HOUSING SALES PRICE PREDICTION OF AMES, IOWA

VISHNU SIVADAS

16-05-2019

1. INTRODUCTION

1.1 Background

Ames is a city in Story County, Iowa, United States, located approximately 30 miles (48 km) north of Des Moines in central Iowa. It is best known as the home of Iowa State University (ISU), with leading agriculture, design, engineering, and veterinary medicine colleges. Housing prices of this area depends on a lot of factors. For the people who are looking for buying a house or somebody who wants to sell a house, making a wild guess is difficult and often results in bad business decisions. In this project a model is created to tackle the same.

1.2 Business Problem

When we ask a home buyer to describe their dream house, and they probably won't begin with the height of the basement ceiling or the proximity to an east-west railroad. There are a lot of features to be considered before one can set the price or start negotiating. The project aims in creating a model for predicting housing sales price for Ames, Iowa considering all the important features including the neighbourhood venues

1.3 Target Audience

- House aspirants who can roughly estimate the value of a house based on its features and the average price.
- Real estate people and city planners who can decide what kind of venues to put around their products to maximize selling price.
- House sellers who can optimize their advertisements.

2. DATA DESCRIPTION

2.1 Data Sources

Data sets are prepared from the following sources:

- The Ames Housing dataset is taken from Kaggle.com which was compiled by Dean De Cock for use in data science education. It consists of 79 explanatory variables describing various aspect of residential homes in Ames, Iowa.
- **Foursquare API** is used to get the most common venues of Ames, Iowa. There is a categorical variable 'Neighborhood' in Ames housing dataset. Using this variable and 'geopy' library in python, latitude and longitude of neighbourhoods' is found which in turn is used for finding nearby venues using Foursquare API.

2.2 Usage of Data in problem solving

- The above data sets are merged into a single one after cleaning on which explanatory data analysis is done.
- Correlation analysis is done on datasets by which features are selected.
- Further training is done on these datasets using Machine Learning (Regression) algorithms to make the required housing sales price prediction model.