

School of Engineering and  
Technology

# Estate360

## Next Gen Real Estate Platform

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# Overview

This project entails the development of a streamlined real estate platform designed to facilitate property transactions and enhance user experience through the integration of basic AI functionalities:

- ▶ AI chatbot assistance & Service Provider Directory
- ▶ Property Search & Matchmaking
  - Static Property Visuals
  - Sustainability Metrics
  - Investment Calculators
  - Community Forum





# Importance and Relevance of the project :

- This project simplifies the property search and buying process by addressing key real-world challenges in the real estate industry. Such as the following:
- The personalized AI assistance to reduce user confusion.
- Offers smart property matching to save time, and highlights sustainability metrics to support eco-friendly choices.
- The inclusion of investment calculators empowers users to make informed financial decisions.
- While the service directory and community forum create a connected ecosystem for buyers, sellers, and service providers.
- Its responsive design ensures accessibility on any device, making it practical and user-friendly in today's digital-first environment

## **Problem statement:**

- Current real estate platforms often lack personalized assistance, efficient property matching, sustainability insights, and integrated investment tools.
- Users face fragmented services, limited community engagement, and poor mobile experiences.
- This project addresses these gaps with AI-driven support, smart search, eco-friendly metrics, and a user-friendly, responsive design.



# Methodology:

## Project Setup

- **Tools & Technologies:** Python (Flask/Django), HTML and CSS.
- **Environment variables:** Install necessary packages using pip and set up a virtual environment.

## Frontend Development

- **HTML/CSS:** Design responsive web pages using HTML5 and CSS3
- **Responsive Design:** Ensure compatibility across devices with media queries
- **UI/UX design:** User friendly data interface using **Canva** and **Figma**.

## Backend Development

- **Framework Setup:** Use Flask/Django to create server-side logic
- **Database Integration:** Use SQLite/PostgreSQL to store property data
- **API Development:** Create RESTful APIs to fetch and update property data

## AI-Powered Chatbot Integration

- **Chatbot Framework:** Use libraries like **chatterbot** or integrate third-party APIs (**Dialogflow**)
- **Training:** Train the chatbot to handle common queries related to property searches

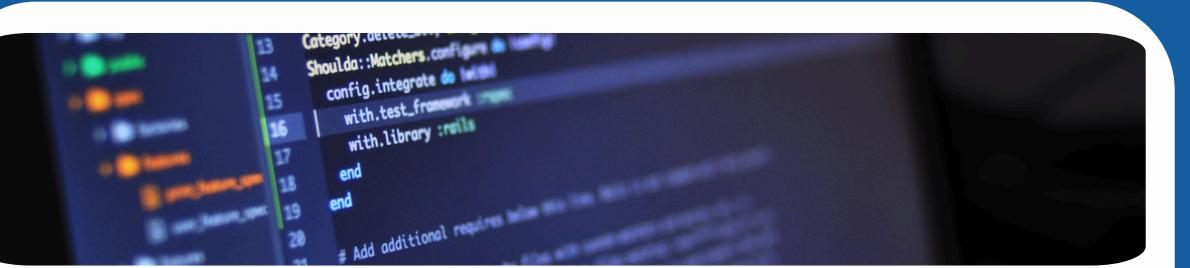


# Methodology



## Property Search and Matchmaking

- **Search Algorithm:** Implement search and filter functionalities using SQL queries.
- **Matchmaking Logic:** Use AI models to recommend properties based on user preferences



## Static Property Visuals

- **Image Upload:** Allow users to upload property images.
- **Image Display:** Use a grid layout to showcase property visuals.



## Investment Calculators

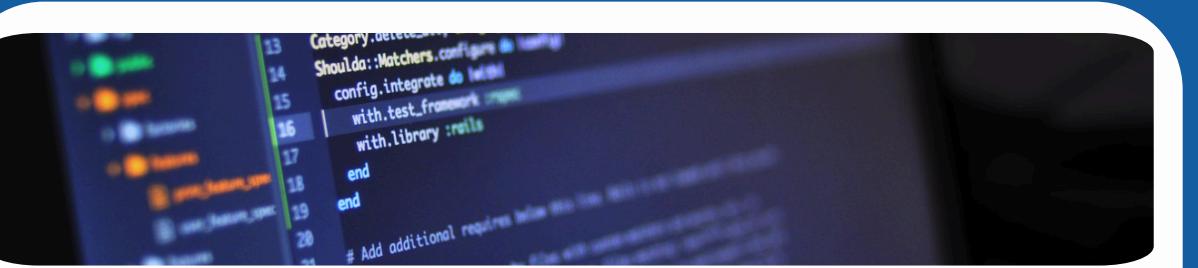
- **Calculator Logic:** Develop mortgage and ROI calculators
- **UI Integration:** Embed calculators within the platform

# Methodology



## Sustainability Metrics

- **Data Sources:** Integrate data sources for environmental impact metrics
- **Display Metrics:** Show sustainability scores on property listings.



## Forum and Service Provider Directory

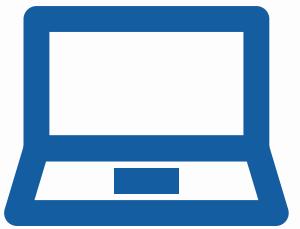
- **Forum Implementation:** Create a simple discussion board using Flask/Django models
- **Directory:** List verified service providers with contact information.



## Future Integrations

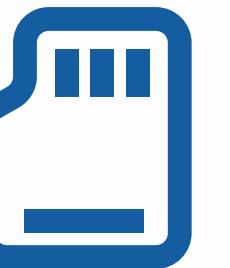
- **AR/VR:** Explore libraries for virtual property tours
- **Blockchain:** Consider blockchain for secure property transactions

# Expected Outcomes:



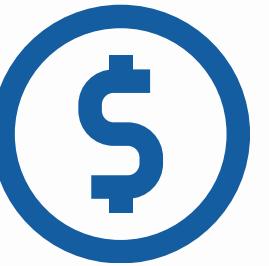
## Enhanced User Experience

- Seamless property searches with AI-driven recommendations tailored to user preferences
- Faster response times and reduced latency, especially in smart city and IoT environments



## Improved Network Performance

- Optimized real estate platform operations leveraging AI-based predictive models
- Efficient data management and system scalability compatible with 5G networks

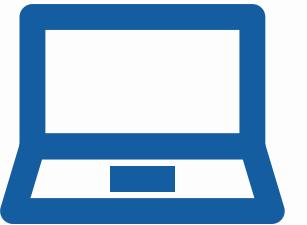


## Increased Market Competitiveness

- Positioning the platform as a leader in smart real estate solutions with AI and sustainability features
- Attracting tech-savvy users and investors interested in innovative property platforms

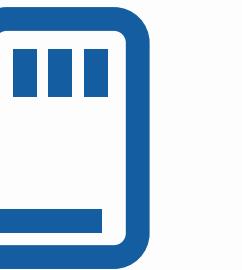


# Expected Outcomes:



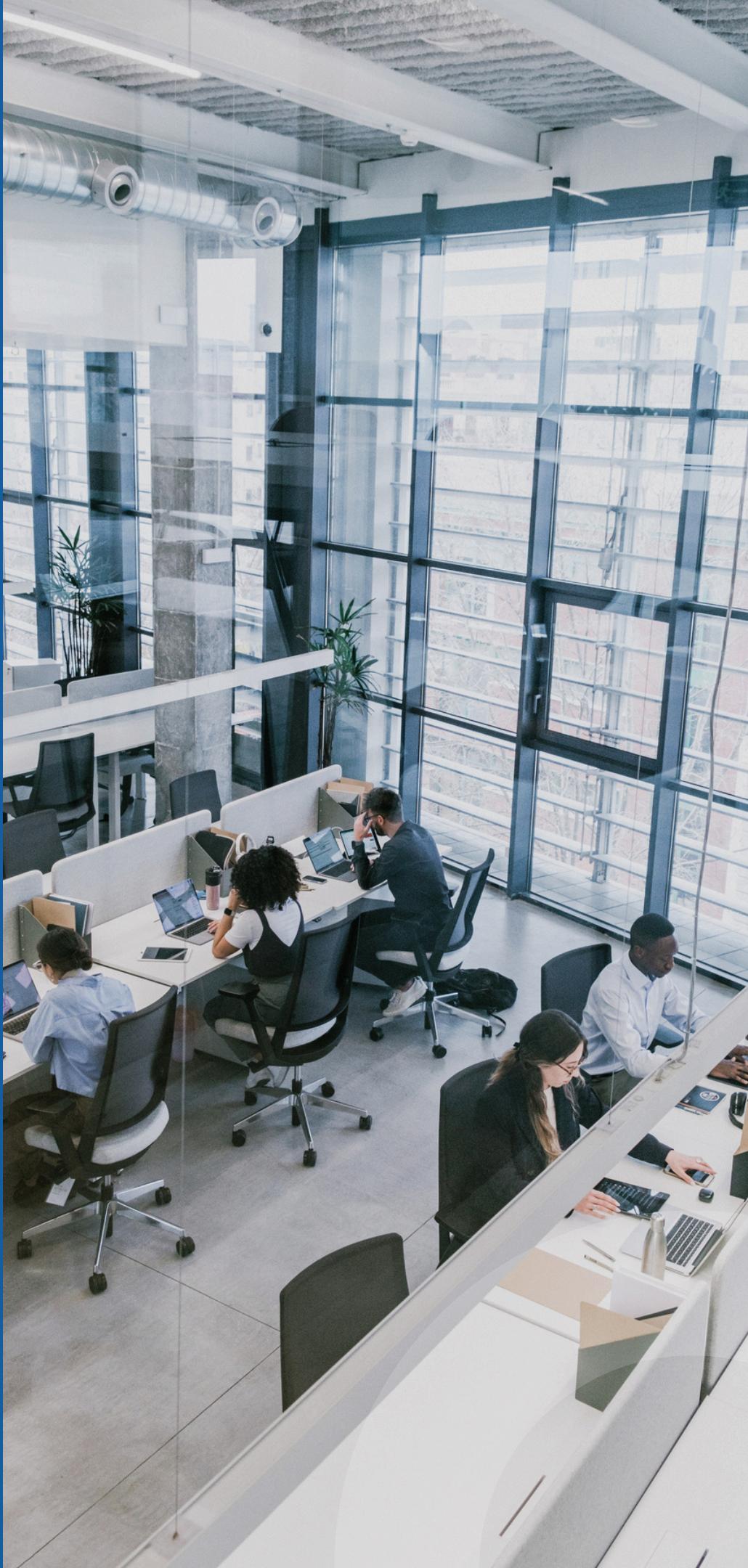
## Scalability and Future Growth

- A robust foundation for integrating advanced technologies like AR/VR for virtual tours
- Potential for blockchain integration to ensure secure, transparent transactions



## Community Engagement:

- An active forum fostering discussions on real estate trends and sustainability
- A reliable directory connecting users with trusted service providers



## Applications:

- 01 Real estate platforms for personalized property search.
- 02 Smart city integrations leveraging IoT and 5G.
- 03 Sustainability-focused investment tools
- 04 Scalable systems adaptable to future tech advancement

## Challenges and Limitations:

01

- Data availability and quality for training AI models.

02

- Initial latency during the system adaptation phase.

03

- Costs of integrating advanced 5G and IoT frameworks.

04

- User acceptance and adaptability to AI-powered features

## **Summary:**

- Developed a beginner-friendly real estate platform enhanced with AI and sustainability tools.
- Focused on addressing challenges in network performance, latency, and scalability.
- Provides significant room for future integration of AR/VR and blockchain technologies.

## **Relevance of Outcomes:**

- Aims to transform the real estate landscape through smart and sustainable solutions.
- Offers an adaptable framework for 5G-integrated, IoT-driven smart city applications



# Key References

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