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

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| DATE | 28-02-2026 |
| TEAM ID | LTVIP2026TMID90693 |
| PROJECT NAME | Visualizing Housing market Trends: An Analysis of sales prices and Features Using tableau |
| MAXIMUM MARKS | 4 MARKS |

## 3.4 Technology Stack

This project analyses housing market trends using a Tableau-centric technology stack to visualize, map, and filter sales data based on location, price, and property features. Key tools include **Tableau Desktop/Public** for interactive dashboards, **Python (Pandas, NumPy)** for data pre-processing, and **Excel/SQL** for data storage. It enables stakeholders to identify key value drivers—such as location (zip codes), size, and amenities—to facilitate informed real estate decisions.

✞ **Core Components of the Analysis & Tableau Stack**

- **Data Preparation:** Raw housing data is cleaned and structured using Python (Pandas) and Microsoft Excel.
- **Visualization & Mapping:** Tableau creates interactive maps (e.g., geospatial visualization by zip code), scatter plots (for price vs. square footage), and heatmaps.
- **Interactive Dashboards:** Features include filters for price range, date range, location, and property type to allow users to drill down into specific market segments.
- **Key Metrics:** Dashboards highlight average price per square foot, sales volume, and trends over time.

**Key Insights Derived**

- **Location Impact:** High-density areas show higher prices and faster turnover.
- **Feature Analysis:** Items like waterfront access, multiple bathrooms, and proximity to amenities (roads/ac) significantly drive-up value.

- **Seasonal Trends:** The highest volume of sales typically occurs during spring and summer months.

# ⭘ 🏠 Technology Stack

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

The **Technology Stack** explains the tools, software, platforms, and technologies used to build and deploy your housing market analysis dashboard.

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## 🗃️ 1. Front-End (Visualization Layer)

### ◈ Tableau Desktop

**Purpose:**

- Create interactive dashboards
- Build charts (line, bar, scatter, maps)
- Create calculated fields (Price per Sq Ft, Growth Rate)
- Design filters and parameters

**Why Used:**

- Drag-and-drop interface
- Strong geographic visualization
- Built-in analytics features

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### ◈ Tableau Public (Optional)

**Purpose:**

- Publish dashboards online
- Share project publicly

- Embed dashboards in reports or websites

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# 2. Data Layer

## Data Sources

- Excel files (.xlsx)
- CSV files (.csv)
- Real estate datasets

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### Microsoft Excel

**Purpose:**

- Initial data storage
- Data cleaning
- Formatting columns
- Removing duplicates

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### Google Sheets (Optional)

**Purpose:**

- Cloud-based data storage
- Collaborative editing

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# 3. Data Processing Layer

## Data Preparation Tasks

- Data cleaning

- Handling missing values
- Creating calculated fields
- Converting date formats
- Standardizing location names

### Tools Used:

- Tableau Data Pane
- Excel formulas
- Tableau Calculated Fields

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## 4.Analytics Layer

Tableau provides built-in analytical features:

- Trend lines
- Forecasting
- Aggregation (SUM, AVG, MEDIAN)
- Geographic mapping
- Filtering and drill-down

No additional programming language is mandatory.

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## 5. System Requirements

### Hardware

- Computer with minimum 8GB RAM
- Windows / macOS

### Software

- Tableau Desktop

- Web browser (Chrome, Edge, Safari)

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## 6. Deployment Layer

If publishing online:

- Tableau Public (Cloud-based)
- Tableau Server (Enterprise level)

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## 7. Optional Advanced Stack (If Extended Project)

If your project includes advanced analytics:

- Python (for predictive modeling)
- SQL (for database querying)
- MySQL / PostgreSQL (for large datasets)

But for a standard academic Tableau project, this is optional.

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## Technology Stack Summary Table

| Layer | Technology |
|---|---|
| Visualization | Tableau Desktop |
| Publishing | Tableau Public |
| Data Storage | Excel / CSV |
| Data Cleaning | Excel / Tableau |

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

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|---|---|
| Analytics | Tableau Built-in Functions |
| Deployment | Tableau Public / Server |

**Example**

The project utilizes Tableau Desktop as the primary data visualization tool. Housing market data is sourced from Excel/CSV files and pre-processed using Microsoft Excel and Tableau's data preparation features. Interactive dashboards are created to analyse sale prices, property features, and location trends. The final visualization is published using Tableau Public for online accessibility.