Summary

Overview:

- Real estate firms play a crucial role in the property market, acting as intermediaries between buyers and sellers, landlords and tenants, as well as developers and investors.Their core function is to help clients navigate the complexities of real estate transactions, ensuring that their interests are well-represented and that they make informed decisions based on market data and trends.

Problem Statement:

- Real estate firms want to analyze market trends, understand price movements, and identify areas with the highest growth.

Overview of Dataset:

- House data contains 16 features and 5000 rows

- Selected relevant features for modeling: zipcode, lot size, taxes, year built, bedrooms, bathrooms, square footage, and garage availability.

- Split the data into 80% training and 20% testing sets.

Implementation:

Multiple Linear Regression: A manual implementation of the MLR algorithm was used. The algorithm that predicts the Sold_price depends upon the Independent variable

Prediction:

Multiple Linear regression is implemented and for tuning multiple Linear Regression: Gradient Descent with learning rate 0.01 over 315 iterations. Evaluated using Mean Absolute Error (MAE).

Python Libraries used Numpy,Pandas used for Data processing and Normalization process and Matplot used for Data visualization. Then Multiple linear regression and Gradient descent with multiple linear regression algorithms written Manually without using Sklearn.

Conclusion:

- The model gives most accurate predicting results but further tuning or using some other advanced techniques may improve the accuracy of the model.

- Some zip codes have significantly higher average sold prices indicating that these areas may be wealthier or have higher property values.

- The Insights shows with specific regions based on latitude and longitude have higher sold

prices.

- Most data points are concentrated in the years closer to 1900-2000, with prices showing variability.

- The fluctuations might be due to market conditions, economic factors, or data inconsistencies. Further analysis is needed to understand the reasons behind these price variations.

- By enhancing the models, real estate firms can use this tool to make better-informed decisions about marketing campaigns, inventory management, and business strategies.

- It helps real estate firms Identify growth areas to target high-demand regions ,Optimize inventory based on price trends and Improve marketing campaigns by focusing on trending areas.