Visualizing Housing Market Trends - Documentation

Project Overview

This project is designed to provide a visually compelling and informative analysis of the housing market. Using interactive Tableau dashboards, users can explore patterns, trends, and insights from real estate data. Whether you are a buyer, seller, investor, or policymaker, the goal of this project is to help you understand the housing market in a data-driven way. By integrating web technologies with powerful data visualizations, this site bridges the gap between raw data and user understanding.

The project uses a cleaned dataset from Kaggle which includes attributes like square footage, number of bedrooms, sale price, and more. Insights are drawn by analyzing correlations between features and visualizing them through interactive dashboards embedded within a responsive website.

Project Structure

The project is structured in a modular and scalable way. Below is the folder-level breakdown of the structure:

static/
- css/: contains all the custom stylesheets used across the site.
- img/: stores all image assets used, such as hero banners, icons, and logos.
- vendor/: holds all third-party libraries like Bootstrap, AOS, Glightbox, Swiper, and more.

templates/
- index.html: the core template file rendered by Flask, containing all the HTML for the homepage and sections.

forms/
- contact.php: handles email submission from the contact form.

app.py: optional Python Flask file if dynamic rendering is needed for future upgrades.
README.md: project documentation.

Technologies Used

Visualizing Housing Market Trends - Documentation

Frontend Technologies:

- HTML5/CSS3 for structure and styling
- Bootstrap 5 for responsive design and layout
- AOS (Animate on Scroll) for scroll animations
- Swiper.js for interactive sliders or galleries
- Glightbox for image modals/lightbox display
- Bootstrap Icons and Google Fonts for visual aesthetics

Backend (Optional):

- Flask (Python) for routing and server-side logic
- PHP used in the contact form for handling submissions

Data Visualization:

- Tableau Public used for creating interactive dashboards and stories

Features

1. Fully responsive website with mobile-first design
2. Hero section with banner image and project summary
3. About section describing objectives, tools used, and dataset features
4. Interactive Tableau dashboards embedded within the site
5. A Tableau Storyboard summarizing trends and insights
6. Contact section with working form for communication
7. Social media integration in the footer
8. Smooth scroll navigation and mobile menu support

Dataset

The dataset used in this project is titled 'Transformed Housing Data 2' and is sourced from Kaggle. It includes over 1,000 records with various housing attributes. The primary goal was to understand what drives the pricing of homes and how different features like location, square footage, and age influence sale prices.

Visualizing Housing Market Trends - Documentation

Key Attributes Analyzed:

- SalePrice (target variable)
- TotalSqft
- BedroomAbvGr
- KitchenAbvGr
- GarageCars
- OverallQual
- Neighborhood
- YearBuilt
- SaleCondition
- MSZoning

Getting Started

To run this project locally using Flask, follow these steps:

1. Clone the repository:

   git clone https://github.com/your-username/housing-market-trends.git

2. Navigate to the project folder:

   cd housing-market-trends

3. Create and activate a virtual environment (optional):

   python -m venv venv

   source venv/bin/activate (on Linux/Mac)

   venv\Scripts\activate (on Windows)

4. Install dependencies:

   pip install flask

5. Run the Flask application:

```
flask run
```

6. Open your browser and visit http://127.0.0.1:5000

Contact

You can get in touch with the team via the following methods:

- Email: housingmarkettrends@gmail.com
- Phone: +91 94410 31362
- Location: 4th Class Employees Colony, Adoni, Kurnool District, Andhra Pradesh, India - 518302

We're happy to hear feedback, collaborate on related projects, or discuss insights into housing market analytics.

License

Base template design credits go to: BootstrapMade (https://bootstrapmade.com/)

To-Do

Potential future enhancements for the project:

- Replace PHP with Flask-based email submission handler
- Add new Tableau dashboards for regional comparison
- Implement filtering options for dashboards (e.g., year, neighborhood)
- Introduce animations using GSAP or Lottie
- Add user login/signup for personalized dashboard views
- Export dashboard data as CSV

Visualizing Housing Market Trends - Documentation

- Add admin panel for content management