```
import pandas as pd
import folium
from IPython.display import HTML, display , IFrame

data = pd.read_csv("/content/AB_NYC_2019.csv")

data.info()

data.isna().sum()

#creating base map
center_lat = data['latitude'].mean()
center_lon = data['longitude'].mean()
map = folium.Map(location=[center_lat, center_lon], zoom_start=12)
map

# Extract latitude and longitude coordinates from the dataset and plot
them as markers on the map
for index, row in data.iterrows():
    latitude = row['latitude']
    longitude = row['longitude']

    #Customize markers based on different attributes (e.g., listing type,
price range, availability)
    room_type = row['room_type']
    marker_color = 'blue' if room_type == 'Private room' else 'green'

    price = row['price']
    marker_size = price / 50

    #Add markers to the map
    popup_text = f"Name: {row['name']}<br>Host:
{row['host_name']}<br>Price: ${price} per night"
    folium.CircleMarker(
        location=[latitude, longitude],
        radius=marker_size,
        color=marker_color,
        fill=True,
        popup=popup_text,
    ).add_to(map)
```

```
#Incorporating additional layers, such as neighborhoods
neighborhood_grouped = data.groupby('neighbourhood').agg({
    'latitude': 'mean',
    'longitude': 'mean',
}).reset_index()

for index, row in neighborhood_grouped.iterrows():
    neighborhood = row['neighbourhood']
    neighborhood_lat = row['latitude']
    neighborhood_lon = row['longitude']
    folium.Marker(
        location=[neighborhood_lat, neighborhood_lon],
        icon=folium.Icon(color='purple', icon='cloud'),
        popup=f"Neighborhood: {neighborhood}"
    ).add_to(map)

map
map.save('map.html')

"""Task 2"""

import csv
from selenium import webdriver
from selenium.webdriver.common.by import By
import time

def fetch_menu_category_titles(url):
    options = webdriver.ChromeOptions()
    options.add_argument('--headless')  # Set to True if you don't want
the browser to open visibly
    options.add_argument('--no-sandbox')
    options.add_argument('--disable-dev-shm-usage')

    # Set up ChromeDriver with the compatible version
    driver = webdriver.Chrome(options=options)

    driver.get(url)

    # Wait for the "View Menu" button to load and click it
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```
    menu_card_button = driver.find_element(By.XPATH,
"//button[contains(div[@class='v-btn__content'], 'View Menu')]")
    menu_card_button.click()

    # Wait for the menu category titles to load
    time.sleep(5)
    titles = driver.find_elements(By.XPATH, "//div[contains(@class,
'categoryLabelMobile')]")

    category_titles = [title.text for title in titles]

    driver.quit()
    return category_titles

def save_to_csv(data, filename):
    with open(filename, mode='w', encoding='utf-8', newline='') as file:
        writer = csv.writer(file)
        writer.writerow(['Category Title'])
        for item in data:
            writer.writerow([item])

if __name__ == '__main__':
    restaurant_url =
'https://demoazulmexicanosummerville.onlineordersnow.com/MenuDisplay'
    category_titles = fetch_menu_category_titles(restaurant_url)

    csv_filename = 'menu_category_titles.csv'
    save_to_csv(category_titles, csv_filename)

    print(f"Menu category titles saved to {csv_filename}.")
```