free of germs & dirt and at the same time well nourished.For Beauty tips, tricks & more visit https://bigbasket.blog/

```
      Category    Platform
0   Beverages   BigBasket
1   Beverages   BigBasket
2   Beverages   BigBasket
3   Beverages   BigBasket
4   Beverages   BigBasket
```

PREPROCESSING FLIPKART DATASET

```
df_flipkart = pd.read_csv("/content/drive/MyDrive/flipkart_com-
ecommerce_sample.csv")
df_flipkart.head()
```

```
                           uniq_id              crawl_timestamp  \
0   c2d766ca982eca8304150849735ffef9   2016-03-25 22:59:23 +0000
1   7f7036a6d550aaa89d34c77bd39a5e48   2016-03-25 22:59:23 +0000
2   f449ec65dcbc041b6ae5e6a32717d01b   2016-03-25 22:59:23 +0000
3   0973b37acd0c664e3de26e97e5571454   2016-03-25 22:59:23 +0000
4   bc940ea42ee6bef5ac7cea3fb5cfbee7   2016-03-25 22:59:23 +0000


product_url  \
0
http://www.flipkart.com/alisha-solid-women-s-cycling-shorts/p/itmeh2ff
vzetthbb?pid=SRTEH2FF9KEDEFGF
1
http://www.flipkart.com/fabhomedecor-fabric-double-sofa-bed/p/itmeh3qg
famccfpy?pid=SBEEH3QGU7MFYJFY
```

```
2
http://www.flipkart.com/aw-bellies/p/itmeh4grgfbkexnt?
pid=SHOEH4GRSUBJGZXE
3
http://www.flipkart.com/alisha-solid-women-s-cycling-shorts/p/itmeh2f6
sdgah2pq?pid=SRTEH2F6HUZMQ6SJ
4
http://www.flipkart.com/sicons-all-purpose-arnica-dog-shampoo/p/itmeh3
zyw2vhgsp5?pid=PSOEH3ZYDMSYARJ5

                                  product_name  \
0      Alisha Solid Women's Cycling Shorts
1      FabHomeDecor Fabric Double Sofa Bed
2                                AW Bellies
3      Alisha Solid Women's Cycling Shorts
4  Sicons All Purpose Arnica Dog Shampoo


product_category_tree  \
0  ["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >>
Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]
1              ["Furniture >> Living Room Furniture >> Sofa Beds &
Futons >> FabHomeDecor Fabric Double Sofa Bed (Finish Colo..."]
2
["Footwear >> Women's Footwear >> Ballerinas >> AW Bellies"]
3  ["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >>
Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]
4                      ["Pet Supplies >> Grooming >> Skin & Coat Care
>> Shampoo >> Sicons All Purpose Arnica Dog Shampoo (500 ml)"]

                  pid  retail_price  discounted_price  \
0  SRTEH2FF9KEDEFGF          999.0             379.0
1  SBEEH3QGU7MFYJFY        32157.0           22646.0
2  SHOEH4GRSUBJGZXE          999.0             499.0
3  SRTEH2F6HUZMQ6SJ          699.0             267.0
4  PSOEH3ZYDMSYARJ5          220.0             210.0


image  \
0
["http://img5a.flixcart.com/image/short/u/4/a/altht-3p-21-alisha-38-
original-imaeh2d5vm5zbtgg.jpeg",
"http://img5a.flixcart.com/image/short/p/j/z/altght4p-26-alisha-38-
original-imaeh2d5kbufss6n.jpeg",
"http://img5a.flixcart.com/image/short/p/j/z/altght4p-26-alisha-38-
original-imaeh2d5npdybzyt.jpeg",
"http://img5a.flixcart.com/image/short/z/j/7/altght-7-alisha-38-
original-imaeh2d5jsz2ghd6.jpeg"]
1  ["http://img6a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-
foam-fabhomedecor-leatherette-black-leatherette-1100x1100-
```

imaeh3gemjjcg9ta.jpeg",
"http://img6a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-
fabhomedecor-leatherette-black-leatherette-original-
imaeh3gemjjcg9ta.jpeg",
"http://img6a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-
fabhomedecor-leatherette-black-leatherette-original-
imaeh3genfxkqvuv.jpeg",
"http://img5a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-
fabhomedecor-leatherette-black-leatherette-original-
imaeh3ge2sfeczef.jpeg",
"http://img5a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-
fabhomedecor-leatherette-black-leatherette-original-
imaeh3geuy7d74g2.jpeg",
"http://img5a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-
fabhomedecor-leatherette-black-leatherette-original-
imaeh3gerfhdxzwj.jpeg"]
2
["http://img5a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-
original-imaeebfwsdf6jdf6.jpeg",
"http://img6a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-original-
imaeebfwsdf6jdf6.jpeg",
"http://img5a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-original-
imaeebfwt8zqc5cy.jpeg",
"http://img5a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-original-
imaeebfwhz5f8v6m.jpeg",
"http://img6a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-original-
imaeeducshzc6pbz.jpeg",
"http://img6a.flixcart.com/image/shoe/7/z/z/red-as-454-aw-11-original-
imaeebfw2veeuz8s.jpeg"]
3
["http://img5a.flixcart.com/image/short/6/2/h/altght-11-alisha-38-
original-imaeh2d5uq9thnyg.jpeg",
"http://img6a.flixcart.com/image/short/p/h/t/altht-3p-1-alisha-34-
original-imaeh2d5jxvh4msy.jpeg",
"http://img6a.flixcart.com/image/short/p/h/t/altht-3p-1-alisha-34-
original-imaeh2d5yz9fcjxe.jpeg",
"http://img6a.flixcart.com/image/short/p/h/t/altht-3p-1-alisha-34-
original-imaeh2d5fa94gzuy.jpeg",
"http://img6a.flixcart.com/image/short/x/5/f/altght-2-alisha-36-
original-imaeh2d5xnueazgz.jpeg"]
4
["http://img5a.flixcart.com/image/pet-shampoo/r/j/5/sh-df-14-sicons-
500-1100x1100-imaeh3hfvav85tva.jpeg",
"http://img5a.flixcart.com/image/pet-shampoo/r/j/5/sh-df-14-sicons-
500-original-imaeh3hfvav85tva.jpeg"]

    is_FK_Advantage_product \
0   False
1   False
2   False

```
3                    False
4                    False


description  \
0
Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy,
Red, Navy,Specifications of Alisha Solid Women's Cycling Shorts Shorts
Details Number of Contents in Sales Package Pack of 3 Fabric Cotton
Lycra Type Cycling Shorts General Details Pattern Solid Ideal For
Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not
Bleach Additional Details Style Code ALTHT_3P_21 In the Box 3 shorts

1  FabHomeDecor Fabric Double Sofa Bed (Finish Color - Leatherette
Black Mechanism Type - Pull Out) Price: Rs. 22,646 • Fine deep seating
experience • Save Space with the all new click clack Sofa Bed • Easy
to fold and vice versa with simple click clack mechanism • Chrome legs
with mango wood frame for long term durability • Double cushioned Sofa
Bed to provide you with extra softness to make a fine seating
experience • A double bed that can easily sleep two,Specifications of
FabHomeDecor Fabric Double Sofa Bed (Finish Color - Leatherette Black
Mechanism Type - Pull Out) Installation & Demo Installation & Demo
Details Installation and demo for this product is done free of cost as
part of this purchase. Our service partner will visit your location
within 72 business hours from the delivery of the product. In The Box
1 Sofa Bed General Brand FabHomeDecor Mattress Included No Delivery
Condition Knock Down Storage Included No Mechanism Type Pull Out Type
Sofa Bed Style Contemporary & Modern Filling Material Microfiber
Seating Capacity 3 Seater Upholstery Type NA Upholstery Included No
Bed Size Double Shape Square Suitable For Living Room Model Number
FHD112 Care Instructions Avoid outdoor use and exposure to water or
prolonged moisture, Avoid exposure to direct heat or sunlight as this
can cause the sofa colour to fade, Keep sharp objects away from your
sofa, A little tear on the fabric cover may be hard to repair, Vacuum
your sofas periodically with a soft bristled bru...View More Avoid
outdoor use and exposure to water or prolonged moisture, Avoid
exposure to direct heat or sunlight as this can cause the sofa colour
to fade, Keep sharp objects away from your sofa, A little tear on the
fabric cover may be hard to repair, Vacuum your sofas periodically
with a soft bristled brush attachment or lightly brush them to keep
general dirt and dust off the sofa and prevent any embedding between
the fibres, Try to avoid food and drink spillage of any kind, If
spills occur, do not leave unattended, In case of a stain, a water-
free fabric cleaner can be used, However, avoid applying the cleaner
directly on the stain as this can cause damage to the fabric and fade
colour, Pour the cleaner onto a clean cloth and test its effect on a
hidden area of the sofa before cleaning the stain with the cloth, A
professional scotchguard treatment is one of the easiest and most
effective options to protect against spills or stains and keep pet
hair at bay, Getting your sofa professionally cleaned once every 6-8
```

months will not only take care of the nooks and corners that you can't reach, it will also make it more durable Finish Type Matte Important Note Cancellation NOT allowed for this product after 24 hrs of order booking. Warranty Covered in Warranty Warranty covers all kind of manufacturing defects. Concerned product will either be repaired or replaced based on discretion. Service Type Manufacturer Warranty Warranty Summary 6 Months Domestic Warranty Not Covered in Warranty Warranty does not cover for Improper Handling Dimensions Weight 40 kg Height 838 mm Width 1905 mm Depth 939 mm Disclaimer - The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit through...View More - The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit through the entrance(s) and door(s) of the premises - Please expect an unevenness of up to 5 mm in the product due to differences in surfaces and floor levels - Flipkart, or the Seller delivering the product, will not take up any type of civil work, such as drilling holes in the wall to mount the product. The product will only be assembled in case carpentry assembly is required - In case the product appears to lack shine, wiping the surface with a cloth will help clear the surface of dust particles Material & Color Upholstery Color Leatherette Black Primary Color Black Primary Material Fabric Secondary Material Subtype Mango Wood Secondary Material Foam Finish Color Leatherette Black Primary Material Subtype Foam

2

Key Features of AW Bellies Sandals Wedges Heel Casuals,AW Bellies Price: Rs. 499 Material: Synthetic Lifestyle: Casual Heel Type: Wedge Warranty Type: Manufacturer Product Warranty against manufacturing defects: 30 days Care instructions: Allow your pair of shoes to air and de-odorize at regular basis; use shoe bags to prevent any stains or mildew; dust any dry dirt from the surface using a clean cloth; do not use polish or shiner,Specifications of AW Bellies General Ideal For Women Occasion Casual Shoe Details Color Red Outer Material Patent Leather Heel Height 1 inch Number of Contents in Sales Package Pack of 1 In the Box One Pair Of Shoes

3

Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT_11 In the Box 2 shorts

4

Specifications of Sicons All Purpose Arnica Dog Shampoo (500 ml) General Pet Type Dog Brand Sicons Quantity 500 ml Model Number SH.DF-

14 Type All Purpose Fragrance Arnica Form Factor Liquid In the Box
Sales Package Shampoo Sicons Dog Fashion Arnica

```
         product_rating        overall_rating         brand  \
0  No rating available  No rating available        Alisha
1  No rating available  No rating available  FabHomeDecor
2  No rating available  No rating available            AW
3  No rating available  No rating available        Alisha
4  No rating available  No rating available        Sicons
```

product_specifications
0
{"product_specification"=>[{"key"=>"Number of Contents in Sales
Package", "value"=>"Pack of 3"}, {"key"=>"Fabric", "value"=>"Cotton
Lycra"}, {"key"=>"Type", "value"=>"Cycling Shorts"},
{"key"=>"Pattern", "value"=>"Solid"}, {"key"=>"Ideal For",
"value"=>"Women's"}, {"value"=>"Gentle Machine Wash in Lukewarm Water,
Do Not Bleach"}, {"key"=>"Style Code", "value"=>"ALTHT_3P_21"},
{"value"=>"3 shorts"}]}
1 {"product_specification"=>[{"key"=>"Installation & Demo Details",
"value"=>"Installation and demo for this product is done free of cost
as part of this purchase. Our service partner will visit your location
within 72 business hours from the delivery of the product."},
{"value"=>"1 Sofa Bed"}, {"key"=>"Brand", "value"=>"FabHomeDecor"},
{"key"=>"Mattress Included", "value"=>"No"}, {"key"=>"Delivery
Condition", "value"=>"Knock Down"}, {"key"=>"Storage Included",
"value"=>"No"}, {"key"=>"Mechanism Type", "value"=>"Pull Out"},
{"key"=>"Type", "value"=>"Sofa Bed"}, {"key"=>"Style",
"value"=>"Contemporary and Modern"}, {"key"=>"Filling Material",
"value"=>"Microfiber"}, {"key"=>"Seating Capacity", "value"=>"3
Seater"}, {"key"=>"Upholstery Type", "value"=>"NA"},
{"key"=>"Upholstery Included", "value"=>"No"}, {"key"=>"Bed Size",
"value"=>"Double"}, {"key"=>"Shape", "value"=>"Square"},
{"key"=>"Suitable For", "value"=>"Living Room"}, {"key"=>"Model
Number", "value"=>"FHD112"}, {"key"=>"Care Instructions",
"value"=>"Avoid outdoor use and exposure to water or prolonged
moisture, Avoid exposure to direct heat or sunlight as this can cause
the sofa colour to fade, Keep sharp objects away from your sofa, A
little tear on the fabric cover may be hard to repair, Vacuum your
sofas periodically with a soft bristled bru...View More Avoid outdoor
use and exposure to water or prolonged moisture, Avoid exposure to
direct heat or sunlight as this can cause the sofa colour to fade,
Keep sharp objects away from your sofa, A little tear on the fabric
cover may be hard to repair, Vacuum your sofas periodically with a
soft bristled brush attachment or lightly brush them to keep general
dirt and dust off the sofa and prevent any embedding between the
fibres, Try to avoid food and drink spillage of any kind, If spills
occur, do not leave unattended, In case of a stain, a water-free
fabric cleaner can be used, However, avoid applying the cleaner

directly on the stain as this can cause damage to the fabric and fade colour, Pour the cleaner onto a clean cloth and test its effect on a hidden area of the sofa before cleaning the stain with the cloth, A professional scotchguard treatment is one of the easiest and most effective options to protect against spills or stains and keep pet hair at bay, Getting your sofa professionally cleaned once every 6-8 months will not only take care of the nooks and corners that you can't reach, it will also make it more durable"}, {"key"=>"Finish Type", "value"=>"Matte"}, {"value"=>"Cancellation NOT allowed for this product after 24 hrs of order booking."}, {"value"=>"- The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit through...View More - The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit through the entrance(s) and door(s) of the premises - Please expect an unevenness of up to 5 mm in the product due to differences in surfaces and floor levels - Flipkart, or the Seller delivering the product, will not take up any type of civil work, such as drilling holes in the wall to mount the product. The product will only be assembled in case carpentry assembly is required - In case the product appears to lack shine, wiping the surface with a cloth will help clear the surface of dust particles"}, {"key"=>"Covered in Warranty", "value"=>"Warranty covers all kind of manufacturing defects. Concerned product will either be repaired or replaced based on discretion."}, {"key"=>"Service Type", "value"=>"Manufacturer Warranty"}, {"key"=>"Warranty Summary", "value"=>"6 Months Domestic Warranty"}, {"key"=>"Not Covered in Warranty", "value"=>"Warranty does not cover for Improper Handling"}, {"key"=>"Weight", "value"=>"40 kg"}, {"key"=>"Height", "value"=>"838 mm"}, {"key"=>"Width", "value"=>"1905 mm"}, {"key"=>"Depth", "value"=>"939 mm"}, {"key"=>"Upholstery Color", "value"=>"Leatherette Black"}, {"key"=>"Primary Color", "value"=>"Black"}, {"key"=>"Primary Material", "value"=>"Fabric"}, {"key"=>"Secondary Material Subtype", "value"=>"Mango Wood"}, {"key"=>"Secondary Material", "value"=>"Foam"}, {"key"=>"Finish Color", "value"=>"Leatherette Black"}, {"key"=>"Primary Material Subtype", "value"=>"Foam"}]]
2
{"product_specification"=>[{"key"=>"Ideal For", "value"=>"Women"}, {"key"=>"Occasion", "value"=>"Casual"}, {"key"=>"Color", "value"=>"Red"}, {"key"=>"Outer Material", "value"=>"Patent Leather"}, {"key"=>"Heel Height", "value"=>"1 inch"}, {"key"=>"Number of Contents in Sales Package", "value"=>"Pack of 1"}, {"value"=>"One Pair Of Shoes"}]]
3
{"product_specification"=>[{"key"=>"Number of Contents in Sales Package", "value"=>"Pack of 2"}, {"key"=>"Fabric", "value"=>"Cotton

Lycra"}, {"key"=>"Type", "value"=>"Cycling Shorts"},
{"key"=>"Pattern", "value"=>"Solid"}, {"key"=>"Ideal For",
"value"=>"Women's"}, {"value"=>"Gentle Machine Wash in Lukewarm Water,
Do Not Bleach"}, {"key"=>"Style Code", "value"=>"ALTGHT_11"},
{"value"=>"2 shorts"}]}
4
{"product_specification"=>[{"key"=>"Pet Type", "value"=>"Dog"},
{"key"=>"Brand", "value"=>"Sicons"}, {"key"=>"Quantity", "value"=>"500
ml"}, {"key"=>"Model Number", "value"=>"SH.DF-14"}, {"key"=>"Type",
"value"=>"All Purpose"}, {"key"=>"Fragrance", "value"=>"Arnica"},
{"key"=>"Form Factor", "value"=>"Liquid"}, {"key"=>"Sales Package",
"value"=>"Shampoo Sicons Dog Fashion Arnica"}]}

```python
df_flipkart.shape
```

```
(20000, 15)
```

```python
df_flipkart['Platform']  = CONST_PLATFORM_FLIPKART
```

```python
df_flipkart.columns
```

```
Index(['uniq_id', 'crawl_timestamp', 'product_url', 'product_name',
       'product_category_tree', 'pid', 'retail_price',
'discounted_price',
       'image', 'is_FK_Advantage_product', 'description',
'product_rating',
       'overall_rating', 'brand', 'product_specifications',
'Platform'],
      dtype='object')
```

#COMBINING ALL THE PLATFORM DATA TOGETHER

```python
df_all_platforms = pd.concat([df_amazon, df_bigbasket, df_flipkart],
axis=0)
df_all_platforms.columns
```

```
Index(['Unnamed: 0', 'asin', 'avg.rating', 'avg.helpful.ratio',
'also_bought',
       'also_viewed', 'brand', 'categories', 'description', 'price',
       'salesRank', 'title', 'SpecialPrice', 'IsAvailable',
'Platform',
       'index', 'product', 'category', 'sub_category', 'sale_price',
       'market_price', 'type', 'rating', 'Category', 'uniq_id',
       'crawl_timestamp', 'product_url', 'product_name',
       'product_category_tree', 'pid', 'retail_price',
'discounted_price',
       'image', 'is_FK_Advantage_product', 'product_rating',
'overall_rating',
       'product_specifications'],
      dtype='object')
```

```python
df_all_platforms.dtypes
```

```
Unnamed: 0                     float64
asin                            object
avg.rating                     float64
avg.helpful.ratio              float64
also_bought                     object
also_viewed                     object
brand                           object
categories                      object
description                     object
price                          float64
salesRank                       object
title                           object
SpecialPrice                   float64
IsAvailable                     object
Platform                        object
index                          float64
product                         object
category                        object
sub_category                    object
sale_price                     float64
market_price                   float64
type                            object
rating                         float64
Category                        object
uniq_id                         object
crawl_timestamp                 object
product_url                     object
product_name                    object
product_category_tree           object
pid                             object
retail_price                   float64
discounted_price               float64
image                           object
is_FK_Advantage_product         object
product_rating                  object
overall_rating                  object
product_specifications          object
dtype: object


df_all_platforms['SpecialPrice'] =
df_all_platforms['SpecialPrice'].replace(',', '', regex=True)
df_all_platforms['avg.rating'] =
df_all_platforms['avg.rating'].replace(CONST_NOT_APPLICABLE , 0,
regex=True)

df_all_platforms['rating'] =
df_all_platforms['rating'].replace(CONST_NOT_APPLICABLE , 0,
regex=True)
df_all_platforms[['rating']] =
```

```
df_all_platforms[['rating']].astype(np.float)
df_all_platforms[['avg.rating']] =
df_all_platforms[['avg.rating']].astype(np.float)
df_all_platforms.dtypes
```

```
Unnamed: 0                    float64
asin                           object
avg.rating                    float64
avg.helpful.ratio             float64
also_bought                    object
also_viewed                    object
brand                          object
categories                     object
description                    object
price                         float64
salesRank                      object
title                          object
SpecialPrice                  float64
IsAvailable                    object
Platform                       object
index                         float64
product                        object
category                       object
sub_category                   object
sale_price                    float64
market_price                  float64
type                           object
rating                        float64
Category                       object
uniq_id                        object
crawl_timestamp                object
product_url                    object
product_name                   object
product_category_tree          object
pid                            object
retail_price                  float64
discounted_price              float64
image                          object
is_FK_Advantage_product        object
product_rating                 object
overall_rating                 object
product_specifications         object
dtype: object
```

```
df_all_platforms.to_csv('df_all_platforms.csv', index=False)
df_all_platforms[df_all_platforms['Platform'] == CONST_PLATFORM_AMAZON
].head()
```

```
   Unnamed: 0        asin  avg.rating  avg.helpful.ratio  \
0         1.0  7806397051        2.50                NaN
1         2.0  9759091062        3.09                NaN
```

```
2          3.0  9788072216          5.00                        NaN
3          4.0  9790790961          4.60                        NaN
4          5.0  9790794231          4.50                        NaN


                                         also_bought  \
0                                   ['B00KR26VFE', 'B00E7LQHZ0',
'B00BMW24TU', 'B00K67AQN8', 'B008G0R600', 'B00KVBZAXK', 'B008B2Z94Q',
'B00IIFVJZ4', 'B00FYUX3Z0', 'B00HWR1OZ4', 'B00EYZR3E8', 'B00IHQKRCA',
'B00KS4FDL0', 'B00GBTX1G0', 'B00FYVOG1Y', 'B009WJCEMM', 'B00ID5PRQQ',
'B00IIG7UQ0', 'B0068Y0EXK', 'B00JFLRC0W', 'B009NAE91E', 'B00B4YVU4G',
'B00K48JDWY', 'B006HCJXBM', 'B009VXY05S', 'B00I99O0N8', 'B009WI3RZQ',
'B00IJ3LG94', 'B0067F8BBM', 'B002TPQPEE', 'B00IBVE79K', 'B00K05ZR08',
'B00K407VOO', 'B00GMDIKV0', 'B00KWSCOZO', 'B00EL1HZ34', 'B00HKA110G',
'B00KL53KGA', 'B00B8P5CTA', 'B00EYYW2HW', 'B00IKBGQAE', 'B00KHKXPHS',
'B00HPS4664', 'B00I9ZCV6E', 'B00EOFEKF8', 'B00F16KHLA', 'B00L0R8KK4',
'B00G8F2RNE', 'B00942W51C', 'B00KX0LTD0', 'B00DAYGJVW', 'B004X1QY20',
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['B0054GLD1U', 'B003BRZCUC', 'B0054GBXOW', 'B006VDOPPQ', 'B005R3IPJI',
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'B009SIEQ78', 'B002TNIN2S', 'B0074RLEZC', 'B007CMS5C4', 'B0071H5C76',
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'B000VXVEGK', 'B000O2P3RE', 'B0011SUGFE', 'B00FM7PGTQ', 'B00176YZUM',
'B00DH1015O', 'B00BTCZJW2', 'B008G0R600', 'B005JECMQM', 'B000W3WP1W',
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'B005GMYPMG', 'B0013OUL0M', 'B00GZ0WFQG', 'B004H7GB9G', 'B000MIR7TM',
'B002EP9OUG', 'B00K2T5RZ2', 'B00F12F5QQ', 'B00B786720', 'B00447F1YK',
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'B00KSLJ5WA', 'B0079VZFSA', 'B0072CVBZC', 'B001RCIPMU', 'B0072CS07A',
'B0017LQNQ6', 'B00JUCIN4O', 'B000HZPKTY', 'B007VXH2DM', 'B004VUBNQU',
'B009NP0Y14', 'B00CG0UL2A', 'B00KCX9BK0', 'B0072CQU2G', 'B00KJ0Q34S',
'B0022V2PKI', 'B004B2J8UG', 'B0072CYS9I', 'B001362KHQ', 'B001JQ6072',
'B000VOHKK8', 'B0079VYY3M', 'B0072CWP3O', 'B0049CXC8W', 'B000VOL914',
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'B0009N36NG', 'B0091XL4B6', 'B00152SA1S', 'B002Z7FVTQ', 'B00L290S28',
'B000UICT6U', 'B002LZ0IPY', 'B00023QRCK', 'B00456E6N2', 'B002LKZ1JW',
'B0009N33Z2', 'B000E7UFM2', 'B00IPZE0XU', 'B0079W3WIE', 'B000C1ZDTU',
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'B0061KQEVW', 'B00E7LQHZ0', 'B00KR26VFE', 'B00IHR9EVE', 'B00IHQKRCA',
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'B000NB3VOS', 'B005R3IPJI', 'B00BTCZJW2', 'B000X5LUYC', 'B005IJTKFY',
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'B008BJ5GMO', 'B005EM6NYQ', 'B000VQEUK4', 'B000XQ0850', 'B00KLGFH1A',
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'B009FGHKNA', 'B00BKFNQI2', 'B0000V3ZDO', 'B007M8TB08', 'B001E919LU',

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 'B00B1YH7PA', 'B00HPYVCM4', 'B008AZ0E80', 'B00GFE0VX6', 'B0079W1YUW',
 'B0079VUA5S', 'B0040C8HQO', 'B00B9KT9FW', 'B00KTB1ZF4', 'B00KSL75E0',
 'B002XQ1SQ4', 'B003HUP0H8', 'B008KS9VBS', 'B006C5OHSI', 'B00727PMYS',
 'B00BUUCRGO', 'B00CMR3A6A', 'B00DST09YM', 'B00KB93G06', 'B00D8H2FNW',
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 'B0079VYMDY', 'B0072CUKQS', 'B00L6XS1II', 'B000U66I0A', 'B0079VZFSA',
 'B00E9EU1LG', 'B000CNTT9I', 'B000C1Z3LS']
3  ['B005M2AQRI', 'B000VOHKK8', 'B0017JT658', 'B000KS1A7Y',
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 'B000AQF50Y', 'B008HLP3WY', 'B00CPDJHU4']

              brand  \
0              COKA
1     Xtreme Brite
2             Prada
3           Versace
4


categories  \
0              [['Beauty', 'Makeup', 'Face', 'Concealers &
Neutralizers']]
1  [['Beauty', 'Hair Care', 'Styling Products', 'Creams, Gels &
Lotions']]
2                   [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]
3                   [['Beauty', 'Fragrance', "Women's", 'Eau de
```

Toilette']]
4   [['Beauty', 'Fragrance', "Women's", 'Eau de
Parfum']]

description \
0 An extensive range of 15 multiple vibrant long wear concealer
colour with different skin tones to create more than 10,000 amazing
looks. Using the most commonly applied shades, ensures the best skin
colour match and guarantees a traceless and natural finish. Enabling
layering and mixing, provides total camouflage for almost any skin
problem including blemishes, scars, birthmarks and black circles. It
is also suitable to use as bronzer. The light colour is suitable for
redness, acne and so on. The medium colour is perfect for dark shadows
in the under-eye area. The dark colour provides exceptional camouflage
and adheres well to the skin. Silky glossy colour and high quality
ingredients together to care skin around and can last for all day
long. It is perfect for Professional Salon, Wedding, Party and Home
use. Size: 15.4 x 10.2 x 1.3cm. Each Diameter: 2.6cm. Concealer: 15
Color Concealer.
1
Xtreme Brite Brightening gel is a highly concentrated gel that helps
to obtain a clearer and brighter complexion. It helps remove
blackheads and cosmetic acne.
2
Prada Candy By Prada Eau De Parfum Spray 1.7 Oz For Women : Prada
Candy launched in 2011 has taken all vivacious young feminine hearts
in its grasp. The caramela, musky, and balmy accords are irresistible
for the graceful or the vivacious. A creation by the perfumer Daniela
Andrier, it enlivens the young heart of the applicant and tantalizes
the smeller. It is a companion of the flirtatious and the sensuous.
The musky notes dominate over the top followed by the chypre benzoin.
The gourmand caramel is a surprise at the base when you start feeling
that you know the Prada trick. The exquisite flacon with embossed
brand name and attractive stopper gives a start to the temptation.
3
Versace Bright Crystal Perfume for Women 3 oz Eau De Toilette Spray
Inspired by a mixture of Donatella Versace's favorite floral
fragrances, Bright Crystal is a fresh, sensual blend of refreshing
chilled yuzu and pomegranate mingled with soothing blossoms of peony,
magnolia, and lotus flower, warmed with notes of musk and amber.
Notes: Iced Accord, Yuzu, Pomegranate, Peony, Magnolia, Lotus Flower,
Acajou, Vegetal Amber, Musk. Style: Sheer. Sensual. Luminous.
Recommend Use: Day, Evening, Night
4
STELLA For Women By STELLA MCCARTNEY 1.7 oz EDP Spray

   price ... product_name product_category_tree pid retail_price \
0   5.04 ...   NaN   NaN NaN   NaN
1 19.99 ...   NaN   NaN NaN   NaN

```
2  65.86  ...              NaN                    NaN  NaN           NaN
3  52.33  ...              NaN                    NaN  NaN           NaN
4    NaN  ...              NaN                    NaN  NaN           NaN

   discounted_price   image is_FK_Advantage_product product_rating  \
0               NaN     NaN                      NaN            NaN
1               NaN     NaN                      NaN            NaN
2               NaN     NaN                      NaN            NaN
3               NaN     NaN                      NaN            NaN
4               NaN     NaN                      NaN            NaN

   overall_rating  product_specifications
0            NaN                      NaN
1            NaN                      NaN
2            NaN                      NaN
3            NaN                      NaN
4            NaN                      NaN

[5 rows x 37 columns]
```

```python
df_all_platforms[df_all_platforms['Platform'] ==
CONST_PLATFORM_BIGBASKET ].head()
```

```
   Unnamed: 0 asin  avg.rating  avg.helpful.ratio also_bought
also_viewed  \
0         NaN  NaN         NaN                NaN         NaN
NaN
1         NaN  NaN         NaN                NaN         NaN
NaN
2         NaN  NaN         NaN                NaN         NaN
NaN
3         NaN  NaN         NaN                NaN         NaN
NaN
4         NaN  NaN         NaN                NaN         NaN
NaN

             brand categories  \
0  Sri Sri Ayurveda        NaN
1        Mastercook        NaN
2               Trm        NaN
3            Nakoda        NaN
4             Nivea        NaN


description  \
0
This Product contains Garlic Oil that is known to help proper
digestion, maintain proper cholesterol levels, support cardiovascular
and also build immunity.  For Beauty tips, tricks & more visit
https://bigbasket.blog/
```

1
Each product is microwave safe (without lid), refrigerator safe, dishwasher safe and can also be used for re-heating food and not for cooking. All containers come with airtight lids and a wide variety of attractive colours. Stack these stylish and colourful containers in your kitchen with ease and for a look-good factor.

2
A perfect gift for all occasions, be it your mother, sister, in-laws, boss or your friends, this beautiful designer piece wherever placed, is sure to beautify the surroundings Traditional design This type diya has been used for Diwali and All other Festivals for centuries. Sturdy and easy to carry The feet keep it balanced to ensure safety. Wonderful Oil Lamp made in Brass also called as Jyoti. This is a handcrafted piece of Indian brass Deepak.

3 Multipurpose container with an attractive design and made from food-grade plastic for your hygiene and safety ideal for storing pulses. Grains, spices, and more with easy opening and closing flip-open lid. Strong, durable and transparent body for longevity and easy identification of contents. Multipurpose storage solution for your daily needs stores your everyday food essentials in style with the Nakoda container set. With transparent bodies, you can easily identify your stored items without having to open the lids. These containers are ideal for storing a large variety of items such as food grains, snacks and pulses to sugar, spices, condiments and more. Featuring unique flip-open lids, you can easily open and close this container without any hassles.\nThe Nakoda container is made from high-quality food-grade and BPA-free plastic that is 100% safe for storing food items. You can safely store your food items in this container without worrying about contamination and harmful toxins. As they are constructed using highly durable virgin plastic, this container will last for a long time even with regular use. This container can enhance the overall look of your kitchen decor. Being dishwasher safe, cleaning and maintaining this container is an easy task. You can also use a simple soap solution to manually wash and retain their looks for a long time.

4
Nivea Creme Soft Soap gives your skin the best care that it must get. The soft bar consists of Vitamins F and Almonds which are really skin gracious and help you get great skin. It provides the skin with moisture and leaves behind flawless and smooth skin. It makes sure that your body is totally free of germs & dirt and at the same time well nourished.For Beauty tips, tricks & more visit https://bigbasket.blog/

```
   price  ... product_name product_category_tree  pid retail_price  \
0    NaN  ...          NaN                   NaN  NaN          NaN
1    NaN  ...          NaN                   NaN  NaN          NaN
2    NaN  ...          NaN                   NaN  NaN          NaN
3    NaN  ...          NaN                   NaN  NaN          NaN
4    NaN  ...          NaN                   NaN  NaN          NaN
```

```
   discounted_price   image is_FK_Advantage_product product_rating  \
0              NaN     NaN                      NaN             NaN
1              NaN     NaN                      NaN             NaN
2              NaN     NaN                      NaN             NaN
3              NaN     NaN                      NaN             NaN
4              NaN     NaN                      NaN             NaN

   overall_rating  product_specifications
0             NaN                     NaN
1             NaN                     NaN
2             NaN                     NaN
3             NaN                     NaN
4             NaN                     NaN

[5 rows x 37 columns]

df_all_platforms[df_all_platforms['Platform'] ==
CONST_PLATFORM_FLIPKART ].head()

    Unnamed: 0 asin  avg.rating  avg.helpful.ratio also_bought
also_viewed  \
0          NaN  NaN         NaN                NaN         NaN
NaN
1          NaN  NaN         NaN                NaN         NaN
NaN
2          NaN  NaN         NaN                NaN         NaN
NaN
3          NaN  NaN         NaN                NaN         NaN
NaN
4          NaN  NaN         NaN                NaN         NaN
NaN

         brand categories  \
0       Alisha        NaN
1  FabHomeDecor        NaN
2           AW        NaN
3       Alisha        NaN
4       Sicons        NaN


description  \
0
Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy,
Red, Navy,Specifications of Alisha Solid Women's Cycling Shorts Shorts
Details Number of Contents in Sales Package Pack of 3 Fabric Cotton
Lycra Type Cycling Shorts General Details Pattern Solid Ideal For
Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not
Bleach Additional Details Style Code ALTHT_3P_21 In the Box 3 shorts
```

1 FabHomeDecor Fabric Double Sofa Bed (Finish Color - Leatherette Black Mechanism Type - Pull Out) Price: Rs. 22,646 • Fine deep seating experience • Save Space with the all new click clack Sofa Bed • Easy to fold and vice versa with simple click clack mechanism • Chrome legs with mango wood frame for long term durability • Double cushioned Sofa Bed to provide you with extra softness to make a fine seating experience • A double bed that can easily sleep two,Specifications of FabHomeDecor Fabric Double Sofa Bed (Finish Color - Leatherette Black Mechanism Type - Pull Out) Installation & Demo Installation & Demo Details Installation and demo for this product is done free of cost as part of this purchase. Our service partner will visit your location within 72 business hours from the delivery of the product. In The Box 1 Sofa Bed General Brand FabHomeDecor Mattress Included No Delivery Condition Knock Down Storage Included No Mechanism Type Pull Out Type Sofa Bed Style Contemporary & Modern Filling Material Microfiber Seating Capacity 3 Seater Upholstery Type NA Upholstery Included No Bed Size Double Shape Square Suitable For Living Room Model Number FHD112 Care Instructions Avoid outdoor use and exposure to water or prolonged moisture, Avoid exposure to direct heat or sunlight as this can cause the sofa colour to fade, Keep sharp objects away from your sofa, A little tear on the fabric cover may be hard to repair, Vacuum your sofas periodically with a soft bristled bru...View More Avoid outdoor use and exposure to water or prolonged moisture, Avoid exposure to direct heat or sunlight as this can cause the sofa colour to fade, Keep sharp objects away from your sofa, A little tear on the fabric cover may be hard to repair, Vacuum your sofas periodically with a soft bristled brush attachment or lightly brush them to keep general dirt and dust off the sofa and prevent any embedding between the fibres, Try to avoid food and drink spillage of any kind, If spills occur, do not leave unattended, In case of a stain, a water-free fabric cleaner can be used, However, avoid applying the cleaner directly on the stain as this can cause damage to the fabric and fade colour, Pour the cleaner onto a clean cloth and test its effect on a hidden area of the sofa before cleaning the stain with the cloth, A professional scotchguard treatment is one of the easiest and most effective options to protect against spills or stains and keep pet hair at bay, Getting your sofa professionally cleaned once every 6-8 months will not only take care of the nooks and corners that you can't reach, it will also make it more durable Finish Type Matte Important Note Cancellation NOT allowed for this product after 24 hrs of order booking. Warranty Covered in Warranty Warranty covers all kind of manufacturing defects. Concerned product will either be repaired or replaced based on discretion. Service Type Manufacturer Warranty Warranty Summary 6 Months Domestic Warranty Not Covered in Warranty Warranty does not cover for Improper Handling Dimensions Weight 40 kg Height 838 mm Width 1905 mm Depth 939 mm Disclaimer - The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit

through...View More - The color of the product may vary slightly compared to the picture displayed on your screen. This is due to lighting, pixel quality and color settings - Please check the product's dimensions to ensure the product will fit in the desired location. Also, check if the product will fit through the entrance(s) and door(s) of the premises - Please expect an unevenness of up to 5 mm in the product due to differences in surfaces and floor levels - Flipkart, or the Seller delivering the product, will not take up any type of civil work, such as drilling holes in the wall to mount the product. The product will only be assembled in case carpentry assembly is required - In case the product appears to lack shine, wiping the surface with a cloth will help clear the surface of dust particles Material & Color Upholstery Color Leatherette Black Primary Color Black Primary Material Fabric Secondary Material Subtype Mango Wood Secondary Material Foam Finish Color Leatherette Black Primary Material Subtype Foam

2
Key Features of AW Bellies Sandals Wedges Heel Casuals,AW Bellies Price: Rs. 499 Material: Synthetic Lifestyle: Casual Heel Type: Wedge Warranty Type: Manufacturer Product Warranty against manufacturing defects: 30 days Care instructions: Allow your pair of shoes to air and de-odorize at regular basis; use shoe bags to prevent any stains or mildew; dust any dry dirt from the surface using a clean cloth; do not use polish or shiner,Specifications of AW Bellies General Ideal For Women Occasion Casual Shoe Details Color Red Outer Material Patent Leather Heel Height 1 inch Number of Contents in Sales Package Pack of 1 In the Box One Pair Of Shoes

3
Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT_11 In the Box 2 shorts

4
Specifications of Sicons All Purpose Arnica Dog Shampoo (500 ml) General Pet Type Dog Brand Sicons Quantity 500 ml Model Number SH.DF-14 Type All Purpose Fragrance Arnica Form Factor Liquid In the Box Sales Package Shampoo Sicons Dog Fashion Arnica

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1    NaN  ...       FabHomeDecor Fabric Double Sofa Bed
2    NaN  ...                              AW Bellies
3    NaN  ...     Alisha Solid Women's Cycling Shorts
4    NaN  ...   Sicons All Purpose Arnica Dog Shampoo


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DATA ANALYSIS ON INTEGRATED DATA

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df_all_platforms.info()

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50%	5673.500000	4.330000	0.860000	11.590000
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max	11346.000000	5.000000	1.000000	499.000000

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18929.000000
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3.943410
std        19.305909   7954.58767     486.263116     581.730717
0.739063
min         0.010000      1.00000       2.450000       3.000000
1.000000
25%         6.680000   6889.50000      95.000000     100.000000
3.700000
50%        11.590000  13778.00000     190.000000     220.000000
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75%        20.000000  20666.50000     359.000000     425.000000
4.300000
max       499.000000  27555.00000   12500.000000   12500.000000
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12855
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15987
NaN

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15335   Loreal Paris
14373   Lever Ayush
2184   Colgate
10670   Burt's Bees
19026   Steelo
5958   B Vishal
10186   Speedwav
12855   Jewels5
15987   INATUR

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NaN
12855
NaN

15987
NaN

description \
2729
S4S Printed Women's Full Coverage Bra\n   Price: Rs. 289\n\t\t\t\t\n\t\t\tS4S Brings you a range of stylish and comfortable collection. Colour may slightly vary depending on your computer monitor setting.\nS4S Brings you a range of stylish and comfortable collection. Colour may slightly vary depending on your computer monitor setting.
15335
WHITE PERFECT Fairness Control Day Cream lightens the skin tone and reduces brown spot Melanin Vanish*: regulates the production of melanin for a visible reduction of darkness and brown spots Tourmaline Gemstone: Helps stimulate microcirculation helping give the skin a intense radiance and a rosy glow and Mexoryl SX : A patented; powerful UV filter system. For Beauty tips, tricks & more visit https://bigbasket.blog/
14373 Ayush Purifying Turmeric soap is formulated with 5000 years of Ayurvedic wisdom to give you clear and glowing skin. It contains the goodness of Turmeric (Haldi) and Nalpamaradi Tailam. Turmeric (Haldi) is prescribed in Ayurveda for purification and is also well known for its antiseptic and healing properties. While, Nalpamaradi Tailam is a classic oil formulated with various effective ingredients such as Vetiver, Peepal and Amla that are believed to cure skin infections and rashes, leaving your skin clear and glowing. The Ayush range of products has been carefully crafted with authentic recipes and processes, prescribed in the ancient Granthas. Traditionally, Ayurvedic ingredients were consciously picked at a certain time of the day, when they are most potent to create extremely effective Ayurvedic solutions. Lever Ayush uses the most potent ingredients that are highly beneficial to the skin, hair & teeth. The goodness of ingredients like Turmeric (Haldi), Saffron (Kesar), Cows ghee, Cardamom and Rock Salt has been used to formulate products that address our most worrying beauty problems. At Lever Ayush, we strive to make ancient Ayurvedic wisdom accessible to solve modern-day beauty problems. We believe that the solution to our beauty problems lies in the 5000-year-old Ayurvedic granthas, that prescribes the way to solve these problems from the root. We work with one of the world's premier Ayurvedic institutes, Arya Vaidya Pharmacy (AVP) to create products that use the right ingredients to make them unique and incredibly effective.
2184
Colgate Active Salt with salt & lemon is an anti-cavity toothpaste with the goodness of natural ingredients. Power of active salt and lemon helps keep remove yellowness with regular brushing. Refreshing minty flavour gives fresher breath when used as directed for oral hygiene. Both the ingredients help fight germs and provide you with

healthier and cleaner teeth. Brush twice a day with Colgate Active Salt Lemon toothpaste as recommended by dentists. Colgate is India,¬„¢s No. 1 brand recommended by Dentists and offers unique oral hygiene solutions to ensure complete protection against germs and plague build-up.

10670

Nourish and moisturize your belly with Burt’s Bees Mama Bee Belly Butter. This 99% natural, fragrance free formula contains a combination of cocoa, shea and jojoba butters   that will keep your belly feeling soft and smooth before and after your new arrival. Simply apply this rich belly butter to your growing bump to keep skin supple. Pamper yourself with Mama Bee during your nine month stretch.

19026

Steelo plastic container set is made of 100% food-grade PET plastic that can help store pulses, spices and other edibles in a safe way. These containers are Bisphenol A (BPA) free which makes it safe from health hazards and will help lead a healthy lifestyle. The PET material makes the containers odor-free, so you donot have to worry about the contents smelling different. The airtight seal completely locks the container and conserves the nutritional value of the stored items.

5958

Office Scissor can be used for cutting paper, cardboard, fabric, photos and more. Widely used in the office for cutting paper or any other paper-related product. It can also be used in school for craft or at home in the kitchen. With its stainless steel blade, it is a versatile product used to perform different functions.

10186

Key Features of Speedwav 154253 Manual Rear View Mirror Mirror Surface: Convex Suitable for: Cars,Speedwav 154253 Manual Rear View Mirror (Interior) Price: Rs. 594 Wide angle view from roof mounted rear mirror provides tension free driving experience and reduces stress of looking to both side rear view mirrors Features Makes driving on roads easy A must have product for all long distance travelers Can be installed on the roof rear view of the vehicle with help of clips Provides wide angle rear view for safe driving on roads as well as on highway Anti slip clip holding the mirror of the vehicle provides tension free driving Package Contents: 1 X Speedwav Wide Angle Rear View Mirror,Specifications of Speedwav 154253 Manual Rear View Mirror (Interior) General Mirror Operation Manual Brand Speedwav Mirror Placement Interior Vehicle Model Name Fiesta Model Number 154253 Vehicle Brand Ford Type Rear View Mirror Vehicle Model Year 2013, 2014, 2015 Mirror Surface Convex In the Box 1 Mirror Unit

12855

Jewels5 Tirion Yellow Gold Diamond 18 K Ring - Buy Jewels5 Tirion Yellow Gold Diamond 18 K Ring only for Rs. 27000 from Flipkart.com. Only Genuine Products. 30 Day Replacement Guarantee. Free Shipping. Cash On Delivery!

15987

Inatur Calming massage oil is a blend of pure essential oils which work to relax tight muscles and give relief from tension. It is perfect for a gentle massage to help relax, unwind and ensure a good nights sleep. According to Ayurveda, this oil can be used by persons with Pitta imbalance, which occurs due to reasons like emotional trauma and unrest, to relax the mind and body. Soothing herbal and base oils infused with antioxidants and vitamins nourish, protect and cool Pitta skin.

```
       price  ...                                 product_name  \
2729     NaN  ...          S4S Printed Women's Full Coverage Bra
15335    NaN  ...                                          NaN
14373    NaN  ...                                          NaN
2184     NaN  ...                                          NaN
10670  13.99  ...                                          NaN
19026    NaN  ...                                          NaN
5958     NaN  ...                                          NaN
10186    NaN  ...      Speedwav 154253 Manual Rear View Mirror
12855    NaN  ...  Jewels5 Tirion Yellow Gold Diamond 18 K Ring
15987    NaN  ...                                          NaN


      product_category_tree  \
2729
["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Bras
>> S4S Bras"]
15335
NaN
14373
NaN
2184
NaN
10670
NaN
19026
NaN
5958
NaN
10186  ["Automotive >> Accessories & Spare parts >> Spares &
Performance Parts >> Car Spare Parts >> Vehicle Mirrors >> Speedwav
154253 Manual Rear View Mirror (Interior)"]
12855
["Jewellery >> Rings"]
15987
NaN


                    pid  retail_price  discounted_price  \
2729    BRAEDQFRZEEGC49E         949.0             289.0
15335               NaN           NaN               NaN
14373               NaN           NaN               NaN
```

```
2184               NaN        NaN             NaN
10670              NaN        NaN             NaN
19026              NaN        NaN             NaN
5958               NaN        NaN             NaN
10186   VMREGZPQEQ3FX7JZ     1050.0           594.0
12855   RNGE8UGWZ7QGTSBT    38066.0         27000.0
15987              NaN        NaN             NaN


                                                   image  \
2729
["http://img6a.flixcart.com/image/bra/b/b/g/dolly-bluered-2-s4s-38b-
original-imaedq8yh3jwcjky.jpeg",
"http://img5a.flixcart.com/image/bra/b/b/g/dolly-bluered-2-s4s-38b-
original-imaedq8yh3jwcjky.jpeg",
"http://img6a.flixcart.com/image/bra/f/s/e/dolly-blue-3-s4s-30b-
original-imaedq8s6mnhz4da.jpeg",
"http://img6a.flixcart.com/image/bra/f/s/e/dolly-blue-3-s4s-30b-
original-imaedq8srauj8zpg.jpeg",
"http://img5a.flixcart.com/image/bra/f/s/e/dolly-blue-3-s4s-36b-
original-imaedq8sfb68qjyf.jpeg"]
15335
NaN
14373
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2184
NaN
10670
NaN
19026
NaN
5958
NaN
10186
["http://img6a.flixcart.com/image/vehicle-mirror/f/e/5/154351-
speedwav-1100x1100-imaegbdufawd6bba.jpeg",
"http://img5a.flixcart.com/image/vehicle-mirror/f/e/5/154351-speedwav-
original-imaegbdufawd6bba.jpeg",
"http://img6a.flixcart.com/image/vehicle-mirror/7/j/z/154253-speedwav-
original-imaegnyjtzeszpxa.jpeg"]
12855   ["http://img5a.flixcart.com/image/ring/x/n/z/tlr1658-16-
jewels5-ring-1100x1100-imae8tnp7wr6ngfd.jpeg",
"http://img5a.flixcart.com/image/ring/x/n/z/tlr1658-16-jewels5-ring-
original-imae8tnp7wr6ngfd.jpeg",
"http://img5a.flixcart.com/image/ring/x/n/z/tlr1658-16-jewels5-ring-
original-imae8tnpr7j8daqf.jpeg",
"http://img5a.flixcart.com/image/ring/s/z/m/tlr1658-6-jewels5-ring-
original-imae8tnqt3fgsjgn.jpeg",
"http://img5a.flixcart.com/image/ring/x/n/z/tlr1658-16-jewels5-ring-
original-imae8tnq3dgvpyjh.jpeg",
```

"http://img5a.flixcart.com/image/ring/x/n/z/tlr1658-16-jewels5-ring-original-imae8tnryvk3jzcp.jpeg"]
15987
NaN

```
      is_FK_Advantage_product       product_rating
overall_rating  \
2729                   False  No rating available  No rating
available
15335                    NaN                  NaN
NaN
14373                    NaN                  NaN
NaN
2184                     NaN                  NaN
NaN
10670                    NaN                  NaN
NaN
19026                    NaN                  NaN
NaN
5958                     NaN                  NaN
NaN
10186                  False  No rating available  No rating
available
12855                  False  No rating available  No rating
available
15987                    NaN                  NaN
NaN
```

```
product_specifications
2729
{"product_specification"=>[{"key"=>"Brand Color", "value"=>"Blue,
Red"}, {"key"=>"color", "value"=>"Blue, Red"}, {"key"=>"Pattern",
"value"=>"Printed"}, {"key"=>"Ideal For", "value"=>"Women's"},
{"key"=>"Occasion", "value"=>"Casual"}, {"key"=>"Wire Support",
"value"=>"Wirefree"}, {"key"=>"Inner Lining", "value"=>"Cotton
Lining"}, {"key"=>"Straps", "value"=>"Regular"}, {"key"=>"Detachable
Straps", "value"=>"No"}, {"key"=>"Number of Contents in Sales
Package", "value"=>"Pack of 2"}, {"key"=>"Cup Type", "value"=>"Non
Padded"}, {"key"=>"Fabric", "value"=>"Hosiery, Cotton"},
{"key"=>"Type", "value"=>"Full Coverage Bra"}, {"value"=>"Hand
Wash/Machine Wash, Wash Dark Colour Separately."}, {"value"=>"2 Pc
Bra"}]}
15335
NaN
14373
NaN
2184
NaN
10670
```

NaN
19026
NaN
5958
NaN
10186
{"product_specification"=>[{"key"=>"Mirror Operation",
"value"=>"Manual"}, {"key"=>"Brand", "value"=>"Speedwav"},
{"key"=>"Mirror Placement", "value"=>"Interior"}, {"key"=>"Vehicle
Model Name", "value"=>"Fiesta"}, {"key"=>"Model Number",
"value"=>"154253"}, {"key"=>"Vehicle Brand", "value"=>"Ford"},
{"key"=>"Type", "value"=>"Rear View Mirror"}, {"key"=>"Vehicle Model
Year", "value"=>"2013, 2014, 2015"}, {"key"=>"Mirror Surface",
"value"=>"Convex"}, {"value"=>"1 Mirror Unit"}]}
12855   {"product_specification"=>[{"key"=>"Brand",
"value"=>"Jewels5"}, {"key"=>"Collection", "value"=>"Designer"},
{"key"=>"Model Number", "value"=>"TLR1658"},
{"key"=>"Precious/Artificial Jewellery", "value"=>"Precious
Jewellery"}, {"key"=>"Type", "value"=>"Ring"}, {"key"=>"Model Name",
"value"=>"Tirion"}, {"key"=>"Ideal For", "value"=>"Women, Girls"},
{"key"=>"Occasion", "value"=>"Everyday, Love, Religious, Wedding and
Engagement, Workwear"}, {"key"=>"Color", "value"=>"Gold"},
{"key"=>"Diamond Weight", "value"=>"0.29 carat"}, {"key"=>"Diamond
Shape", "value"=>"Round"}, {"key"=>"Diamond Color Grade",
"value"=>"IJ"}, {"key"=>"Natural/Synthetic Diamond", "value"=>"Natural
Diamond"}, {"key"=>"Diamond Clarity", "value"=>"SI"}, {"key"=>"Gold
Purity", "value"=>"18 K"}, {"key"=>"Gold Weight", "value"=>"2.85"},
{"key"=>"Gold Color", "value"=>"Yellow Gold"}, {"key"=>"Weight",
"value"=>"2.908 g"}, {"key"=>"Height", "value"=>"21.7 mm"},
{"key"=>"Width", "value"=>"8.7 mm"}, {"key"=>"Base Material",
"value"=>"Yellow Gold"}, {"key"=>"Gemstone", "value"=>"Diamond"},
{"key"=>"Ring Size", "value"=>"8"}, {"key"=>"Pack of", "value"=>"1"},
{"key"=>"Certification", "value"=>"BIS Hallmark, DGLA, GCI"}]}
15987
NaN

[10 rows x 37 columns]

VISUALIZATION ON DATASET

```
fig = plt.figure(figsize=(10,7))
sns.set()
ax = sns.countplot(x="Platform", data=df_all_platforms)
```
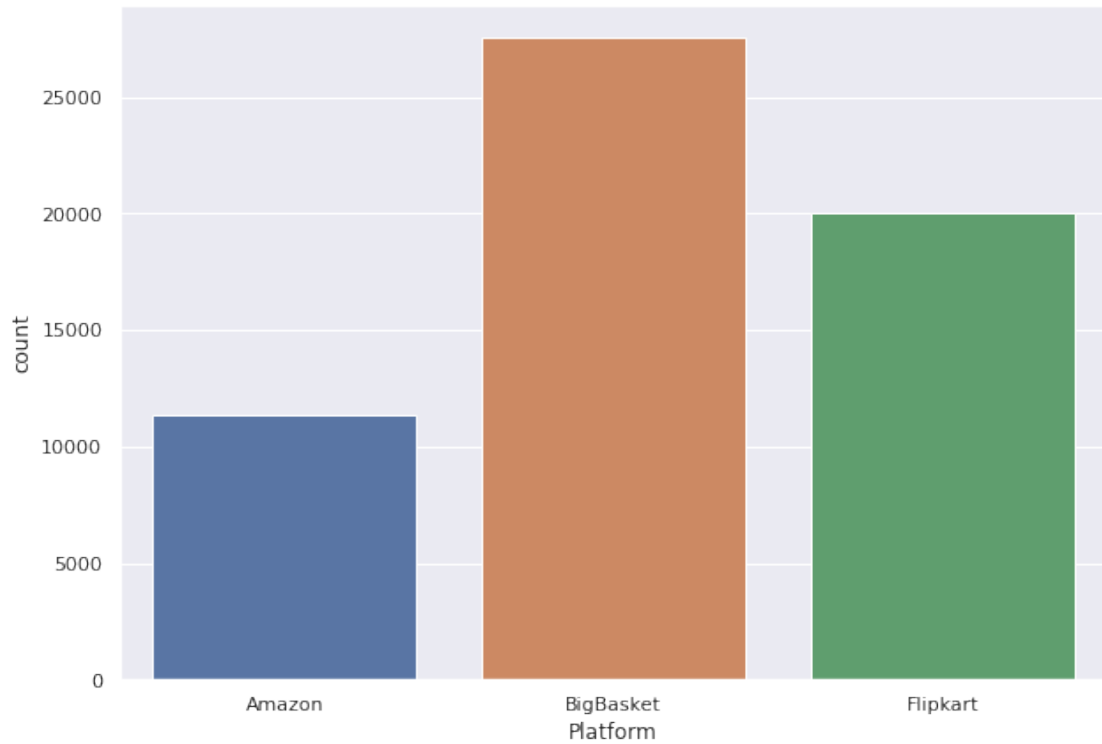
```
corr = df_all_platforms.corr()
fig = plt.figure(figsize=(10,7))
sns.heatmap(corr, xticklabels=corr.columns, yticklabels=corr.columns,
annot=True)
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f470f041e10>
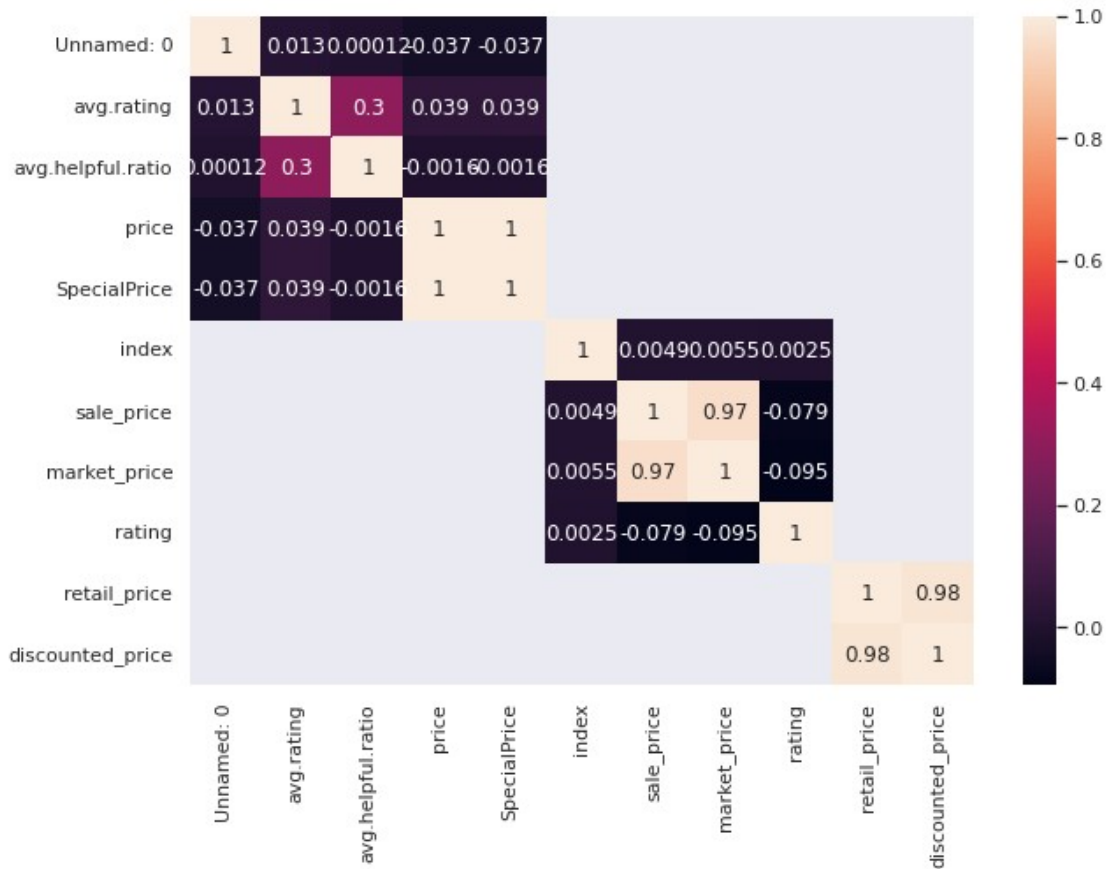
```
df_all_platforms.isna().any()
```

Unnamed: 0	True
asin	True
avg.rating	True
avg.helpful.ratio	True
also_bought	True
also_viewed	True
brand	True
categories	True
description	True
price	True
salesRank	True
title	True
SpecialPrice	True
IsAvailable	True
Platform	False
index	True
product	True
category	True
sub_category	True
sale_price	True
market_price	True
type	True

```
rating                      True
Category                    True
uniq_id                     True
crawl_timestamp             True
product_url                 True
product_name                True
product_category_tree       True
pid                         True
retail_price                True
discounted_price            True
image                       True
is_FK_Advantage_product     True
product_rating              True
overall_rating              True
product_specifications      True
dtype: bool

df_all_platforms.isna().sum()

Unnamed: 0                  47555
asin                        47555
avg.rating                  47555
avg.helpful.ratio           58109
also_bought                 47555
also_viewed                 47555
brand                        5881
categories                  47555
description                   799
price                       47960
salesRank                   47555
title                       47555
SpecialPrice                47960
IsAvailable                 47555
Platform                        0
index                       31346
product                     31347
category                    31346
sub_category                31346
sale_price                  31346
market_price                31346
type                        31346
rating                      39972
Category                    31346
uniq_id                     38901
crawl_timestamp             38901
product_url                 38901
product_name                38901
product_category_tree       38901
pid                         38901
retail_price                38979
discounted_price            38979
```

```
image                       38904
is_FK_Advantage_product     38901
product_rating              38901
overall_rating              38901
product_specifications      38915
dtype: int64
```

df_all_platforms.isna().sum().sum()

1385331

RECOMMENDATION SYSTEM FOR THE INTEGRATED DATASET

```python
def search(sender):
    ''' recomending user based on special price and ratings. '''
    search_item = sender.value.lower()
    df_filtered =
df_all_platforms[df_all_platforms['product_name'].astype(str)\
                    .str.contains(search_item)].sort_values(by=['Specia
lPrice'], ascending=[True])\
                    .groupby(by=['Platform']).first()
    df = df_filtered.sort_values(by=['rating'],
ascending=[False]).copy()
    df.reset_index(inplace=True)
    df_top_product = df.iloc[1]
    msg = str.format('Recommended Platform : {0}',
df_top_product.Platform)
    print(tabulate([[msg]], tablefmt='fancy_grid'))
    display(df)

display(df[['Platform','rating']].head(4).style.hide_index().highlight
_max(color='lightgreen'))
    fig = plt.figure(figsize=(10,7))
    ax = sns.barplot(x="Platform", y="SpecialPrice", data=df,
capsize=.2)
# recommending basedon price and ratings
text = widgets.Text()
print(tabulate([['Type the product name in below box and press enter
to search.']], tablefmt='grid'))
display(text)
text.on_submit(search)
```

```
+-------------------------------------------------------------+
| Type the product name in below box and press enter to search. |
+-------------------------------------------------------------+
```

{"version_major":2,"version_minor":0,"model_id":"16edf8281aae45a29a829
78138a97713"}

```
-----------------------------------------------------------------------
-----
IndexError                              Traceback (most recent call
```

```
last)
<ipython-input-39-0d387aa845fa> in search(sender)
      7       df = df_filtered.sort_values(by=['rating'],
ascending=[False]).copy()
      8       df.reset_index(inplace=True)
----> 9       df_top_product = df.iloc[1]
     10       msg = str.format('Recommended Platform : {0}',
df_top_product.Platform)
     11       print(tabulate([[msg]], tablefmt='fancy_grid'))

/usr/local/lib/python3.7/dist-packages/pandas/core/indexing.py in
__getitem__(self, key)
    929
    930             maybe_callable = com.apply_if_callable(key,
self.obj)
--> 931             return self._getitem_axis(maybe_callable,
axis=axis)
    932
    933     def _is_scalar_access(self, key: tuple):

/usr/local/lib/python3.7/dist-packages/pandas/core/indexing.py in
_getitem_axis(self, key, axis)
   1564
   1565             # validate the location
-> 1566             self._validate_integer(key, axis)
   1567
   1568             return self.obj._ixs(key, axis=axis)

/usr/local/lib/python3.7/dist-packages/pandas/core/indexing.py in
_validate_integer(self, key, axis)
   1498         len_axis = len(self.obj._get_axis(axis))
   1499         if key >= len_axis or key < -len_axis:
-> 1500             raise IndexError("single positional indexer is
out-of-bounds")
   1501
   1502     #
----------------------------------------------------------------------

IndexError: single positional indexer is out-of-bounds
```