

Final Report

1. INTRODUCTION

1.1 Project Overview

The Data Analytics with Tableau project focuses on leveraging Tableau's visualization capabilities to provide actionable insights from datasets. The primary objective is to utilize Tableau for creating dashboards and visualizations that can assist clients in decision-making processes. This project specifically revolves around analyzing datasets related to real estate, focusing on sales trends, house renovations, and demographic patterns.

1.2 Purpose

The purpose of this project is to demonstrate the practical application of data visualization techniques using Tableau. By analyzing the dataset, the project aims to uncover hidden patterns, trends, and correlations, ultimately aiding stakeholders in making data-driven decisions.

2. IDEATION PHASE

2.1 Problem Statement

Understanding real estate trends is crucial for making informed decisions. However, the data often remains unstructured, making it challenging to extract meaningful insights. This project aims to solve this issue by cleaning and visualizing the dataset to present clear insights on sales trends, house renovations, and demographic preferences.

2.2 Empathy Map Canvas

- **User:** Real estate agents, buyers, and market analysts.
- **Needs:** Insights into sales trends, house renovation impacts, and buyer preferences.
- **Pains:** Lack of accessible visual data and actionable insights.
- **Goals:** Provide comprehensive dashboards to facilitate decision-making.

2.3 Brainstorming

Key areas of focus identified:

1. Total sales trends over the years.
 2. Impact of renovations on house prices.
 3. Correlation between house features (bathrooms, bedrooms, floors) and prices.
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3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

1. **Discover:** Identify the need for visual data insights.
2. **Engage:** Explore datasets and define analysis goals.
3. **Use:** Develop dashboards and interpret results.
4. **Retain:** Utilize insights for long-term planning.

3.2 Solution Requirements

- A clean dataset with relevant fields.
- Tableau Public for visualization.
- Analysis tasks:
 - Overview of total sales.
 - Renovation impact on house prices.
 - House features vs. pricing distribution.

3.3 Data Flow Diagram

Input: Raw dataset (e.g., CSV format). **Process:**

- Clean the dataset in Excel.
- Import to Tableau.
- Create visualizations (e.g., histograms, heatmaps). **Output:** Dashboards showcasing insights.

3.4 Technology Stack

- **Tools:** Tableau Public, Microsoft Excel.
- **Frameworks:** Tableau visualization frameworks.
- **Languages:** None required.

4. PROJECT DESIGN

4.1 Problem-Solution Fit

The project addresses the problem of unstructured data by providing structured and interactive dashboards that cater to real estate stakeholders' needs.

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4.2 Proposed Solution

To use Tableau's powerful visualization tools to create dashboards that:

- Analyze sales trends over time.
- Examine the effect of renovations on pricing.
- Correlate house features with market value.

4.3 Solution Architecture

1. **Data Layer:** Input dataset.
 2. **Processing Layer:** Data cleaning and transformation.
 3. **Visualization Layer:** Dashboards created using Tableau.
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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Milestones:

1. Dataset preparation (Week 1).
 2. Visualization creation (Week 2-3).
 3. Testing and iteration (Week 4).
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6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Test for dashboard responsiveness across devices.
 - Validate accuracy of visualizations using sample queries.
 - Optimize performance for large datasets.
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7. RESULTS

7.1 Output Screenshots

Screenshots of the dashboards showcasing:

- Yearly sales trends.
- Renovation impacts on pricing.

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- Feature correlations with house pricing.
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8. ADVANTAGES & DISADVANTAGES

Advantages:

- Easy-to-understand visualizations.
- Efficient decision-making support.
- Interactive dashboards.

Disadvantages:

- Requires training to use Tableau effectively.
 - Limited offline accessibility for Tableau Public users.
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9. CONCLUSION

This project highlights how Tableau can transform unstructured data into actionable insights. The dashboards created provide real estate stakeholders with tools to analyze trends and make informed decisions effectively.

10. FUTURE SCOPE

- Integration of predictive analytics using Tableau extensions.
- Expansion to include more diverse datasets.
- Enhanced interactivity using advanced Tableau features.