The Development of Information Systems for the traditional Occupation of the Local Community

Satie Janplaa*, Kunyanuth Kularbphettonga, Rattanathip Rattanachai a, Kanokwan Tangtastham a

aSuan Sunandha Rajabhat University, 1 U-TongNok Road, Dusit, Bangkok, Thailand

Abstract

The purpose of this research was to develop information systems for the traditional occupation of the local community. To store the occupation database and to promote and occupation on website. By working in a Web Application to provide services to users anywhere with the convenient and faster. This system was developed to run on MySQL database system, using PHP and JavaScript for programming languages. For system evaluation, we used questionnaires for quality test that were conducted by 7 specialists and 30 users, data were analysed by the mean and the standard deviation. Results of this study were as followed. Mean for specialists and users were 4.32 and 4.53 and standard deviation for specialists and users were 0.55 and 0.61 respectively. Further analysis showed that the quality of information systems for the traditional occupation of the local community was also at a good level and could be use in real system.

Keywords: Traditional occupation, Community, Web application, and black box technique

1. Introduction

To strengthen Thai economic, promotion of community is one of the important factors affected to increase Thai economic outcome. It is essential to empowerment of people and community, living in the area, to adapt to changing

* Satien Janpla. Tel.: +66-2-160-1159.
E-mail address: satien@ssru.ac.th
economy and society. To make a strong community cannot be achieved by creating from outside the community. Hence, the strong community has a process of community management with analytical thinking to learn together to solve the problems and to enrich the social capital and economic value.

According to Magic Web Solutions, 2013, with the rapid development of technology, web technology is one of the easy and fast efficient approaches to access and search online. With web-based application used as the interface, user access the application from any computer connected to the Internet using a standard browser, instead of using an application that has been installed on their local computer. Therefore, the development of this project aimed to collect data of traditional occupation community. The web application is available through Internet and users can edit and store data in database. Moreover, the system makes a convenience to get through on web site. Also, it is very important to answer the strategy of development community.

The remainder of this paper is organized as follows. Section 2 presents the analysis and design of this work. Section 3 presents the results evaluated by specialists and users. Finally, in section 4 conclude the paper with future work

2. Analysis and Design

In order to develop this project, data was surveyed and collected from user’s requirements. The information was used as a source of information for management web application and database management and the characteristics of a web application are compatible with the Web Browser on the Internet and display by using HTML and PHP, which is in contact with study and analyse user’s community data. After studying problems and needs of the system, UML (Unified Modelling Language). SDLC technique was adapted to use as developing tool in implementation this system.

Also, Rattanachai et al (2014) developed the lifestyles of Thai Buddhist application based on Android operating system to learn about lifestyle of Thai Buddhist serving to design and implement a web system therefore we separated design system processes in to 4 parts: the structure of web site part, user interface part, occupation parts and data base part. In a user management system, user can subscribe his/her profile such as personal information, email address, username and password, and etc. An occupation management system can be immediately insert/delete and updated occupation information. Moreover, this system allows user to update and retrieve occupation information by using a search system.

To test and evaluation a web application system, Black box Testing and Questionnaires with 7 experts and 30 users were applied. Black box testing was tested based on the performances of the system and collected errors of the system. Questionnaires were tested for user’s satisfaction. To evaluate the quality assessment system, Mean (x) and standard deviation (SD) were used to assess the qualities of the project.
3. Experimental Results

In this section, experimental results were separated into 2 parts: developing the traditional occupation web-based application and evaluating the performance and satisfaction of the application.

3.1 Developing the traditional occupation web-based application

When developing the web application, Adobe Dreamweaver, PHP, HTML, CS6, AJAX and Java Script language were used to implement with MySQL database. The system consists of the subscriber system, search system, categorization system, and map. The first page is displayed the menu keys such as occupation search, clip menu, and in the map search, if the user clicks on the map, the system displays a map from and shows the position of traditional occupation community. For a system administrator, the system is required to log in with username and password and the application will manage related information in database.

3.2 Evaluating the performance and satisfaction of the application.

To test and evaluate the qualities of the system, Black box testing and Questionnaires by 7 experts and 30 users were used to test this application. Black Box testing was assessed in the error of the project as following: functional requirement test, Function test, Usability test, Performance test and Security test. Functional Requirement test was evaluated the ability of the system to serve the needs of the users and Functional test was used to evaluate the accuracy of the system (Amman and Offutt). Usability test was tested the suitability of the system. Performance test was assessed the processing speed of the system. Finally, Security test was used to evaluate the security of the system (Laurie Williams, 2006). In the table 1 was described the ability of the system by 7 experts and 30 users.

Table 1. The results of the system

<table>
<thead>
<tr>
<th>The ability of the system</th>
<th>Experts</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
</tr>
<tr>
<td>1. the ability of the system to provide information</td>
<td>4.57</td>
<td>0.53</td>
</tr>
<tr>
<td>2. the ability of the system to link menu</td>
<td>4.71</td>
<td>0.49</td>
</tr>
<tr>
<td>3. the ability of the system to search</td>
<td>4.71</td>
<td>0.49</td>
</tr>
<tr>
<td>4. the ability of the system’s response time</td>
<td>4.00</td>
<td>0.82</td>
</tr>
<tr>
<td>5. the ability of the system to work automatically</td>
<td>4.43</td>
<td>0.53</td>
</tr>
<tr>
<td>6. the ability of the system to manage the database</td>
<td>4.86</td>
<td>0.38</td>
</tr>
</tbody>
</table>

The accuracy of the system

<table>
<thead>
<tr>
<th>The accuracy of the system</th>
<th>Experts</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
</tr>
<tr>
<td>1. the accuracy of the system to display information</td>
<td>4.86</td>
<td>0.48</td>
</tr>
<tr>
<td>2. the accuracy of the system to information retrieval</td>
<td>4.43</td>
<td>0.53</td>
</tr>
<tr>
<td>3. the accuracy of the system to update</td>
<td>4.71</td>
<td>0.49</td>
</tr>
<tr>
<td>4. the accuracy of the system in storage</td>
<td>4.57</td>
<td>0.79</td>
</tr>
<tr>
<td>5. the accuracy of the system to report</td>
<td>4.14</td>
<td>0.78</td>
</tr>
<tr>
<td>6. the accuracy of the system in the overall system functions</td>
<td>4.86</td>
<td>0.8</td>
</tr>
</tbody>
</table>

The suitability of the system

<table>
<thead>
<tr>
<th>The suitability of the system</th>
<th>Experts</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
</tr>
<tr>
<td>1. the suitability of the functions with ease of system usage</td>
<td>4.86</td>
<td>0.48</td>
</tr>
<tr>
<td>2. the suitability of text display clarity</td>
<td>3.86</td>
<td>0.53</td>
</tr>
<tr>
<td>3. the suitability of using colour</td>
<td>4.00</td>
<td>0.58</td>
</tr>
<tr>
<td>4. the suitability of data presentation</td>
<td>3.71</td>
<td>0.49</td>
</tr>
<tr>
<td>5. the suitability of user interface</td>
<td>4.14</td>
<td>0.78</td>
</tr>
</tbody>
</table>

The speed of the system

<table>
<thead>
<tr>
<th>The speed of the system</th>
<th>Experts</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
</tr>
<tr>
<td>1. the speed of program as a whole</td>
<td>4.29</td>
<td>0.49</td>
</tr>
<tr>
<td>2. the speed of search data</td>
<td>4.43</td>
<td>0.53</td>
</tr>
<tr>
<td>3. the speed of data presentation</td>
<td>4.29</td>
<td>0.49</td>
</tr>
<tr>
<td>4. the speed of showing the link</td>
<td>4.00</td>
<td>0.82</td>
</tr>
<tr>
<td>5. the speed of edit data</td>
<td>3.86</td>
<td>0.69</td>
</tr>
</tbody>
</table>

The security and verify data of the system

<table>
<thead>
<tr>
<th>The security and verify data of the system</th>
<th>Experts</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>SD</td>
</tr>
<tr>
<td>1. the security and verify data of set the permissions</td>
<td>3.71</td>
<td>0.49</td>
</tr>
</tbody>
</table>
The table shows that assessment of the ability of the system to meet the needs of the experts and users respectively in average of 4.55 and 4.52 and standard deviation of 0.54 and 0.59 so that satisfaction in quality toward the system is well.

Table 2. The results of the Black box testing of the system

<table>
<thead>
<tr>
<th></th>
<th>Experts</th>
<th></th>
<th>Users</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{x} )</td>
<td>SD</td>
<td>( \bar{x} )</td>
<td>SD</td>
</tr>
<tr>
<td>1. Function Requirement Test</td>
<td>4.55</td>
<td>0.54</td>
<td>4.52</td>
<td>0.59</td>
</tr>
<tr>
<td>2. Functional Test</td>
<td>4.60</td>
<td>0.58</td>
<td>4.50</td>
<td>0.60</td>
</tr>
<tr>
<td>3. Usability Test</td>
<td>4.11</td>
<td>0.44</td>
<td>4.70</td>
<td>0.48</td>
</tr>
<tr>
<td>4. Performance Test</td>
<td>4.17</td>
<td>0.60</td>
<td>4.48</td>
<td>0.66</td>
</tr>
<tr>
<td>5. Security Test</td>
<td>4.19</td>
<td>0.59</td>
<td>4.47</td>
<td>0.72</td>
</tr>
<tr>
<td>Summary</td>
<td>4.32</td>
<td>0.55</td>
<td>4.53</td>
<td>0.61</td>
</tr>
</tbody>
</table>

The results show that a quality assessment of the system is well in all aspects and Mean were 4.32 and 4.53 and standard deviation were 0.55 and 0.61. It can be concluded that the traditional occupation web base application is good.

4. Conclusion and Future Works

From the results of this application, this study presents the system can meet the needs of users in case of providing traditional occupation information and this system can be beneficial to manage and enhance knowledge community. However, from the development of the traditional community employment problem, the sizes of image files were high quality and there are various forms of occupations in communities. Therefore, in term of the future development, other advance technologies and techniques were applied to enhance this project and also apply the tool to manage this system.

Acknowledgements

The authors gratefully acknowledge the financial subsidy provided by Suan Sunandha Rajabhat University.

References

Amman and Offutt, "Introduction to software testing", chapter 1, pp. 6-7.