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Sprint 0

Capstone Project Proposal

The Problem Area:

My area of interest deals with housing market trends within the United States and the UK. One of the biggest challenges is limited housing. I would like to analyze the trends in the following categories:

1. Available and unavailable housing spread throughout different demographic
2. Growth/Decline of availability across different regions
3. Spread of different types of housing (apartment, complex, etc.) available throughout different periods in time
4. Listings posted over time
5. Prices across different demographics

The User:

Future homeowners and renters in the US/UK are the ones experiencing/affected by housing instability problems and would benefit the most from the insights gained in my project.

The Big Idea:

How can machine learning bring solutions?

One of the ways in which machine learning can be used is to forecast property demand for different regions within the UK and in the United States. Paired with other demographic information per region analyzed, we can analyze trends within people of different socio-economic status.

The Impact:

The problem that we are observing within the housing market is tremendously large affecting millions of people both in the UK and in the United States. Finding trends to minimize the problem of inefficiencies within supply and demand could save millions of dollars in the housing market.

The Data:

I have two sets of data sets that I plan on using. The [first one](#). The [second one](#) is a data set gathered from the UK government's HM Land Registry and provides details on property sales in England and Wales. Other further insights include locations and types of properties sold. The second data set provides information on US cities Housing Market and is a data set that is updated frequently (last time that it was updated was June 2024). Some of the key features of this data set are location (region, city, state), sale price information, and information on new listings just to name a few.

The Alternative:

Another subject area that is of interest to me is Airbnb listings across the world. This rental company is leading in short-term rentals and offers hosts the opportunity to make a profit from

their listed property. I have been able to gather a [data set](#) for this alternative area of interest. Some of the main takeaways from this data set are summaries posted by the hosts about their listed property, details on the specifications of the property listed, details on the neighborhood in which the property is situated, and host information (self description, response rate, acceptance rate).