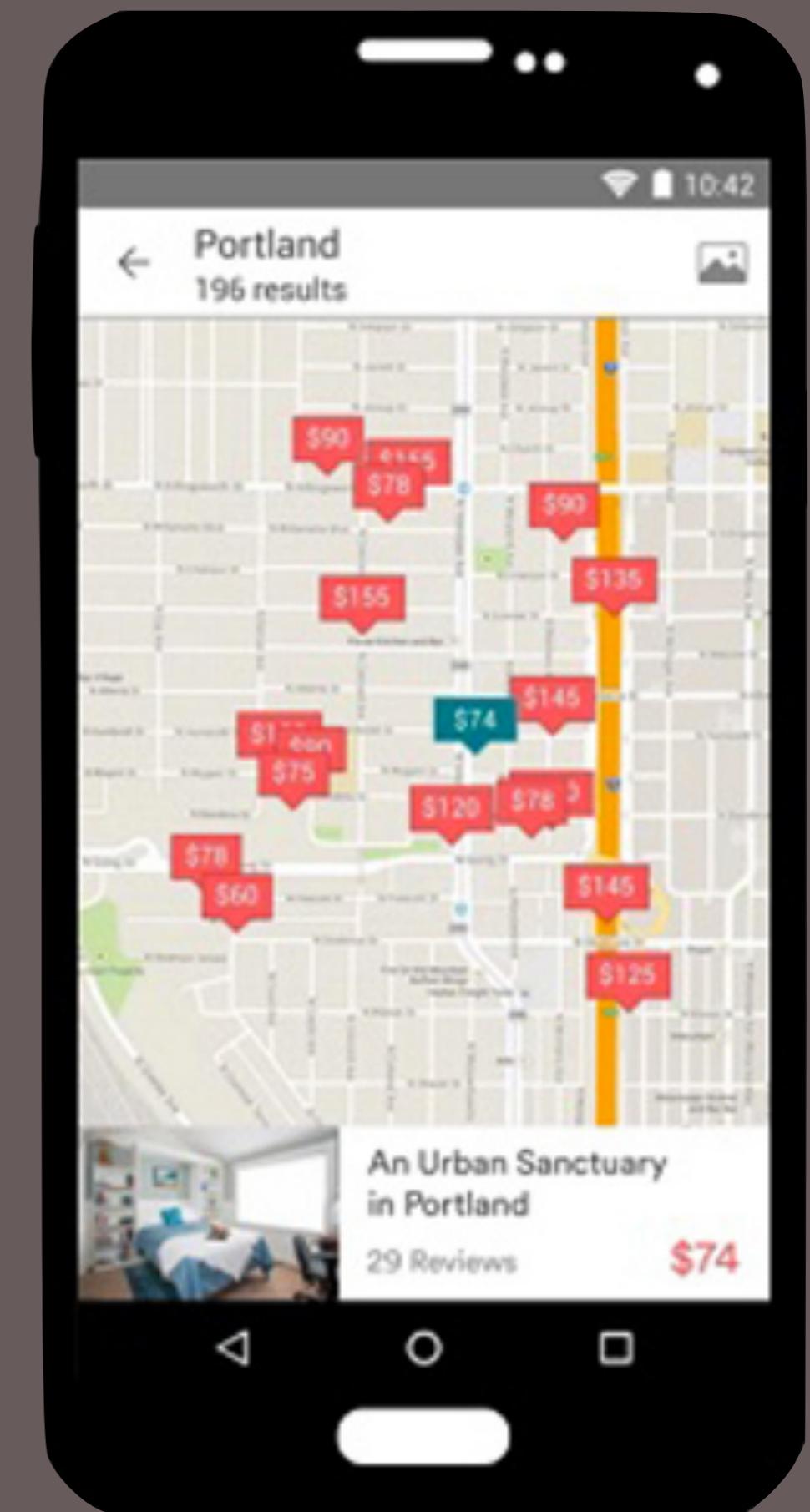
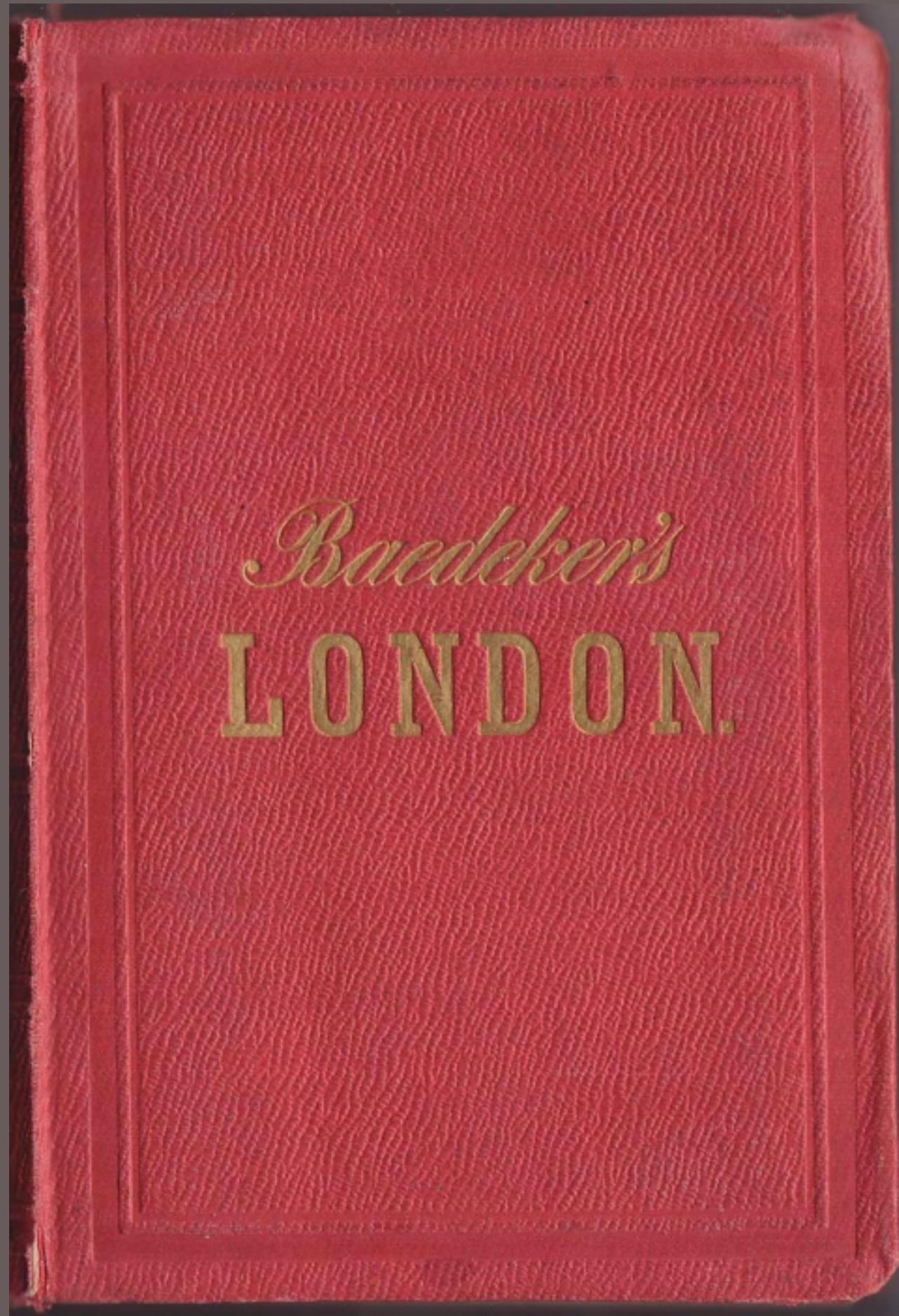


Branding Urban Neighborhoods on Airbnb

Will Payne

PS239T Final Project

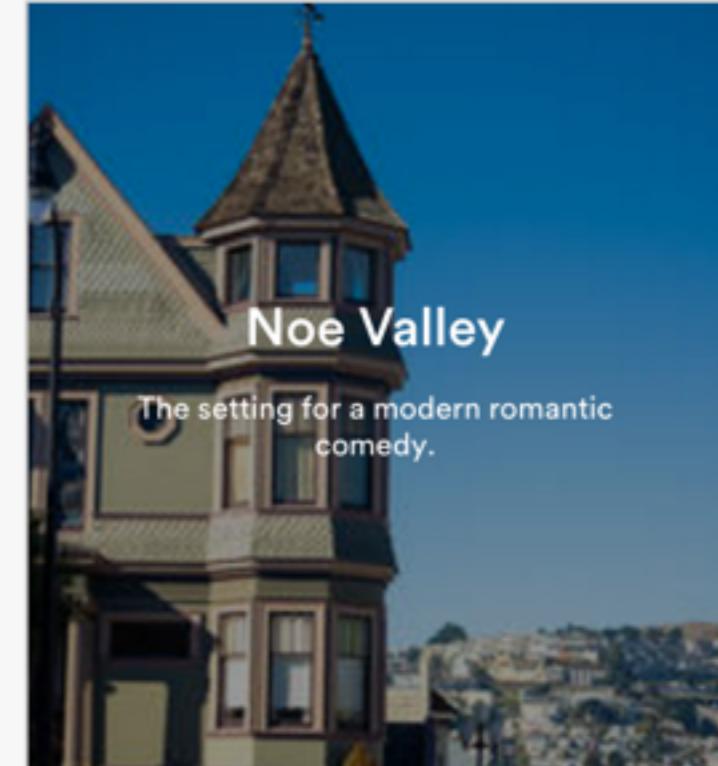
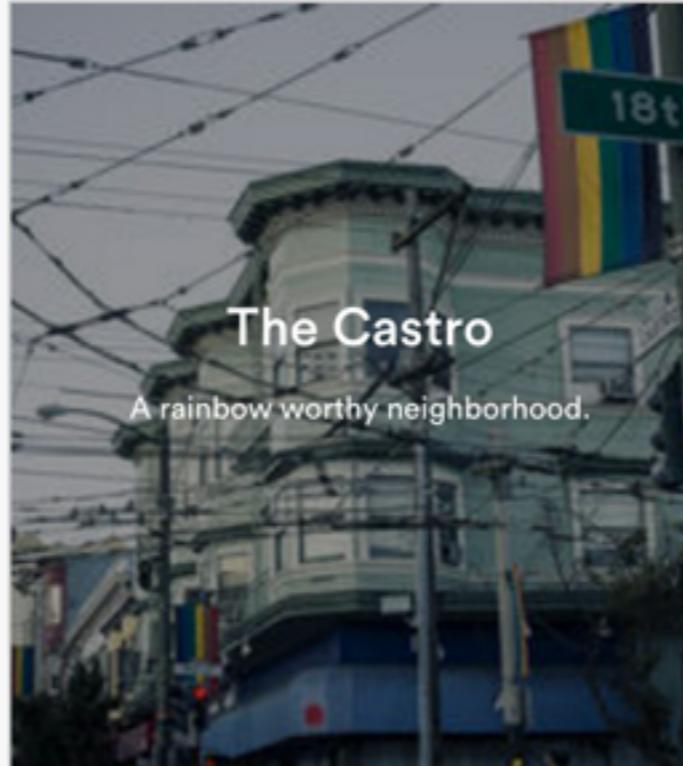
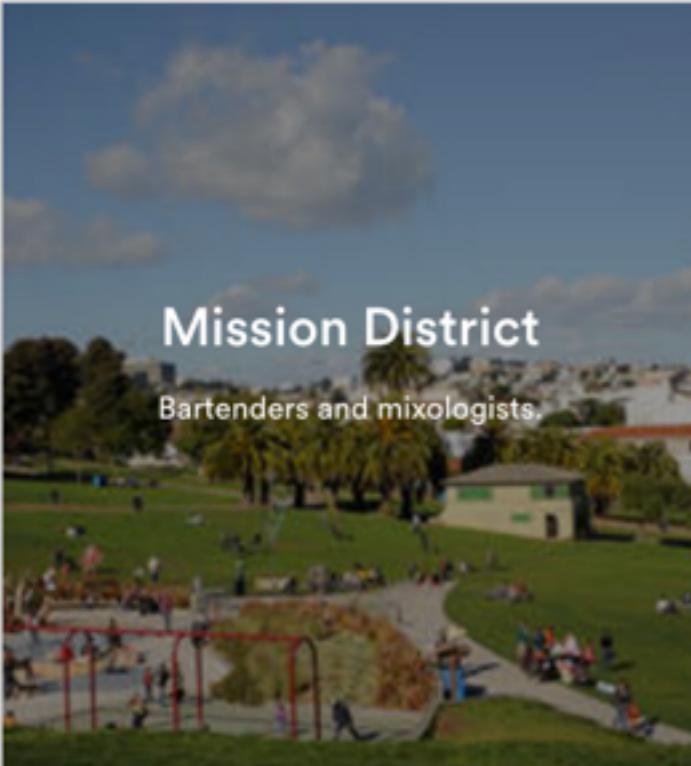


Find a Neighborhood in San Francisco

What kind of neighborhood are you looking for?

[Great Transit](#) [Loved by San Franciscans](#) [Stunning Views 1](#)[Shopping 3](#)[Peace & Quiet 2](#)[Dining 5](#)[Touristy 2](#)[Nightlife 3](#)[Artsy 4](#)

5 neighborhoods match Great Transit, Loved by San Franciscans. [See all listings](#)



Murals - Hipsters - Bicyclists - Trendy

Gay - Activism - Nightlife - Theatre

Family - Strollers - Desirable - Hip



Mission District

The Mission District's blend of class and crass evades definition as this colorful neighborhood changes from block to block.

Loved by San Franciscans

Dining

Nightlife

Artsy

Great Transit

Shopping

Touristy

The Mission District's multifarious corridors comprise an invitingly seedy melting pot of cultures, cuisines, and cool kids. Dusty produce bins line the sidewalks in front of colorful Latino markets, and the aroma of fresh roasted coffee beans emanates from first-class cafes along this diverse neighborhood's main streets. Whether you're looking for upscale restaurants, lowbrow dive bars, the best taquerias, or simply delicious street food, the Mission delivers.

Tweet

Pin it

G+

Like

453

The community says:

Murals • Hipsters • Bicyclists • Trendy •
Burritos • Artists • Nightlife • Music • Dive Bars •
Coffee • Latino Community • Tamale Lady
[+ suggest a tag](#)

The Mission District: It's Complicated



The Mission District's streets are more than names and numbers. They often serve as geographic indicators when answering the question, "Will I find amusement or will I feel apprehensive?"

Collecting Data with Python/Beautiful Soup

```
def get_descriptions(url):
    src = requests.get(url).text

    descriptions = {}
    soup = BeautifulSoup(src)

    descriptions["Name"] = soup.select('h1.circularbold')[0].text.encode("ascii", "ignore")
    print descriptions["Name"]

    intro = str(soup.select("div.description"))[48:-20]
    newintro = clean_strings(intro)
    descriptions["Intro"] = newintro

    lede = soup.select("p.lede")[0].text.encode("ascii", "ignore")
    strlede = str(lede)
    cleanerlede = clean_strings(strlede)
    descriptions["Lede"] = cleanerlede

    official_tags = soup.select("span.name")
    official_tag_list = []
    for tag in official_tags:
        justtag = (str(tag)[19:-7])
        cleantag = clean_strings(justtag)
        official_tag_list.append(cleantag)
    descriptions["Official_Tags"] = official_tag_list
```

Challenges/Data Cleaning

“ Almagro [borders] Boedo. Boedo is the emblematic Tango neighborhood. [Almagro] is not so touristy, so you can see how the “porteños” live in the city. It has a lot of “non commercial” theaters.”



Emilce & Esther

Hosts Tango area. 3 blocks from Metro

Photography

Airbnb works with local photographers to capture the spirit of neighborhoods all around the world. The photography on this page includes work by:

Erika Rojas

[View website](#)



Erika Rojas studied Documentary Photography in Venezuela. She lived in New York City for 12 years where she focused and developed her career in Lifestyle, Still Life and Food Photography. She is currently living and working in Buenos Aires, Argentina.

```
block_quotes = soup.select("blockquote")
block_quote_list = []
for quote in block_quotes:
    justquote = str(quote)[12:-14]
    if "photograph" not in justquote: # gets rid of the repetitive block quotes describing photographers
        cleanquote = clean_strings(justquote)
        block_quote_list.append(cleanquote)
for quote in block_quote_list:
    if "client" in quote: # hack for one photographer description that said "client" instead of above.
        block_quote_list.remove(quote)
descriptions["Block_Quotes"] = block_quote_list
```

CSV Output for Analysis

Name	Somerville
Block_Quotes	['Enjoy the panoramic views of Boston from nearby Prospect Hill - where the first true American Flag proudly flew in 1776.']
Community_Tags	['fixies', 'bodegas', 'davis square', 'hip', 'artsy', 'diverse', 'families', 'zaftigs jewish rye', 'coolidge corner theatre', 'sunday afternoons', 'artsy', 'music', 'students', 'hipster', 'higher education', 'solo cup parties', 'dingy but proud', 'students', 'diy']
Official_Tags	['Artsy', 'Peace & Quiet', 'Loved By Bostonians', 'Great Transit']
Lede	<p>Somerville is a special kind of big-city border town. It cultivates a diverse community of families, students, and trendsetters who seem to know one another. More importantly, this motley mix of individuals want to know one anothera quality not always found in the fringes of an urban center. Adding to the charm of its bodegas, eateries, and shops is Somervilles metropolitan convenience. Its myriad public transit options swiftly get you to Cambridge and Boston proper.</p>
Photo_Headers	['Cool Outside of Cambridge', 'Somerville By Squares']
Intro	<p>This easy-going Cambridge neighbor has a life of its own.</p> <p>['Across the Charles from Boston and next-door neighbor to Cambridge, Somerville feels like a destination despite being on the outskirts of the big-city.', 'Students, commuting professionals, and families call Somerville home.', "It's near everything without being too close to anything.", "Whether you're traveling to nearby Tufts University or taking the T into Boston, Somerville makes it easy.", 'In Somerville you can find solace or entertainment.', 'You can even find a place to park.', "With one foot in Cambridge and the other in Somerville, Porter Square's direct T accessibility and commercial creature comforts support simple living.", 'The Porter Square Galleria and its shopping center offer an expansive array of suburban amenities like grocery stores and corporate cafes.', 'Off the path of the T, Union Square feels a little less traveled.', "Plans are underway for extending the T's reach into Union Square, but some prefer its relative unreachability.", "As Somerville's most popular nightlife destination, Davis Square caters to local university students and energetic young professionals.", 'It artfully blends retro and contemporary stylings without coming across as kitschy.', "Lined with theatres, music venues, restaurants, and dive bars, there's no shortage of entertainment in Davis Square.", 'Front-row recommended.', 'You, as well.']</p>
Photo_Captions	

Results/Visualization

streets
architectural
boutiques around paths
san
city coffee
great homes center cafes
shops bars find
energy people commercial based
get beach stores inner beaten although
giants district dining
charming urban **views** walk
time feels hill can tourists
sorts day franciscos like
local street valley art call
quiet
francisco
diversity **mission** shopping downtown
specializes sunset area **home**
heights **park**

boutiques
urban suburban **community** lake
pacific las **shopping** still
bars friendly make **hollywood** its great
valley shops **santa**
street griffith car
away can cool line
spaces south like
food angelinos沿 town
cafes **los**
park sunset hills
coast citys
beaches **downtown**
hip **angeles** one culver
residential center miles parks
good music

beach south bay beach residents local designer tourists
residents beaches ocean bal malls like
restaurants biscuits miamians many its
biking highrises quiet suburban one haute
golf little **miami** district the
north cuban downtown young easy
coral city spaces town mall
boasts grove east loved park access
cafes cafes style art
shopping parks **miamis** suburb coconut
neighborhoods way wynwood shops casual
living harbour destination island urban
outdoor gables labels

vintage south homes
texas new laidback streets
enjoying edwards community
soco **austin** nolo
green music hills living
local drinking creating old
cool lamar lake fun barton
stores **shops** its
find zilker work food west
students bars feel
popular walkable away
creek street passionate life
artsy coffee
city **downtown** north dining
just the urban
trendy time

center buildings quiet afternoons public beacon local cupcakeries community end just easy corner zaftigs its chess like sunday north diverse

neighborhood

old find along shops bars parks just town shopping rye transit access boutiques players away streets bostons theatre feel many home harvard east jewish new back green common students university artsy street

music residential downtown coolidge one historic residents history restaurants families people residents capitol home shops away concrete line georgetown national just nationals get expensive park houses businesses blockquotes the local city morgan entertainment bustling cathedral row along dupont transit circle area landmarks cafes vibrant heights streets residential bar new find downtown around diverse columbiawaterfront the metro dining restaurants dcs nearby feel university shopping washington washingtonians friendly architecture

the
nyc
diverse street
manhattan
restaurants
away
like west
boutiques
heights
cool spaces
east
transit spaces
easy hill
get york dining bars
hipster residential along artsy art
best citys one
village
streets district
trendy quiet park
long many
little brownstone
brooklyn
nightlife
buildings
cafes
home
loved central
still residents
italian also
city great
subway people brooklyn
brownstones canyorkers
side food families
prospect
friendly
familyfriendly
shops
brooklyns
area
community square
brownstones
canworkers
district
coffee central
its also well
nightlife mommies street prenzlauer
culture one community german
outdoor gardens tiergarten new
shopping
sites
area

berlin park
transit
famous
quietfood
creativity neighborhoods
great hipsters markets west museums
zoo east steglitz trendy beer turkish
cafes busy young shops urban
graffiti artists
babies city wall
berliners loved berg public day
million mauerpark streets like bars
within dining find
central organic
the
its coffee boutiques many parks
nightlife mommies street prenzlauer
culture one community german
outdoor gardens tiergarten new
shopping kreuzberg sites
area

```
127 The following metric takes variation into account.  
128  
129 ```{r}  
130 # start again with turning original rate dtm into dataframe  
131 dtm.m <- as.data.frame(as.matrix(dtm))  
132 dtm.m[,1:5]  
133  
134 # Subset into 2 dtms  
135 nyc <- dtm.m[1:61,]  
136 sf <- dtm.m[62:101,]  
137  
138 # calculate means and vars  
139 means.nyc <- colMeans(nyc)  
140 var.nyc <- colVars(as.matrix(nyc))  
141 means.sf <- colMeans(sf)  
142 var.sf <- colVars(as.matrix(sf))  
143  
144 #calculate overall score  
145 num <- (means.nyc - means.sf)  
146 denom <- sqrt((var.nyc/61) + (var.sf/40))  
147 score <- num / denom  
148  
149 # sort and view  
150 score <- sort(score)  
151 head(score,25) # top sf words  
152 tail(score,25) # top nyc words  
153 ```
```

Standardized Mean Difference



- Brownstone
- Subway
- NYU
- Indie
- Restaurants / Bars
- PBR
- Family-Friendly
- Enclave
- Expensive
- Former
- Great
- Train
- Polish
- Caribbean
- Discover
- Nuance
- Sunny
- Home
- Bicyclist
- Urban
- Trail
- Desirable
- View
- Unsafe
- Spread
- Sausage
- Punk
- Fog
- Mural
- Produce
- Windswept
- Theatre
- Independent
- Colorful

Next Steps

- Discriminating words analysis on each city compared to overall corpus (instead of A/B comparison)
- Sentiment analysis of neighborhood descriptions plotted against mean income
- Compare community tags to official tags (sentiment analysis, qualitative study, etc.)
- K-means clustering of all Airbnb neighborhoods globally