Question 1

```
In [1]:  import requests
         from bs4 import BeautifulSoup
         import pandas as pd
         from selenium import webdriver
         from selenium.webdriver.common.by import By
         from selenium.webdriver.support.ui import WebDriverWait
         from selenium.webdriver.support import expected_conditions as EC
         import time
         import re
```

```
In [2]:  def getReviews(page_url, driver):

             result = None
             driver.get(page_url)

             page = driver.page_source
             soup = BeautifulSoup(page, 'html.parser')

             name_list = []
             vote_list = []
             rate_list = []
             text_list = []
             title_list = []
             date_list = []

             # reviews = soup.find_all('div', {'class': 'YibKl MC R2 Gi z Z BB pBbQr'})
             reviews = soup.select('#component_17 div div:nth-child(3) div.YibKl.MC.R2.G

             for review in reviews:
                     a_name=review.select("a.ui_header_link.uyyBf")
                     name_list.append(a_name[0].get_text())

                     span_vote=review.select("span.phMBo")

                     if len(span_vote)>1:
                         vote_list.append(span_vote[1].get_text())
                     else:
                         vote_list.append(None)

                     span_rate=review.select("span.ui_bubble_rating")
                     rate_list.append(span_rate[0]["class"][1])


                     a_title = review.select("a.Qwuub")

                     title_list.append(a_title[0].get_text())

                     q_text = review.select("q.QewHA.H4._a")
                     text_list.append(q_text[0].get_text())


                     span_date = review.select("span.teHYY._R.Me.S4.H3")
                     date_list.append(span_date[0].get_text())
```

```
        list_data = [name_list, rate_list, vote_list, title_list, text_list, date_l
        columns=['reviewer','rating','vote','title', 'text', 'date']
        data_1 = dict(zip(columns,list_data))
        result = pd.DataFrame(data_1)

        return result
```

In [3]:
```
page_url = "https://www.tripadvisor.com/Hotel_Review-g60763-d23448880-Reviews-d

executable_path = '/usr/bin/chromedriver'
driver = webdriver.Chrome(executable_path=executable_path)

reviews = getReviews(page_url, driver)

driver.quit()

reviews
```

```
/var/folders/xh/9s8p6wv51lb17v8j4lqd9zrr0000gn/T/ipykernel_92374/3044288218.p
y:4: DeprecationWarning: executable_path has been deprecated, please pass in a
Service object
  driver = webdriver.Chrome(executable_path=executable_path)
```

Out[3]:

	reviewer	rating	vote	title	text	date
0	scott w	bubble_50	None	Great room, great service, great location	Room was fantastic and the service was outstan...	Date of stay: February 2023
1	Louis M	bubble_50	None	Motto NYC Chelsea	We had an excellent one-night stay at the Mott...	Date of stay: February 2023
2	Brady	bubble_30	1 helpful vote	Whats in a name?	Its the Hilton name so booked on that assumpti...	Date of stay: February 2023
3	Robsen	bubble_50	None	Just perfect!	At first the arrival there was amazing. Ina fr...	Date of stay: February 2023
4	Kristin N	bubble_50	None	Great Hotel, Wonderful Customer Service!	I've stayed at the Motto hotel several times ...	Date of stay: February 2023
5	koldoVergara_77	bubble_50	None	amazing!	happy to be back to NY after 16 years! Great W...	Date of stay: February 2023
6	sgoldberg75093	bubble_50	1 helpful vote	Good hotel for a quick trip.	This is a brand new hotel (a year old) and sti...	Date of stay: February 2023
7	Khyree R	bubble_50	None	Great viewssss, no microwave	Had a view of the Freedom Tower! What a way to...	Date of stay: February 2023
8	Saf	bubble_50	1 helpful vote	Great views, clean, beautiful boutique feel hotel	This is my first ever solo trip to anywhere an...	Date of stay: February 2023
9	Mile C	bubble_50	None	A gem in Chelsea!	A phenomenal experience! These folks have nail...	Date of stay: February 2023

Question 2

```
In [4]:  def getReviews(page_url, driver, expand_review = False, limit = 10):

             result = None
             driver.get(page_url)

             page = driver.page_source
             soup = BeautifulSoup(page, 'html.parser')

             name_list = []
             vote_list = []
             rate_list = []
             text_list = []
             title_list = []
             date_list = []
             full_list = []

             while True:
                 # take reviews in 1 page
                 driver.implicitly_wait(10)
                 reviews = soup.find_all('div', {'class': 'YibKl MC R2 Gi z Z BB pBbQr'}

                 # index = 2
                 for review in reviews:
                     # index += 1
                     # take the reviewer in each review
                     a_name=review.select("a.ui_header_link.uyyBf")
                     name_list.append(a_name[0].get_text())

                     # take the vote in each review
                     span_vote=review.select("span.phMBo")

                     # return None if no vote

                     if len(span_vote)>1:
                         vote_list.append(span_vote[1].get_text())
                     else:
                         vote_list.append(None)

                     # take the rate in each review

                     span_rate=review.select("span.ui_bubble_rating")
                     rate_list.append(span_rate[0]["class"][1])

                     # take the title in each review
                     a_title = review.select("a.Qwuub")

                     title_list.append(a_title[0].get_text())

                     # take the text in each review
                     q_text = review.select("q.QewHA.H4._a")
                     text_list.append(q_text[0].get_text())

                     # take the date in each review
                     span_date = review.select("span.teHYY._R.Me.S4.H3")
                     date_list.append(span_date[0].get_text())
```

```python
#                read = review.select("div._T.FKffI")
#                if len(read) == 2:

#                    try:
#                        read_more = driver.find_element(By.XPATH, "//*[@id='comp
#                        read_more = driver.find_element(By.CSS_SELECTOR,"#compone
#                        read_more.click()
#                    except:
#                        read_more = driver.find_element(By.XPATH, "//*[@id='comp
#                        read_more = driver.find_element(By.CSS_SELECTOR,"#compone
#                        read_more.click()
#                    time.sleep(2)

#                    driver.implicitly_wait(20)
#                    text = driver.find_element(By.XPATH, "//*[@id='component_17']
#                    text = driver.find_element(By.CSS_SELECTOR,"#component_17 > d
#                    full_list.append(text.text)

#                else:
#                    full_list.append(q_text[0].get_text())



        try:
            next_page = driver.find_element(By.CSS_SELECTOR, "a.ui_button.nav.r

            next_page.click()

        except:
            next_page = driver.find_element(By.CSS_SELECTOR, "a.ui_button.nav.r

            next_page.click()
        time.sleep(2)

        driver.implicitly_wait(20)

        soup = BeautifulSoup(driver.page_source, 'html.parser')


        if len(name_list)>= limit:
            break



    list_data = [name_list[:limit], rate_list[:limit], vote_list[:limit], title
    columns=['reviewer','rating','vote','title', 'text', 'date']
    data_1 = dict(zip(columns,list_data))
    result = pd.DataFrame(data_1)
    return result
```

```python
In [5]:  page_url = "https://www.tripadvisor.com/Hotel_Review-g60763-d23448880-Reviews-c

         executable_path = '/usr/bin/chromedriver'
         driver = webdriver.Chrome(executable_path=executable_path)

         reviews = getReviews(page_url, driver, expand_review = True, limit = 50)
```

```
driver.quit()

reviews
```

```
/var/folders/xh/9s8p6wv51lb17v8j4lqd9zrr0000gn/T/ipykernel_92374/2986388831.p
y:4: DeprecationWarning: executable_path has been deprecated, please pass in a
Service object
  driver = webdriver.Chrome(executable_path=executable_path)
```

Out[5]:

	reviewer	rating	vote	title	text	date
0	scott w	bubble_50	None	Great room, great service, great location	Room was fantastic and the service was outstan...	Date of stay: February 2023
1	Louis M	bubble_50	None	Motto NYC Chelsea	We had an excellent one-night stay at the Mott...	Date of stay: February 2023
2	Brady	bubble_30	1 helpful vote	Whats in a name?	Its the Hilton name so booked on that assumpti...	Date of stay: February 2023
3	Robsen	bubble_50	None	Just perfect!	At first the arrival there was amazing. Ina fr...	Date of stay: February 2023
4	Kristin N	bubble_50	None	Great Hotel, Wonderful Customer Service!	I've stayed at the Motto hotel several times ...	Date of stay: February 2023
5	koldoVergara_77	bubble_50	None	amazing!	happy to be back to NY after 16 years! Great W...	Date of stay: February 2023
6	sgoldberg75093	bubble_50	1 helpful vote	Good hotel for a quick trip.	This is a brand new hotel (a year old) and sti...	Date of stay: February 2023
7	Khyree R	bubble_50	None	Great viewssss, no microwave	Had a view of the Freedom Tower! What a way to...	Date of stay: February 2023
8	Saf	bubble_50	1 helpful vote	Great views, clean, beautiful boutique feel hotel	This is my first ever solo trip to anywhere an...	Date of stay: February 2023
9	Mile C	bubble_50	None	A gem in Chelsea!	A phenomenal experience! These folks have nail...	Date of stay: February 2023
10	Fearless706378	bubble_50	None	Enjoyable 2nd annual trip to NYC and Motto!!	We had our 2nd annual trip to NYC to Motto for...	Date of stay: February 2023
11	First L	bubble_50	1 helpful vote	Great people!	This is the 2nd time I stayed at Motto. I love...	Date of stay: February 2023
12	Maria Jose Game	bubble_50	None	Great long weekend at Motto	We came for an anniversary trip to one of our ...	Date of stay: February 2023

	reviewer	rating	vote	title	text	date
13	Jennifer M	bubble_50	7 helpful votes	Great Stay!	Spent 4 nights at Motto NYC and had a great ...	Date of stay: February 2023
14	Georgy	bubble_50	None	Great Hotel, great location, very friendly staff	Defenitely we can recommend that hotel Very fr...	Date of stay: February 2023
15	Charlotte L	bubble_50	None	Fabulous!	I stayed on a Thursday night. Fabulous hotel g...	Date of stay: February 2023
16	778moni	bubble_30	19 helpful votes	Great hotel but poor sound isolation	Very nice hotel, cool design, friendly and cou...	Date of stay: February 2023
17	Margie G	bubble_50	None	I love the Motto	One of the best hotels I've ever stayed at!!! ...	Date of stay: February 2023
18	Evan O	bubble_50	None	Awesome service and view!	We spent a long weekend at The Motto and were ...	Date of stay: February 2023
19	Ellen L	bubble_50	1 helpful vote	My son was getting married and i found out 4 d...	Jasmine was working the front desk! She went ...	Date of stay: February 2023
20	Kyaire	bubble_50	None	Friendly staff, amazing views, comfortable beds!	Everything was amazing. The staff was friendly...	Date of stay: February 2023
21	Diya G	bubble_50	None	Great place to stay in nyc	The reception desk staff are professional and ...	Date of stay: February 2023
22	Jane N	bubble_50	1 helpful vote	would def come back	A beautifully designed hotel in a great locati...	Date of stay: February 2023
23	Kate R	bubble_50	None	A favorite in NYC	I have enjoyed staying at the Motto twice in t...	Date of stay: February 2023
24	mexico0416	bubble_50	None	Clean & Friendly Staff	First and foremost I would like to thank the s...	Date of stay: December 2022
25	JettGrimes	bubble_50	1 helpful vote	High quality rooms, and very friendly staff!	My room was very nice and luxurious. I had suc...	Date of stay: February 2023

	reviewer	rating	vote	title	text	date
26	Rebecca K	bubble_50	2 helpful votes	Super friendly staff!	Lovely room, quiet. Z (Zeyad) was super nice a...	Date of stay: February 2023
27	Alhodges	bubble_50	34 helpful votes	Excellent	I spent 8 days at the Motto and really loved m...	Date of stay: February 2023
28	Jab8799	bubble_50	None	Cozy and Clean! Perfect base for NYC.	I want to write a review that puts people on t...	Date of stay: February 2023
29	Vic S	bubble_50	12 helpful votes	First Choice Every Time	We have stayed at this hotel multiple times in...	Date of stay: February 2023
30	Kari C	bubble_50	None	Fabulous Hotel	We recently stayed at the Motto by Hilton in C...	Date of stay: January 2023
31	SamBBer	bubble_50	None	Beautiful place & perfect location	We like to enjoy a weekend in NYC from time to...	Date of stay: December 2022
32	joel l	bubble_30	5 helpful votes	No closet, no desk, no dresser	I understand that hotel rooms are often on the...	Date of stay: February 2023
33	lauryn r	bubble_50	None	Yasmin is amazing!	Yasmin was absolutely amazing!!! She really he...	Date of stay: January 2023
34	Tom l	bubble_50	None	Amazing location and view.	Motto Chelsea was just amazing, the help of Ze...	Date of stay: January 2023
35	Passport58331943467	bubble_50	None	Amazing property and staff!	I booked a stay to celebrate my partner's birt...	Date of stay: January 2023
36	Wade4020	bubble_50	None	Just a great comfortable experience.	The last few times I have traveled to NYC I ha...	Date of stay: February 2023
37	Paradise99206	bubble_40	None	Awesome location	A great location. Rooms were clean and functio...	Date of stay: January 2023
38	bjkennedy	bubble_50	21 helpful votes	Awesome!!!	Awesome hotel. Comfortable beds and very quie...	Date of stay: January 2023

	reviewer	rating	vote	title	text	date
39	Ayse W	bubble_50	14 helpful votes	Great stay at Motto Chelsea	We recently stayed at Motto Chelsea while visi...	Date of stay: January 2023
40	Kathleen R	bubble_50	None	Every Visit is Fantastic	This is a new hotel in the neighborhood and my...	Date of stay: January 2023
41	Andrea	bubble_50	None	Perfect girls trip!	Beautiful and spacious hotel, good location, a...	Date of stay: January 2023
42	Lori H	bubble_50	None	Perfect stay!	From the moment we arrived I knew I made the r...	Date of stay: January 2023
43	Manuel M	bubble_50	None	January trip to remember!	Wonderful staff! Friendly, welcoming, helpful....	Date of stay: January 2023
44	netllama	bubble_40	294 helpful votes	staff issues made it less than great	We spent 10 nights here. The hotel property i...	Date of stay: January 2023
45	Victor	bubble_50	1 helpful vote	Beautiful new hotel	This new hotel of Motto by Hilton has been pre...	Date of stay: January 2023
46	Chefik S	bubble_50	None	the best crew!	staff is always hospitable and make everything...	Date of stay: January 2023
47	Patricia R	bubble_50	None	Perfect stay!	This hotel was a great location for our overni...	Date of stay: January 2023
48	Ashley L	bubble_50	None	Phenomenal Birthday Stay at Motto Chelsea	This hotel is the essence of sophistication! F...	Date of stay: January 2023
49	Nicolas I	bubble_50	4 helpful votes	great hotel	New hotel, cleaning and bed made every day. V...	Date of stay: January 2023

In [6]:
```python
if __name__ == "__main__":

    # Test Question 1

    print("\nTest Question 1")
    page_url = "https://www.tripadvisor.com/Hotel_Review-g60763-d23448880-Revie

    executable_path = '/usr/bin/chromedriver'
```

```python
    driver = webdriver.Chrome(executable_path=executable_path)

    reviews = getReviews(page_url, driver)

    driver.quit()

    print(reviews.head())


     # Test Question 2

    print("\nTest Question 2")
    page_url = "https://www.tripadvisor.com/Hotel_Review-g60763-d23448880-Revie

    executable_path = '/usr/bin/chromedriver'
    driver = webdriver.Chrome(executable_path=executable_path)

    reviews = getReviews(page_url, driver, expand_review = True, limit = 20)

    driver.quit()

    print(reviews.head())
```

Test Question 1

```
/var/folders/xh/9s8p6wv51lb17v8j4lqd9zrr0000gn/T/ipykernel_92374/296775448.py:
9: DeprecationWarning: executable_path has been deprecated, please pass in a S
ervice object
  driver = webdriver.Chrome(executable_path=executable_path)
```

```
    reviewer      rating              vote  \
0    scott w  bubble_50              None
1    Louis M  bubble_50              None
2      Brady  bubble_30  1 helpful vote
3     Robsen  bubble_50              None
4  Kristin N  bubble_50              None


                                    title  \
0  Great room, great service, great location
1                         Motto NYC Chelsea
2                         Whats in a name?
3                             Just perfect!
4   Great Hotel, Wonderful Customer Service!


                                     text  \
0  Room was fantastic and the service was outstan...
1  We had an excellent one-night stay at the Mott...
2  Its the Hilton name so booked on that assumpti...
3  At first the arrival there was amazing. Ina fr...
4   I've stayed at the Motto hotel several times ...


                             date
0  Date of stay: February 2023
1  Date of stay: February 2023
2  Date of stay: February 2023
3  Date of stay: February 2023
4  Date of stay: February 2023


Test Question 2
```

```
/var/folders/xh/9s8p6wv51lb17v8j4lqd9zrr0000gn/T/ipykernel_92374/296775448.py:
24: DeprecationWarning: executable_path has been deprecated, please pass in a
Service object
  driver = webdriver.Chrome(executable_path=executable_path)
     reviewer      rating                vote  \
0    scott w   bubble_50                None
1    Louis M   bubble_50                None
2      Brady   bubble_30   1 helpful vote
3     Robsen   bubble_50                None
4  Kristin N   bubble_50                None


                                       title  \
0  Great room, great service, great location
1                           Motto NYC Chelsea
2                           Whats in a name?
3                               Just perfect!
4    Great Hotel, Wonderful Customer Service!


                                        text  \
0  Room was fantastic and the service was outstan...
1  We had an excellent one-night stay at the Mott...
2  Its the Hilton name so booked on that assumpti...
3  At first the arrival there was amazing. Ina fr...
4   I've stayed at the Motto hotel several times ...

                                date
0  Date of stay: February 2023
1  Date of stay: February 2023
2  Date of stay: February 2023
3  Date of stay: February 2023
4  Date of stay: February 2023
```

In [ ]: