**Springboard Data Science Career Track Unit 4 Challenge**

In this case study, the data of 32 boroughs within Greater London are examined to discover some more desirable areas to live in. A rule of thumb is more desirable areas, more increasing in housing prices so a ratio of  the average prices in 2018 divided by average prices in 1995 for all boroughs is calculated. Then, these ratios are compared, and the top 5 highest ratios are selected as more desirable areas. The asked questions are responded as followings:

* What did you find? Which borough is the most expensive? Any other interesting trends?

Figure 1 The growth of house prices in all boroughs

Graphical user interface, application, Word

Description automatically generated

As Figure 1 shows the housing prices in all districts have increased over the last two decades. However, the highest growth trend  belongs to the district “Hackney” that is distinguished among others. In addition, all districts’ trends show the decreasing in house pricing in 2009 that was considered as the impact of the recession. However, this condition had an intensive effect on the decreasing of house pricing in the district Hackney.

Figure 2 The five most desirable districts are based on the calculated ratio of average prices in 2018 divided by average prices in 1995.

Graphical user interface, application, Word

Description automatically generated

Figure 2 shows five districts: Hackney, Waltham Forest, Southwark, Lewisham, Westminster, as more desirable than other districts.

* How did you arrive at your conclusion?

At this point, we know all price houses, on average, increased over the last two decades. So,  the ratio formula has been used to compare house prices growth together. The ratio of average prices in 2018 divided by average prices in 1995 is calculated. Then, a histogram of 10 highest ratios is plotted in descending order. Figure 2 visualizes the result.

* What were the main challenges you encountered? How did you overcome them?

The coding part is straightforward with the help of the use case tier 2 but analyzing data and interpreting plots need some knowledge beyond coding skills. In this case study, I relied on my knowledge and searched for some information on the internet.

* What could you not overcome?

Visualization helps to draw a lot of valuable information from each dataset. In this case study, only two plots are drawn that reveal a part of information, but it needs more investigation.

* Is there anything you’d like to investigate deeper?

The result of this case study is an answer to the question "which boroughs of London have seen the greatest increase in housing prices, on average, over the last two decades". However, having detailed information about the buildings and districts helps data scientists to interpret data and modeling it more precisely.