```
In [1]: import selenium
                          import pandas as pd
                           from selenium import webdriver
                           import warnings
                           warnings.filterwarnings('ignore')
                           from selenium.common.exceptions import StaleElementReferenceException, NoSuchElementException
                           from selenium.webdriver.common.by import By
                           import time
                           from bs4 import BeautifulSoup
   In [ ]:
                          1. Write a python program which searches all the product under a particular product from www.amazon.in. The product to be searched will
                          be taken as input from user. For e.g. If user input is 'quitar'. Then search for quitars.
   In [ ]:
                          driver=webdriver.Chrome(r'C:/chromedriver.exe')
                          driver.maximize window()
In [22]:
In [23]: time.sleep(5)
In [24]: url=driver.get("https://www.amazon.in/")
In [25]: user_input = input('Enter the product that we want to search : ')
                          Enter the product that we want to search : guitar
In [27]:
                          search=driver.find element(By.ID, "twotabsearchtextbox")
                           search.send keys(user input)
                          button=driver.find element(By.ID, "nav-search-submit-button")
In [28]:
                          button.click()
   In [ ]:
                          2.In the above question, now scrape the following details of each product listed in first 3 pages of your search results and save it in a data
                          frame and csv. In case if any product has less than 3 pages in search results then scrape all the products available under that product
                          name. Details to be scraped are: "Brand Name", "Name of the Product", "Price", "Return/Exchange", "Expected Delivery", "Availability"
                          and "Product URL". In case, if any of the details are missing for any of the product then replace it by "-"
   In [ ]:
   In [9]:
                          urls=[]
                           start=0
                           end=3
                           for page in range(start,end):
                                      url=driver.find elements(By.XPATH,'//a[@class="a-link-normal s-underline-text s-underline-link-text s-link-
                                      for i in url:
                                                 urls.append(i.get_attribute('href'))
                                      next button=driver.find elements(By.XPATH,'//a[@aria-label="Go to next page, page 2"]')
In [26]: urls
                          ['https://www.amazon.in/sspa/click?ie=UTF8&spc=MToOMTk3NjQyNDc3NjMzNDU50jE20DM5MTE3NTU6c3BfYXRm0jIwMDg4NDY10DU5
Out[26]:
                          NDA00jowOjo&url=%2FHenrix-Cutaway-Acoustic-Guitar-Action%2Fdp%2FB097NCQFFM%2Fref%3Dsr 1 1 sspa%3Fcrid%3DQH2MOW7
                          660 JU\% 26 keywords\% 3D guitar\% 26 qid\% 3D 1683 911755\% 26 sprefix\% 3D guitar\% 252 Caps\% 252 C494\% 26 sr\% 3D 8-1-spons\% 26 sp\_csd\% 3D d2 Use and the sponsor of the spons
                          kZ2V0TmFtZT1zcF9hdGY%26psc%3D1'
                              'https://www.amazon.in/Juarez-Acoustic-Cutaway-038C-Strings/dp/B017NPCSLI/ref=sr 1 2?crid=QH2MOW7660JU&keyword
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                          ords=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-4'
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                           ICDtin C/https://www.amazon.in/Kadence-Acoustica-Ash-Wood-Equlizer/dp/B0757H5P13/ref=sxin 16 sbv search btf?con
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'https://www.amazon.in/Yamaha-Classical-Guitar-C40-02/dp/B003UGCUFE/ref=sxbs_aspa_sqa?c_c=533051941&content-id =amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c%s3Aamzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&crid=QH2MOW766 0JU&cv_ct_cx=guitar&keywords=guitar&pd_rd_i=B003UGCUFE&pd_rd_r=f458767b-e261-4eac-8b22-15dc9d6a0708&pd_rd_w=Ix7 NI&pd_rd_wg=zdZc1&pf_rd_p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&pf_rd_r=GWMZKQ1C2QHXFWNA6AZ8&qid=1683911755&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494&sr=1-1-93291ede-2a7a-4e75-a6c2-b89c29736263', 'https://www.amazon.in/Yamaha-C40MII-Acoustic-Concert-Guitar/dp/B005LG2JRK/ref=sxbs_aspa_sqa?c_c=533051941&content-id=amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c%3Aamzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c%crid=QH 2MOW7660JU&cv_ct_cx=guitar&keywords=guitar&pd_rd_i=B005LG2JRK&pd_rd_r=f458767b-e261-4eac-8b22-15dc9d6a0708&pd_rd_w=Ix7NI&pd_rd_wg=zdZc1&pf_rd_p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&pf_rd_r=GWMZKQ1C2QHXFWNA6AZ8&qid=1683911755&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494&sr=1-4-93291ede-2a7a-4e75-a6c2-b89c2973626

 $\label{lem:https://www.amazon.in/DAddario-EJ27H-Classical-Tension-Strings/dp/B000H2D78S/ref=sxbs_aspa_sqa?c_c=533051941\& content-id=amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&crid=QH2M0W7660JU&cv_ct_cx=guitar&keywords=guitar&pd_rd_i=B000H2D78S&pd_rd_r=f458767b-e261-4eac-8b22-15dc9d6a0708&pd_rd_w=Ix7NI&pd_rd_wg=zdZc1&pf_rd_p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&pf_rd_r=GWMZKQ1C2QHXFWNA6AZ8&qid=168391755&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494&sr=1-6-93291ede-2a7a-4e75-a6c2-b89c2973$

https://www.amazon.in/Bluberry-VIP-390-Classical-Guitar/dp/B0BVYTGKTM/ref=sxbs aspa_sqa?c c=533051941&content -id=amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c%3Aamzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&crid=QH2MOW $7660JU\&cv_ct_cx=guitar\&keywords=guitar\&pd_rd_i=B0BVYTGKTM\&pd_rd_r=f458767b-e261-4eac-8b22-15dc9d6a0708\&pd_rd_w=f458767b-e261-4eac-8b22-15dc9d6a0708\&pd_rd_w=f458767b-e261-4eac-8b22-15dc9d6a0708&pd_rd_w=f458767b-e261-4eac-8b22-4eac$ $Ix7NI\&pd\ rd\ wg=zdZc1\&pf\ rd\ p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c\&pf\ rd\ r=GWMZKQ1C2QHXFWNA6AZ8\&qid=1683911755\&s$ $bo=RZvfv\sqrt[8]{2}F\sqrt[8]{2}FWDF\%2B05021pAnSA\%3D\%3D\&sprefix=guitar\%2Caps\%2C494\&sr=\overline{1}-8-93291ede-2a7a-4e75-a6c2-b89c29736263',$ https://www.amazon.in/Juarez-Acoustic-Cutaway-038C-Strings/dp/B017NPCSLI/ref=sxbs_aspa_sqa?c_c=621615956&cont $\verb|ent-id=amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&3Aamzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&crid=QH2|$ MOW7660JU&cv ct cx=guitar&keywords=guitar&pd rd i=B017NPCSLI&pd rd r=f458767b-e261-4eac-8b22-15dc9d6a0708&pd rd w=Ix7NI&pd rd wg=zdZc1&pf rd p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&pf_rd_r=GWMZKQ1C2QHXFWNA6AZ8&qid=168391175 5&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=quitar%2Caps%2C494&sr=1-2-93291ede-2a7a-4e75-a6c2-b89c29736263 'https://www.amazon.in/Intern-INT-38C-Acoustic-Guitar-Black/dp/B073B6TQQY/ref=sxbs aspa sqa?c c=621615956&cont $ent - id = amzn1. sym. 2ebf6aef - 07da - 440f - 8e9d - 3a959a5bfb5c \\ \% 3Aamzn1. sym. 2ebf6aef - 07da - 440\overline{f} - 8e9\overline{d} - 3a95\overline{9}a5bfb5c \\ \& crid = QH2 \\ \& crid = QH2$ MOW7660JU&cv ct cx=guitar&keywords=guitar&pd rd i=B073B6TQQY&pd rd r=f458767b-e261-4eac-8b22-15dc9d6a0708&pd rd w=Ix7NI&pd rd wg=zdZc1&pf rd p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&pf rd r=GWMZKQ1C2QHXFWNA6AZ8&qid=168391175 5&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494&sr=1-3-93291ede-2a7a-4e75-a6c2-b89c29736263 . https://www.amazon.in/Yamaha-F280-Acoustic-Guitar-Natural/dp/B08317Y4VP/ref=sxbs_aspa_sqa?c_c=621615956&conte $\verb|nt-id=amz| n1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c%3Aamz| n1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c&crid=QH2Mather a contract of the contract of the$ &sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494&sr=1-5-93291ede-2a7a-4e75-a6c2-b89c29736263' 'https://www.amazon.in/JUAREZ-JRZ38C-Acoustic-Sunburst-Strings/dp/B01FYYTDTU/ref=sxbs_aspa_sqa?c_c=621615956&c

2M0W7660JU&keywords=guitar&qid=1683911755&sprefix=guitar&2Caps &2C494&sr=8-41'

U&keywords=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-42',

eywords=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-43',

words=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-44'

words=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-45'

rds=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-46'

ords=quitar&qid=1683911755&sprefix=quitar%2Caps%2C494&sr=8-47

rds=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-48',

words=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-49',

ords=guitar&qid=1683911755&sprefix=guitar%2Caps%2C494&sr=8-50',

3',

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 $ontent-id=amzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c\&3Aamzn1.sym.2ebf6aef-07da-440f-8e9d-3a959a5bfb5c\&crid=QH2MOW7660JU\&cv_ct_cx=guitar\&keywords=guitar\&pd_rd_i=B01FYYTDTU\&pd_rd_r=f458767b-e261-4eac-8b22-15dc9d6a0708\&pd_rd_w=Ix7NI\&pd_rd_wg=zdZc1\&pf_rd_p=2ebf6aef-07da-440f-8e9d-3a959a5bfb5c\&pf_rd_r=GWMZKQ1C2QHXFWNA6AZ8\&qid=1683911755\&sbo=RZvfv%2F%2FHxDF%2B05021pAnSA%3D%3D&sprefix=guitar%2Caps%2C494\&sr=1-7-93291ede-2a7a-4e75-a6c2-b89c29736263']$

```
Brand Name=[]
In [15]:
         Name of the Product=[]
         Price=[]
         Return_Exchange=[]
         Expected Delivery=[]
         Availability=[]
         Product_URL=[]
         for i in urls:
             driver.get(i)
             time.sleep(3)
                 brand=driver.find_element(By.XPATH,'//span[@class="a-size-base po-break-word"]')
                 Brand Name.append(brand.text)
             except NoSuchElementException :
                 Brand_Name.append('NA')
             try:
                 product=driver.find_element(By.XPATH,'//span[@id="productTitle"]')
                 Name_of_the_Product.append(product.text)
             except NoSuchElementException
                 Name of the Product append('NA')
                 price=driver.find_element(By.XPATH,'//span[@class="a-price-whole"]')
                 Price.append(price.text)
             except NoSuchElementException :
                 Price.append('NA')
                 returns=driver.find_element(By.XPATH,'//span[@class="a-declarative"]/div/a')
                 Return Exchange.append(returns.text)
             except NoSuchElemetException
                 Return_Exchange.append('NA')
                 delivery=driver.find element(By.XPATH,'//span[@class="a-text-bold"]')
                 Expected_Delivery.append(delivery.text)
             except NoSuchElementException :
                 Expected_Delivery.append('NA')
                 availability=driver.find element(By.XPATH,'//span[@class="a-size-medium a-color-success"]')
                 Availability.append(availability.text)
             except NoSuchElementException :
                 Availability.append('NA')
                 p url=driver.find element(By.XPATH,'//a[@class="a-link-normal"]')
                 Product_URL.append(p_url.get_attribute('href'))
             except NoSuchElementException :
                 Product_URL.append('NA')
In [18]: print(len(Brand Name),len(Name of the Product), len(Price),len(Return Exchange),len(Expected Delivery), len(Ava
         174 174 174 174 174 174 174
In [32]: df=pd.DataFrame({'Brand Name':Brand Name,'Name Of The Product':Name of the Product,'Price':Price,'Return/Exchan
         df.head()
```

Product_URI	Availability	Expected_Delivery	Return/Exchange	Price	Name_Of_The_Product	Brand_Name]:
https://www.amazon.in/Juarez-Acoustic Cutaway	In stock	Tuesday, 16 May	7 days Replacement	1,999	Juârez Acoustic Guitar, 38 Inch Cutaway, 038C	JUAREZ	0
https://www.amazon.in/Intern-INT-38C Acoustic	In stock	Monday, 15 May	7 days Replacement	2,199	Intern INT-38C Right hand Acoustic Guitar Kit,	Intern	1
https://www.amazon.in/JUAREZ JRZ38C-Acoustic-S	In stock	Tuesday, 16 May	7 days Replacement	1,999	Juarez Lindenwood Acoustic Guitar Kit, 38 Inch	JUAREZ	2
https://aax eu.amazon.in/x/c/RErJJ3p0Z2z57S63B	In stock	Monday, 15 May	7 days Replacement	6,999	Kadence Guitar Acoustica Series, Electric Acou	Kadence	3
https://www.amazon.in/Yamaha-F280 Acoustic-Gui	In stock	Monday, 15 May	7 days Replacement	7,200	Yamaha F280 Acoustic Rosewood Guitar (Natural,	YAMAHA	4

```
In [30]: df.to_csv("Guitar.csv")
In [31]: driver.close()
```

```
Tu [ ]:
         3. Write a python program to access the search bar and search button on images.google.com and scrape 10 images each for keywords
         'fruits', 'cars' and 'Machine Learning', 'Guitar', 'Cakes'.
 In [ ]:
In [31]:
         import requests
         import re
In [32]: driver=webdriver.Chrome(r'C:/chromedriver.exe')
In [33]: driver.maximize_window()
In [34]: time.sleep(3)
In [35]: url="http://images.google.com/"
In [36]:
         urls = []
         data = []
         search_item = ["Fruits","Cars","Machine Learning", "Guitar", "Cakes"]
In [37]:
          for item in search_item:
             driver.get(url)
             time.sleep(3)
         search = driver.find element(By.XPATH,'/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/div[2]/textarea')
In [41]:
         search.send_keys('item')
In [42]:
         button = driver.find_element(By.XPATH,"/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/button/div/span")
         button.click()
In [27]: for _ in range(20):
                 driver.execute_script("window.scrollBy(0,100)")
                 imgs = driver.find_elements(By.XPATH,"//img[@class='rg_i Q4LuWd']")
                  img_url = []
                  for image in imgs:
                      source = image.get_attribute('src')
                      if source is not None:
                          if(source[0:4] == 'http'):
                              img_url.append(source)
                 for i in img_url[:10]:
                     urls.append(i)
         for i in range(len(urls)):
             if i > 10:
                 break
             print("Downloading {0} of {1} images" .format(i,10))
             response = requests.get(urls[i])
              file = open(r"C:\Users\HP\Desktop\INTERNSHIP"+str(i)+".jpg","wb")
              file.write(response.content)
         Downloading 0 of 10 images
         Downloading 1 of 10 images
         Downloading 2 of 10 images
         Downloading 3 of 10 images
         Downloading 4 of 10 images
         Downloading 5 of 10 images
         Downloading 6 of 10 images
         Downloading 7 of 10 images
         Downloading 8 of 10 images
         Downloading 9 of 10 images
         Downloading 10 of 10 images
In [28]: driver.close()
 In [ ]:
In [43]: driver=webdriver.Chrome(r'C:/chromedriver.exe')
In [44]: driver.maximize_window()
In [45]: time.sleep(2)
```

In [46]: url="http://images.google.com/"

```
In [47]: urls = []
         data = []
In [49]:
         search item = ["Fruits","Cars","Machine Learning", "Guitar", "Cakes"]
         for item in search item:
             driver.get(url)
             time.sleep(3)
             search = driver.find element(By.XPATH,'/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/div[2]/textar
             search.send_keys('Fruits')
             button = driver.find element(By.XPATH,"/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/button/div/span")
             button.click()
In [50]: for in range(20):
                 driver.execute script("window.scrollBy(0,100)")
                 imgs = driver.find_elements(By.XPATH,"//img[@class='rg_i Q4LuWd']")
                 img_url = []
                 for image in imgs:
                     source = image.get_attribute('src')
                      if source is not None:
                         if(source[0:4] == 'http'):
                              img_url.append(source)
                 for i in img_url[:10]:
                     urls.append(i)
         for i in range(len(urls)):
             if i > 10:
                 break
             print("Downloading {0} of {1} images" .format(i,10))
             response = requests.get(urls[i])
             file = open(r"C:\Users\HP\Desktop\INTERNSHIP"+str(i)+".jpg","wb")
             file.write(response.content)
         Downloading 0 of 10 images
         Downloading 1 of 10 images
         Downloading 2 of 10 images
         Downloading 3 of 10 images
         Downloading 4 of 10 images
         Downloading 5 of 10 images
         Downloading 6 of 10 images
         Downloading 7 of 10 images
         Downloading 8 of 10 images
         Downloading 9 of 10 images
         Downloading 10 of 10 images
In [62]: driver.close()
In [60]:
         driver=webdriver.Chrome(r'C:/chromedriver.exe')
         driver.maximize window()
         time.sleep(2)
         url="http://images.google.com/"
         urls = []
         data = []
         search_item = ["Fruits","Cars","Machine Learning", "Guitar", "Cakes"]
         for item in search item:
             driver.get(url)
             time.sleep(3)
             search = driver.find element(By.XPATH,'/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/div[2]/textar
             search.send keys('Cars')
             button = driver.find element(By.XPATH,"/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/button/div/span")
             button.click()
In [61]: for in range(20):
                 driver.execute_script("window.scrollBy(0,100)")
                 imgs = driver.find_elements(By.XPATH,"//img[@class='rg_i Q4LuWd']")
                 img_url = []
                 for image in imgs:
                     source = image.get attribute('src')
                     if source is not None:
    if(source[0:4] == 'http'):
                              img_url.append(source)
                 for i in img url[:10]:
                     urls.append(i)
         for i in range(len(urls)):
             if i > 10:
                 break
             print("Downloading {0} of {1} images" .format(i,10))
             response = requests.get(urls[i])
```

```
file = open(r"C:\Users\HP\Desktop\INTERNSHIP"+str(i)+".jpg","wb")
             file.write(response.content)
         Downloading 0 of 10 images
         Downloading 1 of 10 images
         Downloading 2 of 10 images
         Downloading 3 of 10 images
         Downloading 4 of 10 images
         Downloading 5 of 10 images
         Downloading 6 of 10 images
         Downloading 7 of 10 images
         Downloading 8 of 10 images
         Downloading 9 of 10 images
         Downloading 10 of 10 images
 In []: driver.close()
In [54]: driver=webdriver.Chrome(r'C:/chromedriver.exe')
         driver.maximize window()
         time.sleep(2)
         url="http://images.google.com/"
         urls = []
         data = []
         search_item = ["Fruits","Cars","Machine Learning", "Guitar", "Cakes"]
         for item in search item:
             driver.get(url)
             time.sleep(3)
             search = driver.find element(By.XPATH,'/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/div[2]/textar
             search.send keys('Machine Learning')
             button = driver.find_element(By.XPATH,"/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/button/div/span")
             button.click()
In [55]: for _ in range(20):
                 driver.execute_script("window.scrollBy(0,100)")
                 imgs = driver.find_elements(By.XPATH,"//img[@class='rg i Q4LuWd']")
                 img_url = []
                 for image in imgs:
                     source = image.get_attribute('src')
                     if source is not None:
                         if(source[0:4] == 'http'):
                             img url.append(source)
                 for i in img url[:10]:
                     urls.append(i)
         for i in range(len(urls)):
             if i > 10:
                 break
             print("Downloading {0} of {1} images" .format(i,10))
             response = requests.get(urls[i])
             file = open(r"C:\Users\HP\Desktop\INTERNSHIP"+str(i)+".jpg","wb")
             file.write(response.content)
         Downloading 0 of 10 images
         Downloading 1 of 10 images
         Downloading 2 of 10 images
         Downloading 3 of 10 images
         Downloading 4 of 10 images
         Downloading 5 of 10 images
         Downloading 6 of 10 images
         Downloading 7 of 10 images
         Downloading 8 of 10 images
         Downloading 9 of 10 images
         Downloading 10 of 10 images
 In [ ]: driver.close()
In [56]: driver=webdriver.Chrome(r'C:/chromedriver.exe')
         driver.maximize window()
         time.sleep(2)
         url="http://images.google.com/"
         urls = []
         data = []
         search_item = ["Fruits","Cars","Machine Learning", "Guitar", "Cakes"]
         for item in search item:
             driver.get(url)
             time.sleep(3)
             search = driver.find element(By.XPATH,'/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/div[2]/textar
             search.send keys('Guitar')
             button = driver.find element(By.XPATH, "/html/body/div[1]/div[3]/form/div[1]/div[1]/div[1]/button/div/span")
             button.click()
```

```
In [57]: for _ in range(20):
                  driver.execute_script("window.scrollBy(0,100)")
                  imgs = driver.find_elements(By.XPATH,"//img[@class='rg i Q4LuWd']")
                  img_url = []
                  for image in imgs:
                       source = image.get_attribute('src')
                       if source is not None:
                           if(source[0:4] == 'http'):
                               img_url.append(source)
                  for i in img url[:10]:
                      urls.append(i)
          for i in range(len(urls)):
              if i > 10:
                  break
              print("Downloading {0} of {1} images" .format(i,10))
              response = requests.get(urls[i])
              file = open(r"C:\Users\HP\Desktop\INTERNSHIP"+str(i)+".jpg","wb")
              file.write(response.content)
          Downloading 0 of 10 images
          Downloading 1 of 10 images
          Downloading 2 of 10 images
          Downloading 3 of 10 images
          Downloading 4 of 10 images
          Downloading 5 of 10 images
          Downloading 6 of 10 images
          Downloading 7 of 10 images
          Downloading 8 of 10 images
          Downloading 9 of 10 images
          Downloading 10 of 10 images
 In [ ]: driver.close()
 In [ ]:
          4. Write a python program to search for a smartphone(e.g.: Oneplus Nord, pixel 4A, etc.) on www.flipkart.com and scrape following details
          for all the search results displayed on 1st page. Details to be scraped: "Brand Name", "Smartphone name", "Colour", "RAM",
          "Storage(ROM)", "Primary Camera", "Secondary Camera", "Display Size", "Battery Capacity", "Price", "Product URL". Incase if any of the
          details is missing then replace it by "- ". Save your results in a dataframe and CSV.
 In [ ]:
 In [ ]:
 In [ ]:
In [46]: driver=webdriver.Chrome(r'C:/chromedriver.exe')
In [47]: driver.get("https://www.flipkart.com/")
          driver.maximize_window()
In [48]: pop_ad=driver.find_element(By.XPATH,"/html/body/div[2]/div/div/button")
          pop_ad.click()
In [49]:
          search=driver.find element(By.CLASS NAME, " 3704LK")
          search.send_keys('pixel 4A')
In [50]:
          button=driver.find element(By.XPATH,'/html/body/div[1]/div/div[1]/div[2]/div[2]/form/div/button')
          button.click()
In [51]:
          page url=[]
          urls=driver.find elements(By.XPATH, '//a[@class=" 1fQZEK"]')
          for url in urls:
              page_url.append(url.get_attribute('href'))
In [52]: len(page_url)
Out[52]: 24
In [53]: Smartphones = ({})
          Smartphones['Brand'] = []
          Smartphones['Phone name'] = []
          Smartphones['Colour'] = []
          Smartphones['RAM'] = []
          Smartphones['Storage(ROM)'] = []
          Smartphones['Primary Camera'] = []
          Smartphones['Secondary Camera'] = []
          Smartphones['Display Size'] = []
```

Smartphones['Display Resolution'] = []

```
Smartphones['Processor Cores'] = []
         Smartphones['Battery Capacity'] = []
         Smartphones['Price'] = []
         Smartphones['URL'] = []
print("Scraping URL = ",url)
             Smartphones['URL'].append(url)
             time.sleep(2)
                 brand tags = driver.find element(By.XPATH,"//span[@class='B NuCI']")
                 Smartphones['Brand'].append(brand_tags.text.split()[0])
             except NoSuchElementException :
                 Smartphones['Brand'].append('-')
             try:
                 read more = driver.find element(By.XPATH,"//button[@class=' 2KpZ6l 1FH0tX']")
                 read more click()
             except NoSuchElementException:
                 print("Exception occured while moving to next page")
                 name_tags = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][1]/table/tbody/tr[3]/td[2]/ul/li")
                 Smartphones['Phone name'].append(name_tags.text)
             except NoSuchElementException:
                 Smartphones['Phone name'].append('-')
                 color tags = driver.find_element(By.XPATH,"//div[@class=' 3k-BhJ'][1]/table/tbody/tr[4]/td[2]/ul/li")
                 Smartphones['Colour'].append(color_tags.text)
             except NoSuchElementException:
                 Smartphones['Colour'].append('-')
             try:
                 ram tags = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][4]/table[1]/tbody/tr[2]/td[2]/ul/li")
                 Smartphones['RAM'].append(ram_tags.text)
             except NoSuchElementException:
                 Smartphones['RAM'].append('-')
                 rom = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][4]/table[1]/tbody/tr[1]/td[2]/ul/li")
                 Smartphones['Storage(ROM)'].append(rom.text)
             except NoSuchElementException:
                 Smartphones['Storage(ROM)'].append('-')
                 pri =driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][5]/table[1]/tbody/tr[2]/td[2]/ul/li")
                 Smartphones['Primary Camera'].append(pri.text)
             except NoSuchElementException:
                 Smartphones['Primary Camera'].append('-')
                 sec = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][5]/table[1]/tbody/tr[6]/td[1]")
                 if sec != 'Secondary Camera'
                     if driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][5]/table[1]/tbody/tr[5]/td[1]").text == "S
                         sec cam =driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][5]/table[1]/tbody/tr[5]/td[2]/ul
                     else
                         raise NoSuchElementException
                 else :
                     sec cam = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][5]/table[1]/tbody/tr[6]/td[2]/ul/li
                 Smartphones['Secondary Camera'].append(sec cam.text)
             except NoSuchElementException:
                 Smartphones['Secondary Camera'].append('-')
                 disp = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][2]/div")
                 if disp.text != 'Display Features' : raise NoSuchElementException
                 disp size = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][2]/table[1]/tbody/tr[1]/td[2]/ul/li")
                 Smartphones['Display Size'].append(disp size.text)
             except NoSuchElementException:
                 Smartphones['Display Size'].append('-')
             try:
                 disp = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][2]/div")
                 if disp.text != 'Display Features' : raise NoSuchElementException
                 disp_reso = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][2]/table[1]/tbody/tr[2]/td[2]/ul/li")
Smartphones['Display Resolution'].append(disp_reso.text)
             except NoSuchElementException:
                 Smartphones['Display Resolution'].append('-')
                 pro = driver.find element(By.XPATH,'//table[@class=" 14cfVK"][3]/tbody/tr[2]/td[2]/ul/li')
                 if pro.text != 'Processor Type' : raise NoSuchElementException
                 processor = driver.find\_element(By.XPATH, '//table[@class="\_14cfVK"][3]/tbody/tr[2]/td[2]/ul/li')
```

Smartphones['Processor'] = []

```
Smartphones['Processor'].append(processor.text)
     except NoSuchElementException:
         Smartphones['Processor'].append('-')
          core = driver.find_element(By.XPATH,'//table[@class="_14cfVK"][3]/tbody/tr[3]/td[2]/ul/li')
         if core.text != 'Processor Core'
              core = driver.find element(By.XPATH,'//table[@class=" 14cfVK"][3]/tbody/tr[3]/td[2]/ul/li')
              if core.text != 'Processor Core' :
                   raise NoSuchElementException
                   cores = driver.find element(By.XPATH,'//table[@class=" 14cfVK"][3]/tbody/tr[3]/td[2]/ul/li')
         else:
               cores = driver.find_element(By.XPATH,'//table[@class=" 14cfVK"][3]/tbody/tr[3]/td[2]/ul/li')
         Smartphones['Processor Cores'].append(disp_reso.text)
     except NoSuchElementException:
         Smartphones['Processor Cores'].append('-')
         if driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][10]/div").text != "Battery & Power Features" :
               if driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][9]/div").text == "Battery & Power Features
                   bat_tags = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][9]/table/tbody/tr/td[1]")
if bat_tags.text != "Battery Capacity" : raise NoSuchElementException
bat_capa = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][9]/table/tbody/tr/td[2]/ul/li"
               elif driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][8]/div").text == "Battery & Power Featur
                   bat_tags = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][8]/table/tbody/tr/td[1]")
if bat_tags.text != "Battery Capacity" : raise NoSuchElementException
bat_capa = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][8]/table/tbody/tr/td[2]/ul/li"
              else:
                   raise NoSuchElementException
         else :
              bat tags = driver.find element(By.XPATH,"//div[@class=' 3k-BhJ'][10]/table/tbody/tr/td[1]")
              if bat_tags.text != "Battery Capacity" : raise NoSuchElementException
bat_capa = driver.find_element(By.XPATH,"//div[@class='_3k-BhJ'][10]/table/tbody/tr/td[2]/ul/li")
               Smartphones['Battery Capacity'].append(bat capa.text)
     except NoSuchElementException:
         Smartphones['Battery Capacity'].append('-')
     try:
         price tags = driver.find element(By.XPATH,"//div[@class=' 30jeq3 16Jk6d']")
         Smartphones['Price'].append(price_tags.text)
     except NoSuchElementException:
            Smartphones['Price'].append('-')
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```

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 $Scraping\ URL = \ https://www.flipkart.com/realme-c33-aqua-blue-64-gb/p/itma112335dbe78a?pid=M0BGHBJG3M6FB35G\&lid=LSTM0BGHBJG3M6FB35G0CB4ZL\&marketplace=FLIPKART&q=pixel+4A&store=tyy%2F4io&srno=s_1_2&otracker=search&otracker1=search&fm=organic&iid=3250425c-0259-4938-a46c-a056c99f3631.M0BGHBJG3M6FB35G.SEARCH&ppt=hp&ppn=homepage&ssid=3270fobwi80000001684003845199&qH=9b26a23b2cff510d$

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 $Scraping \ URL = \ https://www.flipkart.com/realme-c30-bamboo-green-32-gb/p/itmfcf69b2db5059?pid=MOBGF37GUWGZQYGR\&lid=LSTMOBGF37GUWGZQYGRVXRDM1\&marketplace=FLIPKART&q=pixel+4A&store=tyy%2F4io&srno=s_1_7&otracker=search&otracker1=search&fm=organic&iid=3250425c-0259-4938-a46c-a056c99f3631.MOBGF37GUWGZQYGR.SEARCH&ppt=hp&ppn=homepage&ssid=327ofobwi80000001684003845199&qH=9b26a23b2cff510d$

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In [55]: print(len(Smartphones['Brand']),len(Smartphones['Phone name']), len(Smartphones['Colour']),len(Smartphones['RAM

In [56]: df = pd.DataFrame.from_dict(Smartphones)
df.head()

Out[56]:		Brand	Phone name	Colour	RAM	Storage(ROM)	Primary Camera	Secondary Camera	Display Size	Display Resolution	Processor	Processor Cores	Battery Capacity	Price	
	0	realme	C33	Sandy Gold	3 GB	32 GB	50MP + 0.3MP	5MP Front Camera	16.51 cm (6.5 inch)	1600 x 720 Pixel	-	-	5000 mAh	₹8,999	https://www
	1	realme	C33	Aqua Blue	4 GB	64 GB	50MP + 0.3MP	5MP Front Camera	16.51 cm (6.5 inch)	1600 x 720 Pixel	-	-	5000 mAh	₹9,999	https://www
	2	realme	C33	Night Sea	4 GB	64 GB	50MP + 0.3MP	5MP Front Camera	16.51 cm (6.5 inch)	1600 x 720 Pixel	-	-	5000 mAh	₹9,999	https://www
	3	realme	C33	Sandy Gold	4 GB	64 GB	50MP + 0.3MP	5MP Front Camera	16.51 cm (6.5 inch)	1600 x 720 Pixel	-	-	5000 mAh	₹9,999	https://www
	4	realme	C33	Aqua Blue	3 GB	32 GB	50MP + 0.3MP	5MP Front Camera	16.51 cm (6.5 inch)	1600 x 720 Pixel	-	-	5000 mAh	₹8,999	https://www

```
In [58]: driver.close()
  In [ ]:
                   5. Write a program to scrap geospatial coordinates (latitude, longitude) of a city searched on google maps.
  In [ ]:
  In [2]:
                   driver=webdriver.Chrome(r'C:/chromedriver.exe')
  In [4]:
                   driver.get( 'https://www.google.co.in/maps')
                   time.sleep(2)
  In [5]: City_name = input('Enter City name that has to be searched : ')
                   Enter City name that has to be searched : nellore
                   search=driver.find_element(By.XPATH,'/html/body/div[3]/div[9]/div[1]/div[1]/div[1]/div[2]/form/div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1
  In [6]:
                   search.send_keys(City_name)
                   driver.maximize window()
  In [7]:
                   button=driver.find_element(By.ID, "searchbox-searchbutton")
  In [8]:
                   button.click()
                   import requests
  In [9]:
                   import re
In [11]:
                  try:
                           url str=driver.current url
                           print("URL Extracted: ", url_str)
                           latitude longitude = re.findall(r'@(.*)data',url str)
                           if len(latitude_longitude):
                                   lat_long_list = latitude_longitude[0].split(",")
                                   if len(lat_long_list)>=2:
                                           latitude = lat_long_list[0]
                                           longitude = lat_long_list[1]
                                   print("Latitude = {}, Longitude = {}".format(latitude, longitude))
                   except Exception as e:
                                   print("Error: ", str(e))
                   URL Extracted: https://www.google.co.in/maps/place/Nellore,+Andhra+Pradesh/@14.4520445,80.0431722,16z/data=!4m
                   6!3m5!1s0x3a4c8cca0e958771:0xd3036c2025161f55!8m2!3d14.4425987!4d79.986456!16zL20vMDF0Y2Rr
                   Latitude = 14.4520445, Longitude = 80.0431722
In [12]:
                  driver.close()
  In [ ]:
  In [ ]:
                   7. Write a program to scrap all the available details of best gaming laptops from digit.in.
  In [ ]:
  In [ ]:
  In [ ]:
                   driver=webdriver.Chrome(r'C:/chromedriver.exe')
                   driver.get("https://www.digit.in/")
In [118...
                   driver.maximize_window()
                   time.sleep(3)
                   best game laptops = driver.find element(By.XPATH,"//div[@class='listing container']//ul//li[9]")
In [119...
                   best_game_laptops.click()
                   time.sleep(3)
                   Laptop_Name = []
In [120...
                   Operating_sys = []
                   Display = []
                   Processor = []
                   Memory = []
                   Weight = []
                   Dimensions = []
                   Graph_proc = []
                   Price = []
In [121... laptop_name = driver.find_elements(By.XPATH,"//div[@class='specfpro_details_cont']/div/div/span/h3")
```

```
for name in laptop name:
             Laptop_Name.append(name.text)
         try:
             op_sys = driver.find_elements(By.XPATH,"//div[@class='product-detail']/div/ul/li[1]/div/div")
             for os in op sys:
                 Operating sys.append(os.text)
         except NoSuchElementException:
             pass
         try:
             display = driver.find_elements(By.XPATH,"//div[@class='product-detail']/div/ul/li[2]/div/div")
             for disp in display:
                 Display.append(disp.text)
         except NoSuchElementException:
             pass
         try:
             processor = driver.find elements(By.XPATH,"//div[@class='Spcs-details'][1]/table/tbody/tr[5]/td[3]")
             for pro in processor:
                 Processor.append(pro.text)
         except NoSuchElementException:
             pass
         try:
             memory = driver.find elements(By.XPATH,"//div[@class='Spcs-details'][1]/table/tbody/tr[6]/td[3]")
             for memo in memory:
                 Memory.append(memo.text)
         except NoSuchElementException:
             pass
         try:
             weight = driver.find elements(By.XPATH,"//div[@class='Spcs-details'][1]/table/tbody/tr[7]/td[3]")
             for wgt in weight:
                 Weight.append(wgt.text)
         except NoSuchElementException:
             pass
             price = driver.find elements(By.XPATH,"//td[@class='smprice']")
             for pri in price:
                 Price.append(pri.text.replace('₹','Rs'))
         except NoSuchElementException:
             pass
         try:
             dimension = driver.find elements(By.XPATH,"//div[@class='Spcs-details'][1]/table/tbody/tr[8]/td[3]")
             for dim in dimension:
                 Dimensions.append(dim.text)
         except NoSuchElementException:
             pass
         try:
             graph = driver.find elements(By.XPATH,"//div[@class='Spcs-details'][1]/table/tbody/tr[6]/td[3]")
             for gra in graph:
                 Graph_proc.append(gra.text)
         except NoSuchElementException:
In [122_ print(len(Laptop Name),len(Operating sys),len(Display),len(Processor),len(Memory),len(Weight),len(Dimensions),l
         77777777
```

```
In [123_ df=pd.DataFrame({'Laptop_Name':Laptop_Name,'Operating_system':Operating_sys,'Memory':Memory,'Weight':Weight,'Didf
```

```
12 GB DDR6 NVIDIA
                                                                                                                                  397.1 x 262 x 27 mm
                                                                                                                                                                                           12 GB DDR6 NVIDIA
                               HP OMEN 17
                    0
                                                                                                                                                                     ₹ 269.777
                                                     Windows 11 Home
                                                                                             GeForce RTX 4080
                                                                                                                                   dimension & 2.78 kg
                                                                                                                                                                                             GeForce RTX 4080
                                                                                                                                                                                                                           Rs269,777
                                        (2023)
                                                                                                     Graphics card
                                                                                                                                                      weight
                                                                                                                                                                                                     Graphics card
                                                                                           16 GB DDR6 NVIDIA
                                                                                                                                     397 x 330 x 23 mm
                                                                                                                                                                                           16 GB DDR6 NVIDIA
                           MSI Titan GT77
                                                                                                                                    dimension & 3.3 kg
                    1
                                                     Windows 11 Home
                                                                                           GeForce RTX 3080Ti
                                                                                                                                                                     ₹ 499.990
                                                                                                                                                                                           GeForce RTX 3080Ti
                                                                                                                                                                                                                           Rs499,990
                                       12UHS
                                                                                                        Graphics ..
                                                                                                                                                     weight
                                                                                                                                                                                                        Graphics ...
                                                                                                                             359.9 x 264.4 x 19.9 mm
                         Lenovo Legion 5i
                                                                                  NVIDIA GeForce RTX 3070
                                                                                                                                                                                          NVIDIA GeForce RTX
                    2
                                                     Windows 11 Home
                                                                                                                                     dimension & 3.6 kg
                                                                                                                                                                     ₹ 218,000
                                                                                                                                                                                                                           Rs218,000
                                            Pro
                                                                                                 Ti Graphics card
                                                                                                                                                                                          3070 Ti Graphics card
                                                                                                                                                     weight
                                                                                                                                                                                           12 GB DDR6 NVIDIA
                                                                                           12 GB DDR6 NVIDIA
                                                                                                                                     294 x 399 x 23 mm
                          ASUS ROG Strix
                    3
                                                     Windows 11 Home
                                                                                             GeForce RTX 4080
                                                                                                                                     dimension & 3.1 kg
                                                                                                                                                                     ₹ 279,990
                                                                                                                                                                                             GeForce RTX 4080
                                                                                                                                                                                                                           Rs279,990
                               Scar 18 2023
                                                                                                     Graphics card
                                                                                                                                                     weight
                                                                                                                                                                                                     Graphics card
                                                                                             8 GB DDR6 NVIDIA
                                                                                                                                     360 x 279 x 28 mm
                                                                                                                                                                                             8 GB DDR6 NVIDIA
                              Acer Predator
                                                                                                                                                                                             GeForce RTX 4060
                    4
                                                     Windows 11 Home
                                                                                              GeForce RTX 4060
                                                                                                                                                                     ₹ 149,990
                                                                                                                                                                                                                           Rs149,990
                                                                                                                                     dimension & 2.6 kg
                              Helios Neo 16
                                                                                                     Graphics card
                                                                                                                                                                                                     Graphics card
                                                                                                                                                      weight
                                                                                                                                     312 x 227 x 19 mm
                                                                                                                                                                                                8 GB DDR6 AMD
                                 ASUS ROG
                                                                                     8 GB DDR6 AMD Radeon
                                                                                                                                                                                              Radeon RX 6700S
                                                     Windows 11 Home
                                                                                                                                   dimension & 1.65 kg
                                                                                                                                                                     ₹ 156,990
                                                                                                                                                                                                                           Rs156,990
                    5
                             Zephyrus G14
                                                                                      RX 6700S Graphics card
                                                                                                                                                                                                     Graphics card
                                                                                                                                                      weight
                                                                                             8 GB DDR6 NVIDIA
                                                                                                                                                                                             8 GB DDR6 NVIDIA
                             MSI Cyborg 15
                                                     Windows 11 Home
                                                                                             GeForce RTX 4060
                                                                                                                                        & 1.98 kg weight
                                                                                                                                                                     ₹ 130.990
                                                                                                                                                                                             GeForce RTX 4060
                                                                                                                                                                                                                           Rs130,990
                                                                                                     Graphics card
                                                                                                                                                                                                     Graphics card
                  df.to csv("Gaming Laptops.csv")
In [124...
                  driver.close()
 In [ ]:
 In [ ]:
                  8. Write a python program to scrape the details for all billionaires from www.forbes.com. Details to be scrapped: "Rank", "Name", "Net
                  worth", "Age", "Citizenship", "Source", "Industry".
 In [ ]:
 In [ ]:
 In [ ]:
                  driver=webdriver.Chrome(r'C:/chromedriver.exe')
 In [2]:
 In [3]:
                  driver.get('https://www.forbes.com/')
                  driver.maximize_window()
                  time.sleep(2)
 In [4]:
                  opt_btn = driver.find_element(By.XPATH,'/html/body/div[1]/header/nav/div[1]/div[1]/div/div')
                  opt_btn.click()
                  blns = driver.find_element(By.XPATH,"/html/body/div[1]/header/nav/div[1]/div[1]/div[2]/ul/li[2]/div[1]")
 In [5]:
                  blns.click()
                  world\ blns=driver.find\_element(By.XPATH, '/html/body/div[1]/div[2]/div[1]/header/div[1]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/div[2]/di
 In [7]:
                  world_blns.click()
In [11]:
                  Rank = []
                  Person Name = []
                  Net worth = []
                  Age = []
                  Citizenship = []
                  Source = []
                  Industry = []
                  while (True):
                           for rank in rank tag:
                                  Rank.append(rank.text)
                          name tag = driver.find elements(By.XPATH,'//div[@class="TableRow rowContainer IC1Tv"]/div/div[2]/div/div/d
                           for name in name tag:
                                  Person_Name.append(name.text)
```

Memory

Weight Dimensions

Graph_processor

Price

Laptop_Name Operating_system

```
age tag = driver.find elements(By.XPATH,'//div[@class="TableRow rowContainer IC1Tv"]/div/div/div/div/di
for age in age tag:
   Age.append(age.text)
cit_tag = driver.find_elements(By.XPATH,'//div[@class="TableRow_rowContainer__IC1Tv"]/div/div[2]/div/div/di
for cit in cit_tag:
   Citizenship.append(cit.text)
sour_tag = driver.find_elements(By.XPATH,'//div[@class="TableRow_rowContainer__IC1Tv"]/div/div/div/d
for sour in sour_tag:
   Source.append(sour.text)
ind_tag = driver.find_elements(By.XPATH,'//div[@class="TableRow_rowContainer__IC1Tv"]/div/div/div/div/di
for ind in ind tag:
   Industry.append(ind.text)
net_tag = driver.find_elements(By.XPATH,'//div[@class="TableRow_rowContainer__IC1Tv"]/div/div/div/div/di
for net in net_tag:
   Net_worth.append(net.text)
   next button = driver.find element(By.XPATH,'/html/body/div[1]/div[2]/div[3]/div[2]/div[2]/div[2]
   next button.click()
except:
   break
```

```
In [14]: Billionaires = pd.DataFrame({})
Billionaires['Rank'] = Rank[:2640]
Billionaires['Name'] = Person_Name[:2640]
Billionaires['Net Worth'] = Net_worth[:2640]
Billionaires['Age'] = Age[:2640]
Billionaires['Citizenship'] = Citizenship[:2640]
Billionaires['Source'] = Source[:2640]
Billionaires['Industry'] = Industry[:2640]
Billionaires
```

Out[14]:

	Rank	Name	Net Worth	Age	Citizenship	Source	Industry
0	1	Bernard Arnault & family	\$211 B	74	France	LVMH	Fashion & Retail
1		FULL PROFILE	\$180 B	51	United States	Tesla, SpaceX	Automotive
2	Bernard Arnault oversees the LVMH empire of 75	WEALTH HISTORY	\$114 B	59	United States	Amazon	Technology
3	2	Elon Musk	\$107 B	78	United States	Oracle	Technology
4	3	Jeff Bezos	\$106 B	92	United States	Berkshire Hathaway	Finance & Investments
2635	2540	Stanley Motta	\$1 B	51	China	Health clinics	
2636	2540	Tyler Perry	\$1 B	80	United States	Beer	
2637	2540	Réal Plourde	\$1 B	60	China	Tyre manufacturing machinery	
2638	2540	Vera Rechulski Santo Domingo	\$1 B	71	China	Real estate	
2639	2540	George Sakellaris	\$1 B	66	Philippines	Diversified	

2640 rows × 7 columns

```
TU [TD]: DITTIONATIONS TO CSAL LOLDGZ DITTIONATION (CSA.)
         driver.close()
 In [ ]:
 In [ ]:
         9. Write a program to extract at least 500 Comments, Comment upvote and time when comment was posted from any YouTube Video.
 In [ ]:
         driver=webdriver.Chrome(r'C:/chromedriver.exe')
In [60]:
         driver.get('https://www.youtube.com/')
 In [3]:
         driver.maximize_window()
 In [4]:
         search bar = driver.find element(By.XPATH,"//div[@class='ytd-searchbox-spt']/input")
          search_bar.send_keys("GOT")
         search btn = driver.find element(By.ID, "search-icon-legacy")
 In [5]:
         search btn.click()
         video = driver.find_element(By.XPATH,"//yt-formatted-string[@class='style-scope ytd-video-renderer']")
 In [6]:
         video.click()
               in range(1001):
In [11]:
         for
              driver.execute script("window.scrollBy(0,500000)")
In [12]:
         comments = []
          comment time = []
         Time = []
          Likes = []
         No of Likes = []
          com = driver.find_elements(By.XPATH,'//*[@id="content-text"]')
          for i in com:
              if i.text is None:
                  comments.append("--")
              else:
                  comments.append(i.text)
          time = driver.find_elements(By.XPATH,"//a[contains(text(),'ago')]")
          for i in time:
              Time.append(i.text)
          for i in range(0,len(Time),2):
              comment time.append(Time[i])
          like = driver.find_elements(By.XPATH,"//span[@class='style-scope ytd-comment-action-buttons-renderer']")
          for i in like:
              Likes.append(i.text)
         for i in range(1,len(Likes),2):
              No_of Likes.append(Likes[i])
In [13]: len(comments)
Out[13]:
In [14]: print(len(comments),len(comment_time),len(No_of_Likes))
         1279 640 1279
         Youtube = pd.DataFrame({})
In [15]:
         Youtube['Comment'] = comments[:500]
          Youtube['Comment Time'] = comment time[:500]
          Youtube['Comment Upvotes'] = No of Likes[:500]
         Youtube
```

```
Comment
                                                           Comment Time Comment Upvotes
Out[15]:
            0 Can you imagine if the end had been satisfying...
                                                              2 years ago
                                                                                      1 2K
                    This is no trailer, this is a collection of hu...
                                                              2 years ago
                                                                                      5.4K
             2 When you realize your getting old by knowing t...
                                                              2 years ago
                                                                                      1.2K
            3
                   I miss this epic fantasy show... despite all i...
                                                              2 years ago
                                                                                      458
                Game of thrones- An experience of a lifetime. ...
                                                             5 months ago
                                                                                      226
           495
                The times change, society shifts. But one thin... 2 years ago (edited)
           496
                    I wish I could forget the entire series, so I \dots
                                                               1 year ago
                    I'll rooting for Ned Stark to sit on the Iron ...
           497
                                                               1 year ago
           498
                   The realm... Do you know what the realm is?
                                                               1 year ago
                                                                                       1K
                GoT is one the best show ever, with the worst ...
                                                               1 year ago
                                                                                        4
          500 rows × 3 columns
In [16]: Youtube.to_csv("Youtube GOT Comments.csv")
           driver.close()
In [17]:
 In [ ]:
           10. Write a python program to scrape a data for all available Hostels from https://www.hostelworld.com/ in "London" location. You have to
           scrape hostel name, distance from city centre, ratings, total reviews, overall reviews, privates from price, dorms from price, facilities and
           property description
 In [ ]:
 In [ ]:
 In [ ]:
           driver=webdriver.Chrome(r"chromedriver.exe")
In [65]:
           driver.get("https://www.hostelworld.com/")
In [66]:
In [67]:
           driver.maximize_window()
           search = driver.find_element(By.XPATH, "/html/body/div[3]/div/div/div[2]/div/div/div[4]/div/div[2]/div/di
In [69]:
           search.send_keys("London")
In [70]:
           London = driver.find element(By.XPATH, "/html/body/div[3]/div/div/div[2]/div/div/div[4]/div/div[2]/div/div
           London.click()
           search btn = driver.find element(By.XPATH, '/html/body/div[3]/div/div/div[2]/div[2]/div/div/div[4]/div/div[2]/di
In [71]:
           search btn.click()
           hostel name = []
In [72]:
           distance = []
           pvt_prices = []
           dorms price = []
           rating = []
           reviews = []
           over_all = []
           facilities = []
           description = []
           url = []
In [73]:
           for i in driver.find_elements(By.XPATH,"//div[@class='pagination-item pagination-current' or @class='pagination
                i.click()
               try:
                    name = driver.find elements(By.XPATH,"//h2[@class='title title-6']")
                    for i in name:
                         hostel_name.append(i.text)
                except NoSuchElementException:
                    hostel name.append('-')
                    dist = driver.find_elements(By.XPATH,"//div[@class='subtitle body-3']//a//span[1]")
                    for i in name:
```

```
distance.append(i.text.replace('Hostel - ',''))
             except NoSuchElementException:
                 distance.append('-')
             for i in driver.find_elements(By.XPATH,"//div[@class='prices-col']"):
                 trv:
                     pvt_price = driver.find_element(By.XPATH,"//a[@class='prices']//div[1]//div")
                     pvt_prices.append(pvt_price.text)
                 except NoSuchElementException:
                     pvt prices.append('-')
             for i in driver.find_elements(By.XPATH,"//div[@class='prices-col']"):
                     dorms = driver.find element(By.XPATH,"//a[@class='prices']//div[2]/div")
                     dorms price append (dorms text)
                 except NoSuchElementException:
                     dorms_price.append('-')
             try:
                 fac1 = driver.find elements(By.XPATH,"//div[@class='has-wifi']")
                 fac2 = driver.find_elements(By.XPATH,"//div[@class='has-sanitation']")
                 for i in fac1:
                      for j in fac2:
                         facilities.append(i.text +', '+ j.text)
             except NoSuchElementException:
                 facilities.append('-')
             p url = driver.find elements(By.XPATH,"//div[@class='prices-col']//a[2]")
             for i in p url:
                 url.append(i.get attribute("href"))
         for i in url:
             driver.get(i)
                 rat = driver.find element(By.XPATH,"//div[@class='score orange big' or @class='score gray big']")
                 rating.append(rat.text)
             except NoSuchElementException:
                 rating.append('-')
                 rws = driver.find_element(By.XPATH,"//div[@class='reviews']")
                 reviews.append(rws.text.replace('Total Reviews',''))
             except NoSuchElementException:
                 reviews.append('-')
                 overall = driver.find element(By.XPATH,"//div[@class='keyword']//span")
                 over all.append(overall.text)
             except NoSuchElementException:
                 over all.append('-')
                 disc = driver.find element(By.XPATH,"//div[@class='content']")
                 description.append(disc.text)
             except NoSuchElementException:
                 description_all.append('-')
                 driver.find element(By.XPATH,"//a[@class='toggle-content']").click()
             except NoSuchElementException:
                 pass
In [74]: print(len(hostel_name),
```

```
len(distance),
len(pvt_prices),
len(dorms_price),
len(rating),
len(reviews),
len(over_all),
len(facilities),
len(description),
```

```
len(url))
                0 0 0 0 0 0 0 0 0 0
   In [75]: Hostel = pd.DataFrame({})
  Hostel['Hostel Name'] = hostel_name
                Hostel['Distance from City Centre'] = distance
Hostel['Ratings'] = rating
                Hostel['Total Reviews'] = reviews
Hostel['Overall Reviews'] = over_all
                Hostel['Privates from Price'] = pvt_prices
                Hostel['Dorms from Price'] = dorms_price
Hostel['Facilities'] = facilities[:74]
                Hostel['Description'] = description
                Hostel
                                                                                                                            Dorms from Facilities Description
                                      Distance from City
Centre Ratings
                        Hostel
                                                                            Total
                                                                                           Overall
                                                                                                        Privates from
   Out[75]:
                         Name
                                                                         Reviews
                                                                                          Reviews
   In [76]: Hostel.to_csv("London_Hostels.csv")
   In [77]: driver.close()
     In [ ]:
     In [ ]:
     In [ ]:
     In [ ]:
Loading [MathJax]/extensions/Safe.js
```