**Unit 8 Discussion Example - First Response to a Classmate's Post**

**First response:** Choose a classmate's post. Use the same data, and forecast a trend projection using Excel QM. Share the graph and "next period" prediction. Based on the graph, do you think this is a good model for this variable?

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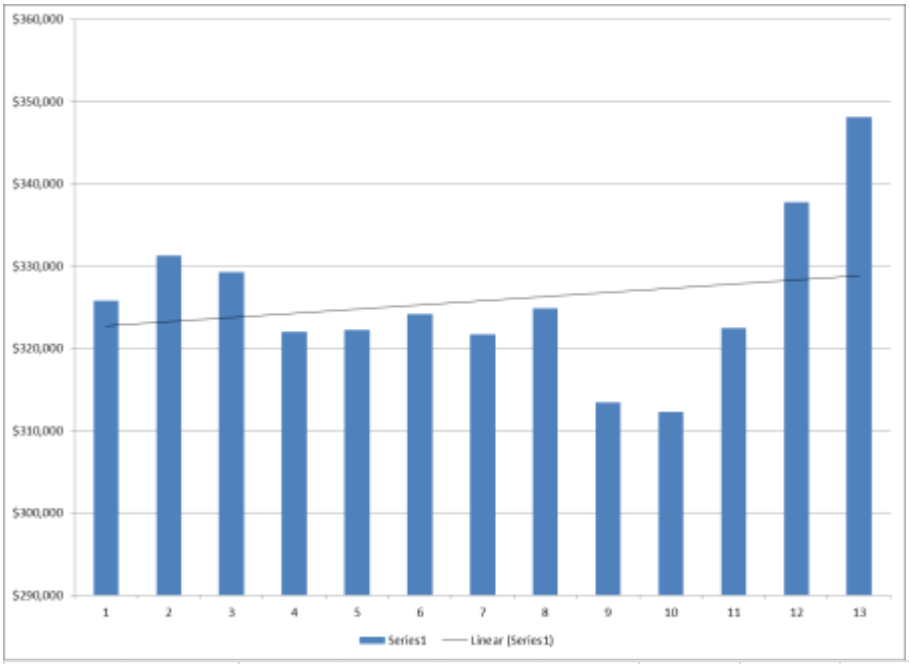
I will use the National Association of Realtors Website (http://www.realtor.org/topics/existing-home-sales ) and I downloaded the "Single-Family Existing Home Sales and Prices" spreadsheet for Database work. I looked at the (not-seasonally adjusted) **median sale price for the West** column over the past year by month (May 2015 – May 2016). **Forecast for the next period is $329,388.** Based on the graph, there looks like there could be some seasonality trends that I might want to explore by looking at more than one years worth of data. Is there always a drop in prices around months 9-10 (Jan-Feb)?




**Forecasting** **Simple linear regression**

**Data**

| Period | Demand (y) | Period(x) |
|---|---|---|
| Month 1 | $325,800 | 1 |
| Month 2 | $331,300 | 2 |
| Month 3 | $329,300 | 3 |
| Month 4 | $322,000 | 4 |
| Month 5 | $322,200 | 5 |
| Month 6 | $324,200 | 6 |
| Month 7 | $321,700 | 7 |
| Month 8 | $324,900 | 8 |
| Month 9 | $313,400 | 9 |
| Month 10 | $312,300 | 10 |
| Month 11 | $322,500 | 11 |
| Month 12 | $337,800 | 12 |
| Month 13 | $348,100 | 13 |

| | |
|---|---|
| Intercept | 322226.9 |
| Slope | 511.5385 |
| Forecast | $329,388 |

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**Forecasts and Error Analysis**

| Forecast | Error | Absolute | Squared | Abs Pct Err |
|---|---|---|---|---|
| 322738.5 | 3061.538 | 3061.538 | 9373018 | 00.94% |
| 323250 | 8050 | 8050 | 64802500 | 02.43% |
| 323761.5 | 5538.462 | 5538.462 | 30674556 | 01.68% |
| 324273.1 | -2273.08 | 2273.077 | 5166879 | 00.71% |
| 324784.6 | -2584.62 | 2584.615 | 6680237 | 00.80% |
| 325296.2 | -1096.15 | 1096.154 | 1201553 | 00.34% |
| 325807.7 | -4107.69 | 4107.692 | 16873136 | 01.28% |
| 326319.2 | -1419.23 | 1419.231 | 2014216 | 00.44% |
| 326830.8 | -13430.8 | 13430.77 | 1.8E+08 | 04.29% |
| 327342.3 | -15042.3 | 15042.31 | 2.26E+08 | 04.82% |
| 327853.8 | -5353.85 | 5353.846 | 28663669 | 01.66% |
| 328365.4 | 9434.615 | 9434.615 | 89011967 | 02.79% |
| 328876.9 | 19223.08 | 19223.08 | 3.7E+08 | 05.52% |
| Total | 1.75E-10 | 90615.38 | 1.03E+09 | 27.69% |
| **Average** | **1.3E-11** | **6970.41** | **7.9E+07** | **02.13%** |
| | **Bias** | **MAD** | **MSE** | **MAPE** |
| | | **SE** | **9679.62** | |
| | | | | |
| | | **Correlati** | **0.21016** | |
| **Coefficient of determination** | | | **0.04417** | |