

## **London Housing Project Brief**

### ***Problem Statement:***

Which boroughs of London have seen the greatest increase in housing prices, on average, over the last two decades?

### ***Conclusion:***

Hounslow, Richmond upon Thames, Harrow, Bromley, Hammersmith & Fulham, Hillingdon, Bexley, Enfield, Kingston upon Thames, Ealing, Havering, Barnet, Redbridge, Tower Hamlets, and Merton had the greatest increase in housing prices, on average. These boroughs are listed in descending order.

### ***Process:***

During the initial data transformation process, the original data set's column titles and row titles were transposed. Then, the initial row's entries were designated as the column titles. The resulting duplicate of column titles and initial row entries were removed. Additionally, the the row indices were reset to a numeric index rather than the borough name indices.

After transforming the data set to a useable format, it was discovered that the relative data was buried among numerous entries containing no useful data regarding the year or monthly average price. All data entries that did not include useful data were removed. Once the initial data set was cleaned, a list of location names was generated, finding that the data set included more locations than the thirty-two official London boroughs. The additional locations were cleaned from our data set by pulling out only the entries that matched a list of the official London borough locations.

A line plot was used to visualize the upward trend in the monthly average price for one borough. However, a challenge arose when attempting to display line plots for all boroughs for comparison simultaneously. Since this was unachievable, data tables were created in pandas to sort the data entries by year and location, and display the resulting average monthly price. A function was created to return the ratio of each location's average monthly price in 1998 compared to 2018. The results displayed in a data table visualized each location's ratio with a numeric row index. The results were sorted in descending order, and the first fifteen rows were pulled in order to isolate the boroughs with the highest monthly average price increase. These final findings were displayed in a bar graph.

### ***Further Investigation:***

It may be useful to further analyze the London Boroughs data set to determine which years had the highest price increase on average, or what features drove the price increase in the list of the top fifteen boroughs.