# Proyecto Final Capstone - La Batalla de los Vecindarios

## Tabla de Contenido

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# 1. Introducción

Para este proyecto nos centraremos en analizar y visualizar, los barrios de la ciudad de **Medellin-Colombia**, para determinar cual lugar es mejor para abrir una **pizzeria**.

# 2. Problema Comercial

Un amigo cercano desea abrir un local de comida, especificamente una pizzeria, pero no tiene idea de en que lugar seria mas propicio abrir este local, en este emprendimiento tiene puesto sus esfuerzos y ahorros, es de vital importancia escoger bien el lugar donde estará la pizzeria. Con la ayuda de la ciencia de datos, podemos darle un panomara claro, de donde es factible abrir la pizzeria y donde no lo es.

# 3. Datos

## 3.1. Fuentes de Datos

Los datos que vamos a utilizar, provienen de varias fuentes, una de ella es la base de datos proporcionada por la alcaldia de **Medellin**, donde se encuentran todos los barrios de medellin, la comuna a la que pertenecen, (parecido a los distritos en otras ciudades) y si son urbanos o rurales. Estos datos pueden ser consultados en este enlace: FuenteDatos.

Tenemos la opción de hacer web scraping, con el paquete **BeautifulSoup**, que utilizamos en los laboratorios anteriores, o tambien podemos descargar el archivo en formato **.csv**, directamente desde la pagina de la alcaldia de Medellin. y cargarlo a nuestro Notebook, con Pandas. Escogeremos esta opción por simplicidad.

Utilizaremos la libreria **GeoPy**, para recuperar los datos Geoespaciales de cada uno de los barrios de la ciudad y los combinaremos en una sola tabla.

Ademas utilizaremos los datos de la Api **FourSquare**, para recuperar lugares y calificaciones, de los negocios similares, para los que deseamos predecir las mejores ubicaciones.

## 3.2. Data Cleaning

Como los Datos provienen de varias fuentes es posible, que halla datos faltantes o nulos, decidí eliminar estos datos de nuestro DataFrame principal, al igual que solo trabajaremos con los barrios que sean catalogados como **Urbanos**, y eliminaremos los que aparecen como rurales.

## 4. Metodologia

Abordaremos el problema utilizando la tecnica de agrupamiento que ya conocemos, **k-means**. Este enfoque permitirá a la audiencia ver como los veciendarios se parecen en sus datos demograficos.

## Importar librerias

```
In [1]:   import numpy as np # librería para manejar datos vectorizados

          import pandas as pd # librería para análisis de datos
          pd.set_option('display.max_columns', None)
          pd.set_option('display.max_rows', None)

          import json # librería para manejar archivos JSON

          import requests # librería para manejar solicitudes
          from pandas.io.json import json_normalize # librería para convertir un archivo json

          # Matplotlib y módulos asociados para graficar
          import matplotlib.cm as cm
          import matplotlib.colors as colors

          # importar k-means desde la fase de agrupación
          from sklearn.cluster import KMeans

          !conda install -c conda-forge folium=0.5.0 --yes
          import folium # librería para graficar mapas

          print('Libraries imported.')
```

```
Collecting package metadata (current_repodata.json): ...working... done
Solving environment: ...working... done

# All requested packages already installed.

Libraries imported.
```

## Cargamos el conjunto de datos de los barrios de **Medellin**.

```
In [2]:   dfBarrios = pd.read_csv('C:/Users/andrey.zapata/Downloads/Barrio_Vereda.csv')
          dfBarrios.head(5)
```

Out[2]:

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| **0** | 1112 | 0510 | Tricentenario | 1 | Castilla |
| **1** | 1113 | 0208 | Villa Niza | 1 | Santa Cruz |
| **2** | 1114 | 1108 | Laureles | 1 | Laureles Estadio |
| **3** | 1115 | 1303 | Santa Rosa de Lima | 1 | San Javier |
| **4** | 1116 | 1206 | Santa Lucía | 1 | La América |

## Eliminamos los barrios que estan catalogados como **Rurales** y los barrios que no tienen nombre, o GeoPy no puede encontrar su datos Geoespaciales

In [3]:
```python
indexNames = dfBarrios[ (dfBarrios['SUBTIPO_BARRIOVEREDA'] == 2)
                      | (dfBarrios['NOMBRE'] == "Hospital San Vicente de Paúl")
                      | (dfBarrios['NOMBRE'] == "Área de Expansión El Noral")
                      | (dfBarrios['NOMBRE'] == "Facultad de Minas")
                      | (dfBarrios['NOMBRE'] == "Facultad Veterinaria y Zootecnia U.de.A.")
                      | (dfBarrios['NOMBRE'] == "U.P.B")
                      | (dfBarrios['NOMBRE'] == "El Nogal-Los Almendros")
                      | (dfBarrios['NOMBRE'] == "Cementerio Universal")
                      | (dfBarrios['NOMBRE'] == "Centro Administrativo")
                      | (dfBarrios['NOMBRE'] == "Facultad de Minas U. Nacional")
                      | (dfBarrios['NOMBRE'] == "Las Acacias")
                      | (dfBarrios['NOMBRE'] == "Plaza de Ferias")
                      | (dfBarrios['NOMBRE'] == "Terminal de Transporte")
                      | (dfBarrios['NOMBRE'] == "Oleoducto")
                      | (dfBarrios['NOMBRE'] == "San Isidro")
                      | (dfBarrios['NOMBRE'] == "Naranjal")
                      | (dfBarrios['NOMBRE'] == "La Palma")
                      | (dfBarrios['NOMBRE'] == "Las Palmas")
                      | (dfBarrios['NOMBRE'] == "El Salado")
                      | (dfBarrios['NOMBRE'] == "Altavista")
                      | (dfBarrios['NOMBRE'] == "Sin Nombre") ].index
dfBarrios.drop(indexNames , inplace=True)
dfBarrios.head(5)
```

Out[3]:

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| **0** | 1112 | 0510 | Tricentenario | 1 | Castilla |
| **1** | 1113 | 0208 | Villa Niza | 1 | Santa Cruz |
| **2** | 1114 | 1108 | Laureles | 1 | Laureles Estadio |
| **3** | 1115 | 1303 | Santa Rosa de Lima | 1 | San Javier |
| **4** | 1116 | 1206 | Santa Lucía | 1 | La América |

## Verificamos el numero de resgistros resultantes.

In [4]:
```python
dfBarrios.shape
```

Out[4]: (251, 7)

## Importamos libreria **GeoPy**, para obtener los datos geoespaciales de los barrios de la ciudad

In [5]:
```python
from geopy.geocoders import Nominatim
```

In [6]:
```python
address = 'Medellin, CO'

geolocator = Nominatim(user_agent="mde_explorer")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print('The geograpical coordinate of Medellin City are {}, {}.'.format(latitude, lon
```

```
The geograpical coordinate of Medellin City are 6.2443382, -75.573553.
```

## Insertamos 2 columnas nuevas para la latitud y longitud

In [7]:
```python
dfBarrios.insert(7, "lat", "")
dfBarrios.insert(8, "lng", "")
dfBarrios.head(5)
```

Out[7]:

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| 0 | 1112 | 0510 | Tricentenario | 1 | Castilla |
| 1 | 1113 | 0208 | Villa Niza | 1 | Santa Cruz |
| 2 | 1114 | 1108 | Laureles | 1 | Laureles Estadio |
| 3 | 1115 | 1303 | Santa Rosa de Lima | 1 | San Javier |
| 4 | 1116 | 1206 | Santa Lucía | 1 | La América |

## Construimos un ciclo para asignar a cada fila, de nuestro DataFrame, los datos de **latitud** y **longitud**, resultantes de la libreria GeoPy

In [8]:
```python
address = 'Medellin,CO'

for i in dfBarrios.index:
    nomBarrio = dfBarrios.loc[i, 'NOMBRE']
    addressFull = nomBarrio + "," + address
    geolocator = Nominatim(user_agent="mde_explorer")
    location = geolocator.geocode(addressFull)
    #print(str(i) + dfBarrios.loc[i, 'NOMBRE'])
    if(location.latitude is not None and location.longitude is not None):
        latitude = location.latitude
        longitude = location.longitude
    else:
        print(dfBarrios.loc[i, 'NOMBRE'] + "Tiene datos geoespaciales nulos")
        latitude = "NoData"
        longitude = "NoData"


    dfBarrios.loc[i, 'lat']= latitude
    dfBarrios.loc[i, 'lng']= longitude
```

## Reseteamos el index de nuestro dataFrame y descartamos las columnas innecesarias

In [9]:
```python
dfBarrios.reset_index(inplace=True)
dfBarrios.drop(['index'], axis=1, inplace=True)
dfBarrios.head(10)
```

Out[9]:

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| 0 | 1112 | 0510 | Tricentenario | 1 | Castilla |
| 1 | 1113 | 0208 | Villa Niza | 1 | Santa Cruz |
| 2 | 1114 | 1108 | Laureles | 1 | Laureles Estadio |
| 3 | 1115 | 1303 | Santa Rosa de Lima | 1 | San Javier |
| 4 | 1116 | 1206 | Santa Lucía | 1 | La América |
| 5 | 1117 | 1205 | La Floresta | 1 | La América |
| 6 | 1118 | 1617 | Las Mercedes | 1 | Belén |

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| **7** | 1119 | 1016 | Boston | 1 | La Candelaria |
| **8** | 1120 | 0725 | Nueva Villa de La Iguaná | 1 | Robledo |
| **9** | 1121 | 0905 | Alejandro Echavarría | 1 | Buenos Aires |

## 5. Analisis

### inicializamos los parametros para generar el mapa de la ciudad

In [10]:
```python
address = 'Medellin, CO'

geolocator = Nominatim(user_agent="mde_explorer")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print('The geograpical coordinate of Medellin City are {}, {}.'.format(latitude, lon
```

The geograpical coordinate of Medellin City are 6.2443382, -75.573553.

### Generemos el mapa con sus marcadores

In [11]:
```python
# crear un mapa de Medellin utilizando los valores de latitud y longitud
map_medellin = folium.Map(location=[latitude, longitude], zoom_start=12)

# añadir marcadores al mapa
for lat, lng, comuna, barrio in zip(dfBarrios['lat'], dfBarrios['lng'], dfBarrios['N
    label = '{}, {}'.format(barrio, comuna)
    label = folium.Popup(label, parse_html=True)
    folium.CircleMarker(
        [lat, lng],
        radius=5,
        popup=label,
        color='blue',
        fill=True,
        fill_color='#3186cc',
        fill_opacity=0.7,
        parse_html=False).add_to(map_medellin)

map_medellin
```

Out[11]: Make this Notebook Trusted to load map: File -> Trust Notebook

### inicializamos los argumentos que utilizaremos para la Api Foursquare

```python
In [12]:   CLIENT_ID = '3KQ23TNDRE4U545FXH421FR5OEUAJ0UU4PKVNC4XNHRE3LKM' # su ID de Foursquare
           CLIENT_SECRET = 'L1MSXE30SXDOQ4CNBTSMIRK2ZAXX5NZ1S3S2IRU1OTMMEBEA' # Secreto de Four
           VERSION = '20180605' # versión de la API de Foursquare
           LIMIT = 100 # Un valor límite para la API de Foursquare

           print('Your credentails:')
           print('CLIENT_ID: ' + CLIENT_ID)
           print('CLIENT_SECRET:' + CLIENT_SECRET)
```

```
Your credentails:
CLIENT_ID: 3KQ23TNDRE4U545FXH421FR5OEUAJ0UU4PKVNC4XNHRE3LKM
CLIENT_SECRET:L1MSXE30SXDOQ4CNBTSMIRK2ZAXX5NZ1S3S2IRU1OTMMEBEA
```

### Construimos una funcion para obtener los sitios cercanos de cada uno de los barrios de la ciudad.

```python
In [13]:   def getNearbyVenues(names, latitudes, longitudes, radius=500):

               venues_list=[]
               for name, lat, lng in zip(names, latitudes, longitudes):
                   print(name)

                   # crear la URL de solicitud de API
                   url = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_sec
                       CLIENT_ID,
                       CLIENT_SECRET,
                       VERSION,
                       lat,
                       lng,
                       radius,
                       LIMIT)

                   # solicitud GET
                   results = requests.get(url).json()["response"]['groups'][0]['items']

                   # regresa solo información relevante de cada sitio cercano
                   venues_list.append([(
                       name,
                       lat,
                       lng,
                       v['venue']['name'],
                       v['venue']['location']['lat'],
                       v['venue']['location']['lng'],
                       v['venue']['categories'][0]['name']) for v in results])

               nearby_venues = pd.DataFrame([item for venue_list in venues_list for item in ven
               nearby_venues.columns = ['Neighborhood',
                           'Neighborhood Latitude',
                           'Neighborhood Longitude',
                           'Venue',
                           'Venue Latitude',
                           'Venue Longitude',
                           'Venue Category']

               return(nearby_venues)
```

### Llamamos la funcion que construimos

In [15]:
```python
Medellin_venues = getNearbyVenues(names=dfBarrios['NOMBRE'],
                                  latitudes=dfBarrios['lat'],
                                  longitudes=dfBarrios['lng']
                                  )
```

```
Tricentenario
Villa Niza
Laureles
Santa Rosa de Lima
Santa Lucía
La Floresta
Las Mercedes
Boston
Nueva Villa de La Iguaná
Alejandro Echavarría
Picacho
Moscú No.2
Santo Domingo Savio No.1
El Danubio
La Avanzada
Perpetuo Socorro
San Lucas
Calasanz Parte Alta
Playón de Los Comuneros
El Chagualo
Cristo Rey
Los Conquistadores
Asomadera No.3
La Gloria
El Pesebre
Lalinde
Manrique Central No.1
Las Independencias
Parque Juan Pablo II
Moscú No.1
Bosques de San Pablo
Los Mangos
Los Cerros El Vergel
Miravalle
El Rodeo
La Milagrosa
El Castillo
San José La Cima No.1
El Raizal
Villa Guadalupe
El Poblado
Trinidad
El Pomar
Oriente
La Isla
La Sierra
María Cano-Carambolas
Belén
La Pilarica
El Corazón
Calle Nueva
La Frontera
Tejelo
Lorena
Miraflores
Los Ángeles
Alejandría
Metropolitano
La Francia
Cuarta Brigada
Los Naranjos
Aures No.1
Cataluña
Carpinelo
```

Andalucía
La Castellana
Carlos E. Restrepo
Robledo
Juan XXIII La Quiebra
Moravia
San Benito
Veinte de Julio
Altamira
Las Lomas No.2
Santander
Las Playas
San Pablo
Las Esmeraldas
San Miguel
Barrio Caicedo
B. Cerro El Volador
Santa Margarita
Suramericana
San Pedro
Villa Turbay
Asomadera No.1
Bomboná No.2
Popular
La Cruz
San Germán
Eduardo Santos
Progreso No.2
Barrio Cristóbal
Girardot
Los Balsos No.2
Los Colores
Palermo
San Joaquín
Manila
Batallón Girardot
Villatina
Barrio Colón
Jardín Botánico
La Candelaria
San José La Cima No.2
Antonio Nariño
Doce de Octubre No.2
Granizal
San Bernardo
El Salvador
Sevilla
Santa Inés
El Progreso
Castropol
Belalcázar
Guayaquil
Las Violetas
Santa María de Los Ángeles
La Pradera
San Diego
Bello Horizonte
Villa Nueva
Batallón Cuarta Brigada
Los Balsos No.1
Villa Carlota
El Compromiso
La Libertad
San Martín de Porres
Las Brisas
Villa Lilliam
Pajarito
Santa Fé
La Rosa

El Tesoro
Monteclaro
La Mansión
La Florida
Diego Echavarría
Los Alcázares
Campo Valdés No.1
Alfonso López
Olaya Herrera
Astorga
Caribe
Aranjuez
Manrique Central No.2
San Antonio
El Rincón
Calasanz
Bermejal-Los Álamos
Jesús Nazareno
Ocho de Marzo
Cucaracho
Belencito
Cerro Nutibara
Simón Bolívar
Universidad de Antioquia
San Javier No.2
Brasilia
Bolivariana
Berlín
El Velódromo
Santa Mónica
Cerro Nutibara
Mirador del Doce
El Triunfo
Enciso
La Esperanza
Las Estancias
Pablo VI
Ecoparque Cerro El Volador
Versalles No.1
Altos del Poblado
Universidad Nacional
El Diamante
Palenque
Barrio Colombia
Rosales
Campo Amor
Las Granjas
Barrios de Jesús
La Alpujarra
Corazón de Jesús
Buenos Aires
Toscana
Los Pinos
La Aguacatala
El Pinal
Fuente Clara
Santo Domingo Savio No.2
Gerona
Santa Teresita
Francisco Antonio Zea
La Mota
La Hondonada
Llanaditas
Loreto
Nuevos Conquistadores
La América
Picachito
Miranda
U.D. Atanasio Girardot

Patio Bonito
Manrique Oriental
La Esperanza No.2
Pedregal
Prado
Trece de Noviembre
Doce de Octubre No.1
La Loma de Los Bernal
Juan Pablo II
Villa Flora
El Diamante No.2
Nueva Villa del Aburrá
Villa del Socorro
Tenche
Fátima
Boyacá
Aldea Pablo VI
Villa Hermosa
Las Lomas No.1
Santa Cruz
Betania
Kennedy
Guayabal
Córdoba
Estación Villa
Florencia
Ferrini
Blanquizal
La Ladera
Asomadera No.2
Parque Norte
Aures No.2
Sucre
La Piñuela
López de  Mesa
La Salle
La Colina
San Javier No.1
Héctor Abad Gómez
Castilla
Florida Nueva
Estadio
El Socorro
Versalles No.2
Bomboná No.1
Los Alpes
Campo Valdés No.2
Granada
Campo Alegre

## Revisemos el tamaño del nuevo DataFrame y las primeras filas

In [16]:
```
print(Medellin_venues.shape)
Medellin_venues.head()
```

(2605, 7)

Out[16]:

| | Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|---|
| 0 | Tricentenario | 6.29107 | -75.566325 | METRO - Estacion Tricentenario | 6.290542 | -75.564733 | Metro Station |
| 1 | Tricentenario | 6.29107 | -75.566325 | Parque Juanes de la Paz | 6.292663 | -75.568673 | Recreation Center |

| | Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|---|
| 2 | Tricentenario | 6.29107 | -75.566325 | Club De Tenis El Bosque | 6.293351 | -75.568521 | Tennis Court |
| 3 | Tricentenario | 6.29107 | -75.566325 | Parche Tricen,Tienda mixta | 6.292670 | -75.564551 | Grocery Store |
| 4 | Tricentenario | 6.29107 | -75.566325 | Indu Aires LS | 6.288768 | -75.567420 | Construction & Landscaping |

Revisemos cuantos retornaron para cada barrio

```
In [17]:  Medellin_venues.groupby('Neighborhood').count()
```

Out[17]:

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Aldea Pablo VI | 2 | 2 | 2 | 2 | 2 | 2 |
| Alejandro Echavarría | 5 | 5 | 5 | 5 | 5 | 5 |
| Alejandría | 16 | 16 | 16 | 16 | 16 | 16 |
| Alfonso López | 1 | 1 | 1 | 1 | 1 | 1 |
| Altamira | 3 | 3 | 3 | 3 | 3 | 3 |
| Altos del Poblado | 4 | 4 | 4 | 4 | 4 | 4 |
| Andalucía | 5 | 5 | 5 | 5 | 5 | 5 |
| Antonio Nariño | 6 | 6 | 6 | 6 | 6 | 6 |
| Aranjuez | 4 | 4 | 4 | 4 | 4 | 4 |
| Asomadera No.1 | 8 | 8 | 8 | 8 | 8 | 8 |
| Asomadera No.2 | 32 | 32 | 32 | 32 | 32 | 32 |
| Asomadera No.3 | 7 | 7 | 7 | 7 | 7 | 7 |
| Astorga | 97 | 97 | 97 | 97 | 97 | 97 |
| Aures No.2 | 4 | 4 | 4 | 4 | 4 | 4 |
| B. Cerro El Volador | 4 | 4 | 4 | 4 | 4 | 4 |
| Barrio Caicedo | 5 | 5 | 5 | 5 | 5 | 5 |
| Barrio Colombia | 75 | 75 | 75 | 75 | 75 | 75 |
| Barrio Colón | 19 | 19 | 19 | 19 | 19 | 19 |
| Barrio Cristóbal | 6 | 6 | 6 | 6 | 6 | 6 |
| Barrios de Jesús | 1 | 1 | 1 | 1 | 1 | 1 |
| Batallón Cuarta Brigada | 15 | 15 | 15 | 15 | 15 | 15 |
| Batallón Girardot | 1 | 1 | 1 | 1 | 1 | 1 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Belalcázar | 3 | 3 | 3 | 3 | 3 | 3 |
| Belencito | 4 | 4 | 4 | 4 | 4 | 4 |
| Bello Horizonte | 1 | 1 | 1 | 1 | 1 | 1 |
| Belén | 1 | 1 | 1 | 1 | 1 | 1 |
| Berlín | 4 | 4 | 4 | 4 | 4 | 4 |
| Bermejal-Los Álamos | 4 | 4 | 4 | 4 | 4 | 4 |
| Betania | 3 | 3 | 3 | 3 | 3 | 3 |
| Bolivariana | 30 | 30 | 30 | 30 | 30 | 30 |
| Bomboná No.1 | 17 | 17 | 17 | 17 | 17 | 17 |
| Bosques de San Pablo | 3 | 3 | 3 | 3 | 3 | 3 |
| Boston | 19 | 19 | 19 | 19 | 19 | 19 |
| Boyacá | 4 | 4 | 4 | 4 | 4 | 4 |
| Brasilia | 2 | 2 | 2 | 2 | 2 | 2 |
| Buenos Aires | 5 | 5 | 5 | 5 | 5 | 5 |
| Calasanz | 17 | 17 | 17 | 17 | 17 | 17 |
| Calasanz Parte Alta | 1 | 1 | 1 | 1 | 1 | 1 |
| Calle Nueva | 19 | 19 | 19 | 19 | 19 | 19 |
| Campo Alegre | 4 | 4 | 4 | 4 | 4 | 4 |
| Campo Amor | 13 | 13 | 13 | 13 | 13 | 13 |
| Campo Valdés No.1 | 4 | 4 | 4 | 4 | 4 | 4 |
| Campo Valdés No.2 | 3 | 3 | 3 | 3 | 3 | 3 |
| Caribe | 15 | 15 | 15 | 15 | 15 | 15 |
| Carlos E. Restrepo | 22 | 22 | 22 | 22 | 22 | 22 |
| Carpinelo | 2 | 2 | 2 | 2 | 2 | 2 |
| Castilla | 69 | 69 | 69 | 69 | 69 | 69 |
| Castropol | 26 | 26 | 26 | 26 | 26 | 26 |
| Cataluña | 4 | 4 | 4 | 4 | 4 | 4 |
| Cerro Nutibara | 24 | 24 | 24 | 24 | 24 | 24 |
| Corazón de Jesús | 5 | 5 | 5 | 5 | 5 | 5 |
| Cristo Rey | 10 | 10 | 10 | 10 | 10 | 10 |
| Cuarta Brigada | 23 | 23 | 23 | 23 | 23 | 23 |
| Cucaracho | 3 | 3 | 3 | 3 | 3 | 3 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Córdoba | 1 | 1 | 1 | 1 | 1 | 1 |
| Diego Echavarría | 25 | 25 | 25 | 25 | 25 | 25 |
| Doce de Octubre No.1 | 4 | 4 | 4 | 4 | 4 | 4 |
| Doce de Octubre No.2 | 4 | 4 | 4 | 4 | 4 | 4 |
| Ecoparque Cerro El Volador | 3 | 3 | 3 | 3 | 3 | 3 |
| El Castillo | 10 | 10 | 10 | 10 | 10 | 10 |
| El Chagualo | 5 | 5 | 5 | 5 | 5 | 5 |
| El Corazón | 2 | 2 | 2 | 2 | 2 | 2 |
| El Danubio | 4 | 4 | 4 | 4 | 4 | 4 |
| El Diamante | 4 | 4 | 4 | 4 | 4 | 4 |
| El Diamante No.2 | 15 | 15 | 15 | 15 | 15 | 15 |
| El Pesebre | 4 | 4 | 4 | 4 | 4 | 4 |
| El Pinal | 2 | 2 | 2 | 2 | 2 | 2 |
| El Poblado | 52 | 52 | 52 | 52 | 52 | 52 |
| El Pomar | 10 | 10 | 10 | 10 | 10 | 10 |
| El Progreso | 13 | 13 | 13 | 13 | 13 | 13 |
| El Raizal | 3 | 3 | 3 | 3 | 3 | 3 |
| El Rincón | 1 | 1 | 1 | 1 | 1 | 1 |
| El Rodeo | 3 | 3 | 3 | 3 | 3 | 3 |
| El Salvador | 4 | 4 | 4 | 4 | 4 | 4 |
| El Socorro | 8 | 8 | 8 | 8 | 8 | 8 |
| El Tesoro | 9 | 9 | 9 | 9 | 9 | 9 |
| El Triunfo | 2 | 2 | 2 | 2 | 2 | 2 |
| El Velódromo | 13 | 13 | 13 | 13 | 13 | 13 |
| Enciso | 4 | 4 | 4 | 4 | 4 | 4 |
| Estación Villa | 9 | 9 | 9 | 9 | 9 | 9 |
| Estadio | 18 | 18 | 18 | 18 | 18 | 18 |
| Ferrini | 5 | 5 | 5 | 5 | 5 | 5 |
| Florencia | 4 | 4 | 4 | 4 | 4 | 4 |
| Florida Nueva | 32 | 32 | 32 | 32 | 32 | 32 |
| Francisco Antonio Zea | 7 | 7 | 7 | 7 | 7 | 7 |
| Fátima | 13 | 13 | 13 | 13 | 13 | 13 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Gerona | 5 | 5 | 5 | 5 | 5 | 5 |
| Girardot | 4 | 4 | 4 | 4 | 4 | 4 |
| Granada | 6 | 6 | 6 | 6 | 6 | 6 |
| Granizal | 4 | 4 | 4 | 4 | 4 | 4 |
| Guayabal | 12 | 12 | 12 | 12 | 12 | 12 |
| Guayaquil | 25 | 25 | 25 | 25 | 25 | 25 |
| Héctor Abad Gómez | 2 | 2 | 2 | 2 | 2 | 2 |
| Jardín Botánico | 18 | 18 | 18 | 18 | 18 | 18 |
| Jesús Nazareno | 8 | 8 | 8 | 8 | 8 | 8 |
| Juan Pablo II | 2 | 2 | 2 | 2 | 2 | 2 |
| Juan XXIII La Quiebra | 1 | 1 | 1 | 1 | 1 | 1 |
| Kennedy | 1 | 1 | 1 | 1 | 1 | 1 |
| La Aguacatala | 100 | 100 | 100 | 100 | 100 | 100 |
| La Alpujarra | 18 | 18 | 18 | 18 | 18 | 18 |
| La América | 8 | 8 | 8 | 8 | 8 | 8 |
| La Avanzada | 5 | 5 | 5 | 5 | 5 | 5 |
| La Candelaria | 44 | 44 | 44 | 44 | 44 | 44 |
| La Castellana | 18 | 18 | 18 | 18 | 18 | 18 |
| La Colina | 4 | 4 | 4 | 4 | 4 | 4 |
| La Esperanza | 3 | 3 | 3 | 3 | 3 | 3 |
| La Esperanza No.2 | 4 | 4 | 4 | 4 | 4 | 4 |
| La Floresta | 8 | 8 | 8 | 8 | 8 | 8 |
| La Florida | 52 | 52 | 52 | 52 | 52 | 52 |
| La Francia | 5 | 5 | 5 | 5 | 5 | 5 |
| La Gloria | 3 | 3 | 3 | 3 | 3 | 3 |
| La Isla | 3 | 3 | 3 | 3 | 3 | 3 |
| La Ladera | 1 | 1 | 1 | 1 | 1 | 1 |
| La Libertad | 2 | 2 | 2 | 2 | 2 | 2 |
| La Loma de Los Bernal | 5 | 5 | 5 | 5 | 5 | 5 |
| La Mansión | 1 | 1 | 1 | 1 | 1 | 1 |
| La Milagrosa | 4 | 4 | 4 | 4 | 4 | 4 |
| La Mota | 20 | 20 | 20 | 20 | 20 | 20 |
| La Pilarica | 4 | 4 | 4 | 4 | 4 | 4 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| La Piñuela | 4 | 4 | 4 | 4 | 4 | 4 |
| La Pradera | 3 | 3 | 3 | 3 | 3 | 3 |
| La Rosa | 2 | 2 | 2 | 2 | 2 | 2 |
| La Salle | 4 | 4 | 4 | 4 | 4 | 4 |
| La Sierra | 1 | 1 | 1 | 1 | 1 | 1 |
| Lalinde | 16 | 16 | 16 | 16 | 16 | 16 |
| Las Brisas | 4 | 4 | 4 | 4 | 4 | 4 |
| Las Esmeraldas | 6 | 6 | 6 | 6 | 6 | 6 |
| Las Estancias | 1 | 1 | 1 | 1 | 1 | 1 |
| Las Granjas | 3 | 3 | 3 | 3 | 3 | 3 |
| Las Independencias | 6 | 6 | 6 | 6 | 6 | 6 |
| Las Lomas No.1 | 43 | 43 | 43 | 43 | 43 | 43 |
| Las Lomas No.2 | 25 | 25 | 25 | 25 | 25 | 25 |
| Las Mercedes | 7 | 7 | 7 | 7 | 7 | 7 |
| Las Playas | 14 | 14 | 14 | 14 | 14 | 14 |
| Las Violetas | 4 | 4 | 4 | 4 | 4 | 4 |
| Laureles | 56 | 56 | 56 | 56 | 56 | 56 |
| Lorena | 48 | 48 | 48 | 48 | 48 | 48 |
| Los Alcázares | 4 | 4 | 4 | 4 | 4 | 4 |
| Los Alpes | 31 | 31 | 31 | 31 | 31 | 31 |
| Los Balsos No.1 | 8 | 8 | 8 | 8 | 8 | 8 |
| Los Balsos No.2 | 59 | 59 | 59 | 59 | 59 | 59 |
| Los Cerros El Vergel | 4 | 4 | 4 | 4 | 4 | 4 |
| Los Colores | 10 | 10 | 10 | 10 | 10 | 10 |
| Los Conquistadores | 13 | 13 | 13 | 13 | 13 | 13 |
| Los Mangos | 2 | 2 | 2 | 2 | 2 | 2 |
| Los Naranjos | 74 | 74 | 74 | 74 | 74 | 74 |
| Los Pinos | 15 | 15 | 15 | 15 | 15 | 15 |
| Los Ángeles | 7 | 7 | 7 | 7 | 7 | 7 |
| López de Mesa | 1 | 1 | 1 | 1 | 1 | 1 |
| Manila | 40 | 40 | 40 | 40 | 40 | 40 |
| Manrique Central No.1 | 5 | 5 | 5 | 5 | 5 | 5 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Manrique Central No.2 | 3 | 3 | 3 | 3 | 3 | 3 |
| Manrique Oriental | 3 | 3 | 3 | 3 | 3 | 3 |
| María Cano-Carambolas | 2 | 2 | 2 | 2 | 2 | 2 |
| Mirador del Doce | 3 | 3 | 3 | 3 | 3 | 3 |
| Miraflores | 5 | 5 | 5 | 5 | 5 | 5 |
| Miranda | 5 | 5 | 5 | 5 | 5 | 5 |
| Miravalle | 27 | 27 | 27 | 27 | 27 | 27 |
| Moravia | 6 | 6 | 6 | 6 | 6 | 6 |
| Moscú No.1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Moscú No.2 | 4 | 4 | 4 | 4 | 4 | 4 |
| Nueva Villa de La Iguaná | 11 | 11 | 11 | 11 | 11 | 11 |
| Nueva Villa del Aburrá | 36 | 36 | 36 | 36 | 36 | 36 |
| Nuevos Conquistadores | 2 | 2 | 2 | 2 | 2 | 2 |
| Ocho de Marzo | 2 | 2 | 2 | 2 | 2 | 2 |
| Olaya Herrera | 1 | 1 | 1 | 1 | 1 | 1 |
| Oriente | 2 | 2 | 2 | 2 | 2 | 2 |
| Pablo VI | 1 | 1 | 1 | 1 | 1 | 1 |
| Palenque | 5 | 5 | 5 | 5 | 5 | 5 |
| Palermo | 4 | 4 | 4 | 4 | 4 | 4 |
| Parque Juan Pablo II | 6 | 6 | 6 | 6 | 6 | 6 |
| Parque Norte | 14 | 14 | 14 | 14 | 14 | 14 |
| Patio Bonito | 81 | 81 | 81 | 81 | 81 | 81 |
| Pedregal | 4 | 4 | 4 | 4 | 4 | 4 |
| Perpetuo Socorro | 33 | 33 | 33 | 33 | 33 | 33 |
| Picachito | 2 | 2 | 2 | 2 | 2 | 2 |
| Picacho | 1 | 1 | 1 | 1 | 1 | 1 |
| Prado | 5 | 5 | 5 | 5 | 5 | 5 |
| Progreso No.2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Robledo | 3 | 3 | 3 | 3 | 3 | 3 |
| Rosales | 17 | 17 | 17 | 17 | 17 | 17 |
| San Antonio | 4 | 4 | 4 | 4 | 4 | 4 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| San Benito | 7 | 7 | 7 | 7 | 7 | 7 |
| San Bernardo | 5 | 5 | 5 | 5 | 5 | 5 |
| San Diego | 18 | 18 | 18 | 18 | 18 | 18 |
| San Germán | 4 | 4 | 4 | 4 | 4 | 4 |
| San Javier No.1 | 4 | 4 | 4 | 4 | 4 | 4 |
| San Javier No.2 | 4 | 4 | 4 | 4 | 4 | 4 |
| San Joaquín | 46 | 46 | 46 | 46 | 46 | 46 |
| San José La Cima No.1 | 1 | 1 | 1 | 1 | 1 | 1 |
| San José La Cima No.2 | 5 | 5 | 5 | 5 | 5 | 5 |
| San Lucas | 4 | 4 | 4 | 4 | 4 | 4 |
| San Martín de Porres | 1 | 1 | 1 | 1 | 1 | 1 |
| San Miguel | 1 | 1 | 1 | 1 | 1 | 1 |
| San Pedro | 4 | 4 | 4 | 4 | 4 | 4 |
| Santa Cruz | 2 | 2 | 2 | 2 | 2 | 2 |
| Santa Fé | 12 | 12 | 12 | 12 | 12 | 12 |
| Santa Inés | 1 | 1 | 1 | 1 | 1 | 1 |
| Santa Lucía | 5 | 5 | 5 | 5 | 5 | 5 |
| Santa Margarita | 2 | 2 | 2 | 2 | 2 | 2 |
| Santa María de Los Ángeles | 13 | 13 | 13 | 13 | 13 | 13 |
| Santa Mónica | 4 | 4 | 4 | 4 | 4 | 4 |
| Santa Teresita | 4 | 4 | 4 | 4 | 4 | 4 |
| Santander | 2 | 2 | 2 | 2 | 2 | 2 |
| Santo Domingo Savio No.1 | 5 | 5 | 5 | 5 | 5 | 5 |
| Sevilla | 25 | 25 | 25 | 25 | 25 | 25 |
| Simón Bolívar | 19 | 19 | 19 | 19 | 19 | 19 |
| Sucre | 9 | 9 | 9 | 9 | 9 | 9 |
| Suramericana | 21 | 21 | 21 | 21 | 21 | 21 |
| Tejelo | 3 | 3 | 3 | 3 | 3 | 3 |
| Tenche | 3 | 3 | 3 | 3 | 3 | 3 |
| Toscana | 5 | 5 | 5 | 5 | 5 | 5 |
| Trece de Noviembre | 3 | 3 | 3 | 3 | 3 | 3 |

| Neighborhood | Neighborhood Latitude | Neighborhood Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|
| Tricentenario | 5 | 5 | 5 | 5 | 5 | 5 |
| Trinidad | 4 | 4 | 4 | 4 | 4 | 4 |
| U.D. Atanasio Girardot | 25 | 25 | 25 | 25 | 25 | 25 |
| Universidad Nacional | 3 | 3 | 3 | 3 | 3 | 3 |
| Universidad de Antioquia | 17 | 17 | 17 | 17 | 17 | 17 |
| Veinte de Julio | 6 | 6 | 6 | 6 | 6 | 6 |
| Versalles No.1 | 42 | 42 | 42 | 42 | 42 | 42 |
| Versalles No.2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Villa Carlota | 20 | 20 | 20 | 20 | 20 | 20 |
| Villa Flora | 4 | 4 | 4 | 4 | 4 | 4 |
| Villa Guadalupe | 4 | 4 | 4 | 4 | 4 | 4 |
| Villa Hermosa | 3 | 3 | 3 | 3 | 3 | 3 |
| Villa Lilliam | 1 | 1 | 1 | 1 | 1 | 1 |
| Villa Niza | 5 | 5 | 5 | 5 | 5 | 5 |
| Villa Nueva | 20 | 20 | 20 | 20 | 20 | 20 |
| Villa Turbay | 2 | 2 | 2 | 2 | 2 | 2 |
| Villa del Socorro | 3 | 3 | 3 | 3 | 3 | 3 |
| Villatina | 5 | 5 | 5 | 5 | 5 | 5 |

## Encontremos cuantas categorías únicas se pueden conservar de todos los sitios regresados

```
In [18]:  print('Hay {} categorias unicas.'.format(len(Medellin_venues['Venue Category'].uniqu

          Hay 241 categorias unicas.
```

# Analicemos cada barrio

```
In [19]:  # codificación
          Medellin_onehot = pd.get_dummies(Medellin_venues[['Venue Category']], prefix="", pre

          # añadir la columna de barrio de regreso al dataframe
          Medellin_onehot['Neighbourhood'] = Medellin_venues['Neighborhood']

          # mover la columna de barrio a la primer columna
          fixed_columns = [Medellin_onehot.columns[-1]] + list(Medellin_onehot.columns[:-1])
          Medellin_onehot = Medellin_onehot[fixed_columns]

          Medellin_onehot.head()
```

Out[19]:

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquarium | |
|---|---|---|---|---|---|---|---|---|---|
| **0** | Tricentenario | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **1** | Tricentenario | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **2** | Tricentenario | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **3** | Tricentenario | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **4** | Tricentenario | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

Verifiquemos el nuevo tamaño del DataFrame

In [20]:
```
Medellin_onehot.shape
```

Out[20]: (2605, 242)

## Agrupemos las filas por barrios tomando la média de la frecuencia de la ocurrencia de cada categoría

In [21]:
```
Medellin_grouped = Medellin_onehot.groupby('Neighbourhood').mean().reset_index()
Medellin_grouped
```

Out[21]:

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| **0** | Aldea Pablo VI | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **1** | Alejandro Echavarría | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **2** | Alejandría | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **3** | Alfonso López | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **4** | Altamira | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **5** | Altos del Poblado | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **6** | Andalucía | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **7** | Antonio Nariño | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **8** | Aranjuez | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **9** | Asomadera No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **10** | Asomadera No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **11** | Asomadera No.3 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **12** | Astorga | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **13** | Aures No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **14** | B. Cerro El Volador | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **15** | Barrio Caicedo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| 16 | Barrio Colombia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 17 | Barrio Colón | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 18 | Barrio Cristóbal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 19 | Barrios de Jesús | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 20 | Batallón Cuarta Brigada | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 21 | Batallón Girardot | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 22 | Belalcázar | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 23 | Belencito | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 24 | Bello Horizonte | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 25 | Belén | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 26 | Berlín | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 27 | Bermejal-Los Álamos | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 28 | Betania | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 29 | Bolivariana | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 30 | Bomboná No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 31 | Bosques de San Pablo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 32 | Boston | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 33 | Boyacá | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 34 | Brasilia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 35 | Buenos Aires | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 36 | Calasanz | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 37 | Calasanz Parte Alta | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 38 | Calle Nueva | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 39 | Campo Alegre | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 40 | Campo Amor | 0.00 | 0.000000 | 0.076923 | 0.076923 | 0.000000 | 0.000000 | 0.00000 |
| 41 | Campo Valdés No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 42 | Campo Valdés No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 43 | Caribe | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 44 | Carlos E. Restrepo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 45 | Carpinelo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| 46 | Castilla | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 47 | Castropol | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 48 | Cataluña | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 49 | Cerro Nutibara | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.083333 | 0.00000 |
| 50 | Corazón de Jesús | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 51 | Cristo Rey | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 52 | Cuarta Brigada | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 53 | Cucaracho | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 54 | Córdoba | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 55 | Diego Echavarría | 0.00 | 0.040000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 56 | Doce de Octubre No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 57 | Doce de Octubre No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 58 | Ecoparque Cerro El Volador | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 59 | El Castillo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 60 | El Chagualo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 61 | El Corazón | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 62 | El Danubio | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 63 | El Diamante | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 64 | El Diamante No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 65 | El Pesebre | 0.25 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 66 | El Pinal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 67 | El Poblado | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 68 | El Pomar | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 69 | El Progreso | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 70 | El Raizal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 71 | El Rincón | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 72 | El Rodeo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 73 | El Salvador | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 74 | El Socorro | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 75 | El Tesoro | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 76 | El Triunfo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| 77 | El Velódromo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 78 | Enciso | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 79 | Estación Villa | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 80 | Estadio | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 81 | Ferrini | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 82 | Florencia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 83 | Florida Nueva | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 84 | Francisco Antonio Zea | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 85 | Fátima | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 86 | Gerona | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 87 | Girardot | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 88 | Granada | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 89 | Granizal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 90 | Guayabal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 91 | Guayaquil | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 92 | Héctor Abad Gómez | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 93 | Jardín Botánico | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.0555! |
| 94 | Jesús Nazareno | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 95 | Juan Pablo II | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 96 | Juan XXIII La Quiebra | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 97 | Kennedy | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 98 | La Aguacatala | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 99 | La Alpujarra | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 100 | La América | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 101 | La Avanzada | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 102 | La Candelaria | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 103 | La Castellana | 0.00 | 0.055556 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 104 | La Colina | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 105 | La Esperanza | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 106 | La Esperanza No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 107 | La Floresta | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 108 | La Florida | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| **109** | La Francia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **110** | La Gloria | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **111** | La Isla | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **112** | La Ladera | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **113** | La Libertad | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **114** | La Loma de Los Bernal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **115** | La Mansión | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **116** | La Milagrosa | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **117** | La Mota | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **118** | La Pilarica | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **119** | La Piñuela | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **120** | La Pradera | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **121** | La Rosa | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **122** | La Salle | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **123** | La Sierra | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **124** | Lalinde | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **125** | Las Brisas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **126** | Las Esmeraldas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **127** | Las Estancias | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **128** | Las Granjas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **129** | Las Independencias | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **130** | Las Lomas No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.023256 | 0.000000 | 0.00000 |
| **131** | Las Lomas No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.040000 | 0.000000 | 0.00000 |
| **132** | Las Mercedes | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **133** | Las Playas | 0.00 | 0.071429 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **134** | Las Violetas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **135** | Laureles | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **136** | Lorena | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **137** | Los Alcázares | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **138** | Los Alpes | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **139** | Los Balsos No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **140** | Los Balsos No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| 141 | Los Cerros El Vergel | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 142 | Los Colores | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 143 | Los Conquistadores | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 144 | Los Mangos | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 145 | Los Naranjos | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 146 | Los Pinos | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 147 | Los Ángeles | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 148 | López de Mesa | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 149 | Manila | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 150 | Manrique Central No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 151 | Manrique Central No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 152 | Manrique Oriental | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 153 | María Cano-Carambolas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 154 | Mirador del Doce | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 155 | Miraflores | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 156 | Miranda | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 157 | Miravalle | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 158 | Moravia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 159 | Moscú No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 160 | Moscú No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 161 | Nueva Villa de La Iguaná | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 162 | Nueva Villa del Aburrá | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 163 | Nuevos Conquistadores | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 164 | Ocho de Marzo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 165 | Olaya Herrera | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 166 | Oriente | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 167 | Pablo VI | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| 168 | Palenque | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| **169** | Palermo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **170** | Parque Juan Pablo II | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **171** | Parque Norte | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.07142 |
| **172** | Patio Bonito | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **173** | Pedregal | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **174** | Perpetuo Socorro | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **175** | Picachito | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **176** | Picacho | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **177** | Prado | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **178** | Progreso No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **179** | Robledo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **180** | Rosales | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **181** | San Antonio | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **182** | San Benito | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **183** | San Bernardo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **184** | San Diego | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **185** | San Germán | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **186** | San Javier No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **187** | San Javier No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **188** | San Joaquín | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **189** | San José La Cima No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **190** | San José La Cima No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **191** | San Lucas | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **192** | San Martín de Porres | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **193** | San Miguel | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **194** | San Pedro | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **195** | Santa Cruz | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **196** | Santa Fé | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **197** | Santa Inés | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **198** | Santa Lucía | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **199** | Santa Margarita | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

| | Neighbourhood | Advertising Agency | Airport | Airport Service | Airport Terminal | American Restaurant | Amphitheater | Aquariu |
|---|---|---|---|---|---|---|---|---|
| **200** | Santa María de Los Ángeles | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **201** | Santa Mónica | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **202** | Santa Teresita | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **203** | Santander | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **204** | Santo Domingo Savio No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **205** | Sevilla | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **206** | Simón Bolívar | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **207** | Sucre | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **208** | Suramericana | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **209** | Tejelo | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **210** | Tenche | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **211** | Toscana | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **212** | Trece de Noviembre | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **213** | Tricentenario | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **214** | Trinidad | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **215** | U.D. Atanasio Girardot | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **216** | Universidad Nacional | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **217** | Universidad de Antioquia | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **218** | Veinte de Julio | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **219** | Versalles No.1 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **220** | Versalles No.2 | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **221** | Villa Carlota | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **222** | Villa Flora | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **223** | Villa Guadalupe | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **224** | Villa Hermosa | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **225** | Villa Lilliam | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **226** | Villa Niza | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **227** | Villa Nueva | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **228** | Villa Turbay | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **229** | Villa del Socorro | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |
| **230** | Víllatina | 0.00 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.00000 |

Confirmemos el tamaño del DataFrame

In [22]:    `Medellin_grouped.shape`

Out[22]:    (231, 242)

## Imprimamos cada barrio junto con los 5 sitios mas comunes

In [23]:
```
num_top_venues = 5

for hood in Medellin_grouped['Neighbourhood']:
    print("----"+hood+"----")
    temp = Medellin_grouped[Medellin_grouped['Neighbourhood'] == hood].T.reset_index
    temp.columns = ['venue','freq']
    temp = temp.iloc[1:]
    temp['freq'] = temp['freq'].astype(float)
    temp = temp.round({'freq': 2})
    print(temp.sort_values('freq', ascending=False).reset_index(drop=True).head(num_
    print('\n')
```
```
----Aldea Pablo VI----
                        venue  freq
0  Construction & Landscaping   0.5
1                  Restaurant   0.5
2            Advertising Agency   0.0
3                  Pastry Shop   0.0
4                 Noodle House   0.0


----Alejandro Echavarría----
                   venue  freq
0       Ice Cream Shop    0.2
1            Multiplex    0.2
2        Shopping Mall    0.2
3     Athletics & Sports   0.2
4          Tram Station   0.2


----Alejandría----
                venue  freq
0              Hotel  0.19
1       Shopping Mall  0.12
2           BBQ Joint  0.06
3         Coffee Shop  0.06
4    Sushi Restaurant  0.06


----Alfonso López----
                  venue  freq
0       Electronics Store   1.0
1     Advertising Agency   0.0
2                  Park   0.0
3              Nightclub   0.0
4           Noodle House   0.0


----Altamira----
                        venue  freq
0  Construction & Landscaping  0.33
1              Breakfast Spot  0.33
2                     Bakery  0.33
3           Advertising Agency  0.00
4                 Pastry Shop  0.00
```

```
        ----Altos del Poblado----
                      venue  freq
0                     Hotel  0.25
1               Snack Place  0.25
2               Tennis Court  0.25
3                 BBQ Joint  0.25
4         Advertising Agency  0.00


        ----Andalucía----
                      venue  freq
0                 Cable Car   0.4
1        Real Estate Office   0.2
2     Furniture / Home Store   0.2
3             Metro Station   0.2
4         Advertising Agency   0.0


        ----Antonio Nariño----
                      venue  freq
0                 BBQ Joint  0.17
1          Business Service  0.17
2           Ice Cream Shop  0.17
3          Arepa Restaurant  0.17
4               Water Park  0.17


        ----Aranjuez----
                          venue  freq
0                    Art Museum  0.25
1      Construction & Landscaping  0.25
2           Gym / Fitness Center  0.25
3       Health & Beauty Service  0.25
4             Advertising Agency  0.00


        ----Asomadera No.1----
                      venue  freq
0                Restaurant  0.12
1              Cocktail Bar  0.12
2          Department Store  0.12
3                       Bar  0.12
4      Brazilian Restaurant  0.12


        ----Asomadera No.2----
                      venue  freq
0                 Nightclub  0.12
1                       Bar  0.06
2        Mexican Restaurant  0.06
3                Restaurant  0.06
4           History Museum  0.06


        ----Asomadera No.3----
                          venue  freq
0                         Hotel  0.29
1      South American Restaurant  0.14
2                     Nightclub  0.14
3                   Supermarket  0.14
4                 Scenic Lookout  0.14


        ----Astorga----
              venue  freq
0       Burger Joint  0.07
1               Café  0.07
2         Restaurant  0.05
3        Pizza Place  0.05
```

```
4          Hostel  0.03


----Aures No.2----
                    venue  freq
0                     Café  0.25
1    Furniture / Home Store  0.25
2         Other Repair Shop  0.25
3       Fast Food Restaurant  0.25
4         Advertising Agency  0.00


----B. Cerro El Volador----
                  venue  freq
0        Event Service  0.25
1             Mountain  0.25
2     Electronics Store  0.25
3        Scenic Lookout  0.25
4           Pastry Shop  0.00


----Barrio Caicedo----
                       venue  freq
0                       Park  0.2
1                     Museum  0.2
2    Comfort Food Restaurant  0.2
3                 Food Court  0.2
4                        Bar  0.2


----Barrio Colombia----
               venue  freq
0               Café  0.05
1     Sandwich Place  0.04
2     Clothing Store  0.04
3     Ice Cream Shop  0.04
4             Bakery  0.04


----Barrio Colón----
               venue  freq
0       Tram Station  0.11
1      Metro Station  0.11
2                Bar  0.11
3            Theater  0.05
4    Bed & Breakfast  0.05


----Barrio Cristóbal----
                    venue  freq
0              Pizza Place  0.17
1              Burger Joint  0.17
2         Convenience Store  0.17
3    Furniture / Home Store  0.17
4          Basketball Court  0.17


----Barrios de Jesús----
                  venue  freq
0           Shoe Store  1.0
1    Advertising Agency  0.0
2            Print Shop  0.0
3             Nightclub  0.0
4          Noodle House  0.0


----Batallón Cuarta Brigada----
                  venue  freq
0    Mexican Restaurant  0.13
```

| | venue | freq |
|---|---|---|
| 1 | Clothing Store | 0.13 |
| 2 | Shopping Mall | 0.13 |
| 3 | Steakhouse | 0.07 |
| 4 | Baseball Field | 0.07 |

----Batallón Girardot----

| | venue | freq |
|---|---|---|
| 0 | Scenic Lookout | 1.0 |
| 1 | Advertising Agency | 0.0 |
| 2 | Print Shop | 0.0 |
| 3 | Nightclub | 0.0 |
| 4 | Noodle House | 0.0 |

----Belalcázar----

| | venue | freq |
|---|---|---|
| 0 | Park | 0.33 |
| 1 | Farm | 0.33 |
| 2 | Grocery Store | 0.33 |
| 3 | Nature Preserve | 0.00 |
| 4 | Noodle House | 0.00 |

----Belencito----

| | venue | freq |
|---|---|---|
| 0 | Ice Cream Shop | 0.50 |
| 1 | Museum | 0.25 |
| 2 | Coffee Shop | 0.25 |
| 3 | Advertising Agency | 0.00 |
| 4 | Pastry Shop | 0.00 |

----Bello Horizonte----

| | venue | freq |
|---|---|---|
| 0 | Hotel | 1.0 |
| 1 | Advertising Agency | 0.0 |
| 2 | Park | 0.0 |
| 3 | Nightclub | 0.0 |
| 4 | Noodle House | 0.0 |

----Belén----

| | venue | freq |
|---|---|---|
| 0 | Pub | 1.0 |
| 1 | Indie Movie Theater | 0.0 |
| 2 | Nightclub | 0.0 |
| 3 | Noodle House | 0.0 |
| 4 | Notary | 0.0 |

----Berlín----

| | venue | freq |
|---|---|---|
| 0 | Fast Food Restaurant | 0.50 |
| 1 | Café | 0.25 |
| 2 | Plaza | 0.25 |
| 3 | Advertising Agency | 0.00 |
| 4 | Notary | 0.00 |

----Bermejal-Los Álamos----

| | venue | freq |
|---|---|---|
| 0 | Art Museum | 0.25 |
| 1 | Recreation Center | 0.25 |
| 2 | Plaza | 0.25 |
| 3 | Gym / Fitness Center | 0.25 |
| 4 | Advertising Agency | 0.00 |

```
----Betania----
                        venue  freq
0  Construction & Landscaping  0.33
1                     Museum   0.33
2                       Park   0.33
3          Advertising Agency  0.00
4                 Pastry Shop  0.00


----Bolivariana----
                   venue  freq
0                   Café  0.10
1      Italian Restaurant  0.10
2          Sandwich Place  0.07
3                     Bar  0.07
4                Pharmacy  0.03


----Bomboná No.1----
           venue  freq
0     Restaurant  0.12
1          Hotel  0.12
2           Park  0.06
3    Art Gallery  0.06
4        Theater  0.06


----Bosques de San Pablo----
               venue  freq
0               Park  0.33
1        Pizza Place  0.33
2             Bakery  0.33
3  Advertising Agency  0.00
4          Nightclub  0.00


----Boston----
            venue  freq
0     Pizza Place  0.16
1           Plaza  0.11
2         Theater  0.11
3   Indie Theater  0.05
4       BBQ Joint  0.05


----Boyacá----
                 venue  freq
0                 Park  0.25
1       Ice Cream Shop  0.25
2         Burger Joint  0.25
3                  Bar  0.25
4   Advertising Agency  0.00


----Brasilia----
                        venue  freq
0                  Restaurant  0.5
1   Latin American Restaurant  0.5
2          Advertising Agency  0.0
3                 Pastry Shop  0.0
4                Noodle House  0.0


----Buenos Aires----
             venue  freq
0     Cocktail Bar  0.4
1       Food Court  0.2
2     Burrito Place  0.2
3              Bar  0.2
```

```
4   Advertising Agency   0.0


----Calasanz----
                venue   freq
0       Grocery Store   0.18
1  Fast Food Restaurant  0.12
2      Ice Cream Shop   0.12
3                Café   0.12
4       Metro Station   0.06


----Calasanz Parte Alta----
                venue   freq
0                Café   1.0
1   Advertising Agency   0.0
2     Nature Preserve   0.0
3         Noodle House   0.0
4              Notary   0.0


----Calle Nueva----
             venue  freq
0       Restaurant  0.11
1   Clothing Store  0.11
2    Metro Station  0.11
3             Café  0.11
4        BBQ Joint  0.05


----Campo Alegre----
                        venue   freq
0                    Nightclub  0.25
1                    Street Art  0.25
2         General Entertainment  0.25
3                  Burger Joint  0.25
4   Paper / Office Supplies Store  0.00


----Campo Amor----
             venue   freq
0        BBQ Joint  0.08
1   Cosmetics Shop  0.08
2              Gym  0.08
3           Bakery  0.08
4    Auto Workshop  0.08


----Campo Valdés No.1----
                venue   freq
0       History Museum  0.25
1   Recreation Center  0.25
2          Restaurant  0.25
3       Grocery Store  0.25
4              Notary  0.00


----Campo Valdés No.2----
                venue   freq
0       History Museum  0.33
1   Recreation Center  0.33
2       Grocery Store  0.33
3              Notary  0.00
4        Noodle House  0.00


----Caribe----
                venue   freq
0   Italian Restaurant  0.07
```

```
1      Asian Restaurant   0.07
2            Multiplex   0.07
3          Supermarket   0.07
4        Shopping Mall   0.07
```

```
----Carlos E. Restrepo----
                venue  freq
0  Seafood Restaurant   0.09
1         Pizza Place   0.09
2              Bakery   0.09
3                 Bar   0.05
4          Restaurant   0.05
```

```
----Carpinelo----
                          venue  freq
0  Construction & Landscaping   0.5
1                  Restaurant   0.5
2          Advertising Agency   0.0
3                 Pastry Shop   0.0
4                Noodle House   0.0
```

```
----Castilla----
          venue  freq
0          Café  0.06
1           Bar  0.06
2   Cocktail Bar  0.06
3     Nightclub  0.04
4    Restaurant  0.04
```

```
----Castropol----
                venue  freq
0   Italian Restaurant  0.12
1        Shopping Mall  0.08
2   Seafood Restaurant  0.08
3          Supermarket  0.08
4                Hotel  0.08
```

```
----Cataluña----
                          venue  freq
0  Construction & Landscaping  0.25
1                 Pizza Place  0.25
2                 Burger Joint  0.25
3                   BBQ Joint  0.25
4          Advertising Agency  0.00
```

```
----Cerro Nutibara----
                          venue  freq
0                          Bar  0.17
1  Latin American Restaurant   0.08
2                         Park  0.08
3               Scenic Lookout  0.08
4                 Beer Garden  0.08
```

```
----Corazón de Jesús----
              venue  freq
0       Bus Station   0.2
1   Toy / Game Store   0.2
2       Concert Hall   0.2
3        Soccer Field   0.2
4      Clothing Store   0.2
```

```
        ----Cristo Rey----
                    venue  freq
0                     Gym   0.1
1             Supermarket   0.1
2     Fried Chicken Joint   0.1
3    Fast Food Restaurant   0.1
4          Clothing Store   0.1


        ----Cuarta Brigada----
                    venue  freq
0                     Gym  0.13
1                   Hotel  0.09
2           Shopping Mall  0.09
3       Italian Restaurant 0.09
4      Mexican Restaurant  0.04


        ----Cucaracho----
                    venue  freq
0             Music Store  0.33
1          Rental Service  0.33
2        Other Repair Shop 0.33
3                    Park  0.00
4               Nightclub  0.00


        ----Córdoba----
                       venue  freq
0    Construction & Landscaping 1.0
1           Advertising Agency  0.0
2                 Pastry Shop   0.0
3                Noodle House   0.0
4                      Notary  0.0


        ----Diego Echavarría----
                    venue  freq
0           Shopping Mall  0.20
1       Italian Restaurant 0.08
2          Sandwich Place  0.08
3        Athletics & Sports 0.04
4    Fast Food Restaurant  0.04


        ----Doce de Octubre No.1----
                    venue  freq
0              Food Truck  0.25
1            Soccer Field  0.25
2                Mountain  0.25
3          Scenic Lookout  0.25
4       Paella Restaurant  0.00


        ----Doce de Octubre No.2----
                    venue  freq
0          Scenic Lookout  0.25
1        Recreation Center 0.25
2              Playground  0.25
3           Moving Target  0.25
4       Advertising Agency 0.00


        ----Ecoparque Cerro El Volador----
                  venue  freq
0         Event Service  0.33
1              Mountain  0.33
2        Scenic Lookout  0.33
3                  Park  0.00
```

| | venue | freq |
|---|---|---|
| 4 | Noodle House | 0.00 |

----El Castillo----

| | venue | freq |
|---|---|---|
| 0 | BBQ Joint | 0.1 |
| 1 | Gym / Fitness Center | 0.1 |
| 2 | Garden | 0.1 |
| 3 | Museum | 0.1 |
| 4 | Supermarket | 0.1 |

----El Chagualo----

| | venue | freq |
|---|---|---|
| 0 | Soccer Field | 0.2 |
| 1 | Supermarket | 0.2 |
| 2 | Shopping Mall | 0.2 |
| 3 | Bar | 0.2 |
| 4 | Café | 0.2 |

----El Corazón----

| | venue | freq |
|---|---|---|
| 0 | Brewery | 0.5 |
| 1 | Bar | 0.5 |
| 2 | Advertising Agency | 0.0 |
| 3 | Park | 0.0 |
| 4 | Noodle House | 0.0 |

----El Danubio----

| | venue | freq |
|---|---|---|
| 0 | Convenience Store | 0.25 |
| 1 | Furniture / Home Store | 0.25 |
| 2 | Mobile Phone Shop | 0.25 |
| 3 | Gym | 0.25 |
| 4 | Park | 0.00 |

----El Diamante----

| | venue | freq |
|---|---|---|
| 0 | Music Store | 0.25 |
| 1 | Furniture / Home Store | 0.25 |
| 2 | Luggage Store | 0.25 |
| 3 | Business Service | 0.25 |
| 4 | Advertising Agency | 0.00 |

----El Diamante No.2----

| | venue | freq |
|---|---|---|
| 0 | Supermarket | 0.13 |
| 1 | Creperie | 0.07 |
| 2 | Peruvian Restaurant | 0.07 |
| 3 | French Restaurant | 0.07 |
| 4 | Shopping Mall | 0.07 |

----El Pesebre----

| | venue | freq |
|---|---|---|
| 0 | Advertising Agency | 0.25 |
| 1 | Park | 0.25 |
| 2 | Mountain | 0.25 |
| 3 | Gym / Fitness Center | 0.25 |
| 4 | Nightclub | 0.00 |

----El Pinal----

| | venue | freq |
|---|---|---|
| 0 | Nursery School | 0.5 |

```
1       Tram Station   0.5
2   Advertising Agency   0.0
3                 Park   0.0
4            Nightclub   0.0
```

----El Poblado----

| | venue | freq |
|---|---|---|
| 0 | Café | 0.13 |
| 1 | Cocktail Bar | 0.06 |
| 2 | Restaurant | 0.06 |
| 3 | Argentinian Restaurant | 0.06 |
| 4 | Bistro | 0.04 |

----El Pomar----

| | venue | freq |
|---|---|---|
| 0 | Bakery | 0.1 |
| 1 | Department Store | 0.1 |
| 2 | Pedestrian Plaza | 0.1 |
| 3 | Ice Cream Shop | 0.1 |
| 4 | Recreation Center | 0.1 |

----El Progreso----

| | venue | freq |
|---|---|---|
| 0 | BBQ Joint | 0.08 |
| 1 | Multiplex | 0.08 |
| 2 | Fast Food Restaurant | 0.08 |
| 3 | Mobile Phone Shop | 0.08 |
| 4 | Shopping Mall | 0.08 |

----El Raizal----

| | venue | freq |
|---|---|---|
| 0 | Pedestrian Plaza | 0.33 |
| 1 | Dance Studio | 0.33 |
| 2 | Clothing Store | 0.33 |
| 3 | Advertising Agency | 0.00 |
| 4 | Notary | 0.00 |

----El Rincón----

| | venue | freq |
|---|---|---|
| 0 | Pub | 1.0 |
| 1 | Indie Movie Theater | 0.0 |
| 2 | Nightclub | 0.0 |
| 3 | Noodle House | 0.0 |
| 4 | Notary | 0.0 |

----El Rodeo----

| | venue | freq |
|---|---|---|
| 0 | Market | 0.33 |
| 1 | Sandwich Place | 0.33 |
| 2 | Plaza | 0.33 |
| 3 | Noodle House | 0.00 |
| 4 | Notary | 0.00 |

----El Salvador----

| | venue | freq |
|---|---|---|
| 0 | Park | 0.50 |
| 1 | Nature Preserve | 0.25 |
| 2 | Department Store | 0.25 |
| 3 | Nightclub | 0.00 |
| 4 | Noodle House | 0.00 |

```
           ----El Socorro----
                        venue  freq
0               BBQ Joint  0.25
1               Nightclub  0.12
2          Ice Cream Shop  0.12
3     Fast Food Restaurant  0.12
4         Arepa Restaurant  0.12


           ----El Tesoro----
                        venue  freq
0           Shopping Mall  0.11
1                Wine Bar  0.11
2     Gym / Fitness Center  0.11
3         Sushi Restaurant  0.11
4               Restaurant  0.11


           ----El Triunfo----
                        venue  freq
0                Mountain   0.5
1            Soccer Field   0.5
2       Advertising Agency   0.0
3          Nature Preserve   0.0
4             Noodle House   0.0


           ----El Velódromo----
                      venue  freq
0      Sandwich Place  0.15
1      Breakfast Spot  0.08
2       Shopping Mall  0.08
3                 Gym  0.08
4       Track Stadium  0.08


           ----Enciso----
                            venue  freq
0                             Café  0.25
1    Construction & Landscaping  0.25
2                 Nursery School  0.25
3        Comfort Food Restaurant  0.25
4             Advertising Agency  0.00


           ----Estación Villa----
                      venue  freq
0         Art Museum  0.22
1      Farmers Market  0.11
2       Historic Site  0.11
3                Café  0.11
4               Plaza  0.11


           ----Estadio----
                        venue  freq
0          Ice Cream Shop  0.17
1           Grocery Store  0.11
2                    Café  0.11
3     Fast Food Restaurant  0.11
4                Juice Bar  0.06


           ----Ferrini----
                      venue  freq
0        Grocery Store   0.2
1        Shopping Mall   0.2
2     Convenience Store   0.2
3        Ice Cream Shop   0.2
```

```
4          Juice Bar    0.2


    ----Florencia----
                    venue   freq
0          Food Truck    0.25
1               Park    0.25
2   Mexican Restaurant    0.25
3           BBQ Joint    0.25
4         Noodle House    0.00


    ----Florida Nueva----
                    venue   freq
0                 Bar    0.06
1    Italian Restaurant    0.06
2          Pizza Place    0.06
3           Restaurant    0.06
4        Sandwich Place    0.06


    ----Francisco Antonio Zea----
                    venue   freq
0   Fast Food Restaurant    0.29
1            Rest Area    0.14
2            Public Art    0.14
3       Electronics Store    0.14
4                 Lake    0.14


    ----Fátima----
                    venue   freq
0      Athletics & Sports    0.15
1           Supermarket    0.15
2    Fast Food Restaurant    0.08
3                  Bar    0.08
4         Bowling Alley    0.08


    ----Gerona----
                    venue   freq
0                 Park    0.4
1                Plaza    0.2
2     Department Store    0.2
3          Supermarket    0.2
4         Noodle House    0.0


    ----Girardot----
                    venue   freq
0                 Park    0.25
1                 Farm    0.25
2         Tennis Court    0.25
3                  Gym    0.25
4   Advertising Agency    0.00


    ----Granada----
                    venue   freq
0   Fried Chicken Joint    0.17
1                  Gym    0.17
2               Bakery    0.17
3      Department Store    0.17
4           Supermarket    0.17


    ----Granizal----
                    venue   freq
0                  Bar    0.50
```

```
1   South American Restaurant  0.25
2                   Cable Car  0.25
3           Advertising Agency  0.00
4                        Park  0.00
```

----Guayabal----

| | venue | freq |
|---|---|---|
| 0 | Clothing Store | 0.08 |
| 1 | Shopping Mall | 0.08 |
| 2 | Bakery | 0.08 |
| 3 | Sandwich Place | 0.08 |
| 4 | Café | 0.08 |

----Guayaquil----

| | venue | freq |
|---|---|---|
| 0 | Shopping Mall | 0.12 |
| 1 | Clothing Store | 0.12 |
| 2 | Café | 0.08 |
| 3 | Plaza | 0.04 |
| 4 | Historic Site | 0.04 |

----Héctor Abad Gómez----

| | venue | freq |
|---|---|---|
| 0 | Clothing Store | 0.5 |
| 1 | Metro Station | 0.5 |
| 2 | Advertising Agency | 0.0 |
| 3 | Pastry Shop | 0.0 |
| 4 | Noodle House | 0.0 |

----Jardín Botánico----

| | venue | freq |
|---|---|---|
| 0 | Theme Park | 0.11 |
| 1 | Café | 0.11 |
| 2 | BBQ Joint | 0.06 |
| 3 | Planetarium | 0.06 |
| 4 | Metro Station | 0.06 |

----Jesús Nazareno----

| | venue | freq |
|---|---|---|
| 0 | Hotel | 0.25 |
| 1 | Bus Station | 0.25 |
| 2 | Theme Park | 0.12 |
| 3 | Soccer Field | 0.12 |
| 4 | Food Court | 0.12 |

----Juan Pablo II----

| | venue | freq |
|---|---|---|
| 0 | Grocery Store | 0.5 |
| 1 | BBQ Joint | 0.5 |
| 2 | Advertising Agency | 0.0 |
| 3 | Noodle House | 0.0 |
| 4 | Notary | 0.0 |

----Juan XXIII La Quiebra----

| | venue | freq |
|---|---|---|
| 0 | Cable Car | 1.0 |
| 1 | Advertising Agency | 0.0 |
| 2 | Nature Preserve | 0.0 |
| 3 | Noodle House | 0.0 |
| 4 | Notary | 0.0 |

```
        ----Kennedy----
                       venue  freq
0  Furniture / Home Store   1.0
1       Advertising Agency   0.0
2             Music Venue    0.0
3               Nightclub    0.0
4            Noodle House    0.0


        ----La Aguacatala----
                       venue  freq
0                   Café     0.08
1                   Hotel    0.08
2       Italian Restaurant   0.06
3          Ice Cream Shop    0.05
4           Burger Joint     0.04


        ----La Alpujarra----
                       venue  freq
0               Restaurant    0.17
1            Metro Station    0.11
2             Pastry Shop    0.06
3          Bed & Breakfast   0.06
4    Fast Food Restaurant    0.06


        ----La América----
                       venue  freq
0           Supermarket      0.12
1       Basketball Court     0.12
2      Fried Chicken Joint   0.12
3                    Gym     0.12
4    Gym / Fitness Center    0.12


        ----La Avanzada----
                       venue  freq
0             Print Shop      0.2
1                  Plaza      0.2
2              Cable Car      0.2
3           Liquor Store     0.2
4     Caribbean Restaurant    0.2


        ----La Candelaria----
                     venue  freq
0       Sandwich Place     0.11
1                Plaza     0.07
2     Department Store     0.05
3            Gastropub     0.05
4           Art Museum     0.05


        ----La Castellana----
                   venue  freq
0        Restaurant     0.11
1               Bar     0.11
2            Theater     0.06
3      Burger Joint     0.06
4        Food Truck     0.06


        ----La Colina----
                     venue  freq
0                  Pub     0.25
1           Restaurant    0.25
2                  Gym    0.25
3    Chinese Restaurant   0.25
```

```
4                    Park   0.00
```

```
----La Esperanza----
                           venue   freq
0                   Soccer Field   0.33
1              Fish & Chips Shop   0.33
2                            Bar   0.33
3             Advertising Agency   0.00
4  Paper / Office Supplies Store   0.00
```

```
----La Esperanza No.2----
                           venue   freq
0  Construction & Landscaping   0.25
1                       Plaza   0.25
2    South American Restaurant   0.25
3                   Cable Car   0.25
4          Advertising Agency   0.00
```

```
----La Floresta----
            venue   freq
0   Metro Station   0.25
1     Supermarket   0.12
2           Hotel   0.12
3      Restaurant   0.12
4    Burger Joint   0.12
```

```
----La Florida----
                 venue   freq
0                 Café   0.06
1  Peruvian Restaurant   0.06
2          Pizza Place   0.04
3            Gastropub   0.04
4         Cocktail Bar   0.04
```

```
----La Francia----
                    venue   freq
0           Metro Station    0.2
1          Clothing Store    0.2
2      Real Estate Office    0.2
3               Cable Car    0.2
4  Furniture / Home Store    0.2
```

```
----La Gloria----
                  venue   freq
0          Burger Joint   0.67
1   Gym / Fitness Center   0.33
2    Advertising Agency   0.00
3           Pastry Shop   0.00
4          Noodle House   0.00
```

```
----La Isla----
                          venue   freq
0             Real Estate Office   0.33
1                   Soccer Field   0.33
2      Financial or Legal Service   0.33
3             Advertising Agency   0.00
4  Paper / Office Supplies Store   0.00
```

```
----La Ladera----
                     venue   freq
0  Comfort Food Restaurant    1.0
```

```
1       Advertising Agency   0.0
2              Pastry Shop   0.0
3             Noodle House   0.0
4                   Notary   0.0
```

----La Libertad----
```
               venue  freq
0  Fried Chicken Joint   0.5
1                Park   0.5
2          Poke Place   0.0
3               Plaza   0.0
4       Nature Preserve   0.0
```

----La Loma de Los Bernal----
```
            venue  freq
0          Market   0.2
1   Ice Cream Shop   0.2
2        Pet Store   0.2
3   Discount Store   0.2
4    Shopping Mall   0.2
```

----La Mansión----
```
               venue  freq
0                Park   1.0
1   Advertising Agency   0.0
2  Indie Movie Theater   0.0
3            Nightclub   0.0
4         Noodle House   0.0
```

----La Milagrosa----
```
               venue  freq
0        Burger Joint  0.25
1               Plaza  0.25
2    Department Store  0.25
3     Arepa Restaurant  0.25
4  Advertising Agency  0.00
```

----La Mota----
```
            venue  freq
0   Shopping Mall  0.15
1             Gym  0.10
2   Sandwich Place  0.10
3    Hot Dog Joint  0.05
4    Movie Theater  0.05
```

----La Pilarica----
```
                       venue  freq
0                       Park  0.25
1                       Food  0.25
2                  BBQ Joint  0.25
3              Grocery Store  0.25
4  Paper / Office Supplies Store  0.00
```

----La Piñuela----
```
               venue  freq
0                Café  0.25
1               Plaza  0.25
2        Cocktail Bar  0.25
3  Fast Food Restaurant  0.25
4    Advertising Agency  0.00
```

----La Pradera----

|   | venue | freq |
|---|---|---|
| 0 | Soccer Field | 0.33 |
| 1 | Home Service | 0.33 |
| 2 | Cable Car | 0.33 |
| 3 | Advertising Agency | 0.00 |
| 4 | Park | 0.00 |

----La Rosa----

|   | venue | freq |
|---|---|---|
| 0 | Indie Theater | 0.5 |
| 1 | Fast Food Restaurant | 0.5 |
| 2 | Print Shop | 0.0 |
| 3 | Nightclub | 0.0 |
| 4 | Noodle House | 0.0 |

----La Salle----

|   | venue | freq |
|---|---|---|
| 0 | Construction & Landscaping | 0.25 |
| 1 | Betting Shop | 0.25 |
| 2 | Bus Station | 0.25 |
| 3 | Park | 0.25 |
| 4 | Advertising Agency | 0.00 |

----La Sierra----

|   | venue | freq |
|---|---|---|
| 0 | Cable Car | 1.0 |
| 1 | Advertising Agency | 0.0 |
| 2 | Nature Preserve | 0.0 |
| 3 | Noodle House | 0.0 |
| 4 | Notary | 0.0 |

----Lalinde----

|   | venue | freq |
|---|---|---|
| 0 | Restaurant | 0.12 |
| 1 | Latin American Restaurant | 0.12 |
| 2 | BBQ Joint | 0.12 |
| 3 | Italian Restaurant | 0.12 |
| 4 | Bed & Breakfast | 0.06 |

----Las Brisas----

|   | venue | freq |
|---|---|---|
| 0 | Food Truck | 0.25 |
| 1 | Gym | 0.25 |
| 2 | Ice Cream Shop | 0.25 |
| 3 | Mexican Restaurant | 0.25 |
| 4 | Other Nightlife | 0.00 |

----Las Esmeraldas----

|   | venue | freq |
|---|---|---|
| 0 | Soccer Field | 0.17 |
| 1 | Construction & Landscaping | 0.17 |
| 2 | Bar | 0.17 |
| 3 | Bus Station | 0.17 |
| 4 | BBQ Joint | 0.17 |

----Las Estancias----

|   | venue | freq |
|---|---|---|
| 0 | Shoe Store | 1.0 |
| 1 | Advertising Agency | 0.0 |
| 2 | Print Shop | 0.0 |
| 3 | Nightclub | 0.0 |

```
4        Noodle House   0.0


----Las Granjas----
                venue  freq
0        Soccer Field  0.33
1         Bus Station  0.33
2                 Bar  0.33
3  Advertising Agency  0.00
4                Park  0.00


----Las Independencias----
              venue  freq
0  Ice Cream Shop   0.33
1  Scenic Lookout   0.17
2     Art Gallery   0.17
3            Café   0.17
4     Coffee Shop   0.17


----Las Lomas No.1----
                  venue  freq
0                 Hotel  0.09
1    Peruvian Restaurant  0.07
2   Gym / Fitness Center  0.07
3             Restaurant  0.07
4              BBQ Joint  0.05


----Las Lomas No.2----
                  venue  freq
0                 Hotel  0.16
1         Shopping Mall  0.08
2          Burger Joint  0.08
3  Gym / Fitness Center  0.08
4     Italian Restaurant  0.04


----Las Mercedes----
                 venue  freq
0          Pizza Place  0.29
1        Sandwich Place  0.14
2     Food & Drink Shop  0.14
3  Fast Food Restaurant  0.14
4              Theater  0.14


----Las Playas----
                venue  freq
0        Shopping Mall  0.14
1   Italian Restaurant  0.07
2             Airport  0.07
3            BBQ Joint  0.07
4  Seafood Restaurant  0.07


----Las Violetas----
                 venue  freq
0        Sandwich Place  0.25
1  Fast Food Restaurant  0.25
2              Theater  0.25
3                 Café  0.25
4    Advertising Agency  0.00


----Laureles----
                venue  freq
0                 Bar  0.07
```

```
1        Burger Joint  0.05
2   Peruvian Restaurant  0.05
3         Pizza Place  0.05
4    Italian Restaurant  0.05
```

----Lorena----
```
            venue  freq
0           Café  0.06
1     Supermarket  0.06
2    Burger Joint  0.06
3  Mexican Restaurant  0.06
4   Sushi Restaurant  0.04
```

----Los Alcázares----
```
                venue  freq
0  Argentinian Restaurant  0.25
1             Dog Run  0.25
2        Metro Station  0.25
3                Park  0.25
4     Advertising Agency  0.00
```

----Los Alpes----
```
                venue  freq
0  Fast Food Restaurant  0.10
1    Italian Restaurant  0.06
2  Fried Chicken Joint  0.06
3                Café  0.06
4       Sandwich Place  0.06
```

----Los Balsos No.1----
```
                  venue  freq
0                Bakery  0.38
1          Intersection  0.12
2  Middle Eastern Restaurant  0.12
3         Shopping Mall  0.12
4   Argentinian Restaurant  0.12
```

----Los Balsos No.2----
```
            venue  freq
0  Italian Restaurant  0.07
1       Coffee Shop  0.05
2             Café  0.05
3          BBQ Joint  0.05
4     Ice Cream Shop  0.05
```

----Los Cerros El Vergel----
```
            venue  freq
0    Ice Cream Shop  0.25
1        Pizza Place  0.25
2       Soccer Field  0.25
3       Tram Station  0.25
4  Advertising Agency  0.00
```

----Los Colores----
```
           venue  freq
0  Ice Cream Shop   0.2
1       Juice Bar   0.2
2   Shopping Mall   0.1
3    Grocery Store   0.1
4           Hotel   0.1
```

----Los Conquistadores----
```
                   venue  freq
0                    Bar  0.15
1                  Hotel  0.15
2          Indie Theater  0.08
3                Theater  0.08
4     Seafood Restaurant  0.08
```

----Los Mangos----
```
                   venue  freq
0            Optical Shop   0.5
1            Home Service   0.5
2      Advertising Agency   0.0
3                    Park   0.0
4               Nightclub   0.0
```

----Los Naranjos----
```
                   venue  freq
0          Clothing Store  0.08
1            Burger Joint  0.07
2       Italian Restaurant  0.05
3           Shopping Mall  0.04
4              Pizza Place  0.04
```

----Los Pinos----
```
                 venue  freq
0          Supermarket  0.20
1                  Gym  0.07
2           Restaurant  0.07
3        Breakfast Spot  0.07
4          Burger Joint  0.07
```

----Los Ángeles----
```
                       venue  freq
0   Latin American Restaurant  0.14
1                 Pizza Place  0.14
2                   BBQ Joint  0.14
3                   Speakeasy  0.14
4                     Theater  0.14
```

----López de  Mesa----
```
                   venue  freq
0            Burger Joint   1.0
1      Advertising Agency   0.0
2          Nature Preserve   0.0
3            Noodle House   0.0
4                  Notary   0.0
```

----Manila----
```
                 venue  freq
0                 Café  0.10
1           Restaurant  0.08
2         Burger Joint  0.05
3            Pet Store  0.05
4       Sandwich Place  0.05
```

----Manrique Central No.1----
```
                 venue  freq
0               Bakery   0.2
1             Cemetery   0.2
2     Department Store   0.2
3        Shopping Mall   0.2
```

```
4        Bus Station   0.2
```

----Manrique Central No.2----
```
                venue   freq
0    Department Store   0.33
1        Bus Station   0.33
2       Shopping Mall   0.33
3   Advertising Agency   0.00
4                Park   0.00
```

----Manrique Oriental----
```
                venue   freq
0                Park   0.67
1         Pizza Place   0.33
2   Advertising Agency   0.00
3           Nightclub   0.00
4        Noodle House   0.00
```

----María Cano-Carambolas----
```
           venue   freq
0           Park   0.5
1   Grocery Store   0.5
2     Music Venue   0.0
3       Nightclub   0.0
4    Noodle House   0.0
```

----Mirador del Doce----
```
                         venue   freq
0                    Food Truck   0.33
1                    Playground   0.33
2                Scenic Lookout   0.33
3   Paper / Office Supplies Store   0.00
4                     Nightclub   0.00
```

----Miraflores----
```
              venue   freq
0    Ice Cream Shop   0.2
1               Bar   0.2
2     Shopping Mall   0.2
3       Pizza Place   0.2
4      Burger Joint   0.2
```

----Miranda----
```
                        venue   freq
0                         Lake   0.2
1             Storage Facility   0.2
2          Outdoor Event Space   0.2
3    Latin American Restaurant   0.2
4                  Art Museum   0.2
```

----Miravalle----
```
                         venue   freq
0                          Bar   0.19
1                 Burger Joint   0.11
2                  Pizza Place   0.11
3                         Café   0.07
4   Vegetarian / Vegan Restaurant   0.07
```

----Moravia----
```
              venue   freq
0       Bus Station   0.33
```

```
1    Sandwich Place   0.17
2     Shopping Mall   0.17
3        Donut Shop   0.17
4     Metro Station   0.17
```

----Moscú No.1----

```
                venue  freq
0  Fast Food Restaurant   1.0
1    Advertising Agency   0.0
2            Print Shop   0.0
3             Nightclub   0.0
4          Noodle House   0.0
```

----Moscú No.2----

```
                       venue  freq
0                       Park  0.25
1  Construction & Landscaping  0.25
2                        Gym  0.25
3             Rental Service  0.25
4           Other Repair Shop  0.00
```

----Nueva Villa de La Iguaná----

```
                venue  freq
0    Seafood Restaurant  0.18
1         Shopping Mall  0.09
2        Soccer Stadium  0.09
3             BBQ Joint  0.09
4  Housing Development  0.09
```

----Nueva Villa del Aburrá----

```
            venue  freq
0     Pizza Place  0.11
1    Burger Joint  0.08
2  Sandwich Place  0.06
3            Café  0.06
4             Bar  0.06
```

----Nuevos Conquistadores----

```
              venue  freq
0           Mountain   0.5
1               Pier   0.5
2  Advertising Agency   0.0
3               Park   0.0
4        Noodle House   0.0
```

----Ocho de Marzo----

```
              venue  freq
0       Grocery Store   0.5
1           BBQ Joint   0.5
2  Advertising Agency   0.0
3        Noodle House   0.0
4             Notary   0.0
```

----Olaya Herrera----

```
              venue  freq
0           Cable Car   1.0
1  Advertising Agency   0.0
2     Nature Preserve   0.0
3        Noodle House   0.0
4             Notary   0.0
```

```
        ----Oriente----
                          venue  freq
0  Construction & Landscaping   0.5
1           French Restaurant   0.5
2           Advertising Agency   0.0
3                 Pastry Shop   0.0
4                 Noodle House   0.0


        ----Pablo VI----
                          venue  freq
0  Financial or Legal Service   1.0
1           Advertising Agency   0.0
2                   Print Shop   0.0
3                    Nightclub   0.0
4                 Noodle House   0.0


        ----Palenque----
              venue  freq
0              Park   0.2
1        Music Store   0.2
2              Hotel   0.2
3        Coffee Shop   0.2
4     Motorcycle Shop   0.2


        ----Palermo----
                          venue  freq
0  Construction & Landscaping  0.25
1               Soccer Field  0.25
2         Gym / Fitness Center  0.25
3               Metro Station  0.25
4           Advertising Agency  0.00


        ----Parque Juan Pablo II----
                venue  freq
0                Park  0.17
1          Steakhouse  0.17
2                Food  0.17
3          Restaurant  0.17
4  Fast Food Restaurant  0.17


        ----Parque Norte----
                          venue  freq
0                 Theme Park  0.14
1                       Café  0.14
2           Botanical Garden  0.07
3  Latin American Restaurant  0.07
4           Pedestrian Plaza  0.07


        ----Patio Bonito----
              venue  freq
0              Hotel  0.11
1               Café  0.09
2    Italian Restaurant  0.07
3        Burger Joint  0.06
4          Restaurant  0.05


        ----Pedregal----
              venue  freq
0  Convenience Store  0.25
1  Recreation Center  0.25
2                Gym  0.25
3              Theater  0.25
```

```
4                   Park   0.00



    ----Perpetuo Socorro----
                         venue  freq
0  Latin American Restaurant   0.06
1          Department Store    0.06
2            Sandwich Place    0.06
3                     Café    0.06
4             Shopping Mall    0.06



    ----Picachito----
                 venue  freq
0      Scenic Lookout   0.5
1          Playground   0.5
2  Advertising Agency   0.0
3           Nightclub   0.0
4         Noodle House   0.0



    ----Picacho----
                 venue  freq
0  Colombian Restaurant   1.0
1    Advertising Agency   0.0
2           Pastry Shop   0.0
3          Noodle House   0.0
4                Notary   0.0



    ----Prado----
                           venue  freq
0                          Hotel   0.4
1                     Theme Park   0.2
2                    Art Gallery   0.2
3                 Sandwich Place   0.2
4  Paper / Office Supplies Store   0.0



    ----Progreso No.2----
                 venue  freq
0         Food Truck   0.5
1           Mountain   0.5
2    Nature Preserve   0.0
3          Nightclub   0.0
4        Noodle House   0.0



    ----Robledo----
                   venue  freq
0                   Park  0.33
1        Motorcycle Shop  0.33
2  Gym / Fitness Center  0.33
3     Advertising Agency  0.00
4              Nightclub  0.00



    ----Rosales----
                   venue  freq
0  Fast Food Restaurant  0.18
1         Bowling Alley  0.06
2            Restaurant  0.06
3                   Bar  0.06
4                   Gym  0.06



    ----San Antonio----
                  venue  freq
0  Fried Chicken Joint  0.25
```

```
1              Park  0.25
2          Mountain  0.25
3        Campground  0.25
4             Plaza  0.00


    ----San Benito----
                    venue  freq
0          Farmers Market  0.14
1            Intersection  0.14
2            Soccer Field  0.14
3             Bus Station  0.14
4     Colombian Restaurant  0.14


    ----San Bernardo----
              venue  freq
0       Coffee Shop   0.2
1       Supermarket   0.2
2           Theater   0.2
3     Grocery Store   0.2
4         BBQ Joint   0.2


    ----San Diego----
                   venue  freq
0          Sandwich Place  0.11
1        Department Store  0.11
2           Shopping Mall  0.11
3       Italian Restaurant  0.06
4          Clothing Store  0.06


    ----San Germán----
              venue  freq
0        Print Shop  0.25
1     Grocery Store  0.25
2             Hotel  0.25
3              Park  0.25
4          Nightclub  0.00


    ----San Javier No.1----
                      venue  freq
0                 Nightclub  0.25
1                 Street Art  0.25
2     General Entertainment  0.25
3                     Track  0.25
4         Advertising Agency  0.00


    ----San Javier No.2----
                      venue  freq
0               Soccer Field  0.25
1                 Street Art  0.25
2     General Entertainment  0.25
3                     Track  0.25
4         Advertising Agency  0.00


    ----San Joaquín----
                      venue  freq
0                       Bar  0.11
1                     Hotel  0.07
2       Fried Chicken Joint  0.04
3                      Café  0.04
4                 Nightclub  0.04
```

```
        ----San José La Cima No.1----
                       venue   freq
0                       Park    1.0
1        Advertising Agency     0.0
2        Indie Movie Theater    0.0
3                  Nightclub    0.0
4                Noodle House   0.0


        ----San José La Cima No.2----
                           venue   freq
0                           Park    0.2
1               French Restaurant   0.2
2      Construction & Landscaping   0.2
3                   Soccer Field    0.2
4                   Grocery Store   0.2


        ----San Lucas----
                       venue   freq
0       Fried Chicken Joint    0.25
1         Italian Restaurant   0.25
2                 Steakhouse   0.25
3               Deli / Bodega   0.25
4       Other Great Outdoors   0.00


        ----San Martín de Porres----
                     venue    freq
0            Soccer Field    1.0
1        Advertising Agency   0.0
2               Print Shop   0.0
3                Nightclub   0.0
4              Noodle House   0.0


        ----San Miguel----
                     venue   freq
0                   Plaza   1.0
1        Advertising Agency  0.0
2                    Park   0.0
3                Nightclub   0.0
4              Noodle House  0.0


        ----San Pedro----
                       venue   freq
0                       Café   0.25
1            Ice Cream Shop    0.25
2                  Cemetery   0.25
3                 Gift Shop   0.25
4        Outdoor Event Space  0.00


        ----Santa Cruz----
                       venue   freq
0            Indie Theater     0.5
1       Fast Food Restaurant   0.5
2                 Print Shop   0.0
3                 Nightclub   0.0
4               Noodle House  0.0


        ----Santa Fé----
                   venue   freq
0          BBQ Joint   0.17
1               Zoo   0.08
2       Lingerie Store   0.08
3               Park   0.08
```

```
4       Pet Service  0.08


----Santa Inés----
                 venue  freq
0         Soccer Field   1.0
1   Advertising Agency   0.0
2           Print Shop   0.0
3            Nightclub   0.0
4         Noodle House   0.0


----Santa Lucía----
                 venue  freq
0         Soccer Field   0.2
1          Supermarket   0.2
2     Business Service   0.2
3    Athletics & Sports  0.2
4        Metro Station   0.2


----Santa Margarita----
                 venue  freq
0         Home Service   0.5
1            Cable Car   0.5
2   Advertising Agency   0.0
3          Pastry Shop   0.0
4         Noodle House   0.0


----Santa María de Los Ángeles----
                 venue  freq
0               Bakery  0.15
1     Department Store  0.08
2          Coffee Shop  0.08
3        Shopping Mall  0.08
4                 Café  0.08


----Santa Mónica----
                   venue  freq
0                   Park  0.25
1           Burger Joint  0.25
2    Fast Food Restaurant  0.25
3              BBQ Joint  0.25
4     Advertising Agency  0.00


----Santa Teresita----
                   venue  freq
0                   Park  0.25
1            Pizza Place  0.25
2    Fast Food Restaurant  0.25
3              BBQ Joint  0.25
4     Advertising Agency  0.00


----Santander----
                 venue  freq
0         Soccer Field   0.5
1         Burger Joint   0.5
2   Advertising Agency   0.0
3       Nature Preserve   0.0
4         Noodle House   0.0


----Santo Domingo Savio No.1----
                   venue  freq
0                    Bar   0.4
```

```
1        Caribbean Restaurant   0.2
2  South American Restaurant   0.2
3                 Cable Car   0.2
4                 Nightclub   0.0
```

```
----Sevilla----
                 venue  freq
0                 Café  0.16
1      Botanical Garden  0.04
2          Concert Hall  0.04
3           Supermarket  0.04
4                  Park  0.04
```

```
----Simón Bolívar----
                    venue  freq
0                    Café  0.11
1                  Bakery  0.11
2      Japanese Restaurant  0.05
3               Restaurant  0.05
4             Burger Joint  0.05
```

```
----Sucre----
              venue  freq
0        Food Court  0.11
1            Museum  0.11
2               Bar  0.11
3       Bus Station  0.11
4      Grocery Store  0.11
```

```
----Suramericana----
                  venue  freq
0    Seafood Restaurant  0.10
1        Sandwich Place  0.10
2             BBQ Joint  0.10
3                Bakery  0.05
4            Restaurant  0.05
```

```
----Tejelo----
                  venue  freq
0        Ice Cream Shop  0.33
1          Burger Joint  0.33
2                  Park  0.33
3     Advertising Agency  0.00
4           Pastry Shop  0.00
```

```
----Tenche----
                  venue  freq
0                   Bar  0.33
1            Shoe Store  0.33
2             BBQ Joint  0.33
3     Advertising Agency  0.00
4        Nature Preserve  0.00
```

```
----Toscana----
                       venue  freq
0              Grocery Store   0.2
1               Tennis Court   0.2
2   Construction & Landscaping   0.2
3              Metro Station   0.2
4           Recreation Center   0.2
```

----Trece de Noviembre----

|   | venue | freq |
|---|---|---|
| 0 | Optical Shop | 0.33 |
| 1 | Cable Car | 0.33 |
| 2 | Scenic Lookout | 0.33 |
| 3 | Advertising Agency | 0.00 |
| 4 | Nature Preserve | 0.00 |

----Tricentenario----

|   | venue | freq |
|---|---|---|
| 0 | Grocery Store | 0.2 |
| 1 | Tennis Court | 0.2 |
| 2 | Construction & Landscaping | 0.2 |
| 3 | Metro Station | 0.2 |
| 4 | Recreation Center | 0.2 |

----Trinidad----

|   | venue | freq |
|---|---|---|
| 0 | BBQ Joint | 0.50 |
| 1 | Medical Supply Store | 0.25 |
| 2 | Supermarket | 0.25 |
| 3 | Music Venue | 0.00 |
| 4 | Nightclub | 0.00 |

----U.D. Atanasio Girardot----

|   | venue | freq |
|---|---|---|
| 0 | Gym | 0.08 |
| 1 | Stadium | 0.08 |
| 2 | Athletics & Sports | 0.08 |
| 3 | Hotel | 0.08 |
| 4 | Shopping Mall | 0.08 |

----Universidad Nacional----

|   | venue | freq |
|---|---|---|
| 0 | Bike Rental / Bike Share | 0.33 |
| 1 | Plaza | 0.33 |
| 2 | Juice Bar | 0.33 |
| 3 | Advertising Agency | 0.00 |
| 4 | Park | 0.00 |

----Universidad de Antioquia----

|   | venue | freq |
|---|---|---|
| 0 | Café | 0.18 |
| 1 | BBQ Joint | 0.06 |
| 2 | Multiplex | 0.06 |
| 3 | Metro Station | 0.06 |
| 4 | Theme Park | 0.06 |

----Veinte de Julio----

|   | venue | freq |
|---|---|---|
| 0 | Ice Cream Shop | 0.33 |
| 1 | Art Gallery | 0.17 |
| 2 | Café | 0.17 |
| 3 | Business Service | 0.17 |
| 4 | Coffee Shop | 0.17 |

----Versalles No.1----

|   | venue | freq |
|---|---|---|
| 0 | Sandwich Place | 0.12 |
| 1 | Plaza | 0.07 |
| 2 | Department Store | 0.05 |
| 3 | Bar | 0.05 |

```
4          Art Museum   0.05


        ----Versalles No.2----
                        venue   freq
0   Other Great Outdoors    0.5
1        Pedestrian Plaza    0.5
2      Advertising Agency    0.0
3                    Park    0.0
4                Nightclub    0.0


        ----Villa Carlota----
                    venue   freq
0   Italian Restaurant   0.10
1          Supermarket   0.10
2                  Gym   0.10
3       Clothing Store   0.05
4                Hotel   0.05


        ----Villa Flora----
             venue   freq
0    Music Store   0.25
1   Grocery Store   0.25
2          Hotel   0.25
3     Coffee Shop   0.25
4    Noodle House   0.00


        ----Villa Guadalupe----
                          venue   freq
0                         Park   0.25
1   Construction & Landscaping   0.25
2              Rental Service   0.25
3                 Men's Store   0.25
4          Advertising Agency   0.00


        ----Villa Hermosa----
                       venue   freq
0   Comfort Food Restaurant   0.33
1                       Bar   0.33
2                      Park   0.33
3        Advertising Agency   0.00
4                Pastry Shop   0.00


        ----Villa Lilliam----
                 venue   freq
0       Campground    1.0
1   Nature Preserve    0.0
2      Noodle House    0.0
3            Notary    0.0
4    Nursery School    0.0


        ----Villa Niza----
                        venue   freq
0         Real Estate Office    0.2
1     Furniture / Home Store    0.2
2                       Farm    0.2
3     Health & Beauty Service    0.2
4              Grocery Store    0.2


        ----Villa Nueva----
                 venue   freq
0       Sandwich Place   0.20
```

```
1    Italian Restaurant   0.05
2               Theater   0.05
3      Department Store   0.05
4          Dessert Shop   0.05


----Villa Turbay----
            venue  freq
0      Campground   0.5
1       Cable Car   0.5
2       Nightclub   0.0
3          Notary   0.0
4   Nursery School   0.0


----Villa del Socorro----
                 venue  freq
0  Furniture / Home Store  0.33
1         Metro Station   0.33
2            Cable Car   0.33
3     Advertising Agency   0.00
4                  Park   0.00


----Villatina----
                         venue  freq
0                 Tram Station   0.4
1                         Park   0.2
2                 Soccer Field   0.2
3                   Shoe Store   0.2
4   Paper / Office Supplies Store   0.0
```

## pongamoslo en el DataFrame

Primero escribamos una función para ordenar los sitios en orden descendente.

```
In [24]:  def return_most_common_venues(row, num_top_venues):
              row_categories = row.iloc[1:]
              row_categories_sorted = row_categories.sort_values(ascending=False)

              return row_categories_sorted.index.values[0:num_top_venues]
```

Generemos el nuevo dataframe y mostremos los primeros 10 sitios de cada barrio.

```
In [25]:  num_top_venues = 10

          indicators = ['st', 'nd', 'rd']

          # crear las columnas acorde al numero de sitios populares
          columns = ['Neighborhood']
          for ind in np.arange(num_top_venues):
              try:
                  columns.append('{}{} Most Common Venue'.format(ind+1, indicators[ind]))
              except:
                  columns.append('{}th Most Common Venue'.format(ind+1))

          # crear un nuevo dataframe
          neighborhoods_venues_sorted = pd.DataFrame(columns=columns)
          neighborhoods_venues_sorted['Neighborhood'] = Medellin_grouped['Neighbourhood']

          for ind in np.arange(Medellin_grouped.shape[0]):
              neighborhoods_venues_sorted.iloc[ind, 1:] = return_most_common_venues(Medellin_g

          neighborhoods_venues_sorted.head()
```

Out[25]:

| | Neighborhood | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue |
|---|---|---|---|---|---|---|---|---|
| **0** | Aldea Pablo VI | Construction & Landscaping | Restaurant | Donut Shop | Food Service | Food Court | Food & Drink Shop | Food |
| **1** | Alejandro Echavarría | Ice Cream Shop | Tram Station | Athletics & Sports | Shopping Mall | Multiplex | Food & Drink Shop | Food |
| **2** | Alejandría | Hotel | Shopping Mall | Restaurant | Pizza Place | Frozen Yogurt Shop | Mediterranean Restaurant | Sushi Restaurant |
| **3** | Alfonso López | Electronics Store | Zoo | Ice Cream Shop | Food Service | Food Court | Food & Drink Shop | Food |
| **4** | Altamira | Construction & Landscaping | Breakfast Spot | Bakery | Event Service | Food Service | Food Court | Food & Drink Shop |

## Agrupemos los barrios, **K-Means**

Ejecutemos *k*-means para agrupar los barrios en 5 agrupaciones.

```
In [26]:    # establecer el número de agrupaciones
            kclusters = 5

            Medellin_grouped_clustering = Medellin_grouped.drop('Neighbourhood', 1)

            # ejecutar k-means
            kmeans = KMeans(n_clusters=kclusters, random_state=0).fit(Medellin_grouped_clusterin

            # revisar las etiquetas de las agrupaciones generadas para cada fila del dataframe
            kmeans.labels_[0:10]
```

Out[26]:  array([0, 2, 2, 2, 2, 2, 3, 2, 2, 2])

Generemos un nuevo dataframe que incluya la agrupación asi como los 10 sitios mas populares de cada barrio.

```
In [28]:    # añadir etiquetas
            neighborhoods_venues_sorted.insert(0, 'Cluster Labels', kmeans.labels_)

            Medellin_merged = dfBarrios

            # juntar Medellin_grouped con dfBarrios
            Medellin_merged = Medellin_merged.join(neighborhoods_venues_sorted.set_index('Neighb

            Medellin_merged.head() # revisar las ultimas columnas
```

Out[28]:

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|

| | OBJECTID | CODIGO | NOMBRE | SUBTIPO_BARRIOVEREDA | NOMBRE_COMUNA_CORREGIMIENTO |
|---|---|---|---|---|---|
| **0** | 1112 | 0510 | Tricentenario | 1 | Castilla |
| **1** | 1113 | 0208 | Villa Niza | 1 | Santa Cruz |
| **2** | 1114 | 1108 | Laureles | 1 | Laureles Estadio |
| **3** | 1115 | 1303 | Santa Rosa de Lima | 1 | San Javier |
| **4** | 1116 | 1206 | Santa Lucía | 1 | La América |

Antes de visualizar las agrupaciones, eliminemos algunas columnas innecesarias

```
In [29]: Medellin_merged.drop(['OBJECTID', 'CODIGO', 'SUBTIPO_BARRIOVEREDA', 'SHAPEAREA', 'SH
         Medellin_merged.head()
```

Out[29]:

| | NOMBRE | NOMBRE_COMUNA_CORREGIMIENTO | lat | lng | Cluster Labels | 1st Most Common Venue | 2nc Cor |
|---|---|---|---|---|---|---|---|
| **0** | Tricentenario | Castilla | 6.29107 | -75.5663 | 2.0 | Construction & Landscaping | G |
| **1** | Villa Niza | Santa Cruz | 6.29565 | -75.5634 | 2.0 | Grocery Store | Real |
| **2** | Laureles | Laureles Estadio | 6.242 | -75.5958 | 2.0 | Bar | Pe Rest |
| **3** | Santa Rosa de Lima | San Javier | 6.2651 | -75.6064 | NaN | NaN | |
| **4** | Santa Lucía | La América | 6.25744 | -75.6074 | 2.0 | Business Service | Supen |

Tratamiento de datos: renombrar columnas con espacios, eliminar valores nulos, etc

```
In [36]: Medellin_merged.rename(columns = {'Cluster Labels':'ClusterLabels'}, inplace = True)
         Medellin_merged.ClusterLabels = Medellin_merged.ClusterLabels.fillna(9)
         Medellin_merged.ClusterLabels = Medellin_merged.ClusterLabels.astype(int)
         Medellin_merged.head(5)
```

Out[36]:

| | NOMBRE | NOMBRE_COMUNA_CORREGIMIENTO | lat | lng | ClusterLabels | 1st Most Common Venue |
|---|---|---|---|---|---|---|

| | NOMBRE | NOMBRE_COMUNA_CORREGIMIENTO | lat | lng | ClusterLabels | 1st Most Common Venue |
|---|---|---|---|---|---|---|
| **0** | Tricentenario | Castilla | 6.29107 | -75.5663 | 2 | Construction & Landscaping |
| **1** | Villa Niza | Santa Cruz | 6.29565 | -75.5634 | 2 | Grocery Store |
| **2** | Laureles | Laureles Estadio | 6.242 | -75.5958 | 2 | Bar |
| **3** | Santa Rosa de Lima | San Javier | 6.2651 | -75.6064 | 9 | NaN |
| **4** | Santa Lucía | La América | 6.25744 | -75.6074 | 2 | Business Service |

In [39]:
```python
indexNames = Medellin_merged[ (Medellin_merged['ClusterLabels'] == 9)].index
Medellin_merged.drop(indexNames, inplace=True)
Medellin_merged.head(5)
```

Out[39]:

| | NOMBRE | NOMBRE_COMUNA_CORREGIMIENTO | lat | lng | ClusterLabels | 1st Most Common Venue |
|---|---|---|---|---|---|---|
| **0** | Tricentenario | Castilla | 6.29107 | -75.5663 | 2 | Construction & Landscaping |
| **1** | Villa Niza | Santa Cruz | 6.29565 | -75.5634 | 2 | Grocery Store |
| **2** | Laureles | Laureles Estadio | 6.242 | -75.5958 | 2 | Bar |
| **4** | Santa Lucía | La América | 6.25744 | -75.6074 | 2 | Business Service |
| **5** | La Floresta | La América | 6.25641 | -75.6014 | 2 | Metro Station |

Despues de ajustar el formato de nuestros datos, procedemos a visualizar las agrupaciones resultantes

In [43]:
```python
#crear mapa
map_clusters = folium.Map(location=[latitude, longitude], zoom_start=13)

# establecer el esquema de color para las agrupaciones
x = np.arange(kclusters)
ys = [i + x + (i*x)**2 for i in range(kclusters)]
colors_array = cm.rainbow(np.linspace(0, 1, len(ys)))
rainbow = [colors.rgb2hex(i) for i in colors_array]
```

```
# añadir marcadores al mapa
markers_colors = []
for lat, lon, poi, cluster in zip(Medellin_merged['lat'], Medellin_merged['lng'], Me
    label = folium.Popup(str(poi) + ' Cluster ' + str(cluster), parse_html=True)
    folium.CircleMarker(
        [lat, lon],
        radius=5,
        popup=label,
        color=rainbow[cluster-1],
        fill=True,
        fill_color=rainbow[cluster-1],
        fill_opacity=0.7).add_to(map_clusters)

map_clusters
```

Out[43]:  Make this Notebook Trusted to load map: File -> Trust Notebook

## Examinemos el resultados de las agrupaciones

### Agrupacion 1

In [46]:  `Medellin_merged.loc[Medellin_merged['ClusterLabels'] == 0, Medellin_merged.columns[[`

Out[46]:

|     | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue |
|-----|--------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 43  | Oriente | Construction & Landscaping | French Restaurant | Cosmetics Shop | Creperie | Food Service | Food Court | Food & Drink Shop | Fo |
| 63  | Carpinelo | Construction & Landscaping | Restaurant | Donut Shop | Food Service | Food Court | Food & Drink Shop | Food | Fish Ch Sh |
| 158 | Brasilia | Restaurant | Latin American Restaurant | Zoo | Donut Shop | Food Court | Food & Drink Shop | Food | Fish Ch Sh |
| 218 | Aldea Pablo VI | Construction & Landscaping | Restaurant | Donut Shop | Food Service | Food Court | Food & Drink Shop | Food | Fish Ch Sh |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Mo Comm Ven |
|---|---|---|---|---|---|---|---|---|---|
| 225 | Córdoba | Construction & Landscaping | Ice Cream Shop | Food Service | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financ or Le Serv |

### Agrupacion 2

In [47]: `Medellin_merged.loc[Medellin_merged['ClusterLabels'] == 1, Medellin_merged.columns[[`

Out[47]:

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Mo Comm Ven |
|---|---|---|---|---|---|---|---|---|
| 11 | Moscú No.2 | Construction & Landscaping | Rental Service | Gym | Park | Fish & Chips Shop | Financial or Legal Service | Fast Fo Restaura |
| 24 | El Pesebre | Advertising Agency | Gym / Fitness Center | Mountain | Park | Cupcake Shop | Event Service | Fo Co |
| 30 | Bosques de San Pablo | Pizza Place | Bakery | Park | Zoo | Electronics Store | Food Court | Food Dri Sh |
| 37 | San José La Cima No.1 | Park | Zoo | Electronics Store | Food Service | Food Court | Food & Drink Shop | Fo |
| 39 | Villa Guadalupe | Construction & Landscaping | Rental Service | Men's Store | Park | Electronics Store | Food Court | Food Dri Sh |
| 46 | María Cano-Carambolas | Park | Grocery Store | Donut Shop | Food Court | Food & Drink Shop | Food | Fish Chi Sh |
| 48 | La Pilarica | Park | Food | BBQ Joint | Grocery Store | Donut Shop | Food Court | Food Dri Sh |
| 52 | Tejelo | Ice Cream Shop | Burger Joint | Park | Electronics Store | Food Court | Food & Drink Shop | Fo |
| 67 | Robledo | Park | Motorcycle Shop | Gym / Fitness Center | Donut Shop | Food Court | Food & Drink Shop | Fo |
| 79 | Barrio Caicedo | Museum | Comfort Food Restaurant | Food Court | Park | Bar | Zoo | Farme Mark |
| 89 | San Germán | Print Shop | Park | Grocery Store | Hotel | Airport Terminal | Electronics Store | Fo Serv |
| 93 | Girardot | Park | Farm | Gym | Tennis Court | Doner Restaurant | Food & Drink Shop | Fo |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue |
|---|---|---|---|---|---|---|---|---|
| 104 | San José La Cima No.2 | Construction & Landscaping | Park | French Restaurant | Soccer Field | Grocery Store | Zoo | Fa |
| 109 | El Salvador | Park | Nature Preserve | Department Store | Zoo | Electronics Store | Food Court | Food Dri Sh |
| 114 | Belalcázar | Park | Farm | Grocery Store | Donut Shop | Food Court | Food & Drink Shop | Fo |
| 126 | La Libertad | Fried Chicken Joint | Park | Zoo | Electronics Store | Food Court | Food & Drink Shop | Fo |
| 135 | La Mansión | Park | Zoo | Electronics Store | Food Service | Food Court | Food & Drink Shop | Fo |
| 138 | Los Alcázares | Park | Argentinian Restaurant | Metro Station | Dog Run | Electronics Store | Food Court | Food Dri Sh |
| 146 | San Antonio | Park | Fried Chicken Joint | Mountain | Campground | Donut Shop | Food & Drink Shop | Fo |
| 162 | Santa Mónica | Fast Food Restaurant | Burger Joint | BBQ Joint | Park | Zoo | Event Service | Fo Serv |
| 190 | Gerona | Park | Plaza | Supermarket | Department Store | Electronics Store | Food Court | Food Dri Sh |
| 191 | Santa Teresita | Pizza Place | Fast Food Restaurant | BBQ Joint | Park | Zoo | Electronics Store | Fo Co |
| 203 | Manrique Oriental | Park | Pizza Place | Zoo | Donut Shop | Food Court | Food & Drink Shop | Fo |
| 217 | Boyacá | Ice Cream Shop | Burger Joint | Bar | Park | Zoo | Event Service | Fo Co |
| 219 | Villa Hermosa | Comfort Food Restaurant | Bar | Park | Zoo | Event Service | Food Service | Fo Co |
| 222 | Betania | Construction & Landscaping | Park | Museum | Hostel | Food Service | Food & Drink Shop | Fo |
| 227 | Florencia | Food Truck | Mexican Restaurant | BBQ Joint | Park | Event Service | Food Service | Fo Co |
| 237 | La Salle | Construction & Landscaping | Betting Shop | Bus Station | Park | Event Service | Food Service | Fo Co |

## Agrupacion 3

In [48]: `Medellin_merged.loc[Medellin_merged['ClusterLabels'] == 2, Medellin_merged.columns[[`

Out[48]:

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| 0 | Tricentenario | Construction & Landscaping | Grocery Store | Recreation Center | Tennis Court | Metro Station | |
| 1 | Villa Niza | Grocery Store | Real Estate Office | Furniture / Home Store | Farm | Health & Beauty Service | |
| 2 | Laureles | Bar | Peruvian Restaurant | Pizza Place | Burger Joint | Italian Restaurant | Gym / Fitness Center |
| 4 | Santa Lucía | Business Service | Supermarket | Soccer Field | Athletics & Sports | Metro Station | Eye Do |
| 5 | La Floresta | Metro Station | Burger Joint | Hotel | Park | Restaurant | Breakfast S |
| 6 | Las Mercedes | Pizza Place | Theater | Food & Drink Shop | Fast Food Restaurant | Sandwich Place | |
| 7 | Boston | Pizza Place | Plaza | Theater | Park | Farmers Market | Salsa |
| 8 | Nueva Villa de La Iguaná | Seafood Restaurant | Housing Development | Gym | Shopping Mall | Fast Food Restaurant | BBQ J |
| 9 | Alejandro Echavarría | Ice Cream Shop | Tram Station | Athletics & Sports | Shopping Mall | Multiplex | Food & D S |
| 10 | Picacho | Colombian Restaurant | Zoo | Electronics Store | Food Service | Food Court | Food & D S |
| 12 | Santo Domingo Savio No.1 | Bar | Cable Car | South American Restaurant | Caribbean Restaurant | Zoo | Food C |
| 13 | El Danubio | Convenience Store | Furniture / Home Store | Mobile Phone Shop | Gym | Zoo | Event Ser |
| 14 | La Avanzada | Plaza | Print Shop | Liquor Store | Caribbean Restaurant | Cable Car | F |
| 15 | Perpetuo Socorro | Latin American Restaurant | Café | Shopping Mall | Sandwich Place | Department Store | Fried Chic J |
| 16 | San Lucas | Deli / Bodega | Fried Chicken Joint | Italian Restaurant | Steakhouse | Financial or Legal Service | Eye Do |
| 17 | Calasanz Parte Alta | Café | Zoo | Electronics Store | Food Service | Food Court | Food & D S |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th M Comm Ve |
|---|---|---|---|---|---|---|---|
| 19 | El Chagualo | Soccer Field | Shopping Mall | Supermarket | Bar | Café | |
| 20 | Cristo Rey | Plaza | Fried Chicken Joint | Supermarket | Gym | Juice Bar | Salad P |
| 21 | Los Conquistadores | Hotel | Bar | Pedestrian Plaza | Beer Garden | Seafood Restaurant | Restau |
| 22 | Asomadera No.3 | Hotel | South American Restaurant | Nightclub | Scenic Lookout | Supermarket | Tennis C |
| 23 | La Gloria | Burger Joint | Gym / Fitness Center | Zoo | Electronics Store | Food Court | Food & D S |
| 25 | Lalinde | BBQ Joint | Restaurant | Latin American Restaurant | Italian Restaurant | Music Venue | Peru Restau |
| 26 | Manrique Central No.1 | Department Store | Shopping Mall | Cemetery | Bakery | Bus Station | |
| 27 | Las Independencias | Ice Cream Shop | Café | Art Gallery | Scenic Lookout | Coffee Shop | Event Ser |
| 28 | Parque Juan Pablo II | Food | Steakhouse | Fast Food Restaurant | Restaurant | Seafood Restaurant | |
| 29 | Moscú No.1 | Fast Food Restaurant | Zoo | Ice Cream Shop | Food Service | Food Court | Food & D S |
| 31 | Los Mangos | Home Service | Optical Shop | Zoo | Electronics Store | Food Court | Food & D S |
| 32 | Los Cerros El Vergel | Ice Cream Shop | Pizza Place | Soccer Field | Tram Station | Donut Shop | Food & D S |
| 33 | Miravalle | Bar | Pizza Place | Burger Joint | Café | Vegetarian / Vegan Restaurant | L Amer Restau |
| 34 | El Rodeo | Plaza | Market | Sandwich Place | Electronics Store | Food Court | Food & D S |
| 35 | La Milagrosa | Plaza | Department Store | Arepa Restaurant | Burger Joint | Event Service | Food Ser |
| 36 | El Castillo | French Restaurant | Gym / Fitness Center | Shopping Mall | Garden | Supermarket | Ba |
| 38 | El Raizal | Dance Studio | Clothing Store | Pedestrian Plaza | Zoo | Electronics Store | Food C |
| 40 | El Poblado | Café | Restaurant | Cocktail Bar | Argentinian Restaurant | Burger Joint | P |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| 41 | Trinidad | BBQ Joint | Supermarket | Medical Supply Store | Zoo | Food Truck | Food Ser |
| 42 | El Pomar | Ice Cream Shop | Recreation Center | Bus Station | Pedestrian Plaza | Department Store | Gym / Fitr Ce |
| 44 | La Isla | Real Estate Office | Soccer Field | Financial or Legal Service | Zoo | Donut Shop | Food & D S |
| 47 | Belén | Pub | Zoo | Donut Shop | Food Court | Food & Drink Shop | F |
| 49 | El Corazón | Brewery | Bar | Zoo | Event Service | Food Service | Food C |
| 50 | Calle Nueva | Restaurant | Metro Station | Café | Clothing Store | Pastry Shop | Burger J |
| 53 | Lorena | Burger Joint | Café | Supermarket | Mexican Restaurant | Restaurant | S Restau |
| 54 | Miraflores | Ice Cream Shop | Pizza Place | Shopping Mall | Burger Joint | Bar | Event Ser |
| 55 | Los Ángeles | Speakeasy | Italian Restaurant | Plaza | BBQ Joint | Latin American Restaurant | The |
| 56 | Alejandría | Hotel | Shopping Mall | Restaurant | Pizza Place | Frozen Yogurt Shop | Mediterrar Restau |
| 58 | La Francia | Metro Station | Real Estate Office | Furniture / Home Store | Cable Car | Clothing Store | |
| 59 | Cuarta Brigada | Gym | Shopping Mall | Hotel | Italian Restaurant | Clothing Store | Baseball F |
| 60 | Los Naranjos | Clothing Store | Burger Joint | Italian Restaurant | Pizza Place | Bakery | Shopping |
| 62 | Cataluña | Construction & Landscaping | Pizza Place | Burger Joint | BBQ Joint | Event Service | Food Ser |
| 65 | La Castellana | Restaurant | Bar | Latin American Restaurant | Food & Drink Shop | Breakfast Spot | Pie S |
| 66 | Carlos E. Restrepo | Bakery | Seafood Restaurant | Pizza Place | Cocktail Bar | Burger Joint | Books |
| 69 | Moravia | Bus Station | Shopping Mall | Metro Station | Sandwich Place | Donut Shop | |
| 70 | San Benito | Clothing Store | Farmers Market | Bus Station | Colombian Restaurant | Intersection | Soccer F |
| 71 | Veinte de Julio | Ice Cream Shop | Art Gallery | Business Service | Coffee Shop | Café | |
| 72 | Altamira | Construction & Landscaping | Breakfast Spot | Bakery | Event Service | Food Service | Food C |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th M Comn Ve |
|---|---|---|---|---|---|---|---|
| 73 | Las Lomas No.2 | Hotel | Shopping Mall | Burger Joint | Gym / Fitness Center | Italian Restaurant | Lou |
| 74 | Santander | Soccer Field | Burger Joint | Zoo | Food Stand | Food Court | Food & D S |
| 75 | Las Playas | Shopping Mall | Italian Restaurant | Airport | BBQ Joint | Pizza Place | Pet S |
| 77 | Las Esmeraldas | Bike Trail | Construction & Landscaping | Soccer Field | Bus Station | Bar | BBQ J |
| 78 | San Miguel | Plaza | Zoo | Electronics Store | Food Service | Food Court | Food & D S |
| 80 | B. Cerro El Volador | Electronics Store | Mountain | Scenic Lookout | Event Service | Zoo | Food C |
| 82 | Suramericana | BBQ Joint | Seafood Restaurant | Sandwich Place | Cocktail Bar | Soccer Stadium | Burger J |
| 83 | San Pedro | Ice Cream Shop | Cemetery | Gift Shop | Café | Cupcake Shop | Event Ser |
| 85 | Asomadera No.1 | Business Service | Bar | Food | Brazilian Restaurant | Department Store | Cocktail |
| 91 | Progreso No.2 | Food Truck | Mountain | Zoo | Food Service | Food Court | Food & D S |
| 92 | Barrio Cristóbal | Convenience Store | Basketball Court | Park | Pizza Place | Furniture / Home Store | Burger J |
| 94 | Los Balsos No.2 | Italian Restaurant | BBQ Joint | Coffee Shop | Ice Cream Shop | Café | Frozen Yo S |
| 95 | Los Colores | Juice Bar | Ice Cream Shop | Shopping Mall | Grocery Store | Gastropub | Mex Restau |
| 96 | Palermo | Construction & Landscaping | Soccer Field | Gym / Fitness Center | Metro Station | Zoo | Electro S |
| 97 | San Joaquín | Bar | Hotel | Burger Joint | Italian Restaurant | Café | Fried Chic J |
| 98 | Manila | Café | Restaurant | Bistro | Argentinian Restaurant | Pet Store | Burger J |
| 99 | Batallón Girardot | Scenic Lookout | Zoo | Food Stand | Food Court | Food & Drink Shop | F |
| 100 | Villatina | Tram Station | Soccer Field | Shoe Store | Park | Zoo | Donut S |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| 101 | Barrio Colón | Tram Station | Metro Station | Bar | Plaza | Restaurant | Be Break |
| 102 | Jardín Botánico | Café | Theme Park | Planetarium | Park | Multiplex | Metro Sta |
| 103 | La Candelaria | Sandwich Place | Plaza | Shopping Mall | Gastropub | Tram Station | Art Mus |
| 105 | Antonio Nariño | Arepa Restaurant | Water Park | Business Service | Athletics & Sports | BBQ Joint | Ice Cr S |
| 106 | Doce de Octubre No.2 | Playground | Moving Target | Recreation Center | Scenic Lookout | Zoo | Donut S |
| 107 | Granizal | Bar | Cable Car | South American Restaurant | Zoo | Food Court | Food & D S |
| 108 | San Bernardo | Theater | Supermarket | BBQ Joint | Coffee Shop | Grocery Store | Event Ser |
| 110 | Sevilla | Café | Shopping Mall | Food Court | Bar | Lake | Bus Sta |
| 111 | Santa Inés | Soccer Field | Zoo | Food Stand | Food Court | Food & Drink Shop | F |
| 112 | El Progreso | Multiplex | Italian Restaurant | Restaurant | BBQ Joint | Supermarket | Grocery S |
| 113 | Castropol | Italian Restaurant | History Museum | Seafood Restaurant | Supermarket | Shopping Mall | H |
| 115 | Guayaquil | Shopping Mall | Clothing Store | Café | South American Restaurant | Toy / Game Store | |
| 116 | Las Violetas | Fast Food Restaurant | Sandwich Place | Café | Theater | Zoo | Donut S |
| 117 | Santa María de Los Ángeles | Bakery | Convenience Store | Gym | Shopping Mall | Café | Restau |
| 118 | La Pradera | Cable Car | Home Service | Soccer Field | Zoo | Food Court | Food & D S |
| 119 | San Diego | Shopping Mall | Department Store | Sandwich Place | Latin American Restaurant | Café | Construc Landscap |
| 120 | Bello Horizonte | Hotel | Zoo | Donut Shop | Food Court | Food & Drink Shop | F |
| 121 | Villa Nueva | Sandwich Place | Colombian Restaurant | Pedestrian Plaza | South American Restaurant | Movie Theater | Speake |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th M Comm Ve |
|---|---|---|---|---|---|---|---|
| **122** | Batallón Cuarta Brigada | Shopping Mall | Mexican Restaurant | Clothing Store | Hotel | Other Nightlife | Steakh |
| **123** | Los Balsos No.1 | Bakery | Argentinian Restaurant | Middle Eastern Restaurant | Intersection | Deli / Bodega | Shopping |
| **124** | Villa Carlota | Gym | Supermarket | Italian Restaurant | Art Gallery | Bakery | BBQ J |
| **127** | San Martín de Porres | Soccer Field | Zoo | Food Stand | Food Court | Food & Drink Shop | F |
| **128** | Las Brisas | Ice Cream Shop | Gym | Mexican Restaurant | Food Truck | Cuban Restaurant | Cupcake S |
| **129** | Villa Lilliam | Campground | Zoo | Electronics Store | Food Service | Food Court | Food & D S |
| **131** | Santa Fé | BBQ Joint | Zoo | Pet Service | Café | Lingerie Store | Restau |
| **132** | La Rosa | Indie Theater | Fast Food Restaurant | Zoo | Electronics Store | Food Service | Food C |
| **133** | El Tesoro | Pizza Place | Italian Restaurant | Shopping Mall | Supermarket | Sushi Restaurant | Ba |
| **136** | La Florida | Café | Peruvian Restaurant | Gastropub | BBQ Joint | Mexican Restaurant | |
| **137** | Diego Echavarría | Shopping Mall | Sandwich Place | Italian Restaurant | Hot Dog Joint | Athletics & Sports | Pet S |
| **139** | Campo Valdés No.1 | Grocery Store | History Museum | Recreation Center | Restaurant | Zoo | Fa Restau |
| **140** | Alfonso López | Electronics Store | Zoo | Ice Cream Shop | Food Service | Food Court | Food & D S |
| **142** | Astorga | Café | Burger Joint | Pizza Place | Restaurant | Sandwich Place | Fast F Restau |
| **143** | Caribe | BBQ Joint | Asian Restaurant | Shopping Mall | Mobile Phone Shop | Sandwich Place | Fast F Restau |
| **144** | Aranjuez | Construction & Landscaping | Health & Beauty Service | Gym / Fitness Center | Art Museum | Event Service | Eye Do |
| **145** | Manrique Central No.2 | Department Store | Shopping Mall | Bus Station | Zoo | Event Service | Food C |
| **147** | El Rincón | Pub | Zoo | Donut Shop | Food Court | Food & Drink Shop | F |
| **148** | Calasanz | Grocery Store | Café | Ice Cream Shop | Fast Food Restaurant | Juice Bar | Gastro |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th M Comm Ve |
|---|---|---|---|---|---|---|---|
| 149 | Bermejal-Los Álamos | Plaza | Recreation Center | Art Museum | Gym / Fitness Center | Farm | Electro S |
| 150 | Jesús Nazareno | Hotel | Bus Station | Food Court | Soccer Field | Metro Station | Theme |
| 151 | Ocho de Marzo | BBQ Joint | Grocery Store | Zoo | Electronics Store | Food Service | Food C |
| 152 | Cucaracho | Music Store | Rental Service | Other Repair Shop | Electronics Store | Food Court | Food & D S |
| 153 | Belencito | Ice Cream Shop | Coffee Shop | Museum | Hot Dog Joint | Donut Shop | Food C |
| 154 | Cerro Nutibara | Bar | Restaurant | Park | History Museum | Historic Site | Indie The |
| 155 | Simón Bolívar | Bakery | Café | Restaurant | Coffee Shop | Electronics Store | BBQ J |
| 156 | Universidad de Antioquia | Café | Restaurant | Theme Park | Multiplex | Shopping Mall | Muse |
| 157 | San Javier No.2 | Soccer Field | Street Art | General Entertainment | Track | Zoo | Electro S |
| 159 | Bolivariana | Café | Italian Restaurant | Sandwich Place | Bar | Comfort Food Restaurant | Automc S |
| 160 | Berlín | Fast Food Restaurant | Café | Plaza | Donut Shop | Food Court | Food & D S |
| 161 | El Velódromo | Sandwich Place | Hotel | Breakfast Spot | Athletics & Sports | Metro Station | |
| 163 | Cerro Nutibara | Bar | Restaurant | Park | History Museum | Historic Site | Indie The |
| 164 | Mirador del Doce | Food Truck | Playground | Scenic Lookout | Zoo | Donut Shop | Food & D S |
| 165 | El Triunfo | Mountain | Soccer Field | Zoo | Electronics Store | Food Court | Food & D S |
| 166 | Enciso | Construction & Landscaping | Comfort Food Restaurant | Nursery School | Café | Cupcake Shop | Dance Stu |
| 167 | La Esperanza | Soccer Field | Fish & Chips Shop | Bar | Zoo | Event Service | Food Ser |
| 169 | Pablo VI | Financial or Legal Service | Zoo | Ice Cream Shop | Food Service | Food Court | Food & D S |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th M Comr Ve |
|---|---|---|---|---|---|---|---|
| 170 | Ecoparque Cerro El Volador | Mountain | Scenic Lookout | Event Service | Zoo | Electronics Store | Food C |
| 171 | Versalles No.1 | Sandwich Place | Plaza | Art Museum | Bar | Gastropub | Departm S |
| 172 | Altos del Poblado | Hotel | Snack Place | BBQ Joint | Tennis Court | Food Stand | Food C |
| 173 | Universidad Nacional | Bike Rental / Bike Share | Plaza | Juice Bar | Electronics Store | Food Service | Food C |
| 174 | El Diamante | Luggage Store | Business Service | Furniture / Home Store | Music Store | Cupcake Shop | Dance Stu |
| 175 | Palenque | Hotel | Coffee Shop | Motorcycle Shop | Park | Music Store | Dance Stu |
| 176 | Barrio Colombia | Café | Bakery | Nightclub | Ice Cream Shop | Sandwich Place | BBQ J |
| 177 | Rosales | Fast Food Restaurant | Spa | Park | Bowling Alley | Breakfast Spot | Burger J |
| 178 | Campo Amor | Cosmetics Shop | Fried Chicken Joint | Bakery | BBQ Joint | Auto Workshop | Sandv P |
| 179 | Las Granjas | Soccer Field | Bar | Bus Station | Zoo | Event Service | Food C |
| 181 | La Alpujarra | Restaurant | Metro Station | Park | Sandwich Place | Fast Food Restaurant | Historic |
| 182 | Corazón de Jesús | Clothing Store | Concert Hall | Bus Station | Soccer Field | Toy / Game Store | Farr Ma |
| 183 | Buenos Aires | Cocktail Bar | Food Court | Bar | Burrito Place | Zoo | Event Ser |
| 184 | Toscana | Construction & Landscaping | Grocery Store | Recreation Center | Tennis Court | Metro Station | |
| 185 | Los Pinos | Supermarket | Hotel | Farmers Market | Outdoor Supply Store | Restaurant | |
| 186 | La Aguacatala | Hotel | Café | Italian Restaurant | Ice Cream Shop | Salad Place | Burger J |
| 187 | El Pinal | Nursery School | Tram Station | Zoo | Donut Shop | Food Court | Food & C S |
| 192 | Francisco Antonio Zea | Fast Food Restaurant | Electronics Store | Lake | Rest Area | BBQ Joint | Public |
| 193 | La Mota | Shopping Mall | Sandwich Place | Gym | Gym / Fitness Center | Movie Theater | Fre Restau |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| 197 | Nuevos Conquistadores | Mountain | Pier | Zoo | Electronics Store | Food Court | Food & D S |
| 198 | La América | Market | Pizza Place | Coffee Shop | Fried Chicken Joint | Basketball Court | Superma |
| 199 | Picachito | Playground | Scenic Lookout | Zoo | Donut Shop | Food & Drink Shop | F |
| 200 | Miranda | Outdoor Event Space | Latin American Restaurant | Lake | Storage Facility | Art Museum | |
| 201 | U.D. Atanasio Girardot | Shopping Mall | Hotel | Gym | Stadium | Athletics & Sports | Tennis C |
| 202 | Patio Bonito | Hotel | Café | Italian Restaurant | Burger Joint | Restaurant | Pizza P |
| 204 | La Esperanza No.2 | Construction & Landscaping | Cable Car | Plaza | South American Restaurant | Food & Drink Shop | F |
| 205 | Pedregal | Convenience Store | Theater | Recreation Center | Gym | Food & Drink Shop | F |
| 206 | Prado | Hotel | Art Gallery | Sandwich Place | Theme Park | Cuban Restaurant | Cupcake S |
| 207 | Trece de Noviembre | Cable Car | Optical Shop | Scenic Lookout | Food Service | Food & Drink Shop | F |
| 208 | Doce de Octubre No.1 | Food Truck | Mountain | Soccer Field | Scenic Lookout | Zoo | Food Ser |
| 209 | La Loma de Los Bernal | Ice Cream Shop | Pet Store | Shopping Mall | Discount Store | Market | Event Ser |
| 210 | Juan Pablo II | BBQ Joint | Grocery Store | Zoo | Electronics Store | Food Service | Food C |
| 211 | Villa Flora | Music Store | Hotel | Grocery Store | Coffee Shop | Fast Food Restaurant | Eye Do |
| 212 | El Diamante No.2 | Supermarket | Hotel | Gym | Peruvian Restaurant | Pedestrian Plaza | Fast F Restau |
| 213 | Nueva Villa del Aburrá | Pizza Place | Burger Joint | Café | Sandwich Place | Bar | Ita Restau |
| 214 | Villa del Socorro | Cable Car | Furniture / Home Store | Metro Station | Zoo | Food Court | Food & D S |
| 215 | Tenche | Shoe Store | Bar | BBQ Joint | Zoo | Food Truck | Food Ser |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| 216 | Fátima | Supermarket | Athletics & Sports | Fast Food Restaurant | Burger Joint | Bar | |
| 220 | Las Lomas No.1 | Hotel | Peruvian Restaurant | Gym / Fitness Center | Restaurant | BBQ Joint | Pizza P |
| 221 | Santa Cruz | Indie Theater | Fast Food Restaurant | Zoo | Electronics Store | Food Service | Food C |
| 223 | Kennedy | Furniture / Home Store | Zoo | Food Stand | Food Court | Food & Drink Shop | F |
| 224 | Guayabal | Bakery | Sandwich Place | Women's Store | Snack Place | Café | Colom Restau |
| 226 | Estación Villa | Art Museum | Hotel | Historic Site | Soccer Field | Farmers Market | ( |
| 228 | Ferrini | Ice Cream Shop | Shopping Mall | Grocery Store | Juice Bar | Convenience Store | Food & D S |
| 230 | La Ladera | Comfort Food Restaurant | Zoo | Electronics Store | Food Service | Food Court | Food & D S |
| 231 | Asomadera No.2 | Nightclub | Shopping Mall | Italian Restaurant | Bar | Hotel | Superma |
| 232 | Parque Norte | Theme Park | Café | Auto Garage | Pedestrian Plaza | Latin American Restaurant | Botar Gar |
| 233 | Aures No.2 | Café | Furniture / Home Store | Fast Food Restaurant | Other Repair Shop | Electronics Store | Food C |
| 234 | Sucre | Ice Cream Shop | Grocery Store | Food Court | Fried Chicken Joint | Bus Station | |
| 235 | La Piñuela | Plaza | Cocktail Bar | Fast Food Restaurant | Café | Cupcake Shop | Dance St |
| 236 | López de Mesa | Burger Joint | Zoo | Convenience Store | Food Service | Food Court | Food & D S |
| 238 | La Colina | Chinese Restaurant | Pub | Restaurant | Gym | Zoo | Electro S |
| 239 | San Javier No.1 | Nightclub | Street Art | General Entertainment | Track | Zoo | Electro S |
| 240 | Héctor Abad Gómez | Clothing Store | Metro Station | Zoo | Electronics Store | Food Service | Food C |
| 241 | Castilla | Bar | Café | Cocktail Bar | Hotel | Restaurant | Night |

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue |
|---|---|---|---|---|---|---|---|
| **242** | Florida Nueva | Sandwich Place | Restaurant | Bar | Italian Restaurant | Pizza Place | Ba |
| **243** | Estadio | Ice Cream Shop | Café | Grocery Store | Fast Food Restaurant | Juice Bar | Gastro |
| **244** | El Socorro | BBQ Joint | Nightclub | Athletics & Sports | Fast Food Restaurant | Ice Cream Shop | Soccer F |
| **245** | Versalles No.2 | Other Great Outdoors | Pedestrian Plaza | Zoo | Electronics Store | Food Court | Food & D S |
| **246** | Bombóná No.1 | Hotel | Restaurant | Colombian Restaurant | Art Gallery | Theater | No |
| **247** | Los Alpes | Fast Food Restaurant | Pizza Place | Sandwich Place | Italian Restaurant | Fried Chicken Joint | |
| **248** | Campo Valdés No.2 | Grocery Store | Recreation Center | History Museum | Zoo | Farm | Electro S |
| **249** | Granada | Department Store | Shopping Mall | Bakery | Fried Chicken Joint | Gym | Superma |
| **250** | Campo Alegre | Nightclub | Street Art | Burger Joint | General Entertainment | Zoo | Event Ser |

## Agrupacion 4

In [49]:
```
Medellin_merged.loc[Medellin_merged['ClusterLabels'] == 3, Medellin_merged.columns[[
```

Out[49]:

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue |
|---|---|---|---|---|---|---|---|---|---|
| **45** | La Sierra | Cable Car | Convenience Store | Food Service | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financi or Leg Servic |
| **64** | Andalucía | Cable Car | Real Estate Office | Furniture / Home Store | Metro Station | Zoo | Food & Drink Shop | Food | Fish Chip Sho |
| **68** | Juan XXIII La Quiebra | Cable Car | Convenience Store | Food Service | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financi or Leg Servic |
| **81** | Santa Margarita | Cable Car | Home Service | Zoo | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financi or Leg Servic |
| **84** | Villa Turbay | Cable Car | Campground | Zoo | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financi or Leg Servic |
| **141** | Olaya Herrera | Cable Car | Convenience Store | Food Service | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financi or Leg Servic |

**Agrupacion 5**

In [50]:  `Medellin_merged.loc[Medellin_merged['ClusterLabels'] == 4, Medellin_merged.columns[[`

Out[50]:

| | NOMBRE | 1st Most Common Venue | 2nd Most Common Venue | 3rd Most Common Venue | 4th Most Common Venue | 5th Most Common Venue | 6th Most Common Venue | 7th Most Common Venue | 8th Most Common Venue |
|---|---|---|---|---|---|---|---|---|---|
| **168** | Las Estancias | Shoe Store | Zoo | Food Stand | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financial or Legal Service |
| **180** | Barrios de Jesús | Shoe Store | Zoo | Food Stand | Food Court | Food & Drink Shop | Food | Fish & Chips Shop | Financial or Legal Service |

# Gracias!!