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In [ ]: from bs4 import BeautifulSoup
import requests
import pandas as pd
import numpy as np
```

```
In [ ]: # Function to extract Product Title
def get_title(soup):

    try:
        # Outer Tag Object
        title = soup.find("span", attrs={"id":'productTitle'})

        # Inner NavigatableString Object
        title_value = title.text

        # Title as a string value
        title_string = title_value.strip()

    except AttributeError:
        title_string = ""

    return title_string
```

```
In [ ]: # Function to extract Product Price
def get_price(soup):

    try:
        price = soup.find("span", attrs={'id':'priceblock_ourprice'}).string.strip()

    except AttributeError:

        try:
            # If there is some deal price
            price = soup.find("span", attrs={'id':'priceblock_dealprice'}).string.strip()

        except:
            price = ""

    return price
```

```
In [ ]: # Function to extract Product Rating
def get_rating(soup):

    try:
        rating = soup.find("i", attrs={'class':'a-icon a-icon-star a-star-4-5'}).string.strip()

    except AttributeError:
        try:
            rating = soup.find("span", attrs={'class':'a-icon-alt'}).string.strip()
        except:
            rating = ""

    return rating
```

```
In [ ]: # Function to extract Number of User Reviews
def get_review_count(soup):

    try:
        review_count = soup.find("span", attrs={'id':'acrCustomerReviewText'}).string.strip()

    except AttributeError:
        review_count = ""

    return review_count
```

```
In [ ]: # Function to extract Availability Status
def get_availability(soup):

    try:
        available = soup.find("div", attrs={'id':'availability'})
        available = available.find("span").string.strip()

    except AttributeError:
        available = "Not Available"

    return available
```

```
In [ ]: if __name__ == '__main__':

    # add your user agent
    HEADERS = ({'User-Agent': '', 'Accept-Language': 'en-US, en;q=0.5'})

    # The webpage URL
    URL = "https://www.amazon.com/s?k=playstation+4&ref=nb_sb_noss_2"

    # HTTP Request
    webpage = requests.get(URL, headers=HEADERS)

    # Soup Object containing all data
    soup = BeautifulSoup(webpage.content, "html.parser")

    # Fetch links as List of Tag Objects
    links = soup.find_all("a", attrs={'class':'a-link-normal s-no-outline'})

    # Store the links
    links_list = []

    # Loop for extracting links from Tag Objects
    for link in links:
        links_list.append(link.get('href'))

    d = {"title": [], "price": [], "rating": [], "reviews": [], "availability": []}
```

```
In [ ]: # Loop for extracting links from Tag Objects
for link in links:
    links_list.append(link.get('href'))

d = {"title": [], "price": [], "rating": [], "reviews": [], "availability": []}
```

```
In [ ]: # Loop for extracting product details from each link
for link in links_list:
    new_webpage = requests.get("https://www.amazon.com" + link, headers=HEADERS)

    new_soup = BeautifulSoup(new_webpage.content, "html.parser")

    # Function calls to display all necessary product information
    d['title'].append(get_title(new_soup))
    d['price'].append(get_price(new_soup))
    d['rating'].append(get_rating(new_soup))
    d['reviews'].append(get_review_count(new_soup))
    d['availability'].append(get_availability(new_soup))
```

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In [ ]: amazon_df = pd.DataFrame.from_dict(d)
amazon_df['title'].replace('', np.nan, inplace=True)
amazon_df = amazon_df.dropna(subset=['title'])
amazon_df.to_csv("amazon_data.csv", header=True, index=False)
```

C:\Users\DELL\AppData\Local\Temp\ipykernel_17744\2726514276.py:2: FutureWarning: A value is trying to be set on a copy of a DataFrame or Series through chained assignment using an inplace method. The behavior will change in pandas 3.0. This inplace method will never work because the intermediate object on which we are setting values always behaves as a copy.

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amazon_df['title'].replace('', np.nan, inplace=True)
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In [ ]: amazon_df
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Out[ ]:
      title price rating reviews availability
0  Sony Playstation PS4 1TB Black Console 4.6 out of 5 stars 1,399 ratings In Stock
1  Flagship Newest Play Station 4 1TB HDD Only on... 4.5 out of 5 stars 199 ratings Not Available
2  Newest Sony Playstation 4 Slim 1TB SSD Console... 4.3 out of 5 stars 313 ratings Not Available
3  PlayStation®5 Digital Edition (slim) 4.7 out of 5 stars 3,504 ratings Only 5 left in stock - order soon.
4  MOVONE Wireless Controller Dual Vibration Game... 4.1 out of 5 stars 1,263 ratings In Stock
5  Charger Dock Station for PS4, 1.8 Hrs Fast Cha... 4.6 out of 5 stars 14,249 ratings In Stock
6  Wireless Controller for PS4 with 2 Thumb Grips... 4.1 out of 5 stars 1,607 ratings In Stock
7  VidPPluing Wireless Controller for PS4/Pro/Sli... 4.3 out of 5 stars 401 ratings In Stock
8  PlayStation 4 Slim 500GB Console - Uncharted 4... 4.8 out of 5 stars 6,453 ratings Only 1 left in stock - order soon.
9  PlayStation 4 Slim 1TB Console - Marvel's Spid... 4.7 out of 5 stars 2,814 ratings Not Available
10 OIVO PS4 Stand Cooling Fan Station for Playsta... 4.5 out of 5 stars 45,117 ratings In Stock
11 Risen - PlayStation 4 4.4 out of 5 stars 7 ratings Only 3 left in stock - order soon.
12 Minecraft Starter Collection (PS4) 4.6 out of 5 stars 660 ratings In Stock
13 Among Us: Crewmate Edition (PS4) - PlayStation 4 4.3 out of 5 stars 337 ratings Only 1 left in stock - order soon.
14 Wireless Controller Compatible with PS4/Slim/P... 4.2 out of 5 stars 3,086 ratings In Stock
15 PlayStation 4 Slim 1TB Console - Black (Renewed) 4.1 out of 5 stars 1,513 ratings Only 2 left in stock - order soon.
16 Turtle Beach Stealth 700 Gen 2 MAX Wireless Am... 4.3 out of 5 stars 1,623 ratings In Stock
17 KontrolFreek FPS Freek Galaxy Black for Playst... 4.6 out of 5 stars 2,338 ratings In Stock
18 Sony Playstation PS4 1TB Black Console 4.6 out of 5 stars 1,399 ratings In Stock
19 Flagship Newest Play Station 4 1TB HDD Only on... 4.5 out of 5 stars 199 ratings Not Available
20 Newest Sony Playstation 4 Slim 1TB SSD Console... 4.3 out of 5 stars 313 ratings Not Available
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24 Wireless Controller for PS4 with 2 Thumb Grips... 4.1 out of 5 stars 1,607 ratings In Stock
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26 PlayStation 4 Slim 500GB Console - Uncharted 4... 4.8 out of 5 stars 6,453 ratings Only 1 left in stock - order soon.
27 PlayStation 4 Slim 1TB Console - Marvel's Spid... 4.7 out of 5 stars 2,814 ratings Not Available
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32 TIANHOO Wireless Controller Compatible with PS... 4.2 out of 5 stars 3,086 ratings In Stock
33 PlayStation 4 Slim 1TB Console - Black (Renewed) 4.1 out of 5 stars 1,513 ratings Only 2 left in stock - order soon.
34 Turtle Beach Stealth 700 Gen 2 MAX Wireless Am... 4.3 out of 5 stars 1,623 ratings In Stock
35 KontrolFreek FPS Freek Galaxy Black for Playst... 4.6 out of 5 stars 2,338 ratings In Stock
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In [ ]:
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