# Introduction & Business Problem

The State Theatre in Easton, Pennsylvania is becoming a very common venue in the region. It regularly hosts concerts, musicals, plays, and various other entertainment largely targeting an adult crowd. The city of Easton offers many restaurants and bars which can be overwhelming to anyone first coming to the city. The State Theatre management would like to help its patrons by providing a map of suggested bars and pizza places. The management feels that bars will be popular both before and after events as the adult crowd will wish to imbibe during their night out. Pizza places have proven to be popular among this crowd as well since they provide a quick meal on the go, even late at night after an event. This interactive map will be provided to all patrons to help them see all pizza places and bars within walking distance of the theatre.

# Data

The data used to make this map was pulled from Foursquare using their API. This data was filtered to show pizza places and bars near the geocoordinates of the State Theatre. All data pulled from Foursquare includes the venue name, latitude, longitude, category, and various other data not required for this exercise. This data allowed me to insert points on the folium map for each venue, color-coded based on type. Foursquare’s API fetches only the data within the defined radius, which I set to 500 meters to ensure all are within walking distance of the State Theatre.

# Methodology

I began this project by first doing a quick Google Maps search to see what bars and pizza places are in the area. I discovered an overwhelming amount, leading me to understand two things: 1) There are enough venues to build a proper map and 2) There is a need for a localized map of applicable venues to help patrons find a desired venue. I then utilized the Foursquare API to obtain a list of venues in the two aforementioned categories, using the State Theatre as the center point and setting a radius of 500 meters. This returned a raw JSON object of 26 venues, with many useful and not-so-useful details. I then took to wrangle the data by arranging it into a sensible dataframe. I grabbed only the following fields from the JSON: venue name, categories, address, country code, city, country, cross street, distance from center point (the theatre), formatted address, latitude, longitude, postal code, state, and venue ID. At this point, I had a friendly dataframe to work with that included only the relevant venues and data therein. I continued by instantiating a folium map and iterating through the dataset to plot the venues on the map. The State Theatre serves as the center point in red. Each pizza place is denoted by a red marker with a heart (because who doesn’t love pizza?) and the bars are blue markers with martini glasses.

# Results

The resulting map is appropriately zoomed and displaying the 26 venues with their names upon clicking a marker. The Foursquare data provided all data necessary for this problem, notably allowing me to query only what is necessary. That is, bars and pizza places. I did not have to query all venues in the given area *then* filter them out. Instead, when I made the API call I was able to include only the specified categories. The folium map also proved to work well and is easy to navigate and zoom, just like a typical map. This could also be printed and handed out to patrons, however it would benefit by first being modified to show all venue names as you can only view them by clicking on a marker today.

# Discussion

While the Foursquare data appears to be complete, it may also return fake venues. For example, this project returned the venue entitled “the new and improved former club shoebox now known as club penthouse” which does not actually exist. This is most likely due to the ability for users to add any venue of their choosing. A user created this venue as a bar which shows up on our map, but is certainly misleading to patrons. Foursquare appears to have eliminated many fake venues over the past 2 years, however it is clear that some remain. In the future, I recommend manually sorting through the data and eliminating such fake venues.

## Conclusion

This project focused on providing patrons of the State Theatre in Easton, PA a simple, concise map of local pizza places and bars with the goal of giving them venues to go to before and after an event. It utilized the Foursquare API to query data which was then wrangled using Python. The resulting folium map is interactive with color- and icon-coded pins for each venue. Upon click, the map shows the name of the venue. Notably, the Foursquare API returned a fake, user-created venue which should be removed in future versions. Overall, the map is usable and would likely be of utility for the State Theatre.