Scenario

When you want to determine whether there are significant differences between the means of two populations, you can use a two-sample t test. But what if you have more than two populations? You can use ANOVA, or analysis of variance, to compare the means of two or more groups of observations. For example, perhaps we're interested in finding whether the heating quality of homes affects the sale price. We might expect that homes with better heating quality sell for more than homes with poor heating quality.

In this section, we use one-way analysis of variance to determine whether the mean sale price of homes is equivalent for all four levels of the categorical variable, heating quality. If there are significant differences in sale price based on heating quality, we can follow up the analysis with techniques to determine which levels of heating quality are associated with significantly different sale prices.

Statistics 1: Introduction to ANOVA, Regression, and Logistic Regression

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