



Northeastern University

College of Professional Studies

Week 4 Assignment

Storytelling with R Shiny

Course #: ALY6070

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Introduction:

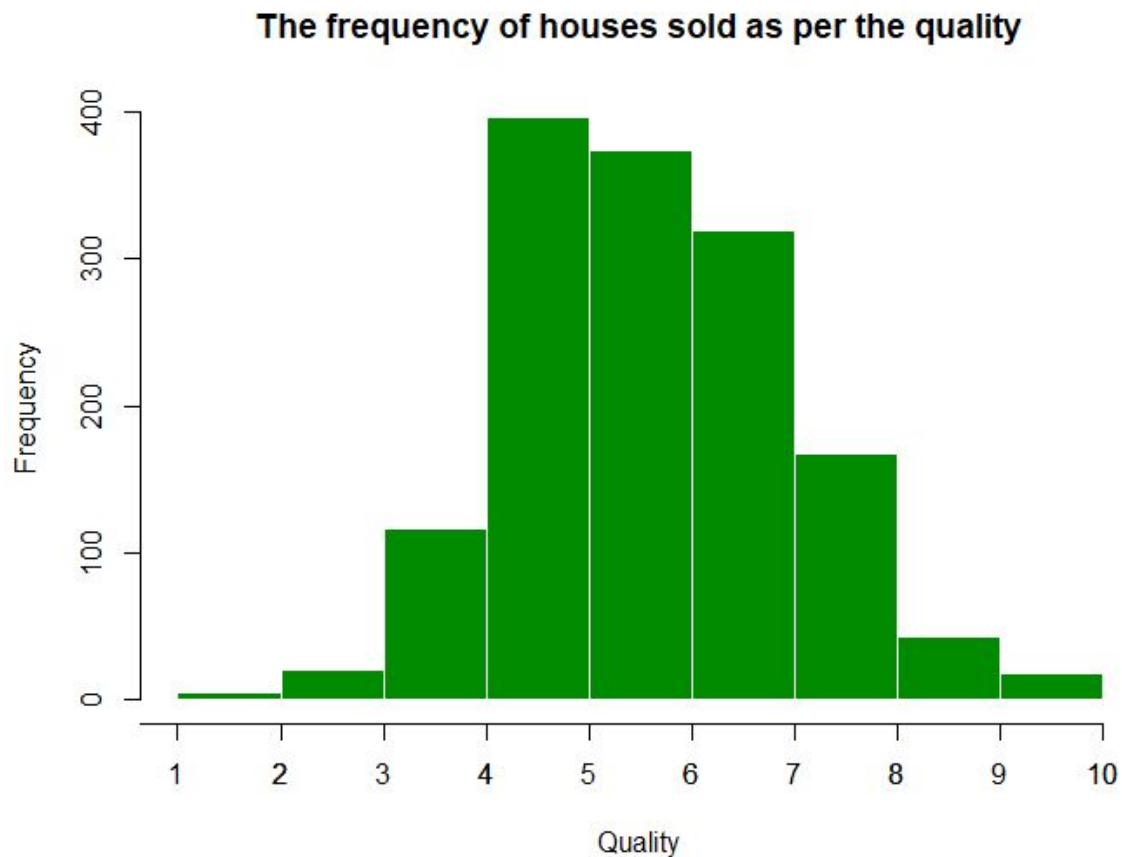
What are some of the factors that a home buyer looks for before buying their dream house? They won't look for the features like the height of the basement or the year the garage was built. The things that influence the customer to buy a house most are Price, Area or the number of Bedrooms, the quality of the house. We have been provided with the dataset of the residential homes in Ames, Iowa, with many variables that might affect the sale price of the house like quality, area, neighborhood, number of bedrooms, etc.

There are many questions which can be raised when studying this housing price data. One of those would be finding the best house in the most affordable price.

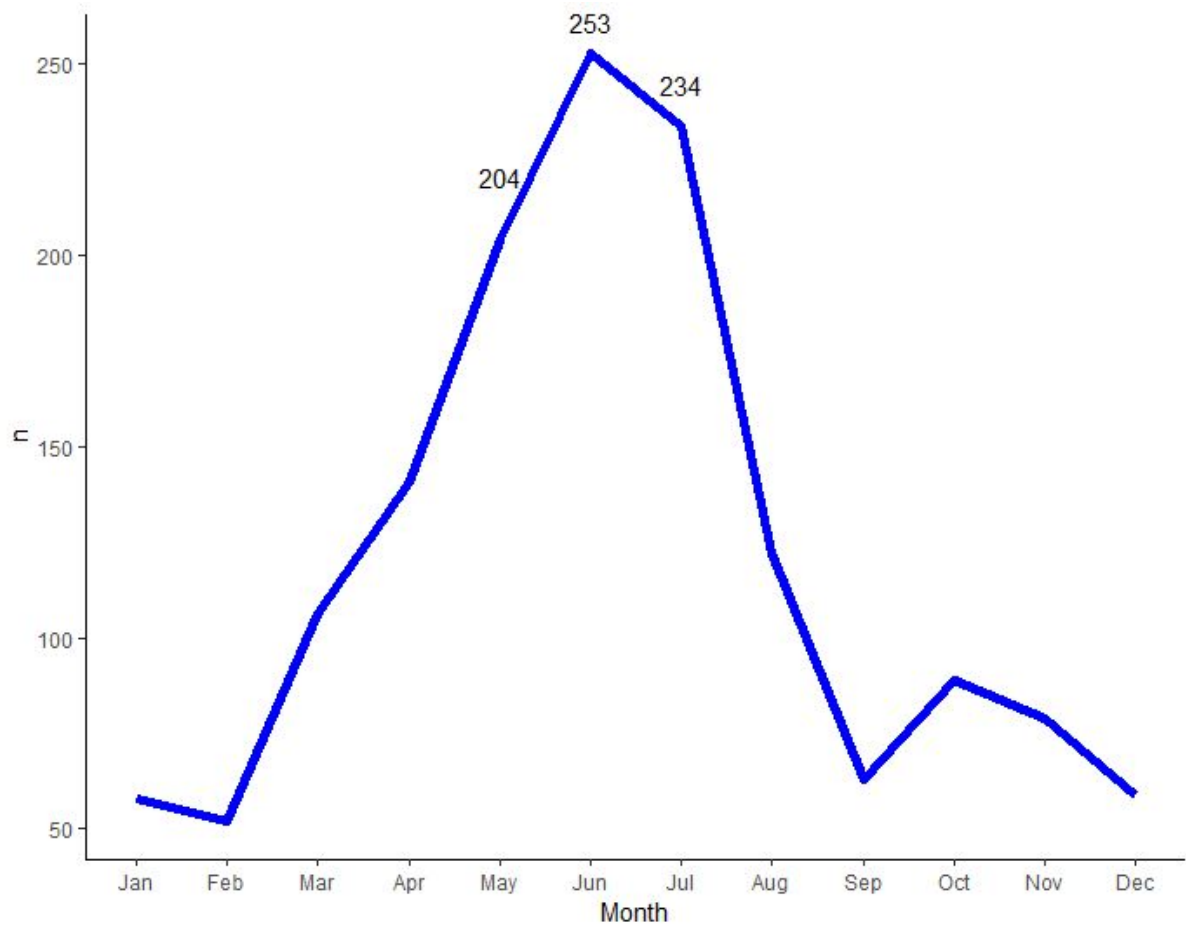
How will this data help the Customers to buy their dream house at the best price and help the Real Estate agents to sell the most number of houses? What factors should they consider?

Analysis:

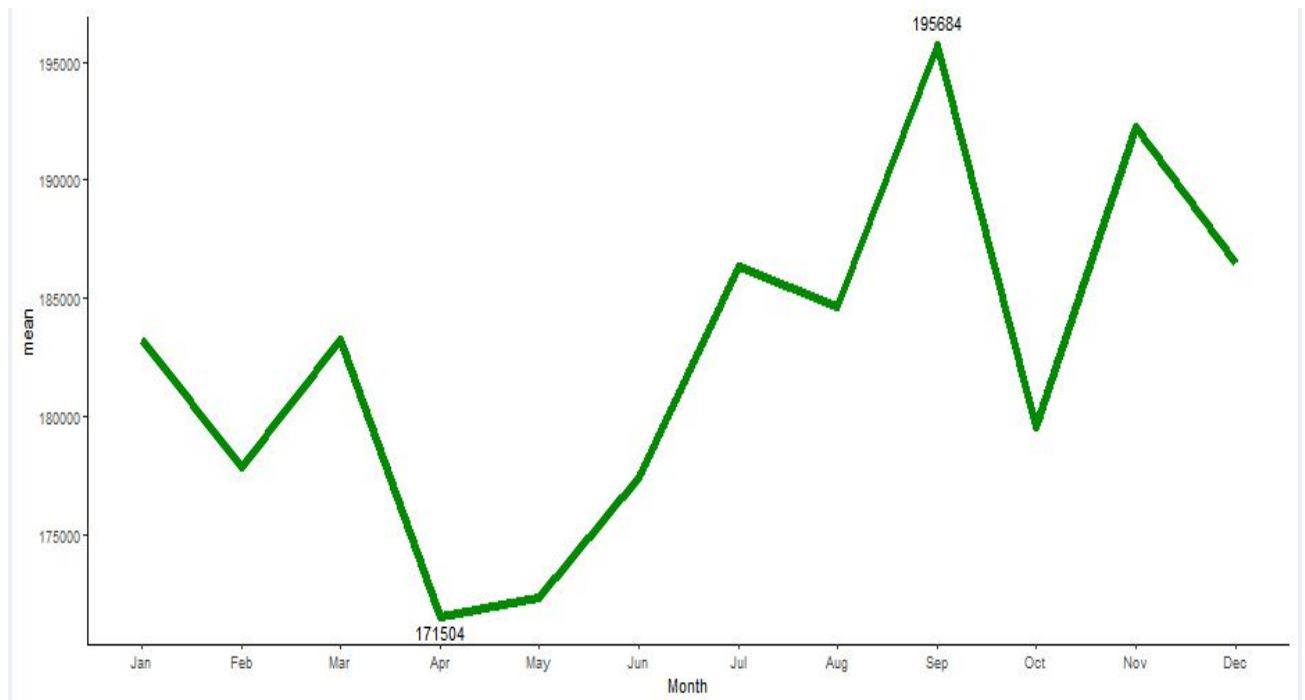
First, We cleaned the data by changing the names of the columns and making it more readable. We will be focusing on the variables like Sale Price, Months and Year Sold, number of Bedrooms, Quality of the house, etc.



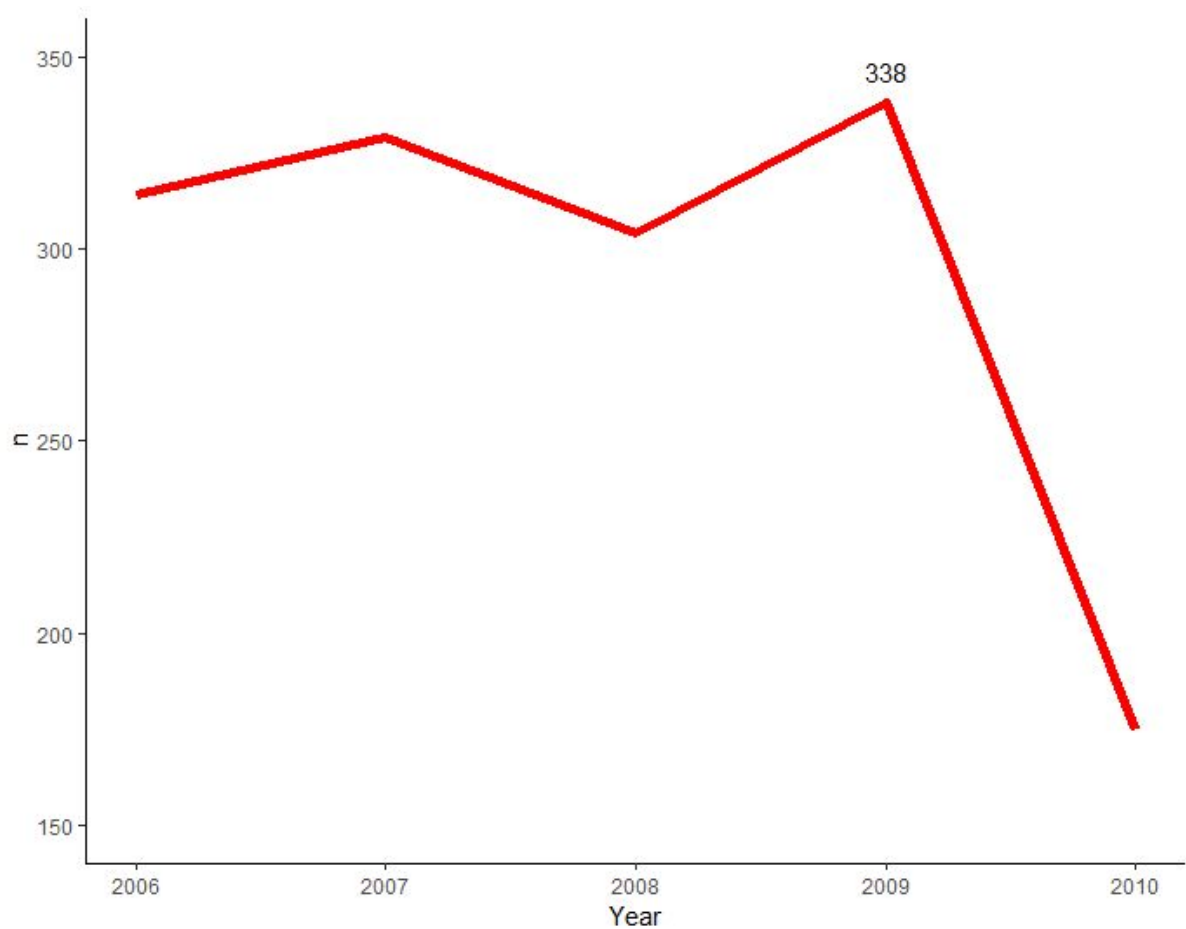
In the above graph, we have plotted the frequency of the houses sold as per the quality. We can see that the houses that sell the most are of average quality. More than 50% of the houses that are sold are of quality 5, which is the average quality. Generally, as the quality of the house increases the price increases with it. But the customer has to analyze if the increase in price as the quality increases is worth the rise in price.



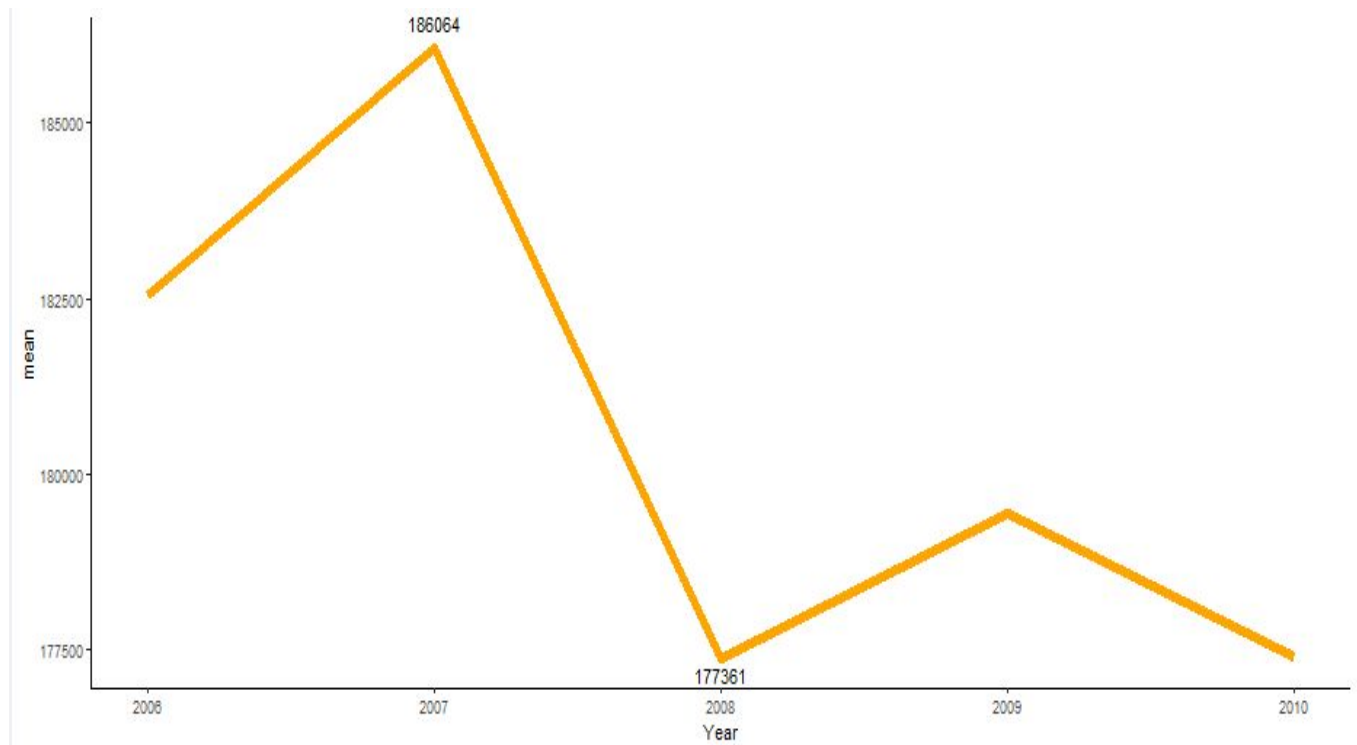
The above graph is a line graph which portrays the houses sold in each month. As we can clearly see that during June, the sale of houses is the highest. The real estate agents should be well prepared before the May, June, and July as every year these are the highest selling months. They can do many improvements and be ready to increase the sales number even higher.



The above plot shows the average price of houses in different months. As we can see in April, the average price is the lowest and it is highest in the month of September. The customer looking for buying their dream house should plan to buy the house in the months of April or May as the price during those months is the lowest.



The above graph shows the yearly sales. It can be noticed that after the year 2009, the real estate sales experienced a major downfall due to the economic crisis and the house sales had a major fall. The real estate agents should look back to 2006-2009 as look for the major changes that happened during these years which caused the huge fall in the sales from 2009-2010.

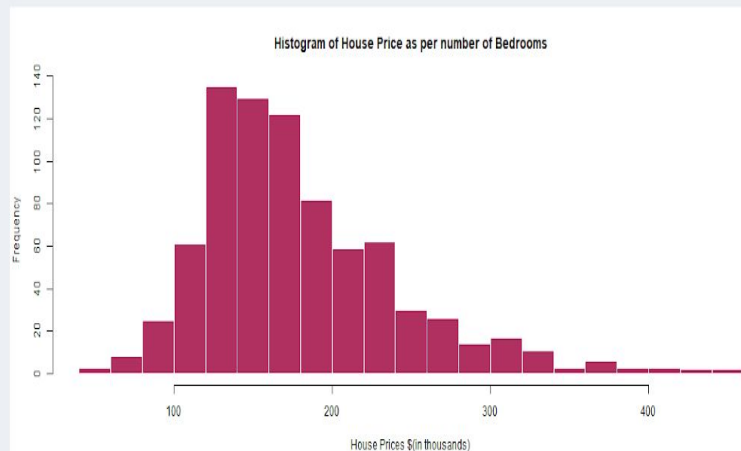


In the above graph, the average price of the houses with respect to years can be seen. From 2006-07, there was a substantial rise in the real estate prices. But after that, it experienced a huge drop where the average price nearly dropped from \$186064 to \$177361.

House Price and Number of Bedrooms

Number of Bedrooms:

- ☐ 0 Bedroom
- ☐ 1 Bedroom
- ☐ 2 Bedrooms
- ☐ 3 Bedrooms
- ☐ 4 Bedrooms
- ☒ 5 Bedrooms
- ☐ 6 Bedrooms
- ☐ 7 Bedrooms
- ☐ 8 Bedrooms



We have plotted a frequency histogram of house price as per the number of Bedrooms. It shows the frequency of the house price in thousand dollars with respect to the bedrooms. Customers can select the number of bedrooms and know about the price and frequency as per the number of bedrooms which they want.

Tran - Naveen

Dashboard

Table

Data Table of Location and Number of Bedrooms

Location:
Number of Bedrooms:

Show entries
Search:

	Location	Bedroom	SalePrice	Year	Month	FirstFloorSquareFeet	SecondFloorSquareFeet
187	Mitchell	3	173000	2009	6	1217	0
202	Mitchell	3	171500	2008	2	1279	0
277	Mitchell	3	201000	2010	4	1560	0
296	Mitchell	3	142500	2006	3	1003	0
392	Mitchell	3	215000	2009	6	804	1157
514	Mitchell	3	134000	2007	6	1080	0
614	Mitchell	3	147000	2007	12	1120	0
792	Mitchell	3	146800	2007	5	1062	0
818	Mitchell	3	271000	2008	7	1689	0
877	Mitchell	3	132250	2007	1	1040	0

Showing 1 to 10 of 23 entries

Previous
1
2
3
Next

Above, we have a different tab in our dashboard which has the data table as per the location and number of bedrooms. Everyone can select the neighborhood that they are looking for with the specific number of bedrooms. All the available houses are displayed with the area and the Sale Price which makes it easier to find the desired house in the desired location at an affordable price.

Our Dashboard contains all these graphs combined with a respective text or value box for which we have matched the color scheme according to the graph to make it easier for the audience to read the graph and get to know the insights.

Conclusion:

We can say that the people looking to buy houses should buy during the months of April and May as the average price at that time is the lowest. The customers who want the best value for money should look for houses with the average quality, where the quality is fine and the price is good. The Real estate agents can expect high sales during from May to July and hence they should be prepared for it. In this way they can expect a good business and also the customers can buy their dream house at the most affordable price.

References:

Shiny Dashboard. (n.d.). Retrieved March 21, 2019, from https://rstudio.github.io/shinydashboard/get_started.html

Amr. (2018, March 22). Build your first web app dashboard using Shiny and R. Retrieved March 21, 2019, from <https://medium.freecodecamp.org/build-your-first-web-app-dashboard-using-shiny-and-r-ec433c9f3f6c>

Christie, L. (2008, December 30). Home prices post record 18% drop in 2008. Retrieved March 21, 2019, from https://money.cnn.com/2008/12/30/real_estate/October_Case_Shiller/index.htm?postversion=2008123014