Comprehensive Real Estate Insights Platform

Members:

Donovan Murphy - dmurphy2021@my.fit.edu

Jonathan Bailey - jbailey2021@my.fit.edu

Enrique Obregon - eobregon2020@my.fit.edu

Faculty Advisor & Client:

Fitzroy Nembhard - fnembhard@fit.edu

- Florida Institute of Technology, Department of Computer Science -

Guidelines for Milestone 6 Progress Evaluation

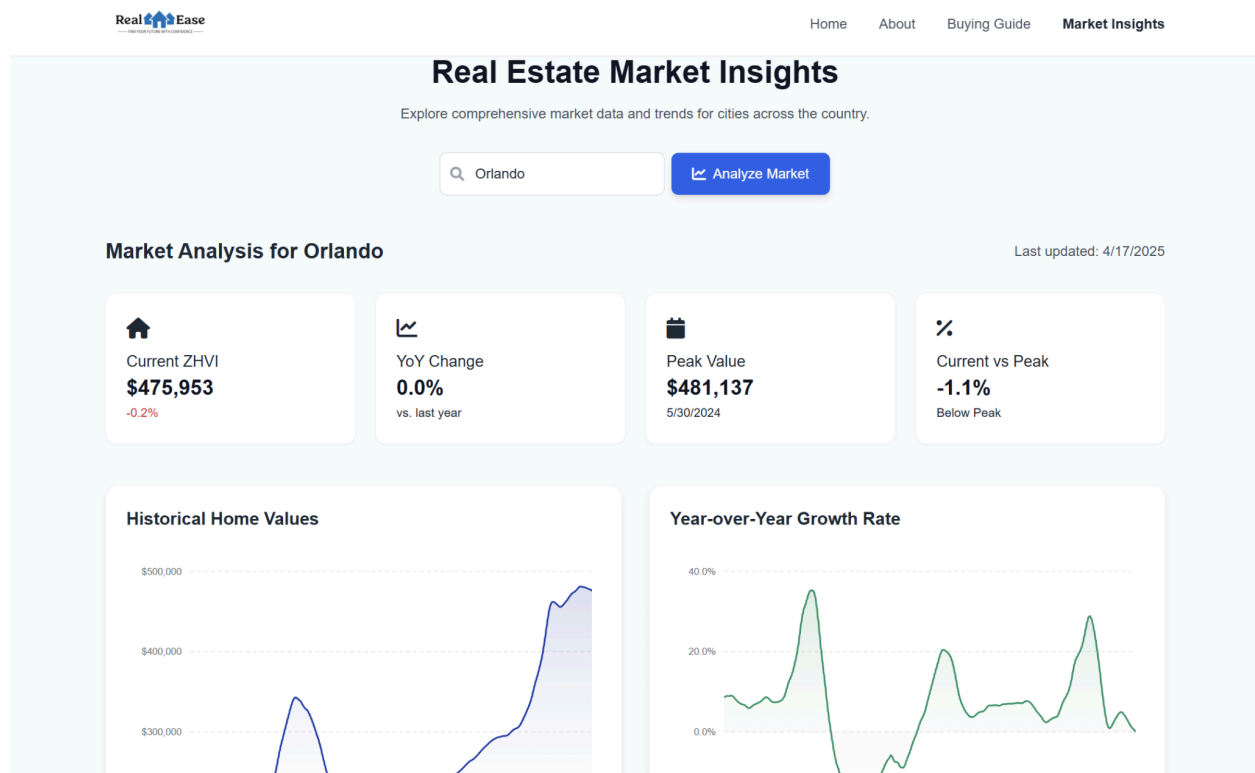# Progress of Current Milestone (Progress Matrix):

Task	Donovan	Jonathan	Enrique
1. Finish Neighborhood Insights Dashboard	implement/test 40%	Research 20%	Research/implement 40%
2. Test all tools thoroughly	Design 50%	Design 25%	Design 25%
3. Touch up anything as suggested by advisor and or instructor	Implement 40%	Implement 30%	Implement 30%
4. Integrate with python everywhere	Research and implementation 60%	Research 20%	Research 20%

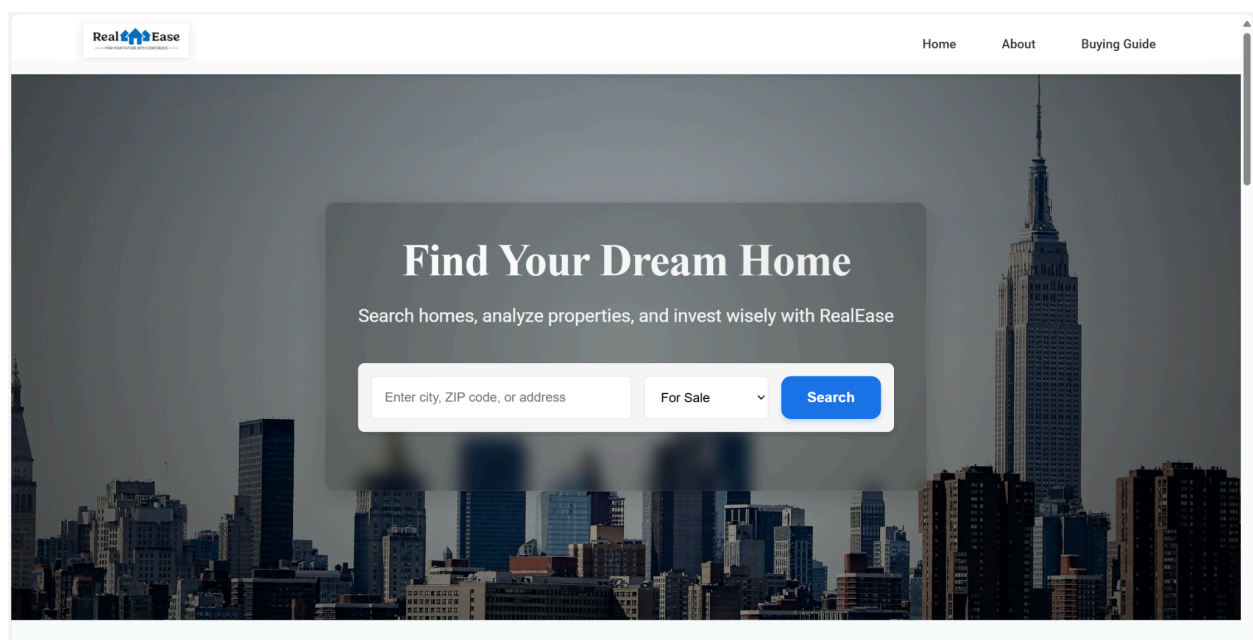# Discussion of each accomplished task for the current Milestone:

Task 1: Neighborhood Insights Dashboard

We made significant progress on the market insights dashboard, which provides users with valuable contextual information about properties and the area surrounding them. The backend infrastructure is now in place to collect and process data related to demographics, school ratings, walkability, and more. We have implemented data integrations to pull this data from external sources. The frontend component displays this information in an easily digestible format, though we still need to complete the styling and improve the visual presentation.

Task 2: Website Refresh

We successfully migrated our existing implementations to a new frontend architecture, resulting in a more responsive and visually appealing interface as well as speeding up the time it takes for a user to search for a house (caching method added). The redesigned property cards and detail pages significantly improve the user experience with intuitive navigation and clearer information hierarchy. We've standardized our color scheme and typography throughout the site, creating a more cohesive brand identity. The comparison tool, ROI calculator, and neighborhood insights have been fully integrated into the new design framework.

Task 3: Working Website Demos

We developed a comprehensive demonstration workflow that showcases our platform's key functionality. Users can now experience the complete journey from property search to detailed analysis, including the comparison tool and ROI calculator. The demos effectively highlight our platform's unique value proposition and differentiate it from existing solutions. We've created initial demonstrations for the Neighborhood Insights Tool, though these need to be expanded to show the full capabilities of this feature. Our next step is to develop a more extensive demonstration specifically focused on neighborhood analytics and community data.

Task 4: Completion of ROI Visualization

Our enhancements to the ROI calculator transformed it from a basic ROI tool into a comprehensive platform with powerful visual elements. We implemented several key improvements, starting with fixing a syntax error that was preventing calculations from rendering properly. We then modified the calculator to dynamically populate values based on property data passed from the property details page, creating a seamless experience for users analyzing specific listings. The most significant enhancement was the addition of interactive visualizations usi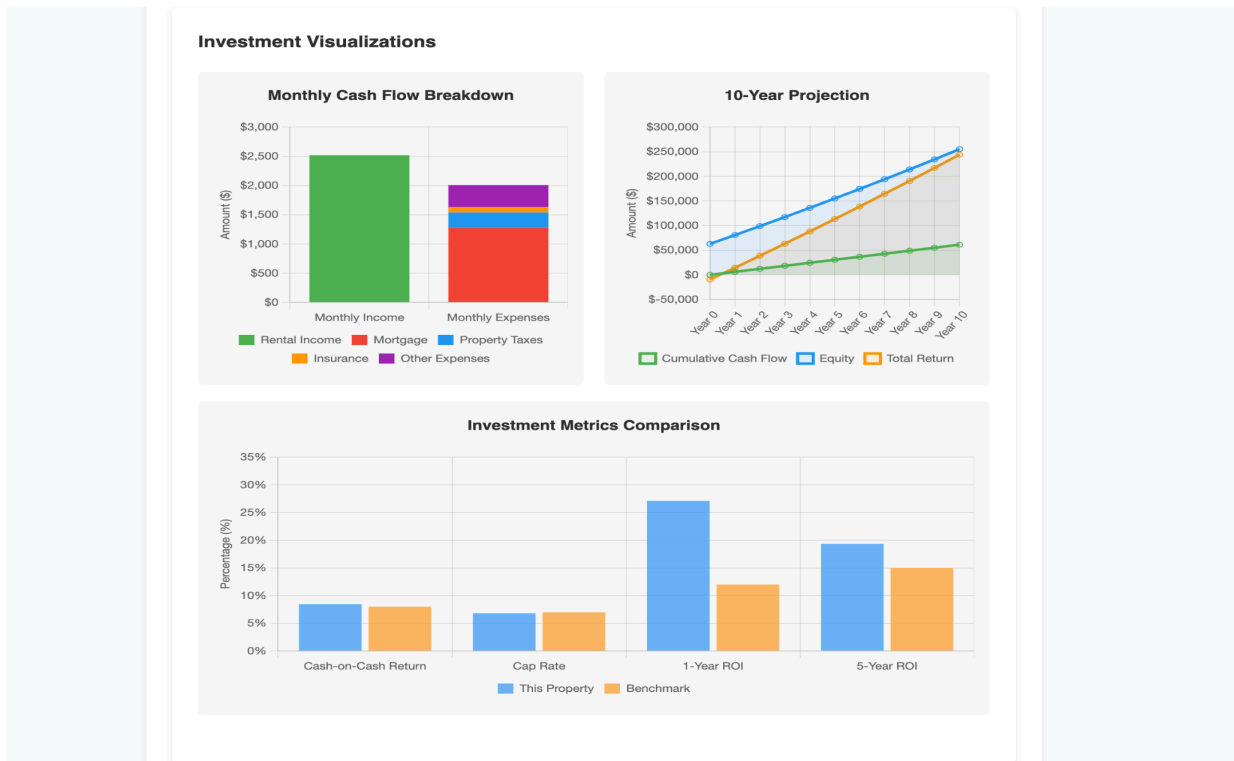ng the Chart.js library. We created three distinct charts: a monthly cash flow breakdown that visually separates income and expenses, a 10-year projection showing cumulative cash flow, equity growth, and total return, and a metrics comparison chart that benchmarks the property's performance against industry standards. We carefully styled these visualizations with fixed height containers and optimized rendering configurations to display.

Discussion of contribution of each team member to the current Milestone:

Donovan Murphy:

During milestone 6, I focused on introducing a fresh and modern aesthetic to enhance the user experience. A key part of this redesign included implementing a new card display for property information, making it more intuitive and visually appealing while maintaining concise and relevant details. Most significantly, I worked on integrating the Neighborhood Insights Dashboard into the front end, a critical feature for providing users with valuable local data. This dashboard includes a couple of charts, though we are still gathering and incorporating all the desired data. This effort will continue into the next milestone.

Additionally, I explored further enhancements to our Flask-based Python backend framework, identifying ways to support these new features and improve overall functionality. These efforts reflect my commitment to advancing our project milestones with innovative, user-focused solutions while maintaining technical precision and strong team coordination.

Jonathan Bailey:

My work focused on transitioning ROI calculations from a command-line interface to a dynamic, user-friendly UI. I implemented interactive elements allowing users to input investment parameters and instantly visualize potential returns. I enhanced the calculator to dynamically pull property data from listings, creating a seamless experience where purchase price and other metrics are pre-populated based on specific properties. Beyond calculations, I integrated comprehensive data visualizations using Chart.js, creating interactive charts that display monthly

cash flow breakdowns, 10-year investment projections, and performance metrics compared to industry benchmarks. These visualizations transform complex financial data into intuitive graphics, helping users make more informed investment decisions. I also conducted extensive testing to ensure calculation accuracy for critical financial indicators like cash-on-cash return, cap rate, and break-even points. Additionally, I researched and implemented UI responsiveness with Tailwind CSS to ensure the calculator functions perfectly across all devices, making investment analysis accessible whether users are at their desk or viewing properties on-site.

Enrique Obregon:

During this milestone, my main focus was integrating the ROI tool into the new frontend to ensure Jonathan could fully flesh out its functionality. I worked on getting it properly set up and responsive within the updated design framework. In addition, I dedicated time to fixing up the Home Comparison tool, improving its structure and layout to better align with the overall user experience. Beyond these specific features, I also spent time refining the frontend design as a whole—polishing the visual elements, tightening up styling consistency, and enhancing usability to ensure the application feels cohesive and intuitive.

Discussion of Showcase Presentation Preparation:

Task 1: Rehearse

In preparation for the senior design showcase, the RealEase team will focus on thoroughly rehearsing our demo and presentation to ensure a polished, engaging delivery. We will practice delivering a clear and concise 1–2 minute pitch that highlights RealEase's core features—Market Insights Dashboard, Home Comparison Tool, ROI Calculator, and Home Search—while emphasizing its user-centric design and data-driven insights. Team members Donovan Murphy, Enrique Obregon, and Jonathan Bailey will simulate the demo using our live site, https://murphyd14.github.io/RealEase-Web/, refining transitions between tools and preparing to explain technical components such as the Flask backend and XGBoost model. Our goal is to engage attendees through interactive charts, intuitive color-coded comparisons, and clear explanations. To further enhance our presentation, we will distribute branded flyers with a QR code linking directly to the demo, reinforcing RealEase's position as a standout project at the showcase.

Task 2: Ensure All Demo Equipment is Working

To deliver a seamless and professional presentation, we will ensure that all demo equipment is fully operational. Throughout the upcoming week, team members will test laptops, monitors, and internet connectivity to verify compatibility with our live site. We will confirm that all RealEase features—Market Insights Dashboard, Home Comparison Tool, ROI Calculator, and Home Search—load quickly and display correctly, with interactive visualizations

functioning smoothly. To mitigate any potential issues, we will prepare backup devices and offline demo versions. By simulating the demo environment and conducting comprehensive technical checks, we aim to deliver a reliable, high-quality experience that reflects the strength and professionalism of the RealEase platform.

Task 3: Touch Up Based on Feedback

As we approach the final showcase, we are actively implementing feedback received during prior presentations and testing sessions to refine our platform. We've prioritized improvements to both functionality and user experience, including enhancements to the layout of the Market Insights Dashboard, adjustments to color schemes for improved readability, and streamlining tool transitions for a smoother demo. Additionally, we've addressed minor bugs identified during internal reviews to ensure system stability. By responding thoughtfully to feedback, we aim to deliver a more intuitive, visually appealing, and technically sound product that resonates with both technical and non-technical audiences at the senior design showcase.

Date(s) of meeting(s) with Client & Faculty Advisor during the current milestone:

- April 17, 2025

Client & Faculty Advisor feedback on the current milestone

Task 1: Home Comparison Tool & ROI Functionality Improvements

Throughout development, our client and faculty advisor provided invaluable feedback that directly shaped key features of RealEase—particularly the Home Comparison Tool and ROI Calculator. One of the most impactful client suggestions was to include images of homes within the comparison interface. This addition significantly improved the visual clarity and appeal, enabling users to assess properties more intuitively.

Further feedback guided refinements to the layout and flow of the comparison experience, ensuring smoother navigation and a more user-centric design. Regarding the ROI tool, our faculty advisor emphasized minimizing manual input requirements. In response, we introduced a call-to-action button on each comparison card that opens a pop-up form with pre-filled property details. This streamlines the process, reduces cognitive load, and improves overall usability.

Additionally, performance optimization was a priority. Our advisor recommended reducing latency during location-based searches. To address this, we explored strategies such as API call optimization, caching, and data preloading, with plans to run performance tests to identify the most effective solution.

Task 2: Pitch Practice & Visual Presentation Enhancements

To ensure a compelling presentation at the senior design showcase, our faculty advisor emphasized two key areas for improvement: communication and visual clarity.

First, he advised us to rehearse and refine our elevator pitch—a concise, persuasive 1–2 minute overview that highlights the problem RealEase solves, its core features, and its unique value. Each team member will practice delivering this pitch with confidence and clarity, focusing on engaging both technical and non-technical attendees.

Second, he recommended a redesign of our poster to emphasize clarity and quick understanding. Rather than full paragraphs, we are consolidating content into bullet points, diagrams, and visuals. This shift aims to make the display more digestible and attention-grabbing, allowing viewers to grasp RealEase's value at a glance.

By incorporating this feedback, we're enhancing both the functionality and the delivery of RealEase—ensuring our platform is not only technically strong but also communicated effectively to stand out at the showcase.

Faculty Advisor Signature: _____ Date: _____

Evaluation by Faculty Advisor

Faculty Advisor: detach and return this page to Dr. Chan (HC 209) or email the scores to pkc@cs.fit.edu

Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Donovan Murphy	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Jonathan Bailey	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Enrique Obregon	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

Faculty Advisor Signature: _____   Date: _____