CMPT 733 Big Data Programming – Final Project
Call for Project Idea

Title of the Project: Property value prediction with market data

Description:
Investment on a home is a big decision for any family. When buying/selling a home, whether it's a house, townhouse or condo, getting the accurate property value assessment is critical. Home owners seek help from realtors, or get the information from BC Assessment once a year in January. The Assessment Notice reflects the market value of the property as of July 1 of the previous year. In the volatile real estate market, neither realtors' advices nor BC assessment notice is adequate for making a buy or sell decision.

On the other hand, current real estate information such as selling prices are available on some advertising websites. For example, the listing content advertised on REALTOR.ca comes from the various MLS® Systems operated by Real Estate Boards and Associations across Canada. People can search the properties on sale in the locations they are interested.

It will be very useful to build a software that can predict the property's market value to help making buy or sell decisions and determining the right timing. For example, the software could monitor the advertising websites, and retrieve data from these websites to a database, then use machine learning algorithm to predict the property's current value when the unique Property Identification Number (PID) or the attributes of the property (built year, type, lot size, etc.) are specified. The software could also retrieve the historical assessment values for the specified property from the BC Assessment website.

Furthermore, the key interest rate set by the Bank of Canada has significant impact on the real estate market. By analyzing the correlations between the historical interest rates and property value data, it's possible to predict the future value of the property. For example, what would the trend look like for the value of a specified property in the next 12 months if the interest rate hikes for 75 base points? When would be the best time to sell (or buy)?

Input	Output
• Property Identification Number (PID) • Or, address and attributes of the property (year, type, # bedrooms, etc.) • Interest rate	• Current market value of the property • Previous BC Assessment value of the property • Future market value of the property and 12 month moving trend

Datasets
Possible websites to look into:

Data	Reference
• https://www.realtor.ca/ • https://www.rew.ca/ • https://www.bcassessment.ca/ • https://www.bankofcanada.ca/rates/interest-rates/	• https://www.landcor.com/ • http://data.vancouver.ca/datacatalogue/index.htm • https://data.surrey.ca/

Contributor of the Project idea:
Marco Wu, Lead Data Scientist, Vancity Credit Union
marco_wu@vancity.com