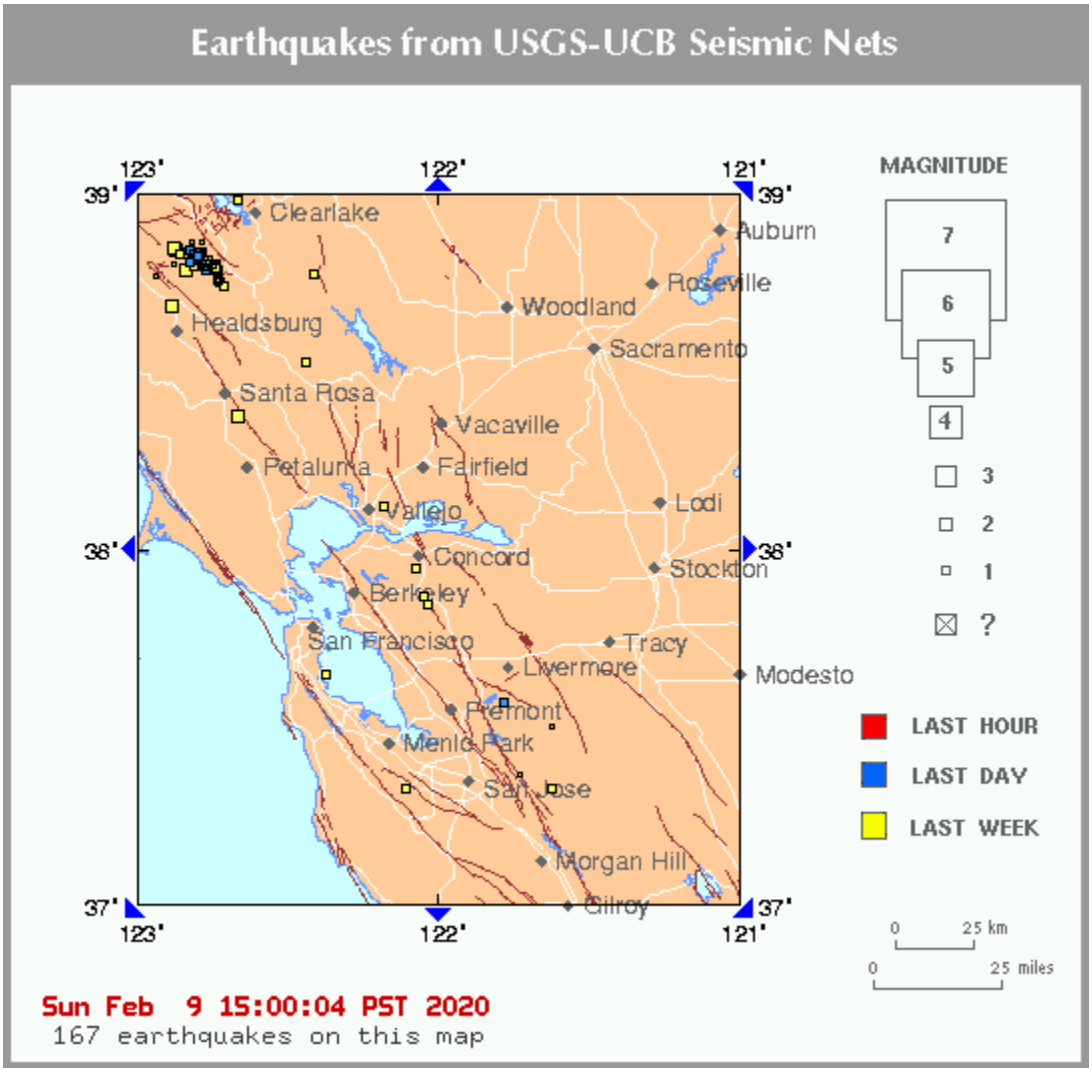
Insurance Sales Targeting for Marketing of Earthquake Policy Riders in The San Francisco Bay Area

Basin Analytics, Richland WA



Introduction

Seismic damage risks to property are ever present in California. With surging real estate prices, the financial risks are therefore amplified and all real estate market stakeholders. Those most at risk are residential real estate developers and individual homeowners because those groups are less likely to carry insurance that would adequately cover the costs of property damage due to earthquakes. The San Francisco Bay area is ground zero for residential property seismic damage risks for numerous reasons. The two most obvious being the frequency and likelihood of earthquakes in the area and the fact that real estate prices in the area are among the highest in the nation. Thus, targeted marketing for Bay Area communities that would most benefit from extra protection in the form earthquake riders on new and existing policies would be an asset for both insurance brokers and real estate owners.

Business Problem

The objective of this project is to analyze and select the best locations around the San Francisco Bay area for marketing earthquake damage insurance riders to homeowners and developers. This objective will be achieved by analyzing existing data using data science techniques of machine learning. Insurances brokers will be able to maximize marketing of earthquake riders by knowing prime sales areas as a result of this analysis.

Target Audience

The target audience for this project are homeowners, rental property owners, and developers of real estate residing or doing business in areas most-likely to incur major property damage from earthquakes in the San Francisco Bay area. There is a 76% chance of future major (>7.0 magnitude) earthquakes in Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. Since the October 17, 1989, Loma Prieta earthquake, only 10% of California's 7 million plus homeowners have earthquake insurance – and the number has dropped by more than half since that deadly quake.

Data Sources

The business problem will be solved by using the following data sources:

- Community data for boroughs and neighborhoods in the cities of San Francisco, Oakland, Alameda, South San Francisco, Berkeley, Fremont, and San Jose. Location data will be especially important for mapping sales target areas.
- Earthquake and seismic data for clustering communities that would be most at risk.

The sources of these data includes Wikipedia pages for the above mentioned cities and the Southern California Earthquake Data Center (SCEDC, https://service.scedc.caltech.edu/eq-catalogs/date_mag_loc.php) for earthquake and seismic information.

The Python Geocoder package will be used to obtain latitude and longitude coordinates of the neighborhoods. The Foursquare API will be used to get venue data for the neighborhoods. Specifically, neighborhood parks information that will give us an idea of the neighborhoods to target for our sales campaign. The Earthquakes Catalog from the SCEDC will provide us with the number, magnitude and

location of earthquakes within our study area. A time frame of ten years will be used so that seismic trends can be observed for various location within the study area.