INTRODUCTION

Thinking of starting a headhunter business in Austin, TX

1. Look for jobs available in the neighborhoods to find out the demand and the lack of services
2. Delve into each neighborhood to understand why and how available jobs existed in the area
3. Compare similarity and dissimilarity among specific neighborhoods to eliminate redundancy

DATASET

1. Search for jobs in Austin to find out what services are provided there

[8]:
```
# assign relevant part of JSON to venues
venues = results['response']['venues']
#venues = results['response']['groups'][0]['items']

# tranform venues into a dataframe
dataframe = json_normalize(venues)
dataframe.head()
```

```
/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:6: FutureWarning: pandas.io.json.json_normalize is deprecated, use panda
on_normalize instead
```

[8]:

	id	name	categories	referralId	hasPerk	location.lat	location.lng	location.labeledLatLngs	location.distance	location.cc	location.city	l
0	5728f9d4498e4d039ce99626	ServJobs	'4bf58dd8d48988d1ff941735', 'name': 'M...	v-1606084927	False	30.266925	-97.743387	[{'label': 'display', 'lat': 30.26692538455611...	468	US	Austin	

2. Explore jobs in Austin to jobs provided in different neighborhoods

[16]:
```
# assign relevant part of JSON to venues
#venues = results['response']['venues']
venues = results['response']['groups'][0]['items']
#groups = results['response']['groups']
# tranform venues into a dataframe
dataframe = json_normalize(venues)
#dataframe = json_normalize(groups)
dataframe.head()
```

```
/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:6: FutureWarning: pandas.io.json.json_normalize is deprecated, use pandas.js
on_normalize instead
```

[16]:

	referralId	reasons.count	reasons.items	venue.id	venue.name	venue.location.address	venue.location.crossStreet	venue.location.lat	venue.location.lng	v
0	e-0-49bd2c3af964a52052541fe3-0	0	[{'summary': 'This spot is popular', 'type': '...	49bd2c3af964a52052541fe3	Texas State Capitol	112 E 11th St	at Congress Ave	30.273659	-97.740814	
1	e-0-558796b2498e9a8f0dccb0a5-1	0	[{'summary': 'This spot is popular', 'type': '...	558796b2498e9a8f0dccb0a5	Relief Enterprise Inc	NaN	NaN	30.269668	-97.743226	
2	e-0-50f002abe412530bab143e8b-2	0	[{'summary': 'This spot is popular', 'type': '...	50f002abe412530bab143e8b	Restore Your Door Austin	402 Rio Grande St	NaN	30.271336	-97.747142	

3 rows × 21 columns

3. Look into the neighborhood of Texas State Capitol

[27]:
```
lat = items[0]['venue']['location']['lat']
lng = items[0]['venue']['location']['lng']
lat, lng
```

[27]:
```
(30.27365925589791, -97.7408135475542)
```

There are 3 businesses around this neighborhood

```
[29]: search_query = 'Jobs'
radius = 500
url = 'https://api.foursquare.com/v2/venues/explore?client_id={}&client_secret={}&ll={},{}&v={}&query={}&radius={}&limit={}'.format(CLIENT_ID, CLIENT_SECRET, lat
results = requests.get(url).json()
results
items = results['response']['groups'][0]['items']
items

dataframe = json_normalize(items)
#dataframe = json_normalize(groups)
dataframe.head()
```

```
/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:9: FutureWarning: pandas.io.json.json_normalize is deprecated, use pandas.js
on_normalize instead
  if __name__ == '__main__':
```

[29]:

	referralId	reasons.count	reasons.items	venue.id	venue.name	venue.location.address	venue.location.crossStreet	venue.location.lat	venue.location.lng	v
0	e-0-49bd2c3af964a52052541fe3-0	0	[{'summary': 'This spot is popular', 'type': '...	49bd2c3af964a52052541fe3	Texas State Capitol	112 E 11th St	at Congress Ave	30.273659	-97.740814	
1	e-0-51ad59b3454af716216ea267-1	0	[{'summary': 'This spot is popular', 'type': '...	51ad59b3454af716216ea267	The Louver Shop Austin	815 Brazos St Ste A	# 185	30.269835	-97.738173	
2	e-0-51fc4dbd498efbf24fb82575-2	0	[{'summary': 'This spot is popular', 'type': '...	51fc4dbd498efbf24fb82575	Trinity Street Players Theatre	901 Trinity St	btwn 9th & 10th St	30.270218	-97.737595	

3 rows × 21 columns

4. Look into the neighborhood of Relief Enterprise Inc

```
[30]: lat = items[1]['venue']['location']['lat']
      lng = items[1]['venue']['location']['lng']
      lat, lng
```

```
[30]: (30.26983497612058, -97.73817300796507)
```

There are 5 businesses around this neighborhood

[32]:

	referralId	reasons.count	reasons.items	venue.id	venue.name	venue.location.address	venue.location.crossStreet	venue.location.lat	venue.location.lng	v
0	e-0-422f8e00f964a520fc1f1fe3-0	0	[{'summary': 'This spot is popular', 'type': '...	422f8e00f964a520fc1f1fe3	Elysium	705 Red River St	at 7th Street	30.267676	-97.736655	
1	e-0-414f6f00f964a520fc1c1fe3-1	0	[{'summary': 'This spot is popular', 'type': '...	414f6f00f964a520fc1c1fe3	The Jackalope	404 E 6th St	btwn Trinity St. & Neches St.	30.267131	-97.739052	
2	e-0-49bd2c3af964a52052541fe3-2	0	[{'summary': 'This spot is popular', 'type': '...	49bd2c3af964a52052541fe3	Texas State Capitol	112 E 11th St	at Congress Ave	30.273659	-97.740814	
3	e-0-51ad59b3454af716216ea267-3	0	[{'summary': 'This spot is popular', 'type': '...	51ad59b3454af716216ea267	The Louver Shop Austin	815 Brazos St Ste A	# 185	30.269835	-97.738173	
4	e-0-51fc4dbd498efbf24fb82575-4	0	[{'summary': 'This spot is popular', 'type': '...	51fc4dbd498efbf24fb82575	Trinity Street Players Theatre	901 Trinity St	btwn 9th & 10th St	30.270218	-97.737595	

5 rows × 21 columns

5. Look into

```
[33]: lat = items[2]['venue']['location']['lat']
      lng = items[2]['venue']['location']['lng']
      lat, lng
```

```
[33]: (30.27365925589791, -97.7408135475542)
```

There are the same businesses as of the first coordinate because their coordinates are very close to each other.

[34]:
```
search_query = 'Jobs'
radius = 500
url = 'https://api.foursquare.com/v2/venues/explore?client_id={}&client_secret={}&ll={},{}&v={}&query={}&radius={}&limit={}'.format(CLIENT_ID, CLIENT_SECRET, lat
results = requests.get(url).json()
results
items = results['response']['groups'][0]['items']
items

dataframe = json_normalize(items)
#dataframe = json_normalize(groups)
dataframe.head()
```

```
/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:9: FutureWarning: pandas.io.json.json_normalize is deprecated, use pandas.js
on_normalize instead
  if __name__ == '__main__':
```

[34]:

	referralId	reasons.count	reasons.items	venue.id	venue.name	venue.location.address	venue.location.crossStreet	venue.location.lat	venue.location.lng	v
0	e-0-49bd2c3af964a52052541fe3-0	0	[{'summary': 'This spot is popular', 'type': '...	49bd2c3af964a52052541fe3	Texas State Capitol	112 E 11th St	at Congress Ave	30.273659	-97.740814	
1	e-0-51ad59b3454af716216ea267-1	0	[{'summary': 'This spot is popular', 'type': '...	51ad59b3454af716216ea267	The Louver Shop Austin	815 Brazos St Ste A	# 185	30.269835	-97.738173	
2	e-0-51fc4dbd498efbf24fb82575-2	0	[{'summary': 'This spot is popular', 'type': '...	51fc4dbd498efbf24fb82575	Trinity Street Players Theatre	901 Trinity St	btwn 9th & 10th St	30.270218	-97.737595	

3 rows × 21 columns

6. There are many different opportunities for technology and big data.

METHODOLOGY

RESULTS

DISCUSSION

CONCLUSION