RealEase: Comprehensive Real Estate Insights Platform

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Client: Fitzroy Nembhard

Project Goals

Streamline Home Search:

Deliver clear, accessible, and real-time information to enable users to make informed decisions with ease.

Empower Users:

Provide enhanced tools for buyers and investors to identify their ideal home through improved comparison features, an advanced Real-Time ROI Calculator, and an upgraded Neighborhood Insights Dashboard.

Address Challenges:

Overcome the limitations of existing platforms, such as high entry costs, outdated data, poor user interfaces, and fragmented information.

Expand Functionality:

Introduce predictive analytics and better data integration to improve accuracy and support dynamic decision-making for both buyers and investors.

Motivation

Provide Affordable Solutions: Offer a cost-effective, user-friendly platform that combines real-time neighborhood insights with detailed property data to make property evaluation accessible to all.
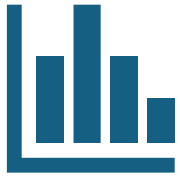
Enhance User Experience: Deliver accurate, actionable information through an intuitive interface, minimizing financial and technical barriers for users.

Modernize the Industry: Address the gaps in current real estate platforms by offering tools that provide up-to-date, reliable insights and robust user-centric features.

Approach & Key Features:

Neighborhood Insights Dashboard:

Explore detailed neighborhood data, including schools, crime rates, demographics, and local amenities.

Access information via interactive maps and comprehensive reports.

Detailed House Comparison:

Compare properties with detailed attributes such as price, square footage, and unique features.

Streamline decision-making with a centralized overview of potential homes.

Real-Time ROI Calculator:

Evaluate the financial potential of properties with real-time calculations based on user-defined parameters.

Analyze net profit, ROI, cash-on-cash return, and IRR.

Novel Features

RealEase Advantage:

Combines data from multiple sources into one intuitive platform.

Unique features like real-time ROI calculator, detailed home comparison, and comprehensive neighborhood insights.
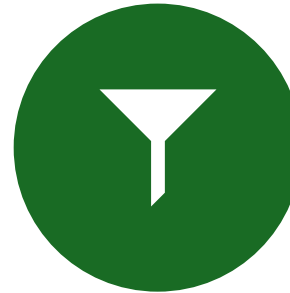
User-Centric Design:

Simplifies complex data into actionable, easy-to-understand insights.

Algorithms and Tools

Python: Data retrieval and integration through APIs (HomeHarvest and API integration).

Collaborative Filtering: Algorithm to identify and display similar houses.
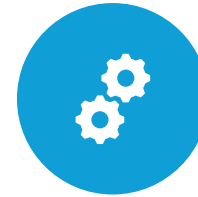
Technical Challenges

Data Integration: Managing real-time data from multiple sources, handling different formats, and minimizing latency

ROI Calculator Development: Designing complex financial algorithms and user interfaces.
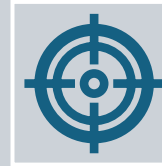
Scalability: Ensuring responsiveness and performance with MongoDB as the backend.

Evaluation Metrics

Speed: Response time for key actions (target: sub-second response times).

Accuracy: Validation of data against real-world sources and ROI metrics.

Reliability: System performance consistency (target: 95% reliability).

User Feedback: Surveys assessing usability, speed, accuracy, and overall user satisfaction.

Milestone 4 (Feb 24)

Tasks:
- Start implementing and integrating data for the dashboard, including schools, crime rates, demographics, and local infrastructure.
- Focus on refining the overall design to ensure it is intuitive, responsive, and user-friendly. Develop "Hello World" demos for front-end frameworks and backend setup.
- Conduct further testing on the ROI Calculator and Home Comparison Tool, ensuring smooth functionality and addressing any bugs.

Deliverables:
- Stakeholder Demo Video and live testing.
- Begin to seek sample feedback

Milestone 5 (Mar 26)

Tasks:
- Add more data layers to the neighborhood insights dashboard and refine the user interface for better navigation and data presentation.
- Develop a Scoring Algorithm for house recommendations.
- Conduct evaluation based on speed, accuracy, reliability, and user feedback; analyze results for improvement.

Deliverables:
- Working demos with algorithm integration
- Early state design for the project poster for the Senior Design Showcase.

Milestone 6 (Apr 21)

Tasks:
- Test the entire system for integration and ensure all features work cohesively, with a focus on the Neighborhood Insights Dashboard.
- Final refinements to the front end to ensure a smooth user experience across all devices.
- Conduct a final demo of the full system to stakeholders, showcasing all features and gathering feedback.

Deliverables:
- Working Online Site
- Final user/developer manual and a demo video to document the system and assist future users.

Task matrix for Milestone 4

Task	Jonathan	Donovan	Enrique
Implement, test, and demo **Neighborhood Insights Dashboard**	25%	50%	25%
Implement **Frontend and UI improvements**	30%	30%	40%
Test, and demo **ROI Calculator refinements**	80%	10%	10%
Test, and demo **Home Comparison Tool**	10%	10%	80%
Conduct testing and gather feedback	33%	33%	33%