

A Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010

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ABSTRACT

Businesses including the promotion of rental properties, utilized the advantage of using technologies to attract more clients. Most of them use a website to easily advertised their properties online. Hence, there were lots of existing system developed to find hotels and apartments online, without considering other affordable rental houses, such as boarding houses and bed spacers. Aside from that, people in Bansud and Bongabong Oriental Mindoro, can't easily find a rental house with the reason of lack of details regarding the location of each rental house and couldn't find an affordable rental house immediately. From that, A Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 was developed to assist the clients in finding affordable variations of rental houses such as boarding house, dormitories, hotels and others. The system can also provide necessary information of specific rental house properties and even gave an alternative option by providing near rental property listings using kilometer distance. The system can also accept reservation request from the clients. On the other hand, the Rapid Application Development was used in building the project for quick continuous development and testing during the project's software development lifecycle. The RAD strategy allows to investigate a working model as in front of schedule as could be normal considering the present situation if the frameworks meet the necessities required, and propose imperative changes. The ISO/IEC 25010 software quality standards were applied in the evaluation to determine the functional suitability, performance efficiency, usability, reliability, security, maintainability and portability of the system. The overall mean of the ISO/IEC 25010 evaluation result was 3.67, which was regarded as very effective, indicating that the evaluators were satisfied by giving positive feedback. Some of the evaluators suggested to have a mobile application for accessibility.

INTRODUCTION

The number of entrepreneurs has grown tremendously in recent years (Acs *et al.*, 2018). The competition platform has also changed from traditional-based to digital-based, through utilization of modern technological facilities to capture a bigger market share (Koe & Sakir, 2020). In the high growth of internet users, e-commerce seems to be a promising business opportunity as it offers convenience in which client can access the information they need anytime and anywhere and even gave businesses an opportunity to represent themselves in ways they want to be seen. As the number of internet users continues to rise, e-commerce businesses have more opportunities for growth. With that, to reach people around the globe, industries such as hotels, apartments, dormitories, rental houses, and rooms for rent utilize the advantage of using technologies. However, individuals require a place to stay at all times, from businesses who travel from one area to another in the course of their company to students who study away from home (Santos, 2018). Clients looking for temporary place for settlement rapidly growing. Due to that, the strong demand for accommodation facilities on the back of tourism growth in the Philippines has grown, in which the hospitality industry's capacity is seen lacking to host both the foreign and local visitors as stated by (Abad, 2017). There is also a lack of on-campus

accommodation in most college areas, forcing students to find an apartment outside near the school (Maughan, 2016). People may have to spend time as feasible with their own sightseeing to know something about the rental house closest to the institution where they wish to live. When it comes to choosing a dormitory or boarding house for university students in the Philippines, location and price are the two most important factors (Curaza, 2021) which is also a difficult factor considered in finding rental house in Bansud and Bongabong according to the local survey conducted. People in the target area can't easily find a rental house with the reason of lack of details regarding the location of each rental house and couldn't find an affordable rental house immediately. From that, finding rental houses is considered as challenging task to do especially when a certain client doesn't know more about a specific place. Aside from that, prices and amenities of the rental houses is bearing also for the clients to consider wherein a system would fulfill their necessities. Furthermore, according to the homeowners based on the prior survey, an online site must be needed to promote their rental houses to gain much profits since the other websites only focused on hotels. Due to that, a Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 has been developed to

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simplify the process of searching rental houses for clients as well as advertising rental properties of the landlords to attract a wider range of prospective tenants with a faster response time in between landlord and the client (Payusan *et al.*, 2016). In addition, the system also utilized Google Map. Incorporating maps are also convenient to know the specific location and commonly used by the user in transportation to save time and money (Ramos *et al.*, 2018). Important information of the rental house owners including contact numbers, address, near popular landmarks location, rent amount per hours/month/night, amenities, sample images, and reservation details was encoded in the system. Moreover, the system was for commercialization purposes that uses Business-to-Consumer (B2C) model in able to provide direct reservation from a rental property to many potential online consumers (Turban *et al.*, 2017).

Objectives of the Study

Generally, the study aimed to design and develop an interactive web-based rental house smart finder.

Specifically, the study aimed to:

1. Locate rental houses around Bongabong and Bansud.
2. Provide detailed information of the rental houses including the amenities, images, location, near popular landmarks, rental house type, prices, house rules and descriptions.
3. Accept reservation request from the clients through the system.
4. Test and evaluate the system using ISO/IEC 25010 software quality standard.



Figure 1: Rapid Application Development (RAD) (Biemba & Nyirenda, 2019)

METHOD

Analysis and Quick Design

The data needed in the system as well as the materials and budget to build Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 project including the rental house details, necessary features, google map API, and plugins has been analyzed. The proponents analyzed the data through survey and search for related literatures/systems that can serve as a guide to develop the project. All the details gathered from Clients and Landlords has been gathered and summarized to proceed with quick design process. Moreover, the software tools used such as WordPress, Google Map API, and plugins has been

prepared to proceed to the next phase.

The design of the Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 is presented in Figure 2. The figure comprises three stages namely Input, Process and Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 Output.

Prototype Cycle

In the next phase, the prototype cycle has been performed. There are three cycles used to create a system, it includes building, demonstrating and refining the prototype. In building phase, it begins with coding process, applied the prepared plugins, and integrated Google Map API in the system. Then created some fields for the details specifically the rental house name, descriptions, amenities, price, images and other important data. The next phase in prototype cycle is demonstrating the developed system. The system has been deployed to the target respondents and the features and flow of a website has been demonstrated. The landlords as well as the clients encountered some minor error and suggested some additional features and fields including addons, maximum number of guests and popular landmarks to satisfy their needs in terms of finding rental house. After that, suggestions of the target users was used to refine the system.

Testing

The Software quality Standard used to test and evaluate the system is ISO/IEC 25010 standard. There are lots of testing procedures, but Beta testing has been used to ensure that users can test the system's functionality and gain suggestions. The evaluation of the system has been started after testing the project website. Landlords/Homeowners, clients, and IT practitioners analyzed and evaluated the system and even provide a positive feedback and suggestions/comments. After that, the suggestions from the three types of respondents are summarized, and proceed to the application of initial changes.

Implementation

The project presented to the clients after following the suggestions. The system was advertised through the use of social media by creating a Facebook page and asked the clients and landlords to implement it to others. The follow up suggestions based on the evaluation has been successfully applied except of having a mobile application of the system.

RESULTS AND DISCUSSION

The study Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 is a project that provides a guide for clients to find rental houses easier and conveniently. The system is a useful tool for finding rental homes in the Bansud and Bongabong areas. Furthermore, the system employs

a rule-based algorithm to filter out the users' preferences. Any web browser can access the project as well. The ISO 25010 software quality standards were applied in the evaluation to rate the functional suitability, performance efficiency, usability, reliability, security, portability and maintainability of the system. The system simplifies the process of looking for a rental home. It also lessens the time consumed in finding rental houses within the areas and quickly access the information needed to rent a rental home. In evaluating the system, evaluation sheets were distributed to fifty (50) evaluators, ten (10) I.T practitioners, ten (10) landlords/home owners, and thirty (30) clients who used the system.

All the suggestions and recommendations in the evaluation form were gathered and used to refine the system. Based on the conducted evaluation, the Web-Based Rental House Smart Finder using Rapid Application Development basis for Evaluation of ISO 205010 project is functional, usable, secured, and maintainable for the respondents. The evaluation result in all criteria of ISO/IEC 25010 with the overall mean of 3.67 and has been interpreted as very effective. As result of the development of the system, the developers found out that the evaluation according to the system performance is very effective and the evaluators were satisfied. In the future, the system must be used as basis of the study and must be improve in terms of locating rental houses.

Table 1: Summary of Evaluation Results in ISO/IEC 25010

Criteria	Mean	Rank	Verbal Interpretation
Functional Suitability	3.70	2.5	Very Effective
Performance Efficiency	3.59	7	Very Effective
Usability	3.65	5.5	Very Effective
Reliability	3.65	5.5	Very Effective
Security	3.70	2.5	Very Effective
Maintainability	3.71	1	Very Effective
Portability	3.67	4	Very Effective
Overall Mean	3.67		Very Effective

CONCLUSION

Based on the summary of findings and objectives of the report the following conclusions were drawn.

1. This system locates rental houses around Bongabong and Bansud using the filtering categories provided by the system.

2. This system provides important data of a rental house including amenities, rental house name, location through google map, images, pricing categories, descriptions, near

popular landmark, house rules, and type of rental house.

3. This system accepts reservation from the clients by adding fields for reservation details.

4. The system is usable, functional, secured, reliable, portable, maintainable, and efficient to use since it satisfies the evaluators of the system

RECOMMENDATION

Based on the Conclusions, the Following Recommendations Were Drawn

1. This project should be recommended to the clients and homeowners/landlords around Bansud and Bongabong to simplify finding and locating rental houses for clients as well as promoting the rental homes of the homeowners/landlords;

2. This project must be used also by the parents to keep a track on the location of the specific rental house of their son/daughter;

3. This project must be used by the homeowners/landlords to promote their rental houses in order to attract clients.

4. The future researchers must conduct the same study and should add cashless payments like GCash, since the system only accepts Cash on Meet Up payment only.

5. The future researchers must create a mobile application for the system.

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