Price Analysis: Houses across the U.S. and its Neighborhoods

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## Did the homes sell significantly higher than the average selling price for the neighborhood?

The null hypothesis is that the mean = 162487. The alternative hypothesis is that the mean > 162487.

### Test using an alpha of 0.05:

The alpha = 0.05, the sample estimate of the mean = 170627.9, se = 4751.79, t(103) = 1.7132 and the p-value = 0.04484. Since the p-value is less than the alpha (0.04484 < 0.05), there is evidence to reject the null hypothesis and that the alternative hypothesis is true. The true mean is greater than 162487.

### Test using an alpha of 0.01:

The alpha = 0.01, the sample estimate of the mean = 170627.9, se = 4751.79, t(103) = 1.7132 and the p-value = 0.04484. Since the p-value is greater than the alpha (0.04484 > 0.05), there is not enough evidence to reject the null.

## Find and interpret a 92% confidence interval for the 2011 average selling price for these neighborhoods.

The null hypothesis is that the mean = 162487. The alternative hypothesis is that the mean ≠ 162487. The confidence level is set to 0.92.

### Test using an alpha of 0.08:

The alpha = 0.08, the sample estimate of the mean = 170627.9, se = 4751.79, t(103) = 1.7132 and the p-value = 0.08968. The 92% confidence interval is [162226.1, 179029.7]. Since the p-value is greater than the alpha (0.08968 > 0.08), there is not enough evidence to reject the null.

R-Script: Console

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| > hSales <- read.csv("2011\_Home\_Sales.csv", header = TRUE)  > t.test(hSales$Sale.Price, mu = 162487, alternative = "greater", conf.level = 0.95)  One Sample t-test  data: hSales$Sale.Price  t = 1.7132, df = 103, p-value = 0.04484  alternative hypothesis: true mean is greater than 162487  95 percent confidence interval:  162740.9 Inf  sample estimates:  mean of x  170627.9  > t.test(hSales$Sale.Price, mu = 162487, alternative = "greater", conf.level = 0.99)  One Sample t-test  data: hSales$Sale.Price  t = 1.7132, df = 103, p-value = 0.04484  alternative hypothesis: true mean is greater than 162487  99 percent confidence interval:  159398.9 Inf  sample estimates:  mean of x  170627.9  > t.test(hSales$Sale.Price, mu = 162487, conf.level = 0.92)  One Sample t-test  data: hSales$Sale.Price  t = 1.7132, df = 103, p-value = 0.08968  alternative hypothesis: true mean is not equal to 162487  92 percent confidence interval:  162226.1 179029.7  sample estimates:  mean of x  170627.9  > describe(hSales$Sale.Price)  vars n mean sd median trimmed mad min max range skew kurtosis se  X1 1 104 170627.9 48458.97 151200 169115.5 46924.29 92400 259300 166900 0.39 -1.34 4751.79 |
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