Coursera Capstone Project: Part 1

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Introduction

The intent of this project is to provide investors information to support their decision to establish a security service in Denver, Colorado (Denver, CO). This document was prepared based on several months of research, data extraction and analysis. The information used in this report is real and was accessed from the Denver, CO county database and clusters using the Foursquare api.

About Denver, Colorado

Denver, is the capital of the U.S. state of Colorado. Denver is located in the South Platte River Valley on the western edge of the High Plains just east of the Front Range of the Rocky Mountains. The Denver downtown district is immediately east of the confluence of Cherry Creek with the South Platte River, approximately 12 mi (19 km) east of the foothills of the Rocky Mountains. Denver is named after James W. Denver, a governor of the Kansas Territory. It is nicknamed the Mile High City because its official elevation is exactly one mile (5280 feet or 1609.3 meters) above sea level. The 105th meridian west of Greenwich, the longitudinal reference for the Mountain Time Zone, passes directly through Denver Union Station.

Denver is ranked as a Beta world city by the Globalization and World Cities Research Network. With an estimated population of 716,492 in 2018, Denver is the 19th-most populous U.S. city, and with a 19.38% increase since the 2010 United States Census, it has been one of the fastest-growing major cities in the United States.

- The 10-county Denver-Aurora-Lakewood, CO Metropolitan Statistical Area had an estimated 2018 population of 2,932,415 and is the 19th most populous U.S. metropolitan statistical area.
- The 12-city Denver-Aurora, CO Combined Statistical Area had an estimated 2018 population of 3,572,798 and is the 15th most populous U.S. metropolitan area.
- In 2016, Denver was named the best place to live in the United States by U.S. News & World Report.

Source: https://en.wikipedia.org/wiki/Denver

The Business Problem¶

Though rated the best place to live, can Denver, CO considered a safe place to operate a business. Investors in a security firm would like to perform a study of the neighborhood crimes within Denver, CO. The company's intent is to identify neighborhoods with high crime, across multiple business locations/venue categories. The crimes within a city are varied, one of the key features of the security service is the installation of closed circuit camera grid over the neighborhoods. The segmentation of these businesses will also form apart of the project planning process, as all neighborhoods will not be launched at the same time. Other uses of the project data:

- Families or individuals relocating to Denver, CO
- Real Estate companies seeking key selling features of the city, as the venues are clustered
- City Offices/Governor looking to gentrify a high crime area.

Success Criteria: Use the data to recommend the first neighborhood to be launched and there after the order of the following neighborhoods.¶
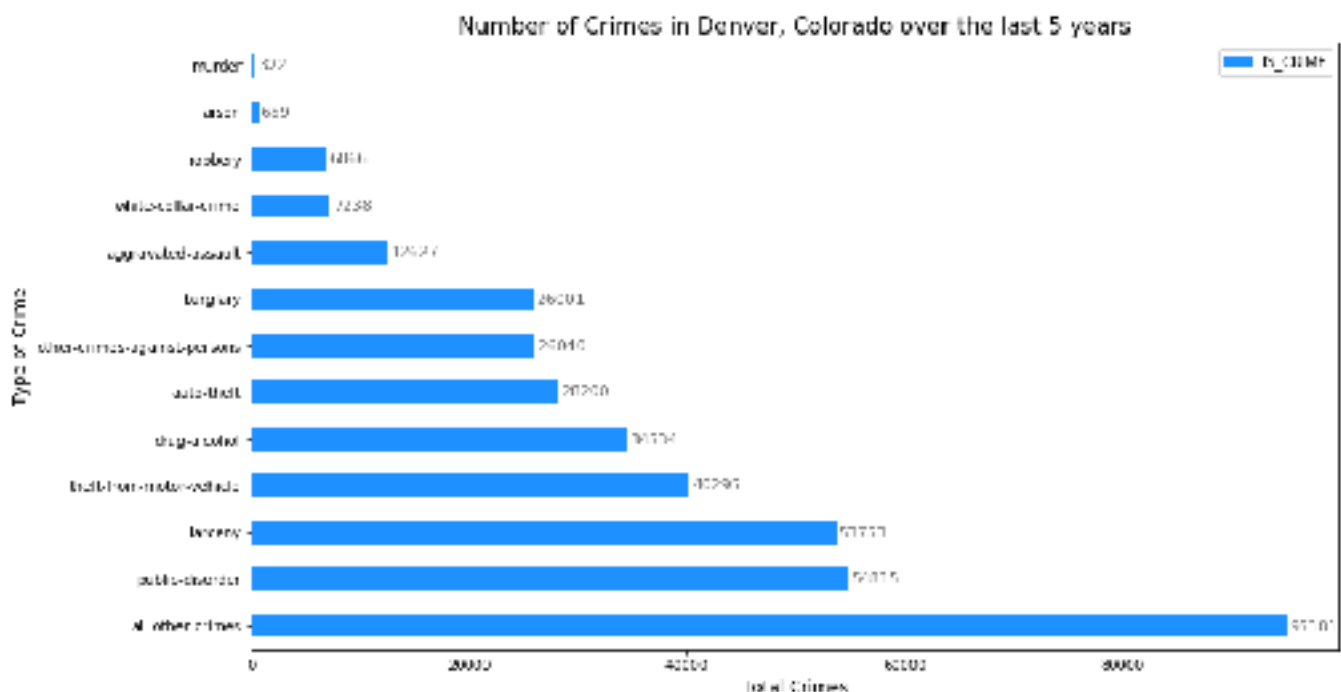
Data Processing & Description¶

This project will require the analysis of Denver, CO neighborhood crime statistics and the clustering of the neighborhoods in order to recommend the first neighborhood. The databases accessed for this project was from www.denvergov.org. This database provided the Denver, CO crime data: https://www.denvergov.org/media/gis/DataCatalog/crime/csv/crime.csv.

- Author: City and County of Denver, Denver Police Department / Data Analysis Unit
- Maintainer: City and County of Denver, Technology Services / DenverGIS Data
- Version: 1.0.2921
- Data was last updated on 11/21/2019

This dataset includes criminal offenses in the City and County of Denver for the previous five calendar years plus the current year to date. The data is based on the National Incident Based Reporting
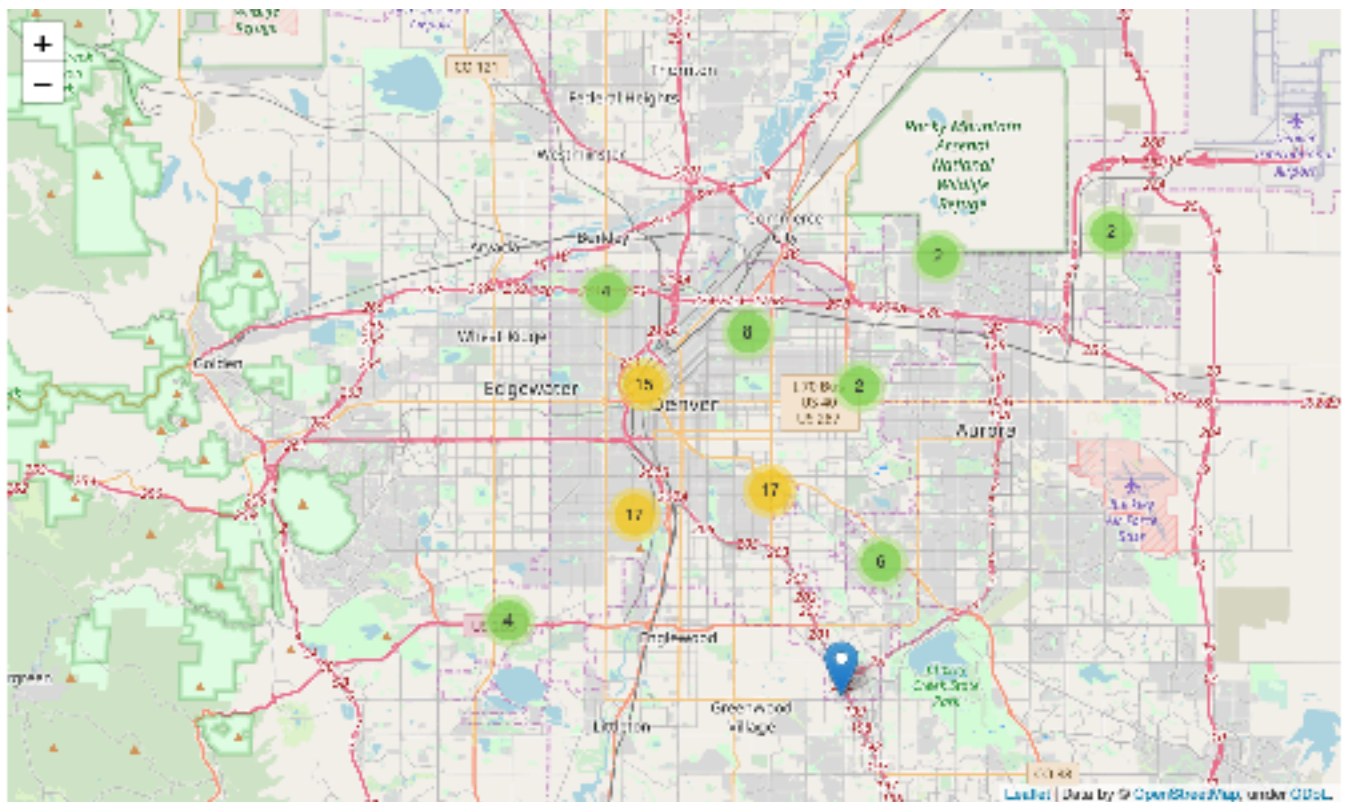
System (NIBRS) which includes all victims of person crimes and all crimes within an incident. The data is dynamic, which allows for additions, deletions and/or modifications at any time, resulting in more accurate information in the database. Due to continuous data entry, the number of records in subsequent extractions are subject to change. Crime data is updated Monday through Friday. Crimes that occurred at least 30 days ago tend to be the most accurate, although records are returned for incidents that happened yesterday. This dynamic nature of crime data means that content provided here today will probably differ from content provided a week from now. Likewise, content provided on this site will probably differ somewhat from crime statistics published elsewhere by the City and County of Denver, even though they draw from the same database. Crime locations reflect the approximate locations of crimes but are not mapped to actual property parcels. Certain crimes may not appear on maps if there is insufficient detail to establish a specific, mappable location.

FIGURE 1: CRIMES IN DENVER, COLORADO

The data will be wrangled to only indicate neighborhoods where only burglary crimes have been committed. This data will then be used with the FourSquare to explore the world around where the crimes have been committed. The Foursquare API allows application developers to interact with the

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Foursquare platform. The API itself is a RESTful set of addresses to which you can send requests, the

request returns XML or JSON format

FIGURE 2: DENVER, COLORADO BURGLARY CRIME MAP