Residential Real Estate Price Prediction

Client: Real Estate Investment Trust (REIT)
Project Type: Investment Analytics & Price Prediction

Business Problem

Property prices vary widely across locations, sizes, and conditions.
Investors struggle to identify:

- Fair property prices
- High-risk purchases
- Homes with hidden renovation potential

A data-driven approach was needed to support faster and safer investment decisions.

Approach & Workflow

1. SQL – Preliminary Data Review
Historical housing data was loaded into SQL to validate accuracy, completeness, and price ranges.
This ensured the data was reliable and suitable for modeling.

2. Python – Analysis & Modeling
Python was used for full exploratory analysis and price modeling to understand:

- Key price drivers
- Error and risk patterns
- Properties that behave differently from their neighborhoods

3. Tableau – Model Validation
Tableau visuals were used to compare predicted vs actual prices and visually validate model behavior across property segments with test data.

4. Power BI – Business Dashboard
An interactive dashboard was built to translate results into clear, actionable insights for investors.

Key Insights

- Most homes are priced close to expectations, indicating stable pricing behavior

- Pricing uncertainty increases for very small, very old, or unusual properties
- Low-condition homes with good location or large land often offer strong renovation opportunities
- Standard, well-maintained homes show more predictable pricing

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Business Impact

- Helps investors avoid overpaying for high-risk properties
- Highlights hidden value opportunities before renovation
- Improves confidence in price comparisons
- Enables faster, data-backed investment decisions

Tools Used

SQL | Python | Tableau | Power BI