SUPERIOR UNIVERSITY

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Project Report: House Price Prediction

Report on Home Price Prediction Implementation

Introduction

This report explains the implementation of a home price prediction model using machine learning techniques. The goal is to preprocess housing data and train a model that can accurately predict home prices based on various features.

Data Preprocessing

Before training the model, the dataset undergoes several preprocessing steps to handle missing values, remove unnecessary features, and prepare the data for analysis. The key steps include:

a) **Dropping Unnecessary Columns**
b) Alley
c) PoolQC
d) Fence
e) MiscFeature
f) MSZoning'

B Handling Missing Values

The 'LotFrontage' column is filled using the median value grouped by 'Neighborhood' to preserve the data distribution.

c) Label Encoding

Categorical variables are transformed into numerical values using label encoding to make them suitable for machine learning models.

d) Feature Scaling

StandardScaler is applied to normalize numerical features, ensuring the model performs optimally.

e) Model Training

The dataset is split into training and testing sets using `train_test_split`. A Linear Regression model is trained to predict home prices, and its performance is evaluated using the Mean Absolute Error (MAE) metric.

f) Conclusion

This project demonstrates how data preprocessing and machine learning techniques are combined to build an effective home price prediction model. Proper data cleaning, feature engineering, and model evaluation ensure accurate predictions for real-world applications.

Kaggle Submission: