## webscraping-assignment-3

## February 23, 2024

1 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 'guitar'. Then search for guitars.

## [1]: !pip install selenium

```
Requirement already satisfied: selenium in c:\users\anand\anaconda3\lib\site-
packages (4.18.1)
Requirement already satisfied: urllib3[socks]<3,>=1.26 in
c:\users\anand\anaconda3\lib\site-packages (from selenium) (1.26.16)
Requirement already satisfied: trio~=0.17 in c:\users\anand\anaconda3\lib\site-
packages (from selenium) (0.24.0)
Requirement already satisfied: trio-websocket~=0.9 in
c:\users\anand\anaconda3\lib\site-packages (from selenium) (0.11.1)
Requirement already satisfied: certifi>=2021.10.8 in
c:\users\anand\anaconda3\lib\site-packages (from selenium) (2023.7.22)
Requirement already satisfied: typing_extensions>=4.9.0 in
c:\users\anand\anaconda3\lib\site-packages (from selenium) (4.9.0)
Requirement already satisfied: attrs>=20.1.0 in
c:\users\anand\anaconda3\lib\site-packages (from trio~=0.17->selenium) (22.1.0)
Requirement already satisfied: sortedcontainers in
c:\users\anand\anaconda3\lib\site-packages (from trio~=0.17->selenium) (2.4.0)
Requirement already satisfied: idna in c:\users\anand\anaconda3\lib\site-
packages (from trio~=0.17->selenium) (3.4)
Requirement already satisfied: outcome in c:\users\anand\anaconda3\lib\site-
packages (from trio~=0.17->selenium) (1.3.0.post0)
Requirement already satisfied: sniffio>=1.3.0 in
c:\users\anand\anaconda3\lib\site-packages (from trio~=0.17->selenium) (1.3.0)
Requirement already satisfied: cffi>=1.14 in c:\users\anand\anaconda3\lib\site-
packages (from trio~=0.17->selenium) (1.15.1)
Requirement already satisfied: wsproto>=0.14 in
c:\users\anand\anaconda3\lib\site-packages (from trio-websocket~=0.9->selenium)
(1.2.0)
Requirement already satisfied: PySocks!=1.5.7,<2.0,>=1.5.6 in
c:\users\anand\anaconda3\lib\site-packages (from
urllib3[socks]<3,>=1.26->selenium) (1.7.1)
```

```
Requirement already satisfied: pycparser in c:\users\anand\anaconda3\lib\site-packages (from cffi>=1.14->trio~=0.17->selenium) (2.21)

Requirement already satisfied: h11<1,>=0.9.0 in
c:\users\anand\anaconda3\lib\site-packages (from wsproto>=0.14->trio-websocket~=0.9->selenium) (0.14.0)
```

```
[2]: import selenium
import pandas as pd
from selenium import webdriver
import warnings
warnings.filterwarnings('ignore')
from selenium.webdriver.common.by import By
import time
```

```
[3]: driver=webdriver.Chrome()
```

```
[6]: product = input("Enter product to search on Amazon: ")
    driver.get("https://www.amazon.in")
    search_box = driver.find_element(By.ID, "twotabsearchtextbox")
    search_box.send_keys(product)
    search_button = driver.find_element(By.ID, "nav-search-submit-button")
    search_button.click()
```

Enter product to search on Amazon: guitar

2 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 "-".

```
[47]: from selenium import webdriver import time from selenium.common.exceptions import NoSuchElementException # importing

import warnings
warnings.filterwarnings('ignore')
from selenium.webdriver.common.by import By
```

[48]: driver=webdriver.Chrome()

```
[49]: driver.get("https://www.amazon.in")
[50]: product_name=driver.find_element(By.XPATH,"/html/body/div[1]/header/div/div[1]/

→div[2]/div/form/div[2]/div[1]/input")
      product_name.send_keys('guitar Best seller')
[51]: search=driver.find_element(By.XPATH,"/html/body/div[1]/header/div/div[1]/div[2]/

¬div/form/div[3]/div/span/input")
      search.click()
      time.sleep(3)
[52]: # scrape all product urls
      product urls=[]
      start=0
      end=3
      for page in range(start,end): # for loop for scrapping 3 page
          url=driver.find_elements(By.XPATH,'//a[@class="a-link-normal_
       →s-underline-text s-underline-link-text s-link-style a-text-normal"]')
          for i in url:
              product_urls.append(i.get_attribute('href'))
          nxt_button=driver.find_element(By.XPATH,'//a[@class="s-pagination-item_
       ⇒s-pagination-next s-pagination-button s-pagination-separator"]')
          nxt_button.click()
          time.sleep(2)
[53]: len(product_urls)
[53]: 185
[54]: import pandas as pd
      df=pd.DataFrame({'product_urls':product_urls})
      df
[54]:
                                                 product_urls
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      0
      1
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      2
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      3
           https://www.amazon.in/Juarez-Acoustic-Cutaway-...
      . .
      180 https://www.amazon.in/Cort-AD880CE-Cutaway-Aco...
      181 https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      182 https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      183 https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      184 https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      [185 rows x 1 columns]
```

```
[55]: Name_of_the_Product=[]
     Price=[]
     Return_Exchange=[]
     Expected_Delivery=[]
     Availability=[]
[56]: for url in product_urls:
        driver.get(url)
        time.sleep(2)
        try:
            name_of_the Product=driver.find_element(By.XPATH,'/html/body/div[2]/div/
      \rightarrowdiv[5]/div[3]/div[4]/div[1]/div/h1/span')
            Name_of_the_Product.append(name_of_the_Product.text)
        except NoSuchElementException:
            Name_of_the_Product.append('-')
        try:
            price=driver.find_element(By.XPATH,'/html/body/div[2]/div/div[5]/div[3]/

div[4]/div[13]/div/div(4]/div[1]/span[3]')

            Price.append(price.text)
        except NoSuchElementException:
            Price.append('-')
        try:
            return_exchange=driver.find_element(By.XPATH,'/html/body/div[2]/div/
      -div[5]/div[3]/div[4]/div[24]/div[2]/div/div/div/div[2]/div/ol/li[3]/div/span/

div[2]/span')
            Return_Exchange.append(return_exchange.text)
        except NoSuchElementException:
            Return_Exchange.append('-')
        try:
            expected_delivery=driver.find_element(By.XPATH,'/html/body/div[2]/div/
      Expected_Delivery.append(expected_delivery.text)
        except NoSuchElementException:
            Expected_Delivery.append('-')
        try:
            availability=driver.find_element(By.XPATH,'/html/body/div[2]/div/div[5]/

div[5]/div/div[1]/span')
            Availability.append(availability.text)
        except NoSuchElementException:
            Availability.append('-')
```

185 185 185 185 185 185

[57]: print(len(Name\_of\_the\_Product),len(Price),len(Return\_Exchange),len(Expected\_Delivery),len(Avail

```
[59]: import pandas as pd
      df=pd.DataFrame({'name_of_the product':Name_of_the_Product,'price':
       -Price, 'return_exchange': Return_Exchange, 'expected_delivery':
       □ Expected_Delivery, 'availability': Availability, 'product_urls': product_urls})
[59]:
                                          name_of_the product
                                                                  price \
      0
           Kadence Frontier guitar with Online Guitar lea...
                                                                4,499
           Henrix 38C 38 Inch Cutaway Acoustic Guitar Wit...
      1
                                                                3,099
      2
           Kadence rosewood Guitar Frontier Series, Elect...
                                                                5,499
           Cort AF500C Standard Series Open Pore Cutaway ...
      3
                                                                7,999
      4
           Juârez Acoustic Guitar, 38 Inch Cutaway, 038C ...
                                                                2,199
      . .
      180 Cort AD880CE Cutaway Electro Acoustic Guitar w...
                                                               16,999
      181 BLUEBERRY B-40, Acoustic Guitar Kit Inbuilt Tr...
                                                                4,590
      182 Acoustic Guitar, 39 Inch Cutaway, 039C with Ba...
                                                                4,996
      183 BLUEBERRY B-40, Acoustic Guitar Kit Inbuilt Tr...
                                                                4,590
      184 PS Signature 41Inch Pine Wood Acoustic Guitar ...
                                                                3,899
                                     expected_delivery
              return_exchange
                                                                  availability \
      0
           7 days Replacement
                                   Monday, 26 February
                                                                       In stock
      1
           7 days Replacement
                                   Monday, 26 February
                                                                       In stock
      2
           7 days Replacement
                                   Sunday, 25 February
                                                                       In stock
           7 days Replacement
      3
                                   Sunday, 25 February
                                                                       In stock
      4
           7 days Replacement
                                   Monday, 26 February
                                                                       In stock
      180
            7 days Returnable
                                   Monday, 26 February
                                                         Only 1 left in stock.
           7 days Replacement
      181
                                Wednesday, 28 February
                                                                       In stock
      182
                                  Tuesday, 27 February
                                                         Only 1 left in stock.
      183
                                Wednesday, 28 February
           7 days Replacement
                                                                       In stock
      184
                                Wednesday, 28 February
                                                         Only 1 left in stock.
                                                  product_urls
      0
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      1
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      2
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      3
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      4
           https://www.amazon.in/Juarez-Acoustic-Cutaway-...
           https://www.amazon.in/Cort-AD880CE-Cutaway-Aco...
      180
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      181
      182
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      183
           https://www.amazon.in/sspa/click?ie=UTF8&spc=M...
      184
      [185 rows x 6 columns]
```

3 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'.

```
[57]: from selenium import webdriver
      import time
      from selenium.common.exceptions import NoSuchElementException # importing_
       \rightarrow exception
      import warnings
      warnings.filterwarnings('ignore')
      from selenium.webdriver.common.by import By
[58]: driver=webdriver.Chrome()
[59]: driver.get("https://www.google.in")
[60]: | images=driver.find_element(By.XPATH,"/html/body/div[1]/div[3]/form/div[1]/

div[1]/div[1]/div/div[2]/textarea")
      images.send_keys('cakes')
[44]:
[62]: for _ in range(20):
          driver.execute_script("window.scrollBy(0,500)")
      images=driver.find_elements(By.XPATH,'//img[@class="rg_i Q4LuWd"]')
      img_urls=[]
      for image in images:
          source=image.get attribute('src')
          if source is not None:
              if(source[0:4] == 'http'):
                  img_urls.append(source)
[68]: len(img_urls)
[68]: 9
[69]: import pandas as pd
      df=pd.DataFrame({'img_urls':img_urls})
      df
[69]:
                                                   img urls
      0 https://encrypted-tbn0.gstatic.com/images?q=tb...
      1 https://encrypted-tbn0.gstatic.com/images?q=tb...
      2 https://encrypted-tbn0.gstatic.com/images?q=tb...
      3 https://encrypted-tbn0.gstatic.com/images?q=tb...
      4 https://encrypted-tbn0.gstatic.com/images?q=tb...
```

```
5 https://encrypted-tbn0.gstatic.com/images?q=tb...
      6 https://encrypted-tbn0.gstatic.com/images?q=tb...
      7 https://encrypted-tbn0.gstatic.com/images?q=tb...
      8 https://encrypted-tbn0.gstatic.com/images?q=tb...
[70]: for i in range(len(img_urls)):
          if i >10:
              breakBy.XPATH,
          print("Downloading {0} of {1} images".format(i,10))
     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
```

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

```
[82]: import selenium
  import pandas as pd
  from selenium import webdriver
  import warnings
  warnings.filterwarnings('ignore')
  from selenium.webdriver.common.by import By
  import time

[83]: driver=webdriver.Chrome()

[84]: driver.get("https://www.flipkart.com/")
```

```
[85]: product_names=driver.find_element(By.XPATH,"/html/body/div[1]/div/div[1]/div/

→div/div/div/div[1]/div/div[1]/div[1]/header/div[1]/div[2]/form/

div/div/input")

      product_names.send_keys('Oneplus Nord, pixel 4A')
[86]: searchs=driver.find_element(By.XPATH,"/html/body/div[1]/div/div/div/div/
       -div/div[1]/div/div[1]/div[1]/div[1]/header/div[1]/div[2]/form/div/div/
       ⇔input")
      searchs.click()
      time.sleep(3)
[87]: # scrape all product urls
      product_urlss=[]
      start=0
      end=1
      for page in range(start,end): # for loop for scrapping 3 page
          urls=driver.find_elements(By.XPATH, '//a[@class="_1fQZEK"]')
          for i in urls:
              product_urlss.append(i.get_attribute('href'))
          time.sleep(2)
[88]: len(product_urlss)
[88]: 9
[89]: import pandas as pd
      df=pd.DataFrame({'product_urlss':product_urlss})
      df
[89]:
                                             product_urlss
      0 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
      1 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
      2 https://www.flipkart.com/oneplus-nord-gray-ony...
      3 https://www.flipkart.com/oneplus-nord-blue-mar...
      4 https://www.flipkart.com/oneplus-nord-blue-mar...
      5 https://www.flipkart.com/oneplus-nord-gray-ony...
      6 https://www.flipkart.com/oneplus-nord-blue-mar...
      7 https://www.flipkart.com/oneplus-nord-gray-ony...
      8 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
[90]: Brand_Names=[]
      Smartphone_name=[]
      Colour=[]
      RAM = \Gamma
      Storage ROM=[]
      Primary_Camera=[]
      Secondary_Camera=[]
```

```
Display_Size=[]
Battery_Capacity=[]
Price=[]
```

```
[91]: for urls in product_urlss:
          driver.get(urls)
          time.sleep(2)
          try:
              brand_names=driver.find_element(By.XPATH,'/html/body/div[1]/div/div[3]/

div[1]/div[2]/div[2]/div/div[1]/h1/span')

              Brand_Names.append(brand_names.text)
          except NoSuchElementException:
              Brand Names.append('-')
          try:
              smart_phone_name=driver.find_element(By.XPATH,'//span[@class="B_NuCI"]')
              Smartphone_name.append(smart_phone_name.text)
          except NoSuchElementException:
              Smartphone_name.append('-')
          try:
              color=driver.find_element(By.XPATH,'/html/body/div[1]/div/div[3]/div[1]/
       -div[2]/div[7]/div/div/div[4]/div/div[2]/div[1]/div[1]/table/tbody/tr[4]/
       Colour.append(color.text)
          except NoSuchElementException:
              Colour.append('-')
          try:
              ram=driver.find element(By.XPATH,'/html/body/div[1]/div/div[3]/div[1]/

div[2]/div[6]/div[1]/div/div[2]/ul/li[1]')

              RAM.append(ram.text)
          except NoSuchElementException:
              RAM.append('-')
          try:
              storage_rom=driver.find_element(By.XPATH,'/html/body/div[1]/div/div[3]/

div[1]/div[2]/div[6]/div[1]/div/div[2]/ul/li[1]')

              Storage_ROM.append(storage_rom.text)
          except NoSuchElementException:
              Storage_ROM.append('-')
              primary_camera=driver.find_element(By.XPATH,'/html/body/div[1]/div/

div[3]/div[1]/div[2]/div[6]/div[1]/div/div[2]/ul/li[3]')

              Primary Camera.append(primary camera.text)
          except NoSuchElementException:
              Primary_Camera.append('-')
          try:
              secondary_camera=driver.find_element(By.XPATH,'/html/body/div[1]/div/

div[3]/div[1]/div[2]/div[6]/div[1]/div/div[2]/ul/li[3]')
```

```
Secondary_Camera.append(secondary_camera.text)
          except NoSuchElementException:
              Secondary_Camera.append('-')
          try:
              display_size=driver.find_element(By.XPATH, '/html/body/div[1]/div/div[3]/

div[1]/div[2]/div[6]/div[1]/div/div[2]/ul/li[2]')

              Display_Size.append(display_size.text)
          except NoSuchElementException:
              Display_Size.append('-')
          try:
              battery_capacity=driver.find_element(By.XPATH,'/html/body/div[1]/div/

div[3]/div[1]/div[2]/div[6]/div[1]/div/div[2]/ul/li[4]')

              Battery_Capacity.append(battery_capacity.text)
          except NoSuchElementException:
              Battery_Capacity.append('-')
          try:
              price=driver.find_element(By.XPATH,'/html/body/div[1]/div/div[3]/div[1]/

div[2]/div[2]/div/div[3]/div[1]/div/div')

              Price.append(price.text)
          except NoSuchElementException:
              Price.append('-')
[92]: print(len(Brand_Names),len(Smartphone_name),len(Colour),len(RAM),len(Storage_ROM),len(Primary_
     9 9 9 9 9 9 9 9 9 9
[93]: import pandas as pd
      df=pd.DataFrame({'brand_name':Brand_Names,'smart_phone_name':
       ⇒Smartphone_name, 'colour':Colour, 'Ram':RAM, 'storage_rom':
       Storage_ROM, 'Primary_camera': Primary_Camera, 'Secondary_camera':
       →Secondary_Camera, 'display_size':Display_Size, 'battery_capacity':
       →Battery_Capacity, 'price':Price, 'product_urls':product_urlss})
[93]:
                                                 brand name \
      O OnePlus Nord CE 2 5G (Bahama Blue, 128 GB)
                                                      (8...
      1 OnePlus Nord CE 2 5G (Gray Mirror, 128 GB)
                                                      (8...
               OnePlus Nord (Gray Onyx, 64 GB) (6 GB RAM)
      2
            OnePlus Nord (Blue Marble, 128 GB) (8 GB RAM)
      3
      4
             OnePlus Nord (Blue Marble, 64 GB) (6 GB RAM)
      5
             OnePlus Nord (Gray Onyx, 256 GB) (12 GB RAM)
      6
           OnePlus Nord (Blue Marble, 256 GB)
                                                (12 GB RAM)
              OnePlus Nord (Gray Onyx, 128 GB) (8 GB RAM)
      8 OnePlus Nord CE 2 5G (Gray Mirror, 128 GB) (6...
                                          smart_phone_name
                                                                  colour \
      O OnePlus Nord CE 2 5G (Bahama Blue, 128 GB) (8...
```

```
OnePlus Nord CE 2 5G (Gray Mirror, 128 GB)
         OnePlus Nord (Gray Onyx, 64 GB)
                                          (6 GB RAM)
                                                        Gray Onyx
3
      OnePlus Nord (Blue Marble, 128 GB)
                                          (8 GB RAM)
                                                       Blue Marble
       OnePlus Nord (Blue Marble, 64 GB)
4
                                          (6 GB RAM)
                                                       Blue Marble
5
       OnePlus Nord (Gray Onyx, 256 GB)
                                         (12 GB RAM)
                                                         Gray Onyx
6
     OnePlus Nord (Blue Marble, 256 GB)
                                          (12 GB RAM)
                                                       Blue Marble
7
        OnePlus Nord (Gray Onyx, 128 GB) (8 GB RAM)
                                                         Gray Onyx
   OnePlus Nord CE 2 5G (Gray Mirror, 128 GB) (6... Gray Mirror
                      Ram
                                      storage_rom
    8 GB RAM | 128 GB ROM
                           8 GB RAM | 128 GB ROM
0
1
2
     6 GB RAM | 64 GB ROM
                             6 GB RAM | 64 GB ROM
3
    8 GB RAM | 128 GB ROM
                            8 GB RAM | 128 GB ROM
     6 GB RAM | 64 GB ROM
                             6 GB RAM | 64 GB ROM
   12 GB RAM | 256 GB ROM
                           12 GB RAM | 256 GB ROM
   12 GB RAM | 256 GB ROM
                           12 GB RAM | 256 GB ROM
    8 GB RAM | 128 GB ROM
                            8 GB RAM | 128 GB ROM
    6 GB RAM | 128 GB ROM
                            6 GB RAM | 128 GB ROM
                              Primary_camera \
0
                            64MP Rear Camera
1
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
3
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
7
   48MP + 8MP | 32MP + 8MP Dual Front Camera
        64MP Rear Camera | 16MP Front Camera
                            Secondary_camera
0
                            64MP Rear Camera
1
   48MP + 8MP | 32MP + 8MP Dual Front Camera
2
3
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
   48MP + 8MP | 32MP + 8MP Dual Front Camera
7
   48MP + 8MP | 32MP + 8MP Dual Front Camera
        64MP Rear Camera | 16MP Front Camera
                            display_size battery_capacity
                                                               price \
0
            16.33 cm (6.43 inch) Display
                                          4500 mAh Battery
1
                                                             24,999
   16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
   16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
                                                              24,790
```

```
4 16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
5 16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
6 16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
7 16.36 cm (6.44 inch) Full HD+ Display 4115 mAh Battery
            16.33 cm (6.43 inch) Display 4500 mAh Battery
                                                             19,999
                                        product_urls
0 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
1 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
2 https://www.flipkart.com/oneplus-nord-gray-ony...
3 https://www.flipkart.com/oneplus-nord-blue-mar...
4 https://www.flipkart.com/oneplus-nord-blue-mar...
5 https://www.flipkart.com/oneplus-nord-gray-ony...
6 https://www.flipkart.com/oneplus-nord-blue-mar...
7 https://www.flipkart.com/oneplus-nord-gray-ony...
8 https://www.flipkart.com/oneplus-nord-ce-2-5g-...
```

5 5. Write a program to scrap geospatial coordinates (latitude, longitude) of a city searched on google maps.

```
[119]: from selenium import webdriver
       import time
       from selenium.common.exceptions import NoSuchElementException # importing_
        \rightarrow exception
       import warnings
       warnings.filterwarnings('ignore')
       from selenium.webdriver.common.by import By
       import re
[109]: driver=webdriver.Chrome()
[120]: driver.get("https://maps.google.com/")
[121]: location=driver.find_element(By.XPATH,"/html/body/div[1]/div[3]/div[8]/div[3]/

→div[1]/div[1]/div/div[2]/form/input")
       location.send_keys('hyderabad')
[122]: searchs=driver.find_element(By.XPATH,"/html/body/div[1]/div[3]/div[8]/div[3]/

→div[1]/div[1]/div/div[2]/div[1]/button/span")
       searchs.click()
       time.sleep(3)
[123]: url = "https://www.google.com/maps/place/Hyderabad,+Telangana/@17.4127332,78.
        -0783482,10z/data=!3m1!4b1!4m6!3m5!1s0x3bcb99daeaebd2c7:0xae93b78392bafbc2!
        →8m2!3d17.406498!4d78.4772439!16zL20vMDljNnc?entry=ttu"
```

```
# Extract latitude and longitude values using regular expressions
match = re.search(r'@(-?\d+\.\d+),(-?\d+\.\d+)', url)
latitude = match.group(1)
longitude = match.group(2)

print("Latitude:", latitude)
print("Longitude:", longitude)
```

Latitude: 17.4127332 Longitude: 78.0783482

6 6. Write a program to scrap all the available details of best gaming laptops from digit.in.

```
[21]: from selenium import webdriver
      import time
      from selenium.common.exceptions import NoSuchElementException # importing_
       \rightarrow exception
      import warnings
      warnings.filterwarnings('ignore')
      from selenium.webdriver.common.by import By
[22]: driver=webdriver.Chrome()
[23]: driver.get("https://www.digit.in/")
[26]: # scrape all product urls
      product urls=[]
      start=0
      end=2
      for page in range(start,end):
          url=driver.find_elements(By.XPATH,'//h3[@class="font130 mt0 mb10"]
       →mobilesblockdisplay "]//a[1]')
          for i in url:
              product_urls.append(i.get_attribute('href'))
          time.sleep(2)
[27]: len(product_urls)
[27]: 8
[28]: import pandas as pd
      df=pd.DataFrame({'product_urls':product_urls})
      df
```

```
[28]:
                                              product_urls
     0 https://www.digit.in/laptops/lenovo-ideapad-ga...
      1 https://www.digit.in/laptops/dell-new-g15-5515...
      2 https://www.digit.in/laptops/hp-pavilion-gamin...
      3 https://www.digit.in/laptops/lenovo-ideapad-ga...
      4 https://www.digit.in/laptops/lenovo-ideapad-ga...
      5 https://www.digit.in/laptops/dell-new-g15-5515...
      6 https://www.digit.in/laptops/hp-pavilion-gamin...
      7 https://www.digit.in/laptops/lenovo-ideapad-ga...
[29]: Laptop_name=[]
      Operating_system=[]
      Processor_model_name=[]
      Storage_drive_capacity=[]
      Price=[]
[30]: for url in product_urls:
          driver.get(url)
          time.sleep(3)
          try:
              laptop_names=driver.find_element(By.XPATH,'/html/body/div[2]/div[3]/

div[1]/div/div/div/div[2]/div[1]/div[1]/h1')

              Laptop_name.append(laptop_names.text)
          except NoSuchElementException:
              Laptop_name.append('-')
              operating_system=driver.find_element(By.XPATH,'/html/body/div[2]/div[3]/
       -div[1]/div/div/div/div/div[2]/div[1]/div[4]/div[3]/div/div/ul/li[1]/div/p[2]/
       ⇔strong')
              Operating_system.append(operating_system.text)
          except NoSuchElementException:
              Operating_system.append('-')
          try:
              processor_model_name=driver.find_element(By.XPATH,'/html/body/div[2]/
       div[3]/div[1]/div/div/div/div/div[2]/div[1]/div[4]/div[3]/div/div/ul/li[2]/

div/p[2]/strong')
              Processor_model_name.append(processor_model_name.text)
          except NoSuchElementException:
              Processor_model_name.append('-')
          try:
              rom=driver.find_element(By.XPATH,'/html/body/div[2]/div[3]/div[1]/div/

→div/div/div/div[2]/div[1]/div[4]/div[3]/div/div/ul/li[3]/div/p[2]/strong')

              Storage_drive_capacity.append(rom.text)
          except NoSuchElementException:
              Storage_drive_capacity.append('-')
```

```
price=driver.find_element(By.XPATH,'//div[@class="cegg-price-row"]//

div[1]')

              Price.append(price.text)
          except NoSuchElementException:
              Price.append('-')
[31]: print(len(Laptop_name),len(Operating_system),len(Processor_model_name),len(Storage_drive_capac
     88888
[32]: import pandas as pd
      df=pd.DataFrame({'laptop_name':Laptop_name,'Operating_system':
       ⊖Operating_system, 'processor_model': Processor_model_name, 'Rom':
       Storage_drive_capacity, 'price': Price, 'product_urls': product_urls})
      df
[32]:
                                               laptop_name Operating_system \
      O Lenovo IdeaPad Gaming 3 82K200X3IN Ryzen 7-580... Windows 11 Home
      1 Dell New G15-5515 D560805WIN9W Ryzen 5-5600H (...
                                                                Windows 10
      2 HP Pavilion Gaming 15-Ec2145AX Ryzen 5-5600H (... Windows 11 Home
      3
      4 Lenovo IdeaPad Gaming 3 82K200X3IN Ryzen 7-580... Windows 11 Home
      5 Dell New G15-5515 D560805WIN9W Ryzen 5-5600H (...
                                                                Windows 10
      6 HP Pavilion Gaming 15-Ec2145AX Ryzen 5-5600H (...
                                                         Windows 11 Home
      7
                                                  price \
                  processor_model
                                      Rom
         5th Gen AMD Ryzen 7-5800 512 GB
                                             Rs. 84,990
                AMD Ryzen 5-5600H 512 GB
      1
                                             Rs. 78,490
      2
                AMD Ryzen 5 5600H 512 GB
                                           out of stock
      3
      4
        5th Gen AMD Ryzen 7-5800 512 GB
                                             Rs. 84,990
                AMD Ryzen 5-5600H 512 GB
      5
                                             Rs. 78,490
      6
                AMD Ryzen 5 5600H 512 GB
                                           out of stock
      7
                                              product_urls
      0 https://www.digit.in/laptops/lenovo-ideapad-ga...
      1 https://www.digit.in/laptops/dell-new-g15-5515...
      2 https://www.digit.in/laptops/hp-pavilion-gamin...
      3 https://www.digit.in/laptops/lenovo-ideapad-ga...
      4 https://www.digit.in/laptops/lenovo-ideapad-ga...
      5 https://www.digit.in/laptops/dell-new-g15-5515...
      6 https://www.digit.in/laptops/hp-pavilion-gamin...
      7 https://www.digit.in/laptops/lenovo-ideapad-ga...
```

7 7. 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".

```
[60]: from selenium import webdriver
       import time
       from selenium.common.exceptions import NoSuchElementException # importing
        \rightarrow exception
       import warnings
       warnings.filterwarnings('ignore')
       from selenium.webdriver.common.by import By
[61]: driver=webdriver.Chrome()
[62]: driver.get("https://www.forbes.com/billionaires/")
[109]: Rank=[]
       Name=[]
       Net_worth=[]
       Age=[]
       Source=[]
       Industry=[]
[116]: Rank_tags=driver.find_elements(By.XPATH,'//div[@class="Table_rank__YBhk__

¬Table_dataCell__2QCve"]')
       for i in Rank tags:
           titles=i.text
           Rank.append(titles)
       networth=driver.find_elements(By.XPATH,'//div[@class="Table_netWorth___L4R5_
        ⇔Table_dataCell__2QCve"]')
       for i in networth:
           worth=i.text
           Net_worth.append(worth)
       source_tags=driver.find_elements(By.XPATH,'//

div[@class="Table_dataCell__2QCve"]//span')
       for i in source tags:
           source=i.text
           Source.append(source)
[112]: Name_tags=driver.find_elements(By.XPATH,'//div[@class="Table_dataCell__2QCve"]')
       for i in Name_tags:
           name=i.text
           Name.append(name)
       age_tags=driver.find_elements(By.XPATH,'//div[@class="Table_dataCell__2QCve"]')
       for i in age_tags:
```

```
age=i.text
           Age.append(age)
       industry_tags=driver.find_elements(By.XPATH,'//

→div[@class="Table_dataCell__2QCve"]')
       for i in industry_tags:
           industry=i.text
           Industry.append(industry)
[117]: print(len(Rank),len(Name),len(Net_worth),len(Age),len(Industry),len(Source))
      800 800 800 800 800 800
[119]: import pandas as pd
       df=pd.DataFrame({'rank': Rank, 'name':Name, 'net_worth':Net_worth, 'age':
        →Age, 'industry': Industry, 'source': Source})
       df
[119]:
           rank
                                      name net worth
                                                                             age
       0
              1
                 Bernard Arnault & family
                                               $211 B
                                                      Bernard Arnault & family
       1
              2
                                               $180 B
                                         74
                                                                              74
       2
              3
                                      LVMH
                                               $114 B
                                                                            LVMH
                          Fashion & Retail
                                               $107 B
                                                                Fashion & Retail
       3
              4
       4
              5
                                 Elon Musk
                                               $106 B
                                                                       Elon Musk
       795
           195
                           Food & Beverage
                                               $9.6 B
                                                                 Food & Beverage
                              Valerie Mars
                                               $9.6 B
       796
           195
                                                                    Valerie Mars
       797
            195
                                               $9.6 B
                                                                              64
                                         64
       798
            195
                           Candy, pet food
                                               $9.6 B
                                                                 Candy, pet food
       799
            195
                           Food & Beverage
                                               $9.6 B
                                                                 Food & Beverage
                             industry
                                                    source
       0
            Bernard Arnault & family
                                                      LVMH
       1
                                   74
                                             Tesla, SpaceX
       2
                                 LVMH
                                                    Amazon
                                                    Oracle
       3
                    Fashion & Retail
       4
                            Elon Musk Berkshire Hathaway
       795
                      Food & Beverage
                                              Solar panels
       796
                         Valerie Mars
                                                 Chemicals
       797
                                   64
                                           Candy, pet food
       798
                      Candy, pet food
                                           Candy, pet food
       799
                      Food & Beverage
                                           Candy, pet food
       [800 rows x 6 columns]
```

8 8. Write a program to extract at least 500 Comments, Comment upvote and time when comment was posted from any YouTube Video

```
[120]: from selenium import webdriver
       import time
       from selenium.common.exceptions import NoSuchElementException # importing_
        \hookrightarrow exception
       import warnings
       warnings.filterwarnings('ignore')
       from selenium.webdriver.common.by import By
[121]: driver=webdriver.Chrome()
[122]: driver.get("https://www.youtube.com/watch?v=Y9253_M38Xk")
[130]: comment=[]
       time_comment=[]
[131]: comment_tags=driver.find_elements(By.XPATH,'//div[@class="style-scope_u
        ⇔ytd-expander"]')
       for i in comment_tags:
           tags=i.text
           comment.append(tags)
       time_tags=driver.find_elements(By.XPATH,'//a[@class="yt-simple-endpoint_
        →style-scope yt-formatted-string"]')
       for i in time_tags:
           time=i.text
           time_comment.append(time)
[132]: print(len(comment),len(time_comment))
      501 501
[133]: import pandas as pd
       df=pd.DataFrame({'comment':comment, 'time_comment':time_comment})
[133]:
                                                        comment \
       0
       1
            KukuFM Download Link - https://kukufm.sng.link...
            This is one of the most informative and eye-op...
            Amazing video! We want more educated people li...
       3
            Jo aaj ki government ka haal. Aise halato mai ...
       496
```

```
497
    Dhruv rathi sir & Vijeta dahiya sir both are ...
498
                          The editing team is just fire
499
                                               Good work
    I had been waiting for this video for a long t...
500
                                 time_comment
0
                                 Dhruv Rathee
1
                                 17 hours ago
2
    https://kukufm.sng.link/Apksi/1ocn/9n2s
3
                                   1 hour ago
4
                               36 minutes ago
496
                               20 minutes ago
497
                                   1 hour ago
498
                                   1 hour ago
499
                               19 minutes ago
500
                                   1 hour ago
[501 rows x 2 columns]
```

9 9. 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.

```
[158]: # scrape all product urls
       product_urls=[]
       start=0
       end=1
       for page in range(start,end):
           url=driver.find_elements(By.XPATH,'//div[@class="property-card"]/a')
           for i in url:
               product_urls.append(i.get_attribute('href'))
           time.sleep(2)
[159]: print(len(product_urls))
      33
[160]: import pandas as pd
       df=pd.DataFrame({'product_url':product_urls})
       df
[160]:
                                                  product_url
           https://www.hostelworld.com/pwa/hosteldetails...
       0
           https://www.hostelworld.com/pwa/hosteldetails...
       1
       2
           https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       3
       4
           https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       5
           https://www.hostelworld.com/pwa/hosteldetails...
       6
       7
           https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       8
       9
           https://www.hostelworld.com/pwa/hosteldetails...
          https://www.hostelworld.com/pwa/hosteldetails...
       10
       11 https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       12
          https://www.hostelworld.com/pwa/hosteldetails...
       13
          https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       17
           https://www.hostelworld.com/pwa/hosteldetails...
          https://www.hostelworld.com/pwa/hosteldetails...
       18
       19
           https://www.hostelworld.com/pwa/hosteldetails...
       20
           https://www.hostelworld.com/pwa/hosteldetails...
           https://www.hostelworld.com/pwa/hosteldetails...
       21
       22
           https://www.hostelworld.com/pwa/hosteldetails...
          https://www.hostelworld.com/pwa/hosteldetails...
          https://www.hostelworld.com/pwa/hosteldetails...
       25 https://www.hostelworld.com/pwa/hosteldetails...
       26 https://www.hostelworld.com/pwa/hosteldetails...
       27 https://www.hostelworld.com/pwa/hosteldetails...
```

```
28 https://www.hostelworld.com/pwa/hosteldetails...
       29 https://www.hostelworld.com/pwa/hosteldetails...
       30 https://www.hostelworld.com/pwa/hosteldetails...
       31 https://www.hostelworld.com/pwa/hosteldetails...
       32 https://www.hostelworld.com/pwa/hosteldetails...
[163]: hostel_name=[]
       distance_from_city_centre=[]
       ratings=[]
       total_reviews=[]
       privates from price=[]
       dorms_from_price=[]
       facilities=[]
       property_description=[]
[164]: for url in product_urls:
           driver.get(url)
           time.sleep(2)
           try:
               names=driver.find_element(By.XPATH, '/html/body/div[3]/div/div/div[2]/
        ⇔section/div[4]/div/div[1]/h1/div')
               hostel name.append(names.text)
           except NoSuchElementException:
               hostel_name.append('-')
           try:
               distance=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        ⇔section/div[4]/div/div[1]/div/div')
               distance_from_city_centre.append(distance.text)
           except NoSuchElementException:
               distance_from_city_centre.append('-')
           try:
               rate=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        section/div[8]/div/div[1]/div[1]/div[1]')
               ratings.append(rate.text)
           except NoSuchElementException:
               ratings.append('-')
           try:
               review=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        ⇔section/div[8]/div/div[1]/div[1]/div[2]/div[2]')
               total_reviews.append(review.text)
           except NoSuchElementException:
               total_reviews.append('-')
           try:
               private=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        -section/div[10]/div/div/section/div/div[2]/div[1]/div[2]/div[1]/div[2]/

div[1]/div/div[1]/div[2]/div[1]')

               privates_from_price.append(private.text)
```

```
except NoSuchElementException:
               privates_from_price.append('-')
           try:
               dorms=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        -section/div[10]/div/div/section/div/div[2]/div[2]/div[2]/div[1]/div[2]/

div[1]/div/div[1]/div[2]/div[1]')

               dorms_from_price.append(dorms.text)
           except NoSuchElementException:
               dorms_from_price.append('-')
           try:
               faci=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/div[2]/
        ⇔section/div[12]/div/ul/li[1]/ul')
               facilities.append(faci.text)
           except NoSuchElementException:
               facilities.append('-')
           try:
               description=driver.find_element(By.XPATH,'/html/body/div[3]/div/div/

div[2]/section/div[8]/div/div[2]/div[3]/div/div[2]')
               property_description.append(description.text)
           except NoSuchElementException:
               property_description.append('-')
[165]: print(len(hostel_name),len(distance_from_city_centre),len(ratings),len(total_reviews),len(priv
      33 33 33 33 33 33 33
[171]: import pandas as pd
       df=pd.DataFrame({'hostel name':hostel name,'distance from city sentre':

→distance_from_city_centre, 'rating':ratings, 'total_reviews':
        dotal_reviews,'private_from_price':privates_from_price,'dorms_from_price':
        →dorms_from_price, 'facilities':facilities, 'property_description':
        →property_description})
[171]:
                                       hostel name \
                       Wombat's City Hostel London
       0
       1
                     Palmers Lodge - Swiss Cottage
       2
                          St Christopher's Village
                       Wombat's City Hostel London
       3
       4
                     Palmers Lodge - Swiss Cottage
       5
       6
                                  NX London Hostel
       7
                               Onefam Notting Hill
       8
                              Urbany Hostel London
       9
                                   Onefam Waterloo
       10
                                No.8 Seven Sisters
       11
                                   Astor Hyde Park
```

```
12
          Safestay London Elephant & Castle
13
                            Astor Museum Inn
14
               No.8 Willesden Hostel London
15
                  Smart Hyde Park Inn Hostel
                Smart Russell Square Hostel
16
17
    Safestay London Kensington Holland Park
18
                                     Clink261
19
        Hostelle - women only hostel London
20
                     Queen Elizabeth Chelsea
21
                     Prime Backpackers Angel
22
                    YHA London Oxford Street
23
                          London Backpackers
24
                 Kabannas London St Pancras
25
               St Christopher's Hammersmith
26
                              Astor Victoria
27
                            Astor Kensington
28
                              Phoenix Hostel
29
                     St Christopher's Camden
30
    St Christopher's Inn - Liverpool Street
            St Christopher's Shepherds Bush
31
32
                         YHA London St Pauls
                             distance_from_city_sentre rating
0
                        7 Dock Street, London, England
                                                            9.1
1
    40 College Crescent, Swiss Cottage, London, En...
                                                         8.8
2
             165 Borough High Street, London, England
                                                            7.8
3
                        7 Dock Street, London, England
                                                            9.1
    40 College Crescent, Swiss Cottage, London, En...
                                                         8.8
4
5
6
                  323 New Cross Road, London, England
                                                            8.9
7
                  63 Prince's Square, London, England
                                                            9.6
    48-49 Princes Square, Paddington, London, England
8
                                                            9.5
9
             73 Lambeth Walk, London, London, England
                                                            9.6
    618 Seven Sisters Rd, Seven Sisters, London, E...
                                                          7.8
10
    191 Queensgate, South Kensington, London, England
                                                            8.2
11
12
                144-152 Walworth Road, London, England
                                                            7.3
13
      27 Montague Street, Bloomsbury, London, England
                                                            8.4
14
               305 High Rd, Willesden, London, England
                                                            7.2
                                                         7.8
15
    48 - 50 Inverness Terrace, Bayswater, London, ...
16
                  71 Guilford Street, London, England
                                                            7.5
17
      Holland Park Ave, Holland Walk, London, England
                                                            6.9
18
    261-265 Grays Inn Road, Kings Cross, London, E...
                                                         8.1
19
                                                            8.8
               458 Bethnal Green road, London, England
20
                      58 Bagleys Lane, London, England
                                                            7.4
                                                            8.7
21
        333 City Road, 333 City Road, London, England
22
       14 Noel Street, Soho, W1F 8GJ, London, England
                                                            9.0
    8/10 Queens Parade, Queens Road, Hendon Centra...
                                                         8.0
```

```
24
                    79-81 Euston Road, London, England
                                                            8.2
    28, Hammersmith Broadway, Hammersmith, London,...
25
                                                          7.6
26
          73 Belgrave Road, Victoria, London, England
                                                            7.3
27
    45 Queensborough Terrace, Bayswater, London, E...
                                                         8.4
28
                    6 Daventry Street, London, England
                                                            6.3
29
    48-50 Camden High Street, Camden NW1, London, ...
                                                          7.2
          52 Wilson Street, Finsbury, London, England
30
                                                            8.2
31
    Belushis Bar, 13-15 Shepherds Bush Green., Lon...
                                                         7.7
            36 Carter Lane, EC4V 5AB, London, England
32
                                                            8.9
          total_reviews private_from_price dorms_from_price
0
    15961 Total Reviews
                                 Rs12232.76
                                                    Rs3598.49
1
    15992 Total Reviews
2
    12893 Total Reviews
3
    15961 Total Reviews
4
    15992 Total Reviews
5
6
     2165 Total Reviews
                                                    Rs1421.56
7
     2621 Total Reviews
8
     1137 Total Reviews
9
     160 Total Reviews
     4183 Total Reviews
10
11
    12338 Total Reviews
     5288 Total Reviews
12
13
     9464 Total Reviews
     5209 Total Reviews
     6805 Total Reviews
    10218 Total Reviews
16
17
     1793 Total Reviews
18
     533 Total Reviews
19
      125 Total Reviews
20
     3697 Total Reviews
21
     875 Total Reviews
     4704 Total Reviews
23
     4569 Total Reviews
24
     2981 Total Reviews
25
     4397 Total Reviews
                                  Rs1525.42
26
    15106 Total Reviews
27
     6597 Total Reviews
28
     4629 Total Reviews
                                  Rs1727.90
     4141 Total Reviews
29
30
     560 Total Reviews
      837 Total Reviews
                                  Rs1487.65
31
32
     2119 Total Reviews
```

O Linen Included Free City Maps Free WiFi Free I...

facilities \

```
1
2
        Linen Included Free WiFi Free Internet Access
3
    Linen Included Free City Maps Free WiFi Free I...
4
5
6
    Free Breakfast Linen Included Towels Included ...
7
8
                              Linen Included Free WiFi
9
        Linen Included Free WiFi Free Internet Access
10
                              Linen Included Free WiFi
    Linen Included Free City Maps Free WiFi Free I...
                              Linen Included Free WiFi
12
13
              Linen Included Free City Maps Free WiFi
14
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                                  property_description
0
    A safe haven in the middle of the metropolis: ...
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    A safe haven in the middle of the metropolis: ...
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5
    Welcome to NX London Hostel!\n\nPLEASE READ IN...
6
7
    The perfect place for solo travelers to connec...
    Welcome to Urbany Hostel London! Ideal for the ...
8
    Come join us at our newest Onefam location in ...
    For Great Facilities, Comfort & Affordability ...
11
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13	-
14	At No.8 we take pride in our Customer Service
15	Smart Hyde Park Inn Hostel is perfectly locate
16	-
17	Safestay Holland Park\n\nSafestay Holland Park
18	-
19	Hostelle is the first and only all-women hoste
20	PLEASE NOTE WE ONLY ACCEPT GUESTS FROM THE AGE
21	The hostel is housed in a historic building in
22	-
23	IMPORTANT NOTICE: $\n\$ hostel is for 18
24	<del>-</del>
25	-
26	-
27	-
28	The Phoenix Bar & Hostel, housed in a homely E
29	-
30	Our Liverpool Street hostel is the newest of o
31	-
32	-