WEB-BASED MALAYSIAN REAL ESTATE DATA BROWSING AND MANAGEMENT SYSTEM

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ABSTRACT

In the current real estate market, traditional methods of browsing and managing real estate data often fail to adapt to the complex and rapidly changing needs of consumers and investors. To address this issue, we propose a "Web-based Malaysian Real Estate Data Browsing and Management System" that aims to provide a more responsive and accurate data management tool. The complexity of real estate data management stems from various factors, such as different economic indicators, fluctuating market conditions, and different consumer preferences, which creates a multifaceted environment where simple data management models may not be sufficient. Our system is dynamic in that it is constantly updated and adjusted using the latest market data and user feedback to ensure the accuracy of data management. This approach, combined with the integration of real-time data graphs, aims to enhance users' data browsing and management capabilities. Our system was developed using agile methods and parallel development methods, using Vue on the front end and Java Spring Boot on the back end, ensuring the robustness, scalability, and user friendliness of the system. By combining advanced computing technologies with user centered design, our web-based system strives to modernize the real estate data management process, providing transparency, adaptability, and precision to meet the needs of today's market.

INTRODUCTION

Modern real estate data management is challenging due to its need to account for a wide range of factors, from property specifics to broader market trends and consumer preferences. These elements are constantly evolving, making the data management process intricate. Our web-based tool addresses these challenges by processing diverse, real-time data, including property details, location influences, market conditions, and user preferences. This approach allows the system to adapt swiftly to market changes and provide accurate, relevant data management. According to some data I searched, online management systems have excellent performance in real estate data management. A study using an adaptive neuro-fuzzy inference system (ANFIS) to evaluate the impact of housing location quality on housing prices demonstrated that online management systems can be more accurate and practical than traditional methods. This highlights the advantages of using advanced online management system approaches for real estate data management. According to a recent survey by PwC, 82% of real estate professionals agree that data analytics is critical for their business success, but only 27% are satisfied with their current data capabilities. Our tool aims to bridge this gap by offering a comprehensive and user-friendly data solution for real estate management. The tool also features realtime data visualization, enhancing user engagement and understanding of market trends. This ensures that users have a comprehensive reflection of both the current market data and potential future trends, aligning with the needs of today's consumers and investors who seek efficient, adaptable, and transparent data management tools. 2 Incorporating modern web technologies like Vue for the front-end and Java Spring Boot for the back-end, the system is designed to ensure a seamless and user-friendly experience. This technological integration facilitates efficient data processing and intuitive interaction, further enhancing the tool's utility in navigating the complexities of the real estate market. The development approach aligns with contemporary agile methodologies, ensuring that the system remains adaptable and responsive to evolving user needs and market conditions.

METHODOLOGY

Incorporating agile methodologies into my project was particularly appropriate due to the data-intensive nature of the project. The fluid nature of the project, especially when dealing with large and diverse real estate data sets, will see requirements and priorities constantly changing as development progresses. This dynamic environment requires continuous re-evaluation and refinement of project goals, closely aligned with agile principles, to adapt to changing requirements. To optimize the development process, we envisioned a parallel front-end and back-end development approach. The front-end, powered by Vue, will ensure responsiveness and maintainability when crafting an intuitive user interface. On the 8 back-end, Java Spring Boot will serve as a powerful framework essential for managing the large-scale data processing required for our real estate data management system. A major innovation of our approach is the integration of advanced data processing techniques. These techniques will improve the accuracy and relevance of real estate data management. Our system will leverage pattern search algorithms to continuously improve our data models based on real-time inputs, ensuring accuracy and reliability of data management. A key aspect of the approach is the continuous feedback mechanism. Insights from stakeholders, testers, and early adopters will help calibrate system components, ensuring that the platform always meets user preferences and needs. By its very nature, Agile methodologies emphasize adaptability and iterative development, integrating seamlessly with our program's innovation focus, promising regular assessment and rapid adaptation to the ever-changing real estate data management landscape.
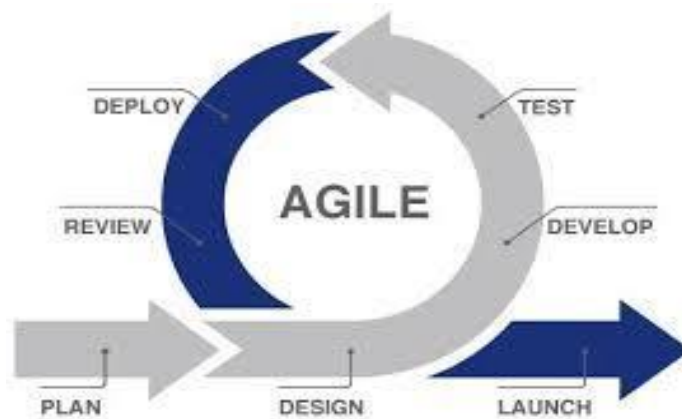
TEST CASE DESIGN

Functional Test

The purpose of functional testing is to ensure that all features of the system work as expected. Here are the functional tests we will run: Unit Testing: Detailed testing of each independent functional module, such as creating an account, viewing a listing, posting a review, collecting a listing, etc., to ensure the normal operation of each individual function. Integration Testing: Testing the interaction between the various functional modules. For example, after managers and administrators upload and save a listing, ensure that it can be found and edited or deleted if needed. We will also test how to add new information paragraphs to existing listings, modify images, etc. System Testing: Extensive system testing is carried out to verify that all functions are working properly. This involves user registration, login, listing search, sorting and filtering. 54 Acceptance Testing: Testing with real users to confirm that the system meets all business requirements and user expectations. This includes the ease of use of the system and whether it meets user expectations and needs.

Non-Functional Testing

The purpose of non-functional testing is to ensure the performance, reliability and security of the system. We will conduct the following non-functional tests: Performance testing: Evaluate the performance of the system when a large number of users access it at the same time and ensure that the system maintains good performance under high load conditions. This includes testing the response time and stability of the system when handling many concurrent requests. Security testing: Focus on testing the system's data protection capabilities, including the secure storage of user personal information and listing data. In addition, we will test the system's protection capabilities against common network attacks. Usability testing: Test whether the system's user interface is easy to understand and use, and whether it complies with modern design principles. We will collect user feedback and make necessary adjustments to the system. Compatibility testing: Test the performance of the system under different browsers (such as Chrome,

Edge) and devices (such as desktop computers, laptops, mobile phones).

TESTING AND TEST RESULTS

Unit Test Unit testing is a method of software testing used to verify that the smallest testable part of code (usually a single function, method, or class) works as expected. The goal of unit testing is to ensure that each unit of code, when run independently, handles various inputs and conditions correctly and produces the correct output. Characteristics of unit testing Independence: Each unit test should be executed independently of other tests or system state. Fine-grained: The object of the test is the smallest unit of code, usually a function or method. Automation: Unit tests are often written and executed using automation tools and frameworks so that they can be run quickly and repeatedly. Quick feedback: Because you are testing a small part of your code, unit tests are usually fast and can quickly find and locate errors. Why unit testing Improve code quality: By validating every unit of code, you can find and fix early errors and reduce the number of defects. Reduce maintenance costs: Unit testing helps ensure that code changes do not introduce new bugs, simplifying refactoring and maintenance. 56 What the documentation does: Test cases serve as documentation for the code, helping to understand the expected behavior and usage of the code. Continuous integration: Unit tests are integrated into a continuous integration system to automatically detect problems in code and improve development efficiency.

RESULTS

Integration testing is also known as assembly testing or joint testing. Usually, on the basis of unit testing, all modules need to be assembled into a system according to the design requirements. At this point, you need to consider the following questions:

1. Connect each module, whether the data of the module interface will be lost;

2. Whether the function of one module will adversely affect the function of another module;

3. Whether the combination of each sub-function can achieve the expected parent function;

4. Whether there is a problem with the global data structure;

5 .Whether the accumulated errors of the unit modules will be enlarged to an unacceptable level. when assembling, we can refer to the one-time assembly method or the value-added assembly method.

CONCLUSION

In conclusion, the Web-Based Malaysian Real Estate Data Browsing and Management System significantly advances the efficiency and accuracy of real estate data management in Malaysia. The platform's innovative features and user-friendly design address the challenges of traditional data management methods, providing a modern solution that meets 67 the evolving needs of the real estate market. While there are certain constraints to consider, the proposed future enhancements offer a clear roadmap for further improving the system, ensuring it continues to provide valuable support to all stakeholders involved in real estate transactions.

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