# Battle of the Neighborhoods

# 1. Introduction

## 1.1 Background

New York is financial capital of US and a famous tourist place. A lot of people from across the world visit the city for their work also for tourism. NYC is divided into 5 Borough namely: Bronx, Manhattan, Brooklyn, Queens and Staten Island. Today every person love to eat Pizza and wanted to stay in the city where he can easily find it.

## 1.2 Problem

This research would help all the Pizza lovers who wanted to visit the city and loves to stay near the Pizza stores. This research would help the users to find the high density of Pizza stores and can view the ratings and their reviews.

# 2. Data acquisition and cleaning

## 2.1 Data sources

For this problem I would need following data set:

1) Amount of Pizza places in various boroughs
2) Data of Borough and Neighborhoods with Lat Lang data

Geographical Data will be taken by Foursquare API and using the link https://geo.nyu.edu/catalog/nyu_2451_34572 , https://cocl.us/new_york_dataset

Borough data with Latitude and Longitude

## 2.2 Data Cleaning

Check is any borough data is Not Available then those rows need to be deleted from the dataset.

## 2.3 Feature Selection

1. For the borough data we 305 rows and the features selected were Neighborhood, Latitude and Longitude.
2. For the Pizza Places in a borough the features selected were Name, Address, Latitude and Longitude. For different boroughs the size of data set varied.

# 3. Methodology

## 3.1 Finding the Borough with highest Pizza Places

Firstly, the criteria will be to find the Borough with highest pizza places. Higher number of pizza places mean that the demand of pizza is that borough is high and more competition generally means better quality. For this purpose, Foursquare API was used to with Pizza places id as the parameter along with the borough names.

### 3.2 Finding the Borough with highest density of Pizza Places

For a tourist only the higher number of pizza places won't satisfy his/her need, he also will look for the ease to access and hence they should be closely located too in case he wants to have taste of pizzas at multiple pizza places. Hence, I chose to find the density of the pizza places. For this I found out the mean coordinate with respect to all the pizza places and then the mean distance of the pizza places from the mean coordinate.

## 4. Results
### 4.1 For the number of pizza places

This clearly shows that Manhattan has the greatest number of Pizza Places, followed by Brooklyn and Bronx. Hence the ranking as per the number of pizza places is:

1. Manhattan

2. Brooklyn

3. Bronx

4. Queens

5. Staten Island

### 4.2 Highest density of pizza places

This clearly shows that Manhattan has the highest density of Pizza Places, followed by Bronx and Brooklyn. Hence the ranking as per the number of pizza places is:

1. Manhattan

2. Bronx

3. Brooklyn

4. Queens

5. Staten Island

## 5. Conclusion

We can see that it has reduced but it's still huge and hence won't affect the findings, so the person travelling to NYC and wants to locate himself/herself as per the affinity to Pizza Places and Pizzas, he/she should prefer Manhattan because it has most number of the Pizza places and also the density of the location of pizza places is also maximum.

## 6. Future Scope

This study can help anyone travelling to NYC and wants to live in such a Borough which has easy access to Pizza places as compared to other Borough. Though there are some limitations in this study. It doesn't consider the ratings of the pizza places in the Borough which can be an important feature if you

are thinking of visiting a pizza place. Also, the preference of pizza type such as thin crush, cheese burst etc. can also be considered.