Software Architecture  
ChicaHome

ChicaHome will be an application where you can found the best place for rent house in Chicago, near to Department of Computer Science – University of Illinois. The principal objective is give possibility of choose between Safe, Affordable, Culture, Entertainment and Price. Each characteristic before, will give a percentage of Score, these percentage can be modified by user.

**How to calculate Score?**

There are five aspect important in calculate the Score, the user will have 100 points to put each aspect, the user always must use all points for your search, by default all aspect will have 20 points (correspond of 0.2 in weighted average).

**Safe value:**

The safe value we need 3 datasets, each dataset will be described below:

1. **Crimes of 2001 to present**: The percentage in value is 0.6, if event was domestic won’t be consider for analyze. If event was Narcotics or Prostitution will give 10 points, if event was robbery, battery, Theft give 6 points. If the event was presented in last 2 years give 3 points and if event had an arrest will give -2. All events analyze will are 1km around point consulted. If the result is between 0-40, is a secure place, 40-90 is a half insurance and if result is more than 90 is unsecure place.

**Dataset**: <https://catalog.data.gov/dataset/crimes-2001-to-present-398a4>

**Dataset:** <https://catalog.data.gov/dataset/crimes-one-year-prior-to-present-e171f>

1. **Police Stations**: The percentage in value is 0.25. If there isn’t a police station 3km around the site will be unsecure, if the amount of police stations is 1 or 2 is a half insurance and if there are more than 2 police station around 3km the place is a secure.

**Dataset**: <https://catalog.data.gov/dataset/police-stations-3a3a8>

1. **Fire Stations**: The percentage in value is 0.15. If there isn’t a fire station 3km around the site will be unsecure, if the amount of fire stations is 1 or 2 is a half insurance and if there are more than 2 fire station around 3km the place is a secure.

**Dataset**: <https://catalog.data.gov/dataset/fire-stations-61d88>

**Culture value:**

The culture value we need 3 datasets, each dataset will be described below:

1. **Libraries**: The percentage in value is 0.4, if there are between 0 to 1 libraries around 3km the point, will have a poor culture, if there are between 2-3 libraries around will have half culture and if there are 3+ libraries will have high culture.

**Dataset**:<https://catalog.data.gov/dataset/libraries-locations-hours-and-contact-information-f3c61>

1. **Artworks**: The percentage in value is 0.3. If there are between 0 to 1 artworks park around 4km of the point, will have a poor culture, if there are between 2-3 park around will have half culture and it there are 3+ artworks parks will have a high culture.

**Dataset**: <https://catalog.data.gov/dataset/parks-chicago-park-district-artworks>

1. **Movie in Park**: The percentage in value is 0.3. If the sum of movies presented in parks around 3km of the point consulted, is between 0-10 will have a poor culture, if 10-25 will have a half culture and if is more than 25 will have a high culture.

**Dataset**: <https://catalog.data.gov/dataset/chicago-park-district-movies-in-the-parks-2016>

**Entertainment value:**

The entertainment value we need 2 datasets, each dataset will be described below:

1. **Parks**: The percentage in value is 0.5. If the sum of parks around 3km of the point consulted, is between 0-2 is a poor entertainment, if it is between 3-4 is half entertainment, and more 4+ is high entertainment.   
   **Dataset**: <https://catalog.data.gov/dataset/parks-locations-10f58>
2. **Pedestrian Streets**: The percentage in value is 0.2. If the sum of pedestrian streets around 3km of the point consulted, is between 0-1 is a poor entertainment, if it is between 2-5 is half entertainment, and more 5+ is high entertainment.   
     
   **Dataset**: <https://catalog.data.gov/dataset/pedestrian-streets>

1. **Near to beach**: The percentage in value is 0.3. If the distance to beach is between 0-3km is a high entertainment, if it is between 4-6 is half entertainment, and more 6+ is poor entertainment.

**Affordable value:**

The affordable value we need 3 datasets, each dataset will be described below:

1. **Development House**: We will take points or house for search in Zillow.  
   **Dataset**:<https://catalog.data.gov/dataset/affordable-rental-housing-developments-ef5c2>
2. **Average Daily Traffic**: The percentage in value is 0.3 If for 2km the streets have less 30.000 vehicle volume the house is high affordable, is between 30.001 to 65.000 is half and more than 65.000 is poor affordable.  
   **Dataset**: <https://catalog.data.gov/dataset/average-daily-traffic-counts-3968f>
3. **Divvy Bicycle Station**: The percentage in value is 0.3 If 1.5km around the house, there are 0-2 Divvy station is poor affordable, if are 3-5 is half affordable, and if there are 5+ is high affordable.

**Dataset**: <https://catalog.data.gov/dataset/divvy-bicycle-stations-3353a>

1. **Near to U of I**: The percentage in value is 0.4. If the house is 3km to Science Computer Department, is a high affordable. Is the distance being between 3.1km - 5 km is half affordable and more than 5km is poor affordable.

**Price value:**

The price will take estimate given for <http://www.zillow.com> API

**Where are hosted?**

The application we will are hosted in Microsoft Azure using a Web App for free plan. The server hosted is in North Central US (Illinois), so near to focused point.

**How will deployed?**

The application will be associated with a master repository in GitHub and Microsoft Azure will get all resources of repository, it’s a continuous deployment.

**Schedule**

The schedule of the program will be found here:



**Technology associated with Application**

The application will be building with 3 principal languages, HTML, CSS, and JavaScript, but will have components that help in the objective:

1. Bootstrap: Framework to html, Css, JavaScript
2. JQuery: Library of JavaScript
3. Font-Awesome: css toolkit for get icons

\* This document is in construction, heuristic, technology or something else can be changing while development process is realized.

\*\* The level in write English is not the best, it can have a lot of grammatical errors.

\*\*\* This document have de principal information for final readme.