Performance Testing & Evaluation Document

Project Title: Visualizing Housing Market Trends: An Analysis of Sale Prices and Features Using Tableau

Team ID: LTVIP2025TMID51194

# 1. Artificial Intelligence (AI)

AI capabilities are leveraged to understand housing trends and enhance predictive modeling. Though Tableau does not use AI directly, external AI tools or scripts can be integrated for deeper insights.  
- Use Case: Predict pricing anomalies using regression or clustering.  
- Performance Metric: Model accuracy and time taken to produce predictions.

# 2. GenAI Functional & Performance

Generative AI tools (e.g., ChatGPT, Copilot) can be used for auto-generating insights, explanations, and reports from data visualizations.  
- Functional Test: Auto-generate market summary based on Tableau dashboard.  
- Performance Test: Measure response time and coherence of generated summaries.

# 3. Machine Learning

Machine Learning models (linear regression, random forest) are used for price prediction.  
- Functional Test: Validate predictions against real sale prices.  
- Performance Test: Evaluate R² score, RMSE, and model training time.

# 4. Power BI

Power BI is tested as an alternative to Tableau for visual analytics.  
- Functional Test: Replicate visualizations such as price vs. area scatter plots.  
- Performance Test: Dashboard load speed and filter response time across datasets.

# 5. Salesforce

Integration feasibility is explored for customer data visualization.  
- Functional Test: Connect and sync real estate lead data with visual platform.  
- Performance Test: API sync latency, dashboard update frequency.

# 6. Tableau

Tableau is used for visualizing housing market trends.  
- Functional Test: Validate all filters, graphs, and tooltips.  
- Performance Test: Dashboard rendering time with growing dataset sizes.

# 7. User Acceptance Testing (UAT)

End users (buyers, analysts) validate if the platform meets their expectations.  
- Test Cases:  
 \* Users should understand price distribution via visualizations.  
 \* Uploading new datasets should reflect updated insights.  
 \* Predictions and dashboards must be responsive and intuitive.  
- Acceptance Criteria: 90%+ satisfaction score on usability survey.