Objective

This document is a summary of an analysis of the housing price trend over two decades (1998 - 2018) in the city of London, and seeks to identify which borough of the 32 in modern London has increased the most and at what average rate. Data is pulled from the official URL of the UK government. This analysis is part of my year 2021 Springboard Data Science training and project creation.
It is found unambiguously that the London borough of Hounslow has seen the greatest average increase in price.

Procedure

Data comes from the [London Datastore](): a free, open-source data-sharing portal for London-oriented datasets. The data is quite raw, and much time and effort are devoted to cleaning and transforming data so it can be consumed by standard pandas tools for analyzing and visualizing the data in order to provide unambiguous answers for which borough of London has appreciated the most over the 20 years from 1998 to 2018.
The Anaconda framework, Python version 3.8.5, and their associated features and tools (i.e. libraries, jupyter notebook, etc…) were used in the analysis. The [jupyter-notebook file (.ipynb)]() and [python file (.py)]() are provided to share the raw data and illustrate the data processing workflow. An overview and results are given in this document.
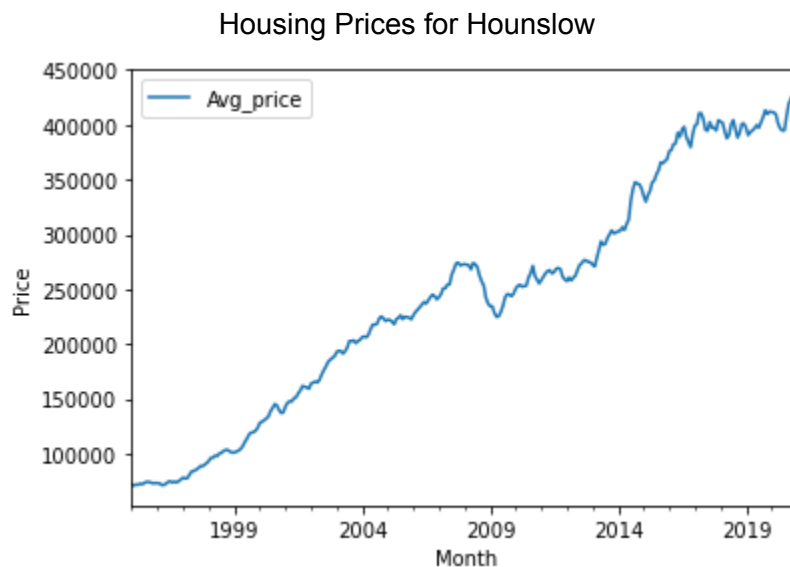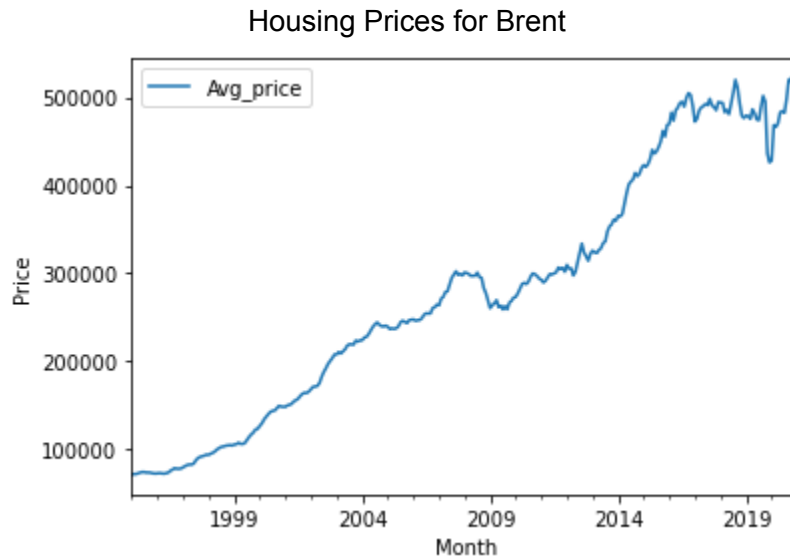
Results

Overall, after cleaning the housing prices collected at the beginning of every month yielded approximately 10,400 data points over the 32 boroughs. Average rate of increase is shown in the table below with a high of 25.1% (Hounslow) and a low of 16.1% (Hackney).

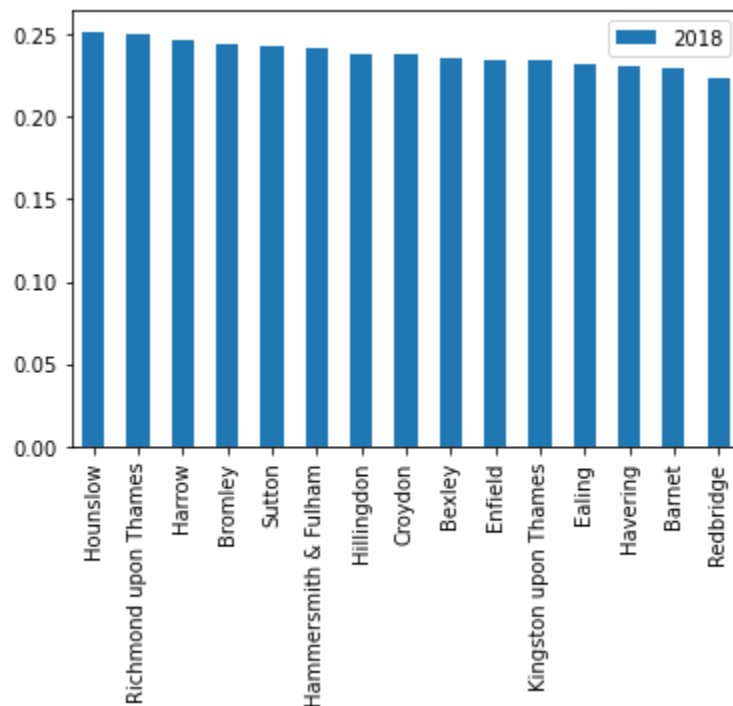|	Borough	2018
17	Hounslow	0.251483
26	Richmond upon Thames	0.249678
14	Harrow	0.246354
4	Bromley	0.244213
28	Sutton	0.242806
12	Hammersmith & Fulham	0.241674
16	Hillingdon	0.238080
7	Croydon	0.238033
2	Bexley	0.235351
9	Enfield	0.234551
20	Kingston upon Thames	0.234162
8	Ealing	0.231940
15	Havering	0.231202
1	Barnet	0.229453
25	Redbridge	0.223655
29	Tower Hamlets	0.216137
23	Merton	0.210914
31	Wandsworth	0.210185
10	Greenwich	0.209950
18	Islington	0.206439
3	Brent	0.204309
0	Barking & Dagenham	0.204223
5	Camden	0.202620
21	Lambeth	0.201704
19	Kensington & Chelsea	0.196755
13	Haringey	0.194756
6	City of London	0.188622
24	Newham	0.188488
32	Westminster	0.186791
22	Lewisham	0.183512
27	Southwark	0.181275
30	Waltham Forest	0.171387
11	Hackney	0.161335

Table of average price increase of houses in London boroughs.

Housing price increases have been relatively monotonic in the past two decades prior to 2018 with a dip around 2009 during the mortgage crisis, and the subsequent decade-long price boom. This pattern is consistent across all London boroughs and is illustrated in monthly average price graphs for Brent and Hounslow. Note - *Update with alpha plot of multiple boroughs.*

Housing Prices for Brent

Housing Prices for Hounslow

The top 15 boroughs experiencing the greatest price increase rate are shown in the bar chart below -

Top 15 Price Increases from 1998 to 2018

Conclusion

In the past two decades, from 1998 to 2018, the London Borough of Hounslow has seen the greatest increase in house prices. An astounding average increase of 25.1% annually! Overall, even the lowest rate of increase over 20 years is impressive (Hackney at 16.1%). See summary of top 15 housing price changes in the bar chart above. Any wonder why London is one of the most expensive cities in the world? There was a plateau in the housing price after 2018, but after the COVID-19 pandemic, it will be interesting to see how much more(?) housing prices have increased. House price trends post-pandemic are worthy of continuing analysis.