RealEase

FIND YOUR FUTURE WITH CONFIDENCE

Comprehensive Real Estate Insights Platform

Members:

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Faculty Advisor & Client:

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- Florida Institute of Technology, Department of Computer Science -

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Guidelines for Milestone Progress Evaluation

Progress of Current Milestone (Progress Matrix):

Task	Completion %	Donovan	Jonathan	Enrique	To do
Investigate tools	85%	50%	20%	30%	Investigate javascript functions and card layout on the home screen.
Hello World demos	75%	20%	10%	60%	Improve on early stage demo, increase the size, improve layout, and figure out what we want to cache vs call.
Requirement Document	100%	20%	60%	20%	Done, just make sure to go back and update if we incur any roadblocks.
Design Document	100%	80%	20%	20%	Done, just need to build on wireframes.
Test Plan	100%	20%	20%	60%	As features progress, add more test cases.
Narrow Down List of API’s	60%	40%	10%	10%	Done, we have our set list of API’s and have begun testing them.
Front End Layout, logo, and color scheme	90%	70%	15%	15%	Logo is complete, but continue to research other options for accent color.

Discussion of each accomplished task for the current Milestone:

Task 1: Selecting the Software Stack

In this milestone, one of the primary tasks was finalizing the software stack that would power RealEase. After careful consideration, we selected the MERN Stack (MongoDB, Express, React, and Node.js) for its scalability, flexibility, and responsiveness. This decision allows for a streamlined development process, where the backend (Node.js and Express) efficiently handles API calls, and the frontend (React) delivers a dynamic user experience. The selection of the software stack was smooth, but we took time to evaluate other options like Python/Django and Ruby on Rails before finalizing MERN.

Task 2: Narrowing Down API List

Another critical task involved narrowing down our extensive list of APIs to the ones most aligned with our platform's objectives. After reviewing APIs related to real estate, crime data, school information, and local businesses, we decided to focus on Realty in the US for the initial demo. This API provides robust data on properties for sale, rent, and recently sold, which is central to our platform's search and comparison tools. Some APIs were eliminated due to slow response times or limited data coverage, but this helped us focus on the most reliable and relevant ones.

Task 3: Testing the API and Creating the "Hello World" Demo

Once we narrowed the API list, our team focused on testing Realty in the US. Initially, we encountered some minor obstacles related to API key authentication and response formatting, but after resolving those, we successfully ran a basic "Hello World" demo using the API. This demo involved retrieving property data based on a sample query and displaying it on our platform's front end. The success of this task was an important milestone as it validated our API integration strategy and provided us with a foundation to build out more complex features in future milestones.

Task 4: Completing the Design, Requirements, and Test Documents

A significant portion of this milestone was dedicated to documenting the system. We completed the design document, which outlines the architecture, user navigation, and data flow of the RealEase platform. The requirements document details the functional, non-functional, and data requirements to achieve our goals. Finally, the test document was created, laying out the test

cases, strategies, and objectives for validating the core functionalities of the platform, including the search bar, comparison tool, and ROI calculator. Drafting these documents required substantial team collaboration and revisions, ensuring our design aligns with user needs and our chosen technology stack. We encountered challenges in defining test cases for API response times and handling large datasets, resolved with further research and testing strategies.

Task 5: Finalizing the Frontend Layout

One of the key objectives in this milestone was designing the frontend layout. We explored various layout styles, drawing inspiration from established real estate platforms like Zillow and Realtor.com. The goal was to create a clean, intuitive interface that ensures ease of navigation for users. After multiple iterations, we finalized a layout emphasizing simplicity, with a central search bar for users to input ZIP codes or addresses and easily accessible navigation tabs for the Neighborhood Insights Dashboard, Home Comparison Tool, and ROI Calculator. This process involved wireframing, prototyping, and conducting informal usability tests to ensure the layout met user expectations. Some challenges arose in balancing design aesthetics with functional elements, but we resolved them by prioritizing user experience.

Task 6: Choosing the Logo and Branding

Another important aspect of this milestone was developing a logo and defining the overall branding for RealEase. We explored several logo concepts that embodied confidence, trust, and simplicity. After receiving feedback from team members and stakeholders, we selected a logo incorporating a stylized house symbol and a modern, clean typeface. This logo reflects RealEase's mission to simplify the home buying and investment process. The decision-making process considered various design principles, ensuring the logo would be scalable and recognizable across different platforms.

Task 7: Narrow Down the Color Scheme

The team also selected a color scheme to project professionalism, trust, and confidence. We opted for a color palette centered around dark blue and white as primary colors, with black and light blue accents to add depth and contrast. These colors convey trust, stability, and a modern appeal. The choice of color scheme involved balancing aesthetics with user psychology, ensuring that the platform would be visually appealing without overwhelming users. This process involved testing different color combinations in mockups to see how they worked with our frontend layout.

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

Donovan Murphy:

During this milestone, I took the lead in organizing group meetings, ensuring everyone was on the same page regarding tasks and deadlines. I was responsible for completing the design diagrams and document and formatting and reviewing all the documents to ensure everything was consistent and well-organized.

I worked closely with Enrique on testing and successfully running the Hello World demo to confirm our API integration was functioning correctly. In addition, I created the Milestone 1 presentation, summarizing the team's progress, and developed the progress evaluation document to track how we were advancing toward our goals. I also updated the webpage, incorporating the latest design elements and features we had worked on.

Jonathan Bailey:

During this milestone, I collaborated in group meetings and worked with both teammates on many tasks. I collaborated in discussions, providing insight into where we needed to improve and how we could progress throughout the course of this project. For instance, I collaborated and provided insight into each design, requirement, and test documentation, as well as the color scheme and layout of the front end.

I was responsible for analyzing and collecting information for the requirements document as well as writing the requirements for the project. I reviewed multiple Software Requirement Specification documents and IEEE templates to ensure that we had covered all of the topics required, adhering to IEEE standards as well as the specifications listed on Doctor Chan's website. I was also responsible for the completion of both the requirements diagrams and the test plan diagrams. I also edited and modified the UML diagram and Sequence diagram.

Enrique Obregon:

During this milestone, I contributed to the test document, ensuring that we had detailed test cases to cover the core functionalities of the platform. I worked closely with Donovan to assemble the "Hello World" demo, which involved integrating the API and ensuring the basic functionality worked as intended. By working together, we addressed some technical challenges and successfully completed the demo. I focused on validating the API calls and ensuring that the test cases aligned with the initial features we were building.

Plan for the next Milestone (task matrix):

Task	Donovan	Jonathan	Enrique
1. Continue to develop DB schema, caching, and investigate scheduled API calls	implement/test 40%	Research 20%	Demo 40%
2. Continue Planning and begin development of the front end website and how we want to query and display results.	Design 30%	Design 30%	Design 40%
3. Begin looking into 3 features and plan integration with the data set.	Implementation and test 20%	Research and early testing 50%	Test 30%

4. Refining API List and Continued Testing	Refine and test 70%		Test and Demo 30%

Discussion of each planned task for the next Milestone:

Task 1: Continue Developing Database Schema, Caching, and Investigate Scheduled API Calls

In the next milestone, the team will focus on finalizing the database schema for MongoDB, ensuring it is structured to store property, neighborhood, and user data efficiently. Additionally, we will explore caching mechanisms to improve performance, especially for frequently accessed data such as neighborhood insights and property details. Investigating and implementing scheduled API calls will also be a priority to ensure the platform can pull in fresh data at regular intervals, keeping users' information as up-to-date as possible.

Task 2: Front-End Website Development and Query Design

The team will continue building the website's front end using React, ensuring the layout aligns with the user interface designs planned at the earlier milestone. We will focus on developing the query logic for pulling data from the backend based on user input, such as ZIP codes or addresses. The next milestone will involve making the Neighborhood Insights Dashboard and Home Comparison Tool functional on the front end, allowing users to navigate the platform and view results in a user-friendly format.

Task 3: Integration of Key Features with Data

We will begin planning and implementing the integration of the three main features—the Neighborhood Insights Dashboard, Home Comparison Tool, and ROI Calculator—using the data retrieved from the APIs. For the Neighborhood Insights Dashboard, the team will focus on integrating crime data, school information, and local business data, ensuring that these insights are displayed clearly. We will begin linking property data from real estate listings for the Home Comparison Tool to allow for side-by-side comparisons of selected properties. Finally, we will

lay the groundwork for the ROI Calculator to process user-inputted financial information and return detailed returns on investment metrics.

Task 4: Refining API List and Continued Testing

The team will continue refining and testing the API integrations, ensuring they function efficiently and return accurate data. Particular focus will be placed on the reality in the US and Crime Data APIs. This phase will also involve refining our error-handling processes, including building fallback strategies for scenarios where APIs are slow to respond or return incomplete data.

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

- Mon 9/23/2024 11:15 AM - 11:30 AM
- Mon 9/30/2024 11:15 AM - 11:30 AM

Client & Faculty Advisor feedback on the current milestone

Task 1: Feedback on Color Scheme and Logo

During our meetings with the faculty advisor, they expressed approval of our chosen color scheme and assisted us in narrowing down options for the logo. One key piece of feedback was that we should consider converting the logo into an SVG format for better scalability and performance on the website.

Task 2: Guidance on "Hello World" Demo

The advisor provided specific guidance on what was expected from our "Hello World" demo. Based on their input, we successfully completed the demo, integrating API calls and confirming the functionality. The advisor emphasized ensuring the demo was detailed enough to serve as a foundation for future API integrations.

Task 3: Detailed Documentation Requirements

Our advisor also gave valuable feedback on the detail required for the design, requirements, and test documents. They highlighted areas that needed more in-depth explanations, mainly how data flows through the system and how each feature interacts with the APIs. We ensured that our documents met these expectations, providing clear and comprehensive coverage.

Task 4: Guidance for the Next Milestone

Looking ahead to the next milestone, the advisor recommended we focus on how we plan to store and cache data, including what data will be used in each feature. Additionally, they emphasized the need to clearly define how users will navigate the website and interact with the platform's core functionalities. This feedback has helped shape our approach for the upcoming development phase.

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: _____