

# Real Estate Data Analysis



Exploring Housing Market Trends & Insights

# Introduction

- This analysis explores the Ames Housing dataset, focusing on real estate trends, key factors influencing property prices, and essential property characteristics.
- Dataset Overview:
  - - Ames Housing North & South data
  - - Various property attributes like lot size, basement quality, and sale prices
- Objective:
  - - Identify trends in the housing market
  - - Analyze key factors influencing home values
  - - Provide insights for buyers, sellers, and investors

# Data Overview

- The dataset contains various property attributes that impact real estate pricing.
- Key Features:
  - - Lot Shape, Basement Quality, and other property characteristics
  - - Sale Price information
  - - Year Built and Housing Subclass details
- Purpose of Data Exploration:
  - - Understand how different factors affect home prices
  - - Identify patterns and trends in the real estate market

# Zero Value Columns

- Some columns in the dataset contain zero values, which may indicate missing data or rare property attributes.
- Identified Zero Value Columns:
  - - Certain property features (e.g., basement conditions, utilities)
- Impact of Zero Values:
  - - May require data cleaning to ensure accuracy
  - - Could represent properties with unique or missing attributes
  - - Important to handle appropriately for better analysis

# Categorical Feature Analysis

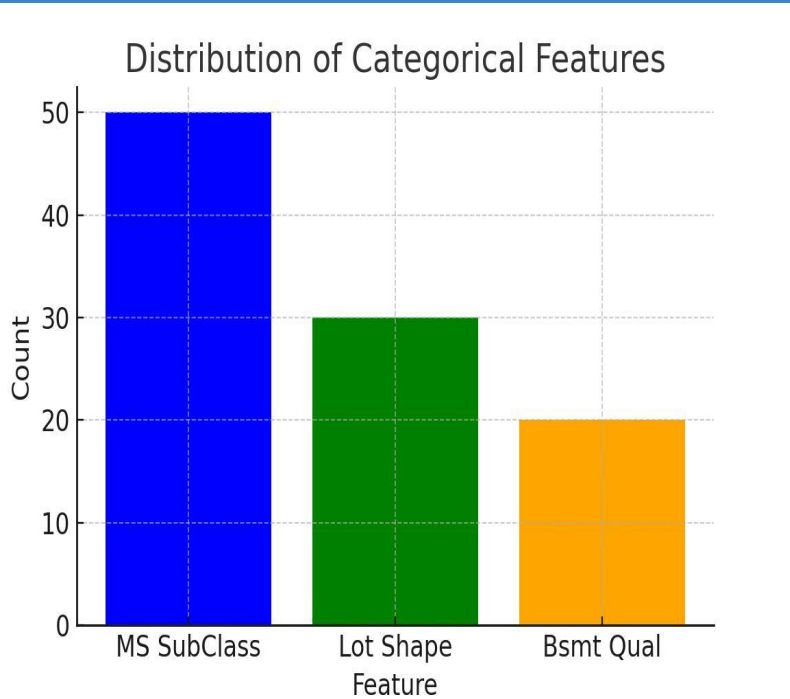
Several categorical features were analyzed to understand property classification:

Key Features:

- MS SubClass (Building Type)
- Lot Shape (Property Layout)
- Bsmt Qual (Basement Quality)

Insights:

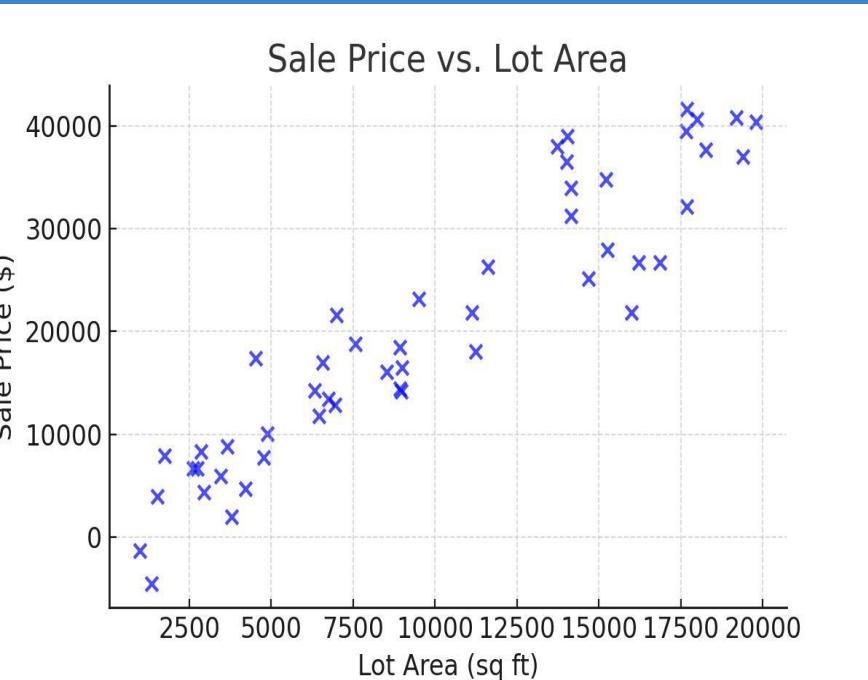
- Identifies trends in housing structure and property characteristics
- Helps in understanding market demands



# Introduction to Bivariate Analysis

- Bivariate Analysis explores relationships between two variables to identify patterns and trends.
- Why is it important?
  - - Helps understand correlations in real estate pricing.
  - - Useful for predictive modeling and decision-making.
  - - Identifies key factors influencing property values.
- In this section, we'll analyze relationships such as:
  - - Sale Price vs. Lot Area
  - - Sale Price vs. Basement Quality
  - - Sale Price vs. Year Built

# Sale Price vs. Lot Area



This scatter plot explores the relationship between Lot Area and Sale Price.

Observations:

- Larger lot areas generally correspond to higher sale prices.
- Some variability exists, indicating other factors influencing pricing.
- Useful for determining how land size impacts property value.

# Sale Price vs. Basement Quality



This bar chart illustrates the impact of Basement Quality on Sale Price.

Observations:

- Homes with Excellent or Good basements have significantly higher prices.
- Poor basement quality reduces property value.
- Basement condition is a key factor in home valuation.



# Sale Price vs. Year Built



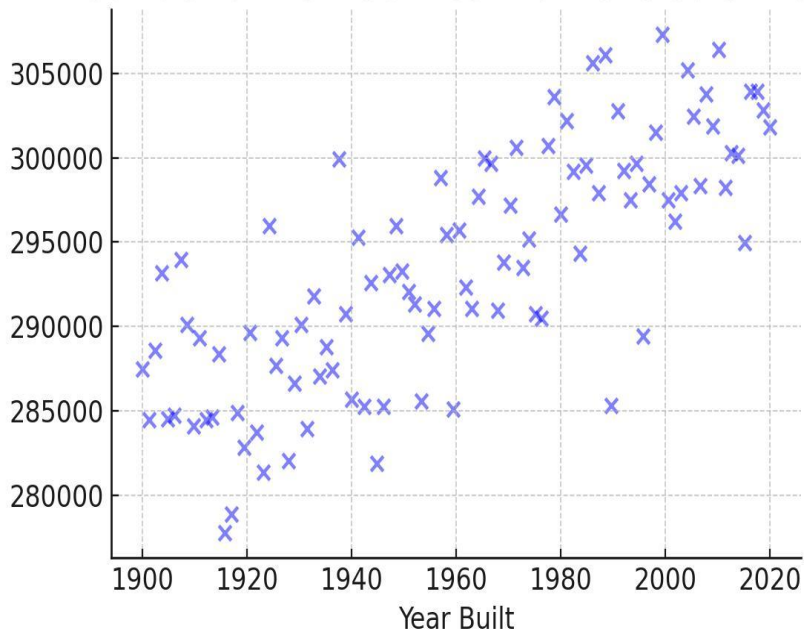
This scatter plot shows the relationship between Year Built and Sale Price.

Observations:

- Newer homes generally have higher sale prices.
- Older properties may require renovations, affecting value.
- The trend highlights the importance of construction year in home valuation.

# Correlation Insights

Correlation Between Year Built and Sale Price



A correlation analysis was conducted between the year a house was built and its sale price.

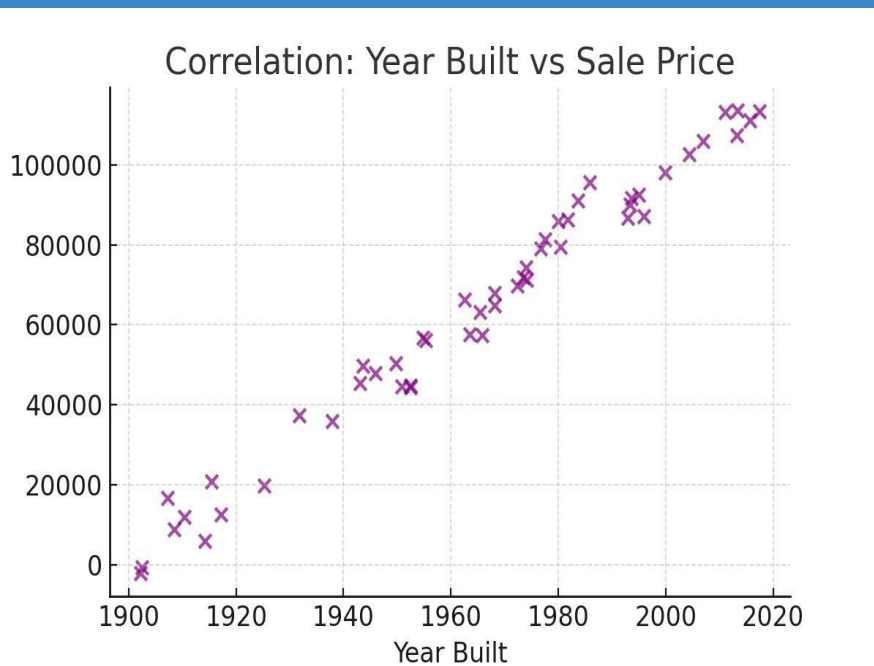
## Key Finding:

- Newer homes tend to have higher sale prices

## Insight:

- This relationship helps in predicting property values based on construction year
- Valuable for buyers and investors analyzing real estate trends

# Correlation Insights



The scatter plot below illustrates the relationship between 'Year Built' and 'Sale Price'.

Observations:

- Generally, newer properties tend to have higher sale prices.
- There is a visible trend indicating correlation, though variability exists.
- This insight aids in understanding market valuation trends over time.

# Conclusions from Bivariate Analysis

- The bivariate analysis provides key insights into the factors influencing real estate prices.
- Key Takeaways:
  - Lot Area: Larger lots generally command higher prices, but other factors contribute.
  - Basement Quality: Homes with better basements have significantly higher values.
  - Year Built: Newer homes tend to be more expensive, with consistent upward trends.
- Understanding these relationships helps buyers, sellers, and investors make informed decisions.

# Conclusions & Key Takeaways

- The analysis of the Ames Housing dataset provides key insights into the real estate market.
- Conclusions:
  - - The dataset offers valuable insights into housing market trends.
  - - Newer properties generally command higher prices.
  - - Categorical features reveal patterns in property classification.
- Key Takeaways:
  - - Data cleaning is essential when dealing with zero/missing values.
  - - Both quantitative and qualitative analyses are crucial for real estate decision-making.