

Web Application Development



Design Document

Team members:

Cesar Ernesto Perez Gomez

Mateo Gonzalez Herrera

Jorge Ruiz Liera

AI-Driven Restoration and Sale Platform for Antique Houses

Introduction

In the modern real estate landscape, digital platforms like Zillow have revolutionized how people buy and sell homes by offering extensive property listings, market insights, and user-friendly interfaces. However, while platforms like Zillow provide comprehensive information on properties, they primarily focus on ready-to-live-in homes and do not address the unique challenges and opportunities presented by old houses in need of restoration. This project proposes the development of a website that not only catalogs old houses but also employs AI to visualize potential restoration outcomes and facilitates the sale of these properties. By doing so, the platform aims to promote innovation, sustainability, and resource responsibility in the real estate market.

Rationale

Similar to Zillow, which has made it easier for users to explore and purchase homes with confidence, this project seeks to empower potential buyers of old houses by providing them with the tools and information they need to make informed decisions. However, this platform goes a step further by addressing a specific niche: historical homes that require restoration. The platform's use of AI-generated restoration visuals distinguishes it from traditional real estate websites, offering a unique value proposition that aligns with the United Nations Sustainable Development Goals (SDGs).

Problem Statement

While Zillow and similar platforms excel at listing properties, they often overlook the potential of old houses that require restoration. This lack of focus results in missed opportunities for preserving cultural heritage and revitalizing urban areas. Potential buyers are often discouraged by the uncertainties and perceived costs of restoring older properties. This project addresses these issues by providing a platform that not only lists old houses but also showcases their potential through AI-generated restoration scenarios, helping buyers envision the possibilities and making the restoration process more transparent and approachable.

Basic Idea

The proposed solution is a website that catalogs old houses and uses AI to generate potential restoration outcomes. The platform will allow users to:

- **Browse and Search:** Users can search for old houses available for sale, filtered by location, size, architectural style, and other criteria, similar to how Zillow allows users to search for properties.
- **AI-Generated Visualizations:** Each property will feature AI-generated images that depict possible restoration outcomes, giving potential buyers a clear vision of what the property could look like post-restoration.
- **Cost and Time Estimates:** The platform will provide detailed estimates of the restoration costs and timelines, much like Zillow's feature that provides estimated mortgage payments and property taxes.
- **Restoration Customization Tool:** Users can interact with the platform to customize restoration options, such as interior design styles, materials, and energy-efficient upgrades, with real-time AI-generated previews.
- **Purchase and Support:** The platform will offer an integrated process for purchasing the property, connecting buyers with trusted restoration experts and contractors to facilitate the project, akin to Zillow's connection with real estate agents and mortgage providers.

Visual Representation

Below are some conceptual sketches to illustrate the platform:

1. **Homepage:** A clean, modern interface inspired by Zillow's user-friendly design, welcoming users with a search bar, filters, and a curated selection of highlighted properties featuring AI-generated restoration visuals.
2. **Property Page:** Detailed property pages will include before-and-after images, AI-generated restoration scenarios, and a breakdown of potential restoration costs and timelines, mirroring Zillow's detailed property listings but with a focus on restoration.
3. **Restoration Customization Tool:** An interactive tool allowing users to experiment with different restoration styles and materials, displaying real-time AI-generated visualizations.

Alignment with UN Sustainable Development Goals

This project aligns with several key UN Sustainable Development Goals (SDGs), contributing to global efforts to foster sustainability, innovation, and economic development:

- **Goal 9: Industry, Innovation, and Infrastructure**
 - **Target 9.1:** The project contributes to the development of resilient and sustainable infrastructure by encouraging the restoration of old houses, which supports economic development and human well-being.
 - **Target 9.2:** By promoting the restoration and reuse of existing buildings, the project supports sustainable industrialization, potentially raising the industry's share of employment and GDP, particularly in regions where this sector is underdeveloped.
 - **Target 9.3:** The platform increases access to financial services for small-scale contractors and artisans, particularly in developing countries, by creating a

- market for restoration services and integrating them into broader economic value chains.
- **Target 9.4:** The project upgrades infrastructure sustainably by retrofitting old houses with modern, energy-efficient technologies, thus contributing to increased resource-use efficiency.
- **Target 9.5:** By integrating AI and other innovative technologies into the real estate sector, the project enhances technological capabilities and promotes research and development within this industry.
- **Goal 11: Sustainable Cities and Communities**
 - **Target 11.1:** The platform directly addresses the need for affordable and sustainable housing by making old houses viable options for purchase and restoration, which can reduce urban sprawl and support the creation of more sustainable human settlements.
 - **Target 11.4:** By focusing on the restoration of old houses, the project contributes to safeguarding the world's cultural and natural heritage, which is essential for creating resilient and inclusive cities.
 - **Target 11.6:** The restoration of old houses, especially with energy-efficient upgrades, supports the goal of reducing environmental impact, including improving air quality and reducing the overall carbon footprint of urban areas.

Additional Services

To further enhance our platform, we will offer the following extra services:

- **Catalog and Virtual Consultations:** Users can browse a catalog of architects and designers specializing in sustainable practices, with options for virtual consultations to discuss restoration ideas and receive design proposals.
- **Sustainable Materials:** The platform will include a marketplace for purchasing eco-friendly building materials, integrated with the restoration customization tool for easy selection and purchase.
- **Energy Audits and Smart Home Integration:** We will offer energy efficiency audits and the integration of smart home technologies to enhance the sustainability of restored homes.
- **Post-Restoration Maintenance Plans:** The platform will provide maintenance packages and emergency repair services to ensure the longevity and upkeep of restored properties.

Potential Benefits

This project offers several key advantages:

- **Lower Prices:** One of the primary attractions of purchasing old houses is their generally lower market price compared to new constructions. By highlighting the affordability of these properties and providing clear restoration plans, the platform makes it easier for buyers to enter the real estate market at a lower cost. This opens up opportunities for a wider range of buyers, including first-time homeowners and investors looking for unique properties.

- **Preservation of Cultural Heritage:** By revitalizing old houses, the platform helps preserve historical architecture, contributing to the cultural richness of communities (aligned with Goal 11).
- **Sustainable Development:** Restoration is typically more resource-efficient than new construction, reducing environmental impact and supporting the goals of sustainable urban development (Target 9.4).
- **Economic Empowerment:** The platform opens up new economic opportunities for small-scale contractors, artisans, and restoration experts, particularly in developing regions (Target 9.3).
- **Technological Innovation:** By integrating AI into the real estate sector, the project fosters innovation and enhances the sector's technological capabilities (Target 9.5).

Conclusion

This proposal outlines an ambitious project that merges technology with tradition to address a significant gap in the real estate market. By leveraging AI to visualize the potential of old houses, the platform will inspire a new wave of restoration efforts, promoting sustainable development, economic empowerment, and innovation. While the idea draws inspiration from successful platforms like Zillow, it is rooted in the principles of the UN SDGs, particularly those related to industry, innovation, infrastructure, and sustainable cities. This project will serve as the foundation for further development throughout the semester, offering ample opportunities to refine and expand upon the initial concept.

Design of our project in the first period:

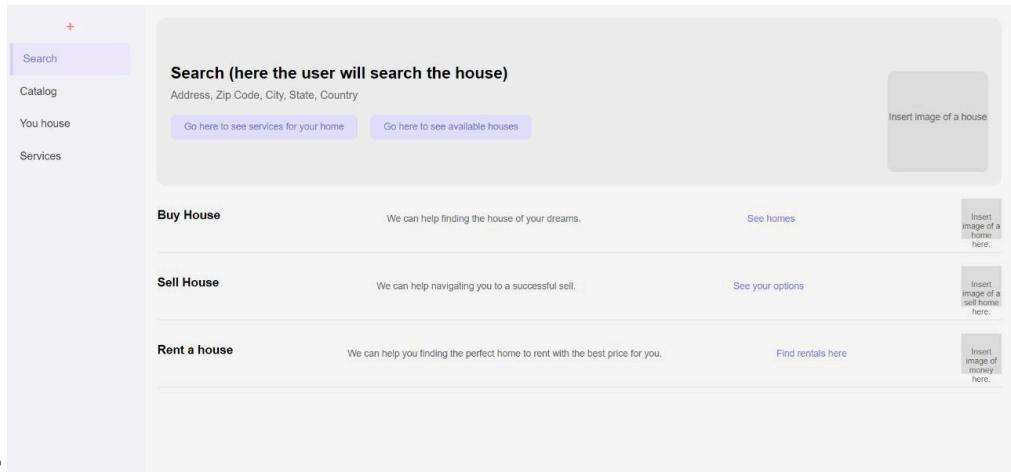
(This image was the basic idea to know how we could define the design of our project)

\$445,000
3614 Nugget Dr, Bowling Green, KY 42104
Est.: \$2,475/mo [Get pre-qualified](#)

4 beds 2 baths 2,413 sqft

[Request a tour](#)
as early as tomorrow at 11:00 am

[Contact agent](#)



Page 1:

House Catalog

Here are the available houses in your area



Insert an image of a house here

Modern Villa

Luxurious and spacious.

[View Details](#)



Insert an image of a house here

Cozy Cottage

A quiet place for families.

[View Details](#)



Insert an image of a house here

Urban Apartment

Centrally located apartment.

[View Details](#)



Insert an image of a house here

Beachfront Property

Oceanfront view.

[View Details](#)



Insert an image of a house here

Mountain Retreat

Peaceful and secluded.

[View Details](#)

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Page 2:

Modern Villa

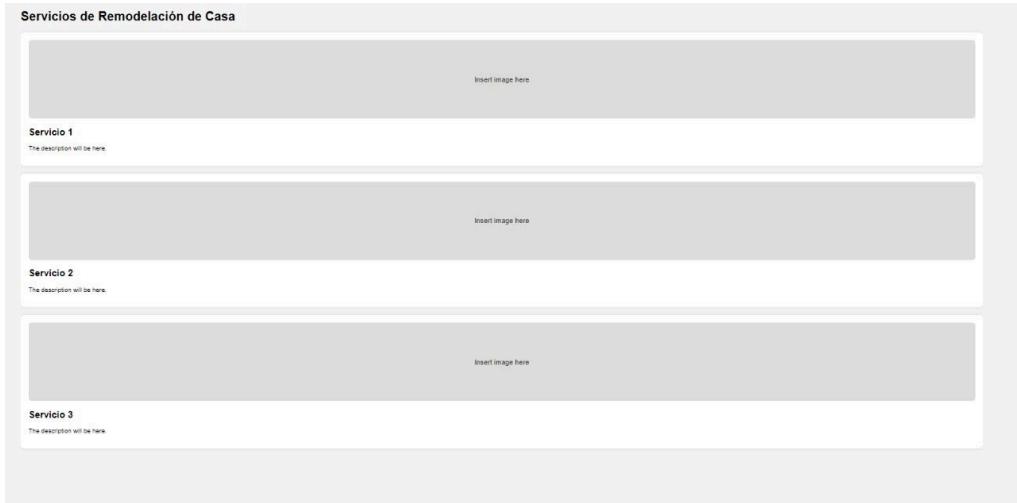


Insert image of the modern villa

A luxurious modern villa with all amenities.

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Page 3:



Page 4:

Design of our project in the second period:

First page:

Buy Rent Sell

house

Services Help

Homes. Future. Sustainability.

Enter a city or ZIP code (Zapopan, 43243)

Buy House
We can help find the house of your dreams.
[See homes](#)

Sell House
We can help you navigate to a successful sale.
[See your options](#)

Rent a House
Find the perfect home to rent at the best price.
[Find rentals here](#)

Go here to see the catalog of our houses.

Second page:

Buy Rent Sell  Services Help

House Catalog

Here are the available houses



Modern Villa
City: Zapopan
ZIP Code: 43221
Price: \$245,000

[Ver Detalles](#)
[!\[\]\(5fff40472ad10d456ceb3775edf98340_img.jpg\) Save](#) [!\[\]\(207d79912909f888f5f071263296f6ac_img.jpg\) Share](#)



Cozy Cottage
City: Tlaquepaque
ZIP Code: 43243
Price: \$450,500

[Ver Detalles](#)
[!\[\]\(176df70e19313d8dc4b65cd4d681dc4c_img.jpg\) Save](#) [!\[\]\(04a646b4a04129f475fedd273f7cea2f_img.jpg\) Share](#)



Urban Apartment
City: Tonala
ZIP Code: 43256
Price: \$434,000

[Ver Detalles](#)
[!\[\]\(38be0354a9847e686b91de18422d82c2_img.jpg\) Save](#) [!\[\]\(43bb564f8e64338559c3fc8e162587a3_img.jpg\) Share](#)

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Third page:

Buy Rent Sell  Services Help



Modern Villa
City: Zapopan
Zip code: 43221
Price: \$245,000
Description:

[Regresar al Catálogo](#)

Contacto

¿Interesado en esta propiedad? ¡Dejanos tus datos y nos pondremos en contacto!

Nombre

Correo electrónico
 ejemplo@correo.com

Teléfono
 123-456-7890

[Enviar](#)

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Fourth page:

Buy Rent Sell  Services Help

Remodeling Services



Carpentry
If you need a carpenter for the house of your dreams, contact him [here](#)



Painter
If you need a painter for your dream house, contact him [here](#)



Plumber
If you need a plumber for the house of your dreams, contact him [here](#)

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Design of our project in the final period:

(Basically the same but we needed to make it with react and in the second period our website wasn't made with react)

First page:

The screenshot shows a modern real estate website interface. At the top, there are navigation links for 'Buy', 'Rent', and 'Sell'. In the center, there's a logo with a house icon and a search bar containing the placeholder text 'Enter a city or ZIP code (Zapopan, 43243)'. Below the search bar, there's a large image of a smiling couple and a real estate agent pointing upwards, with the text 'Homes. Future. Sustainability.' overlaid. A purple button labeled 'See homes' is visible. Below this main section, there are three smaller cards: 'Buy House' (with a photo of a living room), 'Sell House' (with a photo of a living room), and 'Rent a House' (with a photo of a living room). Each card has a corresponding purple button: 'See homes', 'See your options', and 'Find rentals here'. The bottom of the page features a large image of a two-story wooden house in a forest setting.

Second page:

The screenshot shows the 'House Catalog' page of the website. At the top, there are navigation links for 'Buy', 'Rent', and 'Sell'. In the center, there's a logo with a house icon and a link to 'Services' and 'Help'. Below this, the title 'House Catalog' is displayed with the subtitle 'Here are the available houses'. There are three cards showing house thumbnails and details: 'Modern Villa' (City: Zapopan, ZIP Code: 43221, Price: \$245,000), 'Cozy Cottage' (City: Tlaquepaque, ZIP Code: 43243, Price: \$450,500), and 'Urban Apartment' (City: Tonala, ZIP Code: 43256, Price: \$434,000). Each card includes a 'Ver Detalles' button, a green 'Save' button, and a 'Share' button. The bottom of the page features a copyright notice: '© 2024 House Search'.

Third page:

Buy Rent Sell  Services Help



Contacto
¡Interesado en esta propiedad? ¡Déjanos tus datos y nos pondremos en contacto!

Nombre:

Correo electrónico: ejemplo@correo.com

Teléfono: 123-456-7890

Enviar

Modern Villa
City: Zapopan
Zip code: 43221
Price: \$245,000
Description:

[Regresar al Catálogo](#)

© 2024 House Search

Fourth page:

Buy Rent Sell  Services Help 

Remodeling Services



Carpentry
If you need a carpenter for the house of your dreams, contact him [here](#)



Painter
If you need a painter for your dream house, contact him [here](#)



Plumber
If you need a plumber for the house of your dreams, contact him [here](#)