# Introduction

There are many factors that determine the value of a home in the real estate market. We have been provided a dataset containing explanatory variables and the final sale prices of homes. We will attempt to predict the final sales price of a home for Ames, Iowa using regression.

# Data Description

The data was provided from the following educational kaggle competition:

<https://www.kaggle.com/c/house-prices-advanced-regression-techniques/data>

The data consists of 79 explanatory variables and the final Sales Price of a home in Ames, Iowa. The [Ames Housing dataset](http://www.amstat.org/publications/jse/v19n3/decock.pdf) was compiled by Dean De Cock for use in data science education.

For analysis question 1, we are only interested in the following variables:

GrLIvArea

SalesPrice

Neighborhoods (NWAmes, Edwards and BrkSide specifically)

For analysis question 2, we are interest in.

???????????????

# Analysis Question 1:

## Restatement of Problem

Century 21 Ames only sells houses in the NAmes, Edwards and BrkSide neighborhoods and would like to simply get an estimate of how the SalePrice of the house is related to the square footage of the living area of the house (GrLIvArea) and if the SalesPrice (and its relationship to square footage) depends on which neighborhood the house is located in.

## Build and Fit the Model

## Checking Assumptions

Residual Plots

Influential point analysis (Cook’s D and Leverage)

Make sure to address each assumption.

## Comparing Competing Models

Adj R2

Internal CV Press

## Parameters

Estimates

Interpretation

Confidence Intervals

## Conclusion

A short summary of the analysis.

# Analysis Question 2

## Restatement of Problem

## Model Selection

Type of Selection

Stepwise

Forward

Backward

Custom

## Checking Assumptions

Residual Plots

Influential point analysis (Cook’s D and Leverage)

Make sure to address each assumption

## Comparing Competing Models

Adj R2

Internal CV Press

Kaggle Score

## Conclusion: A short summary of the analysis.

# Appendix

Well commented SAS Code for Analysis 1 and 2