Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau

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PROJECT NAME	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features Using Tableau
MAXIMUM MARKS	4 MARKS

Chapter 7

7.1 - Functional and Performance Testing

Visualizing housing market trends in Tableau involves cleaning data, calculating metrics like price-per-square-foot, and creating interactive dashboards to analyse, map, and forecast property values based on features like location and size. Key visualizations include geographical maps of sales, scatter plots for regression analysis, and trend lines, often using CRISP-DM methodology for insights.

- **Feature Analysis:** Including factors such as the number of bedrooms, bathrooms, and, in some cases, incorporating machine learning for better prediction accuracy.

- **Performance Metrics:** Analysing KPIs such as "Days on Market" and year-over-year (YoY) price trends.

Functional & Performance Testing of Dashboards:
- **Functional Testing:** Ensures filters, interactive maps, and calculated fields (e.g., price per square foot) produce accurate, expected results.

- **Performance Testing:** Ensures the Tableau workbook efficiently handles large, complex datasets, providing fast rendering for user interactions, which is crucial for identifying market volatility.

Tools & Techniques:
- **Tableau Public:** Used for creating and sharing interactive dashboards.

- **Data Sources:** Real estate data, Zillow, or scraped data, often involving cleaning to ensure accuracy.

- **Analytics:** Employing linear regression and clustering to understand property value drivers.

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⛪ Focus: Functional & Performance Testing

When developing a Tableau project titled **"Visualizing Housing Market Trends: An Analysis of Sale Prices and Features"**, testing ensures that your dashboards and story points are:

- Accurate
- Interactive
- Reliable
- Efficient
- Scalable

Below is a structured explanation you can use for documentation or academic submission.

1. Functional Testing in Tableau

Functional testing verifies that every component of the dashboard works correctly according to requirements.

2.Performance Testing in Tableau

Performance testing ensures dashboards load quickly and run smoothly, especially with large datasets.

Performance and Functional Testing of Dashboards
- **Functional Testing:** Ensuring that filters, interactive actions, and tooltips function correctly and display accurate data.

- **Performance Testing:** Ensuring that dashboards, especially those using large datasets or live connections, load efficiently and interact seamlessly, with options to create data extracts to improve speed.

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Example

"Comprehensive functional and performance testing was conducted to ensure accuracy, responsiveness, and scalability of the Tableau dashboard. Filters, calculated fields, and parameters were validated against the source dataset. Performance optimization techniques such as data extracts, aggregation, and context filters were implemented to maintain load times under five seconds. The dashboard demonstrated stable performance and accurate dynamic interactions across all story points."