

data science work assessment

October 19, 2021

```
[1]: import numpy as np
import pandas as pd
```

```
[2]: info=pd.read_csv("Data.csv")
```

```
[3]: info
```

```
[3]:
```

	Name	Address \
0	IUPUI	415 Porto Alegre St, Indianapolis, IN 46202
1	The Speak Easy	5255 Winthrop Ave #110, Indianapolis, IN 46220
2	zWORKS	85 E Cedar St #1502, Zionsville, IN 46077
3	Launch Fishers	12175 Visionary Way, Fishers, IN 46038
4	Industrious Mass Ave	350 Massachusetts Ave Suite 300, Indianapolis,...
5	Launch Indy	525 S Meridian St, Indianapolis, IN 46225

	Type
0	Housing
1	Coworking
2	Coworking
3	Coworking
4	Coworking
5	Coworking

Suppose the xtern event starts at May 16th and continue in the next 10 weeks. For this project I will find the events from May 16 th to July 24th. And a week starts on Monday and end on Sunday.

```
[4]: from datetime import datetime
import googlemaps
```

```
[5]: gmaps = googlemaps.Client(key='AIzaSyCcW0fo2X1XmVXw-XGzH_yuUyj5YkyuCfc')
```

```
[6]: location={"name": [], "lat": [], "long": []}
for n in range(info.shape[0]):
    code=gmaps.geocode(info.iloc[n]["Address"])
    location["name"].append(info.iloc[n]["Name"])
    location["lat"].append(code[0]["geometry"]["location"]["lat"])
    location["long"].append(code[0]["geometry"]["location"]["lng"])
```

```
[7]: location=pd.DataFrame(location)
```

```
[8]: location
```

```
[8]:
```

	name	lat	long
0	IUPUI	39.773890	-86.184912
1	The Speak Easy	39.848873	-86.141295
2	zWORKS	39.951492	-86.260870
3	Launch Fishers	39.966764	-86.008809
4	Industrious Mass Ave	39.765831	-86.157617
5	Launch Indy	39.759349	-86.158047

```
[9]: #this can store the time spent by car to the coworking place, in seconds
time=[]
# I will choose a time that is not in rush hour, the time is 2022.7.2 23:59:59:
→00
d_time=datetime(2022,7,2,23,59,59,0)
o=location.iloc[0]["lat"],location.iloc[0]["long"]
for n in range(location.shape[0]):
    d=location.iloc[n]["lat"],location.iloc[n]["long"]
    directions_result = gmaps.directions(origin=o,
                                          destination=d,
                                          departure_time=d_time)
    time.append(directions_result[0]["legs"][0]["duration"]["value"])
```

```
[10]: time
```

```
[10]: [0, 1252, 1696, 1952, 521, 551]
```

```
[11]: location=location.join(pd.DataFrame(time,columns=["time"]))
```

```
[12]: location["type"]=["Housing","Coworking","Coworking","Coworking","Coworking","Coworking"]
```

```
[13]: location
```

```
[13]:
```

	name	lat	long	time	type
0	IUPUI	39.773890	-86.184912	0	Housing
1	The Speak Easy	39.848873	-86.141295	1252	Coworking
2	zWORKS	39.951492	-86.260870	1696	Coworking
3	Launch Fishers	39.966764	-86.008809	1952	Coworking
4	Industrious Mass Ave	39.765831	-86.157617	521	Coworking
5	Launch Indy	39.759349	-86.158047	551	Coworking

```
[14]: location.to_csv("Housing_Coworing_Info.csv",index=False)
```

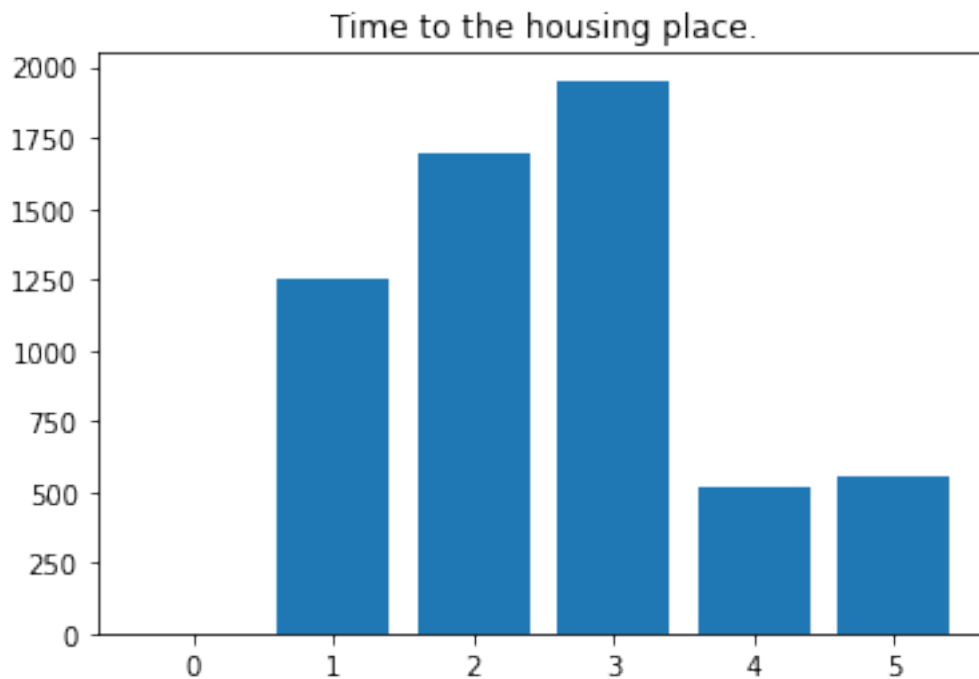
```
[15]: #350 Massachusetts Ave Suite 300 is the nearest place to the housing place
location.sort_values(by=["time"])
```

```
[15]:
```

	name	lat	long	time	type
0	IUPUI	39.773890	-86.184912	0	Housing
4	Industrious Mass Ave	39.765831	-86.157617	521	Coworking
5	Launch Indy	39.759349	-86.158047	551	Coworking
1	The Speak Easy	39.848873	-86.141295	1252	Coworking
2	zWORKS	39.951492	-86.260870	1696	Coworking
3	Launch Fishers	39.966764	-86.008809	1952	Coworking

```
[16]: import matplotlib.pyplot as plt
```

```
[17]: plt.bar([0,1,2,3,4,5],location["time"])
plt.title("Time to the housing place.")
plt.show()
```



```
[18]: import folium
from folium import plugins
```

```
[19]: IN_map = folium.Map(location=[39.7800,-86.1331], zoom_start=10)
```

```
[20]: for n in range(location.shape[0]):
    if location.iloc[n]["type"]=="Housing":
        folium.Marker(location=[location.iloc[n]["lat"], location.
↪iloc[n]["long"]],popup= location.iloc[n]["name"]+" "+location.
↪iloc[n]["type"],tooltip='Click here to see Popup',icon=folium.
↪Icon(color="green")).add_to(IN_map)
```

```

else:
    folium.Marker(location=[location.iloc[n]["lat"], location.
↪iloc[n]["long"]],popup= location.iloc[n]["name"]+" "+location.
↪iloc[n]["type"],tooltip='Click here to see Popup',icon=folium.
↪Icon(color="blue")).add_to(IN_map)

```

```
[21]: IN_map
```

```
[21]: <folium.folium.Map at 0x18d6f3bbb48>
```

```
[22]: IN_map.save("Housing_Coworking_place.html")
```

```
[23]: event=pd.read_csv("event.csv")
```

```
[24]: event
```

```
[24]:
```

	Name \	Date	Start Time \
0	CoderDojo Indy	21-May-22	11:00 AM EDT
1	Coffee with the Curator 2022	3-Jun-22	8:30 AM EDT
2	Leading With Impact Entrepreneur Social	2-Jun-22	11:11 AM EDT
3	Illusions The Drag Queen Show Indianapolis - D...	21-May-22	7:00 PM EDT
4	Steel Magnolias	May 10, 2022-June 5, 2022	7:30 PM EDT
5	H.M. Saffer, II	Every Tuesday-Saturday	12:00 PM EDT
6	ComedySportz	Every Friday, Saturday	7:30 PM EDT
7	5 Seconds of Summer: No Shame 2021 Tour	15-Jul-22	7:00 PM EDT
8	Working the Musical	Every Friday in April 29, 2022-May 20, 2022	7:30 PM EDT
9	Music Moves	May 20,2022 - May 22, 2022	TBD
10	AJR - The OK Orchestra Tour		
11	Indianapolis 500 Mile Race		
12	Antony and Cleopatra		
13	Talbot Street Art Fair		
14	Santana and Earth, Wind & Fire - Miraculous Su...		
15	Backstreet Boys - DNA World Tour		
16	THE LUME Indianapolis		
17	NaN		

10		28-May-22	7:30 PM EDT
11		29-May-22	TBD
12	June 9, 2022-June 11, 2022		7:00 PM EDT
13	June 18, 2022-June 19, 2022		TBD
14		8-Jul-22	7:00 PM EDT
15		10-Jul-22	7:30 PM EDT
16	October 18, 2021- May 31, 2022		all day
17		NaN	NaN

	Location	Type
0	727 N Oriental St, Indianapolis, IN 46202	Conference or TED
1	1230 North Delaware Street, Indianapolis, IN 4...	Conference or TED
2	EDT9511 Angola Court #UNIT 200, Indianapolis, ...	Conference or TED
3	247 S Meridian St, Indianapolis, IN 46225	Art
4	140 West Washington Street, Indianapolis, IN	Art
5	42 East Washington Street, Indianapolis, IN	Art
6	721 Massachusetts Avenue, Indianapolis, IN	Sports
7	801 West Washington Street, Indianapolis, IN	Music
8	4 Center Green, Carmel, IN 46032	Music
9	4600 Sunset Ave., Indianapolis, IN 46208	Music
10	12880 E. 146th St., Noblesville, IN 46060	Music
11	4790 W. 16th St., Indianapolis, IN 46222	Sports
12	3 Center Green, Carmel, IN 46032	Conference or TED
13	16th and Talbott Sts., Indianapolis, IN 46202	Art
14	12880 E. 146th St., Noblesville, IN 46060	Music
15	12880 E. 146th St., Noblesville, IN 46060	Music
16	4000 N Michigan Rd, Indianapolis, IN 46208	Art
17	NaN	NaN

```
[25]: event=event.drop([17])
```

```
[26]: event
```

```
[26]:
```

	Name \
0	CoderDojo Indy
1	Coffee with the Curator 2022
2	Leading With Impact Entrepreneur Social
3	Illusions The Drag Queen Show Indianapolis - D...
4	Steel Magnolias
5	H.M. Saffer, II
6	ComedySportz
7	5 Seconds of Summer: No Shame 2021 Tour
8	Working the Musical
9	Music Moves
10	AJR - The OK Orchestra Tour
11	Indianapolis 500 Mile Race
12	Antony and Cleopatra

```

13                               Talbot Street Art Fair
14 Santana and Earth, Wind & Fire - Miraculous Su...
15                               Backstreet Boys - DNA World Tour
16                               THE LUME Indianapolis

```

```

                                Date      Start Time \
0                               21-May-22  11:00 AM EDT
1                               3-Jun-22   8:30 AM EDT
2                               2-Jun-22  11:11 AM EDT
3                               21-May-22   7:00 PM EDT
4                               May 10, 2022-June 5, 2022  7:30 PM EDT
5                               Every Tuesday-Saturday 12:00 PM EDT
6                               Every Friday, Saturday  7:30 PM EDT
7                               15-Jul-22   7:00 PM EDT
8   Every Friday in April 29, 2022-May 20, 2022  7:30 PM EDT
9                               May 20,2022 - May 22, 2022    TBD
10                              28-May-22   7:30 PM EDT
11                              29-May-22    TBD
12                              June 9, 2022-June 11, 2022  7:00 PM EDT
13                              June 18, 2022-June 19, 2022    TBD
14                              8-Jul-22   7:00 PM EDT
15                              10-Jul-22  7:30 PM EDT
16                              October 18, 2021- May 31, 2022  all day

```

```

                                Location      Type
0                               727 N Oriental St, Indianapolis, IN 46202  Conference or TED
1   1230 North Delaware Street, Indianapolis, IN 4...  Conference or TED
2   EDT9511 Angola Court #UNIT 200, Indianapolis, ...  Conference or TED
3                               247 S Meridian St, Indianapolis, IN 46225    Art
4                               140 West Washington Street, Indianapolis, IN    Art
5                               42 East Washington Street, Indianapolis, IN    Art
6                               721 Massachusetts Avenue, Indianapolis, IN    Sports
7                               801 West Washington Street, Indianapolis, IN    Music
8                               4 Center Green, Carmel, IN 46032    Music
9                               4600 Sunset Ave., Indianapolis, IN 46208    Music
10                              12880 E. 146th St., Noblesville, IN 46060    Music
11                              4790 W. 16th St., Indianapolis, IN 46222    Sports
12                              3 Center Green, Carmel, IN 46032  Conference or TED
13   16th and Talbott Sts., Indianapolis, IN 46202    Art
14                              12880 E. 146th St., Noblesville, IN 46060    Music
15                              12880 E. 146th St., Noblesville, IN 46060    Music
16                              4000 N Michigan Rd, Indianapolis, IN 46208    Art

```

```

[27]: event_pos={"name": [], "type": [], "lat": [], "long": []}
      for n in range(event.shape[0]):
          code=gmaps.geocode(event.iloc[n]["Location"])
          event_pos["name"].append(event.iloc[n]["Name"])

```

```

event_pos["type"].append(event.iloc[n]["Type"])
event_pos["lat"].append(code[0]["geometry"]["location"]["lat"])
event_pos["long"].append(code[0]["geometry"]["location"]["lng"])

```

```
[28]: event_pos=pd.DataFrame(event_pos)
```

```
[29]: event_pos
```

```
[29]:
```

	name	type \
0	CoderDojo Indy	Conference or TED
1	Coffee with the Curator 2022	Conference or TED
2	Leading With Impact Entrepreneur Social	Conference or TED
3	Illusions The Drag Queen Show Indianapolis - D...	Art
4	Steel Magnolias	Art
5	H.M. Saffer, II	Art
6	ComedySportz	Sports
7	5 Seconds of Summer: No Shame 2021 Tour	Music
8	Working the Musical	Music
9	Music Moves	Music
10	AJR - The OK Orchestra Tour	Music
11	Indianapolis 500 Mile Race	Sports
12	Antony and Cleopatra	Conference or TED
13	Talbot Street Art Fair	Art
14	Santana and Earth, Wind & Fire - Miraculous Su...	Music
15	Backstreet Boys - DNA World Tour	Music
16	THE LUME Indianapolis	Art

	lat	long
0	39.778613	-86.131845
1	39.784061	-86.154390
2	39.924683	-86.223152
3	39.763119	-86.157761
4	39.767445	-86.161028
5	39.767361	-86.156675
6	39.776642	-86.146297
7	39.766514	-86.170606
8	39.968773	-86.130235
9	39.838167	-86.170539
10	40.004977	-85.930854
11	39.788176	-86.238562
12	39.968849	-86.130382
13	39.788434	-86.154912
14	40.004977	-85.930854
15	40.004977	-85.930854
16	39.826020	-86.185765

```
[30]: for n in range(event_pos.shape[0]):
        folium.Marker(location=[event_pos.iloc[n]["lat"], event_pos.
        ↳iloc[n]["long"]],popup='name: '+str(event_pos.iloc[n]["name"])+ ' type:␣
        ↳'+str(event_pos.iloc[n]["type"]),tooltip='Click here to see␣
        ↳Popup',icon=folium.Icon(color="red")).add_to(IN_map)
```

```
[31]: restaurants={"name": [], "lat": [], "long": [], "location": [], "rating": [], "type": []}
```

```
[32]: #get nearby restaurants-- 1000m from each coworking place.
        #I will choose results of top 20 (or less, if total result is less than 20)␣
        ↳prominence restaurants
        #And I will remove all restaurants which have rating lower than 4.5
        #This is because I think restaurants with 4.5 or more rating will have no big␣
        ↳difference in food quality,
        #so we can just look at time spent on travel to choose which restaurant we␣
        ↳visit.
import requests
import json
payload={}
headers = {}
key="AIzaSyCcW0fo2X1XmVXw-XGzH_yuUyj5YkyuCfc"
for n in range(1,location.shape[0]):

    lat=location.iloc[n]["lat"]
    long=location.iloc[n]["long"]
    url = "https://maps.googleapis.com/maps/api/place/nearbysearch/json?
    ↳location="+ str(lat)␣
    ↳+"%2C"+str(long)+"&radius=1000&type=restaurant&keyword=dinner&rankby=prominence&key="+key
    response = requests.request("GET", url, headers=headers, data=payload)
    mid=response.json()

    for i in range(len(mid["results"])):
        rating=mid["results"][i]["rating"]
        if rating < 4.5:
            continue
        else:
            r_lat=mid["results"][i]["geometry"]["location"]["lat"]
            r_long=mid["results"][i]["geometry"]["location"]["lng"]
            r_name=mid["results"][i]["name"]
            r_v=mid["results"][i]["vicinity"]
            restaurants["name"].append(r_name)
            restaurants["lat"].append(r_lat)
            restaurants["long"].append(r_long)
            restaurants["location"].append(r_v)
            restaurants["rating"].append(rating)
            restaurants["type"].append("Restaurant")
```



```
[33]: restaurants=pd.DataFrame(restaurants)
restaurants=restaurants.drop_duplicates()
restaurants=restaurants.reset_index()
restaurants=restaurants.drop(["index"],axis=1)
```

```
[34]: restaurants.head()
```

```
[34]:
```

	name	lat	long	\
0	Delicia	39.847378	-86.145280	
1	Aristocrat Pub & Restaurant	39.847282	-86.146016	
2	Half Liter BBQ & Beer Hall	39.849349	-86.141442	
3	Upland College Ave Tasting Room	39.842644	-86.145888	
4	Root & Bone - Indianapolis	39.839802	-86.144769	

	location	rating	type
0	5215 N College Ave, Indianapolis	4.6	Restaurant
1	5212 N College Ave, Indianapolis	4.5	Restaurant
2	5301 Winthrop Ave suite b, Indianapolis	4.5	Restaurant
3	4842 N College Ave, Indianapolis	4.5	Restaurant
4	4601 N College Ave, Indianapolis	4.6	Restaurant

```
[35]: restaurants.to_csv("restaurants.csv",index=False)
```

```
[36]: for n in range(restaurants.shape[0]):
        folium.Marker(location=[restaurants.iloc[n]["lat"], restaurants.
        ↳iloc[n]["long"]],popup='name: '+str(restaurants.iloc[n]["name"])+ ' rating:␣
        ↳'+str(restaurants.iloc[n]["rating"]),tooltip='Click here to see␣
        ↳Popup',icon=folium.Icon(color="black")).add_to(IN_map)
```

```
[37]: IN_map
```

```
[37]: <folium.folium.Map at 0x18d6f3bbb48>
```

```
[38]: IN_map.save("All_info_without_cluster.html")
```

```
[39]: from sklearn.cluster import KMeans
from scipy.spatial import distance_matrix
```

```
[40]: center=location.drop(["name","type","time"],axis=1)
```

```
[41]: center
```

```
[41]:
```

	lat	long
0	39.773890	-86.184912
1	39.848873	-86.141295
2	39.951492	-86.260870
3	39.966764	-86.008809
4	39.765831	-86.157617

```
5 39.759349 -86.158047
```

```
[42]: others=event_pos.drop(["name","type"],axis=1)
```

```
[43]: others
```

```
[43]:
```

	lat	long
0	39.778613	-86.131845
1	39.784061	-86.154390
2	39.924683	-86.223152
3	39.763119	-86.157761
4	39.767445	-86.161028
5	39.767361	-86.156675
6	39.776642	-86.146297
7	39.766514	-86.170606
8	39.968773	-86.130235
9	39.838167	-86.170539
10	40.004977	-85.930854
11	39.788176	-86.238562
12	39.968849	-86.130382
13	39.788434	-86.154912
14	40.004977	-85.930854
15	40.004977	-85.930854
16	39.826020	-86.185765

```
[44]: res=restaurants.drop(["name","location","rating","type"],axis=1)
      res.head()
```

```
[44]:
```

	lat	long
0	39.847378	-86.145280
1	39.847282	-86.146016
2	39.849349	-86.141442
3	39.842644	-86.145888
4	39.839802	-86.144769

```
[45]: cluster_data=pd.concat([center,others,res],ignore_index=True)
```

```
[46]: cluster_data.head()
```

```
[46]:
```

	lat	long
0	39.773890	-86.184912
1	39.848873	-86.141295
2	39.951492	-86.260870
3	39.966764	-86.008809
4	39.765831	-86.157617

```
[47]: #set coworking place as center
centroid_idx = [1,2,3,4,5]
centroids = cluster_data.iloc[centroid_idx,:]
kmeans = KMeans(n_clusters=5, init=centroids,max_iter=1)

kmeans.fit(cluster_data)
```

C:\Users\slt18\AppData\Roaming\Python\Python37\site-packages\ipykernel_launcher.py:6: RuntimeWarning: Explicit initial center position passed: performing only one init in k-means instead of n_init=10

```
[47]: KMeans(init=      lat      long
1  39.848873 -86.141295
2  39.951492 -86.260870
3  39.966764 -86.008809
4  39.765831 -86.157617
5  39.759349 -86.158047,
      max_iter=1, n_clusters=5)
```

```
[48]: kmeans.labels_
```

```
[48]: array([3, 0, 1, 2, 3, 4, 3, 3, 1, 4, 3, 3, 3, 3, 0, 0, 2, 3, 0, 3, 2, 2,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 2, 2, 2,
2, 2, 3, 3, 3, 3, 3, 3, 3, 3, 4, 3, 3, 3, 4, 3])
```

```
[49]: cluster_data["label"]=kmeans.labels_
```

```
[50]: cluster_data.head()
```

```
[50]:      lat      long  label
0  39.773890 -86.184912      3
1  39.848873 -86.141295      0
2  39.951492 -86.260870      1
3  39.966764 -86.008809      2
4  39.765831 -86.157617      3
```

```
[51]: IN_map = folium.Map(location=[39.7800,-86.1331], zoom_start=10)
```

```
[52]: names=list(location["name"])
```

```
[53]: names=names+list(event_pos["name"])
names=names+list(restaurants["name"])
```

```
[54]: cluster_data["name"]=names
cluster_data.head()
```

```
[54]:      lat      long  label      name
0  39.773890 -86.184912     3      IUPUI
1  39.848873 -86.141295     0  The Speak Easy
2  39.951492 -86.260870     1      zWORKS
3  39.966764 -86.008809     2  Launch Fishers
4  39.765831 -86.157617     3  Industrious Mass Ave
```

```
[55]: cluster_data
```

```
[55]:      lat      long  label  \
0  39.773890 -86.184912     3
1  39.848873 -86.141295     0
2  39.951492 -86.260870     1
3  39.966764 -86.008809     2
4  39.765831 -86.157617     3
5  39.759349 -86.158047     4
6  39.778613 -86.131845     3
7  39.784061 -86.154390     3
8  39.924683 -86.223152     1
9  39.763119 -86.157761     4
10 39.767445 -86.161028     3
11 39.767361 -86.156675     3
12 39.776642 -86.146297     3
13 39.766514 -86.170606     3
14 39.968773 -86.130235     0
15 39.838167 -86.170539     0
16 40.004977 -85.930854     2
17 39.788176 -86.238562     3
18 39.968849 -86.130382     0
19 39.788434 -86.154912     3
20 40.004977 -85.930854     2
21 40.004977 -85.930854     2
22 39.826020 -86.185765     0
23 39.847378 -86.145280     0
24 39.847282 -86.146016     0
25 39.849349 -86.141442     0
26 39.842644 -86.145888     0
27 39.839802 -86.144769     0
28 39.843032 -86.145399     0
29 39.850860 -86.140849     0
30 39.850841 -86.145582     0
31 39.850620 -86.145531     0
32 39.842826 -86.154172     0
33 39.851389 -86.138889     0
34 39.846781 -86.146039     0
35 39.846820 -86.146111     0
36 39.950266 -86.261770     1
```

37	39.950335	-86.261224	1
38	39.949167	-86.261389	1
39	39.951155	-86.262150	1
40	39.950870	-86.261615	1
41	39.975525	-86.002990	2
42	39.958604	-86.012405	2
43	39.958392	-86.004655	2
44	39.956406	-86.001160	2
45	39.956435	-85.999805	2
46	39.770901	-86.147055	3
47	39.767406	-86.159195	3
48	39.766069	-86.158312	3
49	39.766791	-86.155693	3
50	39.765964	-86.164581	3
51	39.773774	-86.150303	3
52	39.774737	-86.149746	3
53	39.764556	-86.159645	4
54	39.771813	-86.153972	3
55	39.766272	-86.159535	3
56	39.766249	-86.156826	3
57	39.764600	-86.156714	4
58	39.768380	-86.159623	3

	name
0	IUPUI
1	The Speak Easy
2	zWORKS
3	Launch Fishers
4	Industrious Mass Ave
5	Launch Indy
6	CoderDojo Indy
7	Coffee with the Curator 2022
8	Leading With Impact Entrepreneur Social
9	Illusions The Drag Queen Show Indianapolis - D...
10	Steel Magnolias
11	H.M. Saffer, II
12	ComedySportz
13	5 Seconds of Summer: No Shame 2021 Tour
14	Working the Musical
15	Music Moves
16	AJR - The OK Orchestra Tour
17	Indianapolis 500 Mile Race
18	Antony and Cleopatra
19	Talbot Street Art Fair
20	Santana and Earth, Wind & Fire - Miraculous Su...
21	Backstreet Boys - DNA World Tour
22	THE LUME Indianapolis

```

23 Delicia
24 Aristocrat Pub & Restaurant
25 Half Liter BBQ & Beer Hall
26 Upland College Ave Tasting Room
27 Root & Bone - Indianapolis
28 Greek's Pizzeria
29 Mama Carolla's
30 The Jazz Kitchen
31 Yats
32 Napolese Pizzeria
33 Diavola
34 Red Key Tavern
35 The Little India restaurant
36 Cobblestone
37 AUBERGE
38 The Friendly Tavern
39 Convivio Italian Artisan Cuisine - Zionsville
40 Noah Grant's Grill House & Oyster Bar
41 Texas Roadhouse
42 Five Guys
43 Topgolf
44 The HC Tavern + Kitchen
45 BIBIBOP Asian Grill
46 Vida
47 The Capital Grille
48 The Oceanaire Seafood Room
49 Fogo de Chão Brazilian Steakhouse
50 Conner's Kitchen + Bar
51 The Rathskeller
52 LouVino Indianapolis Mass Ave Restaurant & Win...
53 Harry & Izzy's
54 The Eagle
55 Ruth's Chris Steak House
56 Pearl Street Pizzeria & Pub
57 Sauce on the Side
58 Hyde Park Prime Steakhouse

```

```

[56]: for n in range(cluster_data.shape[0]):
        if cluster_data.iloc[n]["label"]==0:
            folium.Marker(location=[cluster_data.iloc[n]["lat"], cluster_data.
↪iloc[n]["long"]],popup= cluster_data.iloc[n]["name"],tooltip='Click here to_
↪see Popup',icon=folium.Icon(color="green")).add_to(IN_map)
        elif cluster_data.iloc[n]["label"]==1:
            folium.Marker(location=[cluster_data.iloc[n]["lat"], cluster_data.
↪iloc[n]["long"]],popup= cluster_data.iloc[n]["name"],tooltip='Click here to_
↪see Popup',icon=folium.Icon(color="red")).add_to(IN_map)
        elif cluster_data.iloc[n]["label"]==2:

```

```

        folium.Marker(location=[cluster_data.iloc[n]["lat"], cluster_data.
↪iloc[n]["long"]],popup= cluster_data.iloc[n]["name"],tooltip='Click here to_
↪see Popup',icon=folium.Icon(color="orange")).add_to(IN_map)
    elif cluster_data.iloc[n]["label"]==3:
        folium.Marker(location=[cluster_data.iloc[n]["lat"], cluster_data.
↪iloc[n]["long"]],popup= cluster_data.iloc[n]["name"],tooltip='Click here to_
↪see Popup',icon=folium.Icon(color="blue")).add_to(IN_map)
    elif cluster_data.iloc[n]["label"]==4:
        folium.Marker(location=[cluster_data.iloc[n]["lat"], cluster_data.
↪iloc[n]["long"]],popup= cluster_data.iloc[n]["name"],tooltip='Click here to_
↪see Popup',icon=folium.Icon(color="black")).add_to(IN_map)

```

```
[57]: IN_map
```

```
[57]: <folium.folium.Map at 0x18d7fad6548>
```

```
[58]: IN_map.save("All_info_with_cluster.html")
```

```
[59]: cluster_data.groupby('label').count()
```

```
[59]:
```

	lat	long	name
label			
0	18	18	18
1	7	7	7
2	9	9	9
3	21	21	21
4	4	4	4

For this result, I will suggest to to choose Industrious Mass Ave as coworking place.

```
[60]: calculate_time=cluster_data.drop([1,2,3,4,5]).reset_index().
↪drop(["index"],axis=1)
calculate_time.head()
```

```
[60]:
```

	lat	long	label	\
0	39.773890	-86.184912	3	
1	39.778613	-86.131845	3	
2	39.784061	-86.154390	3	
3	39.924683	-86.223152	1	
4	39.763119	-86.157761	4	

	name
0	IUPUI
1	CoderDojo Indy
2	Coffee with the Curator 2022
3	Leading With Impact Entrepreneur Social
4	Illusions The Drag Queen Show Indianapolis - D...

```
[61]: kind=["Housing"]
kind=kind+list(event["Type"])
kind=kind+list(restaurants["type"])
calculate_time["type"]=kind
calculate_time.head()
```

```
[61]:      lat      long  label  \
0  39.773890 -86.184912      3
1  39.778613 -86.131845      3
2  39.784061 -86.154390      3
3  39.924683 -86.223152      1
4  39.763119 -86.157761      4
```

		name	type
0		IUPUI	Housing
1		CoderDojo Indy	Conference or TED
2		Coffee with the Curator 2022	Conference or TED
3		Leading With Impact Entrepreneur Social	Conference or TED
4	Illusions The Drag Queen Show Indianapolis - D...		Art

```
[62]: # calculating time spent from coworking to the events and restuarants

time_1=[]
time_2=[]
time_3=[]
time_4=[]
time_5=[]
o1=location.iloc[1]["lat"],location.iloc[1]["long"]
o2=location.iloc[2]["lat"],location.iloc[2]["long"]
o3=location.iloc[3]["lat"],location.iloc[3]["long"]
o4=location.iloc[4]["lat"],location.iloc[4]["long"]
o5=location.iloc[5]["lat"],location.iloc[5]["long"]
for n in range(calculate_time.shape[0]):
    d=calculate_time.iloc[n]["lat"],calculate_time.iloc[n]["long"]

    directions_result1 = gmaps.directions(origin=o1,
                                           destination=d,
                                           departure_time=d_time)
    time_1.append(directions_result1[0]["legs"][0]["duration"]["value"])

    directions_result2 = gmaps.directions(origin=o2,
                                           destination=d,
                                           departure_time=d_time)
    time_2.append(directions_result2[0]["legs"][0]["duration"]["value"])

    directions_result3 = gmaps.directions(origin=o3,
                                           destination=d,
```



```

                                departure_time=d_time)
time_3.append(directions_result3[0]["legs"][0]["duration"]["value"])

directions_result4 = gmaps.directions(origin=o4,
                                destination=d,
                                departure_time=d_time)
time_4.append(directions_result4[0]["legs"][0]["duration"]["value"])

directions_result5 = gmaps.directions(origin=o5,
                                destination=d,
                                departure_time=d_time)
time_5.append(directions_result5[0]["legs"][0]["duration"]["value"])

```

```

[63]: time_df1=calculate_time.copy()
time_df2=calculate_time.copy()
time_df3=calculate_time.copy()
time_df4=calculate_time.copy()
time_df5=calculate_time.copy()
time_df1["time"]=time_1
time_df2["time"]=time_2
time_df3["time"]=time_3
time_df4["time"]=time_4
time_df5["time"]=time_5

```

```

[64]: event_1=time_df1[1:18].copy()
event_2=time_df2[1:18].copy()
event_3=time_df3[1:18].copy()
event_4=time_df4[1:18].copy()
event_5=time_df5[1:18].copy()
event_1["date"]=list(event["Date"])
event_2["date"]=list(event["Date"])
event_3["date"]=list(event["Date"])
event_4["date"]=list(event["Date"])
event_5["date"]=list(event["Date"])

```

```

[65]: res_1=time_df1[18:53].copy()
res_2=time_df2[18:53].copy()
res_3=time_df3[18:53].copy()
res_4=time_df4[18:53].copy()
res_5=time_df5[18:53].copy()

```

```

[66]: #organize all events and restaurants for coworking place to see if the result
      ↪ is different with clustering result
event_1=event_1.sort_values(by=["time"]).reset_index().drop(["index"],axis=1)
event_1

```

```
[66]:      lat      long label \
0  39.838167 -86.170539    0
1  39.826020 -86.185765    0
2  39.788434 -86.154912    3
3  39.784061 -86.154390    3
4  39.778613 -86.131845    3
5  39.776642 -86.146297    3
6  39.767361 -86.156675    3
7  39.767445 -86.161028    3
8  39.766514 -86.170606    3
9  39.763119 -86.157761    4
10 39.788176 -86.238562    3
11 39.924683 -86.223152    1
12 39.968849 -86.130382    0
13 39.968773 -86.130235    0
14 40.004977 -85.930854    2
15 40.004977 -85.930854    2
16 40.004977 -85.930854    2
```

```

                                name      type \
0                                Music Moves    Music
1                                THE LUME Indianapolis    Art
2                                Talbot Street Art Fair    Art
3                                Coffee with the Curator 2022    Conference or TED
4                                CoderDojo Indy    Conference or TED
5                                ComedySportz    Sports
6                                H.M. Saffer, II    Art
7                                Steel Magnolias    Art
8                                5 Seconds of Summer: No Shame 2021 Tour    Music
9    Illusions The Drag Queen Show Indianapolis - D...    Art
10                               Indianapolis 500 Mile Race    Sports
11                               Leading With Impact Entrepreneur Social    Conference or TED
12                               Antony and Cleopatra    Conference or TED
13                               Working the Musical    Music
14                               Backstreet Boys - DNA World Tour    Music
15                               AJR - The OK Orchestra Tour    Music
16    Santana and Earth, Wind & Fire - Miraculous Su...    Music
```

```

time      date
0    522      May 20,2022 - May 22, 2022
1    714      October 18, 2021- May 31, 2022
2    883      June 18, 2022-June 19, 2022
3    928      3-Jun-22
4   1096      21-May-22
5   1102      Every Friday, Saturday
6   1211      Every Tuesday-Saturday
7   1292      May 10, 2022-June 5, 2022
```

8	1299	15-Jul-22
9	1332	21-May-22
10	1376	29-May-22
11	1387	2-Jun-22
12	1509	June 9, 2022-June 11, 2022
13	1513	Every Friday in April 29, 2022-May 20, 2022
14	1776	10-Jul-22
15	1776	28-May-22
16	1776	8-Jul-22

```
[67]: #number 0,1,2,3,5,6 will fulfill biweekly events and one conference
total_time_1=event_1.iloc[0]["time"]+event_1.iloc[1]["time"]+event_1.
→iloc[2]["time"]+event_1.iloc[3]["time"]+event_1.iloc[5]["time"]+event_1.
→iloc[6]["time"]
```

```
[68]: event_2=event_2.sort_values(by=["time"]).reset_index().drop(["index"],axis=1)
event_2
```

```
[68]:      lat      long  label  \
0  39.924683 -86.223152      1
1  39.968849 -86.130382      0
2  39.968773 -86.130235      0
3  39.826020 -86.185765      0
4  39.788176 -86.238562      3
5  39.784061 -86.154390      3
6  39.838167 -86.170539      0
7  39.788434 -86.154912      3
8  39.767361 -86.156675      3
9  39.766514 -86.170606      3
10 39.767445 -86.161028      3
11 39.776642 -86.146297      3
12 39.763119 -86.157761      4
13 39.778613 -86.131845      3
14 40.004977 -85.930854      2
15 40.004977 -85.930854      2
16 40.004977 -85.930854      2
```

	name	type	\
0	Leading With Impact Entrepreneur Social	Conference or TED	
1	Antony and Cleopatra	Conference or TED	
2	Working the Musical	Music	
3	THE LUME Indianapolis	Art	
4	Indianapolis 500 Mile Race	Sports	
5	Coffee with the Curator 2022	Conference or TED	
6	Music Moves	Music	
7	Talbot Street Art Fair	Art	
8	H.M. Saffer, II	Art	

9	5 Seconds of Summer: No Shame 2021 Tour	Music
10	Steel Magnolias	Art
11	ComedySportz	Sports
12	Illusions The Drag Queen Show Indianapolis - D...	Art
13	CoderDojo Indy Conference or TED	
14	Backstreet Boys - DNA World Tour	Music
15	AJR - The OK Orchestra Tour	Music
16	Santana and Earth, Wind & Fire - Miraculous Su...	Music

	time	date
0	578	2-Jun-22
1	1129	June 9, 2022-June 11, 2022
2	1133	Every Friday in April 29, 2022-May 20, 2022
3	1323	October 18, 2021- May 31, 2022
4	1524	29-May-22
5	1553	3-Jun-22
6	1569	May 20,2022 - May 22, 2022
7	1613	June 18, 2022-June 19, 2022
8	1791	Every Tuesday-Saturday
9	1803	15-Jul-22
10	1854	May 10, 2022-June 5, 2022
11	1879	Every Friday, Saturday
12	1913	21-May-22
13	1948	21-May-22
14	2140	10-Jul-22
15	2140	28-May-22
16	2140	8-Jul-22

```
[69]: #number 0,2,3,7,8,9 will fulfill biweekly events and one conference
total_time_2=event_2.iloc[0]["time"]+event_2.iloc[2]["time"]+event_2.
↳iloc[3]["time"]+event_2.iloc[7]["time"]+event_2.iloc[8]["time"]+event_2.
↳iloc[9]["time"]
```

```
[70]: event_3=event_3.sort_values(by=["time"]).reset_index().drop(["index"],axis=1)
event_3
```

```
[70]:      lat      long  label  \
0  40.004977 -85.930854      2
1  40.004977 -85.930854      2
2  40.004977 -85.930854      2
3  39.968849 -86.130382      0
4  39.968773 -86.130235      0
5  39.924683 -86.223152      1
6  39.784061 -86.154390      3
7  39.826020 -86.185765      0
8  39.776642 -86.146297      3
9  39.788434 -86.154912      3
```

10	39.838167	-86.170539	0
11	39.778613	-86.131845	3
12	39.767361	-86.156675	3
13	39.767445	-86.161028	3
14	39.763119	-86.157761	4
15	39.766514	-86.170606	3
16	39.788176	-86.238562	3

	name	type \
0	Santana and Earth, Wind & Fire - Miraculous Su...	Music
1	AJR - The OK Orchestra Tour	Music
2	Backstreet Boys - DNA World Tour	Music
3	Antony and Cleopatra	Conference or TED
4	Working the Musical	Music
5	Leading With Impact Entrepreneur Social	Conference or TED
6	Coffee with the Curator 2022	Conference or TED
7	THE LUME Indianapolis	Art
8	ComedySportz	Sports
9	Talbot Street Art Fair	Art
10	Music Moves	Music
11	CoderDojo Indy	Conference or TED
12	H.M. Saffer, II	Art
13	Steel Magnolias	Art
14	Illusions The Drag Queen Show Indianapolis - D...	Art
15	5 Seconds of Summer: No Shame 2021 Tour	Music
16	Indianapolis 500 Mile Race	Sports

	time	date
0	1021	8-Jul-22
1	1021	28-May-22
2	1021	10-Jul-22
3	1266	June 9, 2022-June 11, 2022
4	1270	Every Friday in April 29, 2022-May 20, 2022
5	1358	2-Jun-22
6	1625	3-Jun-22
7	1676	October 18, 2021- May 31, 2022
8	1682	Every Friday, Saturday
9	1706	June 18, 2022-June 19, 2022
10	1721	May 20,2022 - May 22, 2022
11	1813	21-May-22
12	1861	Every Tuesday-Saturday
13	1924	May 10, 2022-June 5, 2022
14	1996	21-May-22
15	1996	15-Jul-22
16	2302	29-May-22

```
[71]: #number 3,4,7,8,9,12 will fulfill biweekly events and one conference
total_time_3=event_3.iloc[3]["time"]+event_3.iloc[4]["time"]+event_3.
↳iloc[7]["time"]+event_3.iloc[9]["time"]+event_3.iloc[12]["time"]+event_3.
↳iloc[8]["time"]
```

```
[72]: event_4=event_4.sort_values(by=["time"]).reset_index().drop(["index"],axis=1)
event_4
```

```
[72]:
```

	lat	long	label \
0	39.763119	-86.157761	4
1	39.767361	-86.156675	3
2	39.767445	-86.161028	3
3	39.784061	-86.154390	3
4	39.776642	-86.146297	3
5	39.788434	-86.154912	3
6	39.766514	-86.170606	3
7	39.778613	-86.131845	3
8	39.826020	-86.185765	0
9	39.788176	-86.238562	3
10	39.838167	-86.170539	0
11	39.924683	-86.223152	1
12	39.968849	-86.130382	0
13	39.968773	-86.130235	0
14	40.004977	-85.930854	2
15	40.004977	-85.930854	2
16	40.004977	-85.930854	2

	name	type \
0	Illusions The Drag Queen Show Indianapolis - D...	Art
1	H.M. Saffer, II	Art
2	Steel Magnolias	Art
3	Coffee with the Curator 2022	Conference or TED
4	ComedySportz	Sports
5	Talbot Street Art Fair	Art
6	5 Seconds of Summer: No Shame 2021 Tour	Music
7	CoderDojo Indy	Conference or TED
8	THE LUME Indianapolis	Art
9	Indianapolis 500 Mile Race	Sports
10	Music Moves	Music
11	Leading With Impact Entrepreneur Social	Conference or TED
12	Antony and Cleopatra	Conference or TED
13	Working the Musical	Music
14	AJR - The OK Orchestra Tour	Music
15	Santana and Earth, Wind & Fire - Miraculous Su...	Music
16	Backstreet Boys - DNA World Tour	Music

time	date
------	------

0	167	21-May-22
1	201	Every Tuesday-Saturday
2	264	May 10, 2022-June 5, 2022
3	385	3-Jun-22
4	420	Every Friday, Saturday
5	445	June 18, 2022-June 19, 2022
6	476	15-Jul-22
7	611	21-May-22
8	917	October 18, 2021- May 31, 2022
9	932	29-May-22
10	1075	May 20,2022 - May 22, 2022
11	1606	2-Jun-22
12	2068	June 9, 2022-June 11, 2022
13	2072	Every Friday in April 29, 2022-May 20, 2022
14	2199	28-May-22
15	2199	8-Jul-22
16	2199	10-Jul-22

```
[73]: #number 0,1,2,3,4,5 will fulfill biweekly events and one conference
total_time_4=event_4.iloc[0]["time"]+event_4.iloc[1]["time"]+event_4.
→iloc[3]["time"]+event_4.iloc[4]["time"]+event_4.iloc[5]["time"]+event_4.
→iloc[2]["time"]
```

```
[74]: event_5=event_5.sort_values(by=["time"]).reset_index().drop(["index"],axis=1)
event_5
```

```
[74]:      lat      long  label  \
0  39.763119 -86.157761      4
1  39.767445 -86.161028      3
2  39.767361 -86.156675      3
3  39.766514 -86.170606      3
4  39.784061 -86.154390      3
5  39.776642 -86.146297      3
6  39.788434 -86.154912      3
7  39.778613 -86.131845      3
8  39.788176 -86.238562      3
9  39.826020 -86.185765      0
10 39.838167 -86.170539      0
11 39.924683 -86.223152      1
12 39.968849 -86.130382      0
13 39.968773 -86.130235      0
14 40.004977 -85.930854      2
15 40.004977 -85.930854      2
16 40.004977 -85.930854      2
```

	name	type \
0	Illusions The Drag Queen Show Indianapolis - D...	Art

1	Steel Magnolias	Art
2	H.M. Saffer, II	Art
3	5 Seconds of Summer: No Shame 2021 Tour	Music
4	Coffee with the Curator 2022	Conference or TED
5	ComedySportz	Sports
6	Talbot Street Art Fair	Art
7	CoderDojo Indy	Conference or TED
8	Indianapolis 500 Mile Race	Sports
9	THE LUME Indianapolis	Art
10	Music Moves	Music
11	Leading With Impact Entrepreneur Social	Conference or TED
12	Antony and Cleopatra	Conference or TED
13	Working the Musical	Music
14	AJR - The OK Orchestra Tour	Music
15	Backstreet Boys - DNA World Tour	Music
16	Santana and Earth, Wind & Fire - Miraculous Su...	Music

	time	date
0	114	21-May-22
1	210	May 10, 2022-June 5, 2022
2	358	Every Tuesday-Saturday
3	368	15-Jul-22
4	513	3-Jun-22
5	528	Every Friday, Saturday
6	572	June 18, 2022-June 19, 2022
7	633	21-May-22
8	830	29-May-22
9	904	October 18, 2021- May 31, 2022
10	1062	May 20,2022 - May 22, 2022
11	1593	2-Jun-22
12	2164	June 9, 2022-June 11, 2022
13	2168	Every Friday in April 29, 2022-May 20, 2022
14	2326	28-May-22
15	2326	10-Jul-22
16	2326	8-Jul-22

```
[75]: #number 0,1,2,3,4,5 will fulfill biweekly events and one conference
total_time_5=event_5.iloc[0]["time"]+event_5.iloc[1]["time"]+event_5.
↳iloc[3]["time"]+event_5.iloc[4]["time"]+event_5.iloc[5]["time"]+event_5.
↳iloc[2]["time"]
```

```
[76]: time_compare=pd.
↳DataFrame([total_time_1,total_time_2,total_time_3,total_time_4,total_time_5],columns=["even
time_compare
```

```
[76]: event_time
0      5360
```


1	8241
2	9461
3	1882
4	2091

```
[77]: res_time_1=sum(list(res_1.nsmallest(10,"time")["time"]))
res_time_2=sum(list(res_2.nsmallest(10,"time")["time"]))
res_time_3=sum(list(res_3.nsmallest(10,"time")["time"]))
res_time_4=sum(list(res_4.nsmallest(10,"time")["time"]))
res_time_5=sum(list(res_5.nsmallest(10,"time")["time"]))
```

```
[78]: res_compare=pd.
↳DataFrame([res_time_1,res_time_2,res_time_3,res_time_4,res_time_5],columns=["restaurant_time",
res_compare
```

```
[78]: restaurant_time
0          1343
1          8571
2          8853
3          1973
4          2586
```

```
[79]: time_compare_total=pd.DataFrame(np.
↳transpose([time_compare["event_time"],res_compare["restaurant_time"]]),columns=["event_time",
time_remove(0)
time_compare_total["to_housing"]=time
time_compare_total["total"]=time_compare["event_time"]+res_compare["restaurant_time"]+time
time_compare_total
```

```
[79]: event_time restaurant_time to_housing total
0          5360             1343          1252  7955
1          8241             8571          1696 18508
2          9461             8853          1952 20266
3          1882             1973           521  4376
4          2091             2586           551  5228
```

```
[80]: time_compare_total.to_csv("Coworking_detailed_time_spent.csv",index=False)
```

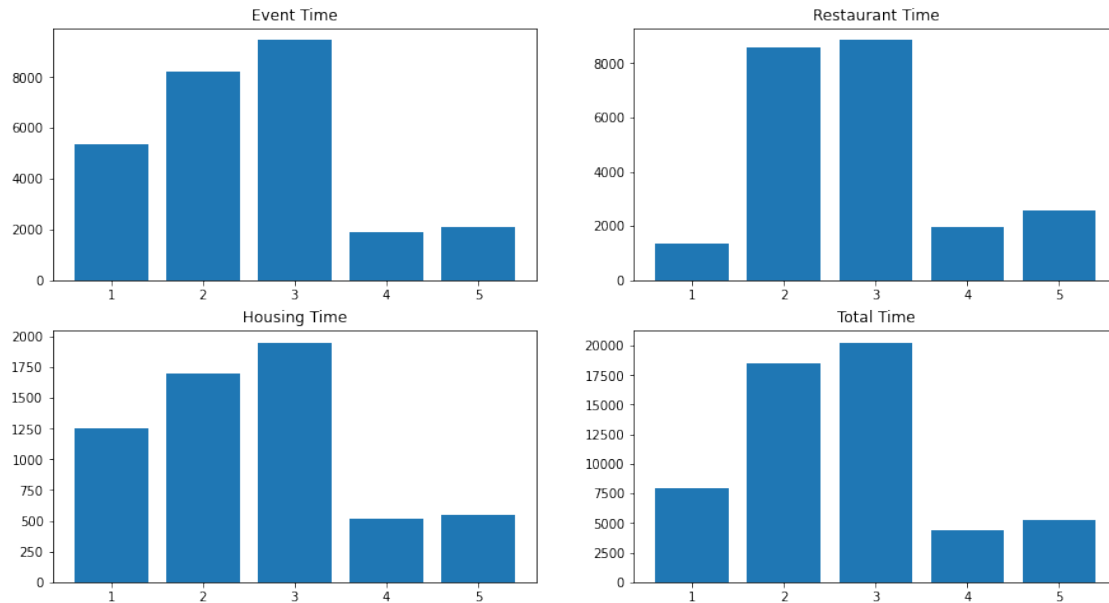
```
[81]: from matplotlib.pyplot import figure
fig, axs = plt.subplots(2,2,figsize=(15, 8))

axs[0,0].set_title('Event Time')
axs[0,0].bar([1,2,3,4,5],time_compare_total["event_time"])
axs[0,1].set_title('Restaurant Time')
axs[0,1].bar([1,2,3,4,5],time_compare_total["restaurant_time"])
axs[1,0].set_title('Housing Time')
axs[1,0].bar([1,2,3,4,5],time_compare_total["to_housing"])
```

```

axs[1,1].set_title('Total Time')
axs[1,1].bar([1,2,3,4,5],time_compare_total["total"])
fig.savefig("time_spent_subplots.png")
plt.show()

```



```

[82]: #decision from schedule events and restaurants
coworking_info=location.drop(0)
new_time=list(time_compare_total["total"])
coworking_info["time"]=new_time
coworking_info["location"]=info["Address"].drop(0)
des_1=coworking_info.sort_values(by=["time"])
des_1

```

```

[82]:
   name          lat    long    time    type \
4  Industrious Mass Ave  39.765831 -86.157617  4376  Coworking
5    Launch Indy  39.759349 -86.158047  5228  Coworking
1   The Speak Easy  39.848873 -86.141295  7955  Coworking
2        zWORKS  39.951492 -86.260870  18508  Coworking
3  Launch Fishers  39.966764 -86.008809  20266  Coworking

   location
4  350 Massachusetts Ave Suite 300, Indianapolis,...
5    525 S Meridian St, Indianapolis, IN 46225
1   5255 Winthrop Ave #110, Indianapolis, IN 46220
2    85 E Cedar St #1502, Zionsville, IN 46077
3   12175 Visionary Way, Fishers, IN 46038

```

```
[83]: des_1.to_csv("Coworking_time_spent.csv",index=False)
```

```
[84]: #events in the schedule
event_schedule=event_4.iloc[0:6,:]
event_schedule
```

```
[84]:
```

	lat	long	label	\
0	39.763119	-86.157761	4	
1	39.767361	-86.156675	3	
2	39.767445	-86.161028	3	
3	39.784061	-86.154390	3	
4	39.776642	-86.146297	3	
5	39.788434	-86.154912	3	

	name	type	time	\
0	Illusions The Drag Queen Show Indianapolis - D...	Art	167	
1	H.M. Saffer, II	Art	201	
2	Steel Magnolias	Art	264	
3	Coffee with the Curator 2022	Conference or TED	385	
4	ComedySportz	Sports	420	
5	Talbot Street Art Fair	Art	445	

	date
0	21-May-22
1	Every Tuesday-Saturday
2	May 10, 2022-June 5, 2022
3	3-Jun-22
4	Every Friday, Saturday
5	June 18, 2022-June 19, 2022

```
[85]: #reformat and decide the date to attend events
date=[datetime(2022,5,21),datetime(2022,7,2),datetime(2022,6,4),datetime(2022,6,3),datetime(2022,6,3)]
```

```
[86]: p=[]
for n in range(event_schedule.shape[0]):
    p.append(event.loc[event["Name"]==event_schedule.iloc[n]["name"]].
    →iloc[0]["Location"])
```

```
[87]: event_schedule["Location"]=p
event_schedule["date"]=date
```

C:\Users\slt18\AppData\Roaming\Python\Python37\site-packages\ipykernel_launcher.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

```

"""Entry point for launching an IPython kernel.
C:\Users\slt18\AppData\Roaming\Python\Python37\site-
packages\ipykernel_launcher.py:2: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

```

```
[88]: event_schedule
```

```
[88]:
```

	lat	long	label	\
0	39.763119	-86.157761		4
1	39.767361	-86.156675		3
2	39.767445	-86.161028		3
3	39.784061	-86.154390		3
4	39.776642	-86.146297		3
5	39.788434	-86.154912		3

	name	type	time	\
0	Illusions The Drag Queen Show Indianapolis - D...	Art	167	
1	H.M. Saffer, II	Art	201	
2	Steel Magnolias	Art	264	
3	Coffee with the Curator 2022	Conference or TED	385	
4	ComedySportz	Sports	420	
5	Talbot Street Art Fair	Art	445	

	date	Location
0	2022-05-21	247 S Meridian St, Indianapolis, IN 46225
1	2022-07-02	42 East Washington Street, Indianapolis, IN
2	2022-06-04	140 West Washington Street, Indianapolis, IN
3	2022-06-03	1230 North Delaware Street, Indianapolis, IN 4...
4	2022-07-16	721 Massachusetts Avenue, Indianapolis, IN
5	2022-06-18	16th and Talbott Sts., Indianapolis, IN 46202

```
[89]: details=pd.read_csv("d.csv",encoding= 'unicode_escape',header=None)
```

```
[90]: event_schedule["details"]=details
```

```

C:\Users\slt18\AppData\Roaming\Python\Python37\site-
packages\ipykernel_launcher.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
"""Entry point for launching an IPython kernel.

```

```
[91]: des_2=event_schedule.sort_values(by=["date"])
      des_2
```

```
[91]:      lat      long  label  \
0  39.763119 -86.157761      4
3  39.784061 -86.154390      3
2  39.767445 -86.161028      3
5  39.788434 -86.154912      3
1  39.767361 -86.156675      3
4  39.776642 -86.146297      3
```

```
      name      type  time  \
0  Illusions The Drag Queen Show Indianapolis - D...  Art    167
3      Coffee with the Curator 2022  Conference or TED    385
2      Steel Magnolias  Art    264
5  Talbot Street Art Fair  Art    445
1      H.M. Saffer, II  Art    201
4      ComedySportz  Sports    420
```

```
      date      Location  \
0  2022-05-21      247 S Meridian St, Indianapolis, IN 46225
3  2022-06-03  1230 North Delaware Street, Indianapolis, IN 4...
2  2022-06-04      140 West Washington Street, Indianapolis, IN
5  2022-06-18  16th and Talbott Sts., Indianapolis, IN 46202
1  2022-07-02      42 East Washington Street, Indianapolis, IN
4  2022-07-16      721 Massachusetts Avenue, Indianapolis, IN
```

```
      details
0  Illusions the Drag Queen Show Indianapolis is ...
3  If you love coffee, pastries, and a good dose ...
2  Before it was a movie, this pop culture favori...
5  With over 200 artists from across the nation, ...
1  New York-based painter H.M. Saffer, II is know...
4  Two teams battle for laughs and points as they...
```

```
[92]: des_2.to_csv("shceduled_events.csv",index=False)
```

```
[93]: des_3=res_4.sort_values(by=["time"])
      des_3=des_3.iloc[0:10]
```

```
[94]: p=[]
      for n in range(des_3.shape[0]):
          p.append(restaurants.loc[restaurants["name"]==des_3.iloc[n]["name"]].
                  ↪iloc[0]["location"])
```

```
[95]: des_3["location"]=p
      des_3=des_3.reset_index().drop(["index"],axis=1)
```

```
[96]: d2=pd.read_csv("d2.csv",header=None)

[97]: des_3["details"]=d2

[98]: date=[datetime(2022,5,22),datetime(2022,5,29),datetime(2022,6,5),datetime(2022,6,12),datetime(2022,6,19)]

[99]: des_3["date"]=date

[100]: des_3
```

	lat	long	label	\
0	39.764600	-86.156714	4	
1	39.766791	-86.155693	3	
2	39.764556	-86.159645	4	
3	39.766069	-86.158312	3	
4	39.766272	-86.159535	3	
5	39.766249	-86.156826	3	
6	39.771813	-86.153972	3	
7	39.767406	-86.159195	3	
8	39.770901	-86.147055	3	
9	39.774737	-86.149746	3	

	name	type	time	\
0	Sauce on the Side	Restaurant	46	
1	Fogo de Chão Brazilian Steakhouse	Restaurant	117	
2	Harry & Izzy's	Restaurant	145	
3	The Oceanaire Seafood Room	Restaurant	159	
4	Ruth's Chris Steak House	Restaurant	197	
5	Pearl Street Pizzeria & Pub	Restaurant	214	
6	The Eagle	Restaurant	226	
7	The Capital Grille	Restaurant	227	
8	Vida	Restaurant	286	
9	LouVino Indianapolis Mass Ave Restaurant & Win...	Restaurant	356	

	location	\
0	130 S Pennsylvania St Suite 2, Indianapolis	
1	117 E Washington St, Indianapolis	
2	153 Illinois St, Indianapolis	
3	30 S Meridian St, Indianapolis	
4	45 S Illinois St, Indianapolis	
5	65 E Pearl St, Indianapolis	
6	310 Massachusetts Ave, Indianapolis	
7	40 W Washington St, Indianapolis	
8	601 E New York St, Indianapolis	
9	530 Massachusetts Ave #140, Indianapolis	

	details	date
--	---------	------

```
0  Housed in the former Zipper Building - named f... 2022-05-22
1  Harry & Izzy's is a restaurant that offers a s... 2022-05-29
2  The Oceanaire provides the perfect setting to ... 2022-06-05
3  At Ruth's Chris, your last bite is just as goo... 2022-06-12
4  The locally owned Pearl Street Pizzeria & Pub ... 2022-06-19
5  We start with cage free, free roaming, all nat... 2022-06-26
6  Make it a day to remember. From birthdays and ... 2022-07-03
7  Offering American entrees, craft cocktails, we... 2022-07-10
8  Vida embodies a modern expression of culinary ... 2022-07-17
9  LouVino is a southern inspired small plates re... 2022-07-24
```

```
[101]: des_3.to_csv("schedule_restaurants_info.csv")
```

We should choose Industrious Mass Ave as our coworking place.