Questionnaire Content Management System to Analyze Characteristics of Graduates in Computer Field

Papatsorn Singhatham[1*] & Veerawan Janthanasub[2]

[1] Rajamangala University of Techlnology Phra Nakhon, Faculty of Science and Technology, Department of Computer Science, Bangkok, Thailand.

[2] Rajamangala University of Techlnology Phra Nakhon, Faculty of Science and Technology, Department of Computer Science, Bangkok, Thailand.

Abstract: This research aims at developing a questionnaire content management system to study and analyze characteristics of graduates in the field of computer in order to meet requirements of the enterprises. The content management system was developed by using Joomla Version 1.5 and bfsurvey component to create the questionnaire that covered all forms.

The performance test result of the questionnaire content management system showed that the system was completely effective as defined. Satisfaction evaluation of the system through a poll revealed that most users were satisfied at the highest level of 47.6 percent. The system was also transferred to the faculty, staff and students, in a total number of 30 people. Satisfaction evaluation of the group revealed the most satisfaction mean of 4.73, as the menu and the explanation of the system was easy to use and practical. It can be concluded that the proposed questionnaire content management system is effective and applicable.

Keywords : Content Management System, Establishments, Field of computer, The characteristics of Graduates

*Corresponding Author : wanida.si@rmutp.ac.th[1], ratree.j@rmutp.ac.th[2] Tel.08 4099 9919

1. Introduction

Current progress of technology has positively impacts human life and society as it starts to replace people with technology and work processes to increase efficiency and create competitive opportunities. Such factors have led to numerous social science research conducted by researchers whose key methods include distributing questionnaires to samples, either via postal mail or in person, which needs the use of human resources and a lot of paper. Thus, researchers have developed online queries to reduce paper wastage and the cost of implementation. It also reduces the duration of storing and processing data while providing facilities to receive and send data in the form of web application.

In addition, the research has led to the transfer of knowledge to staff, students and those interested. The system was developed as a web application by using technology web 2.0 and content management system: CMS. (James Goveror, Dion Hinchcliffe and Duane Nickull, 2009), adding components to a questionnaire by BF Survey. The user or administrator of the system without programming knowledge can easily create online surveys in a short time. They can create questionnaires all form. Reports of statistical data analysis and graphs are shown automatically. Moreover, the data can also be exported to more advanced statistics. The system also supports the survey questionnaire through the board, statistical reports, gallery, news and PR recruitment, all of which are channels to promote the establishment and graduates as a mean to communicate more quickly and easily.

2. Materials and Methods

This research is developmental research. Operations are divided into four steps as follows:

2.1 System analysis and design by principles and theories in software engineering as follows:

2.1.1 Population such as teachers, staff, students and interested people. Sample such as 30 recipients of technology transfer.

2.1.2 Systems analysis. Tools used: use case diagram and template, activity diagram, sequence diagram and storyboard. The actors are 1) administrator 2) user and 3) Recipients of technology transfer. They have ability as follows :

1) An administrator is a system caretaker who manages the look and feel of a website. He/she adds, deletes and edits articles on the site as well as manages questionnaire, users, board, report and poll.

2) A user is a general person that uses the system. He/She can register, use a board, read articles, comment on the questionnaire and poll as well as browse reported questionnaire.

3) The technology transfer recipient is a teacher, staff member, student or person who is interested in the system. Their ability is less than that of the administrator. They can create and read articles, manage questionnaire, and browse reported questionnaire and use a board.

For an overview of the questionnaire, Content Management System is presented by the use case diagram (Kendall, K. E.; and Kendall, J. E., 2005), which consists of the main modules 11 use case as follows: (Shown in Figure 1)
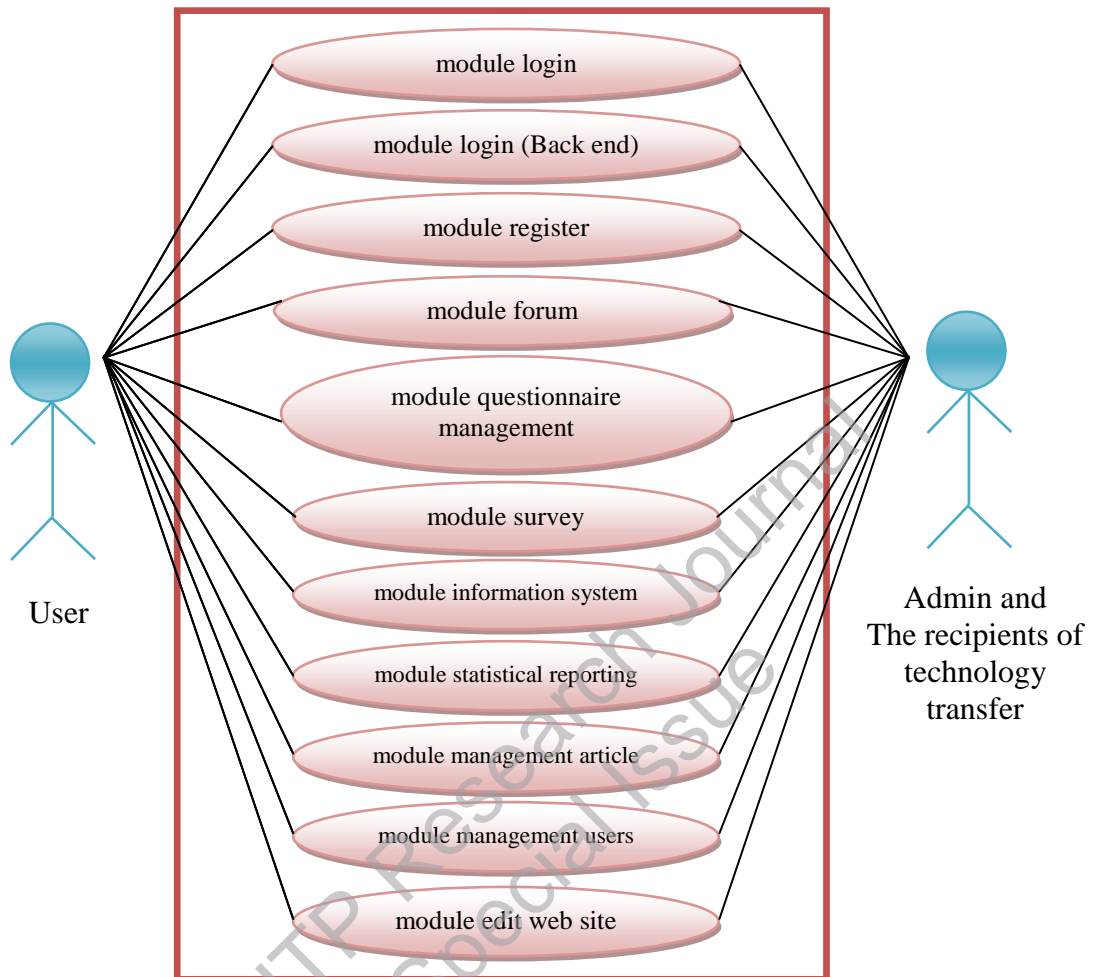
Figure 1 shows use case diagram of the Questionnaire Content Management System.

2.1.3The system design is divided into four sections.

1) Screen design focuses on easy design to understand and conveniently use with the use of technology web 2.0 tools in the form of tools, including writing articles, forum, news, and exchanging files between users or stakeholders. (Wendy Chisholm and Matt May, 2008) as shown in Figure 2.

Figure 2 shows the Questionnaire Content Management System screen design.

2) Database design by principles of relational database design to create Database Management System from MySQL.

3) Hardware design that consists of web server and client.

4) Software design using Joomla version 1.5 and bfsurvey component to develop system because the software is an open source with no cost and no infringement of intellectual property (Gerasit Ungratanawong, 2012).

2.2 Development system by installing Joomla version 1.5, BF survey component and MySQL as shown in Figure 3. Then functions or modules are established for analyzing and designing 11 modules as follows.

1) The use case module login through the website
2) The use case module login via the website
3) The use case module register
4) The use case module forum
5) The use case module questionnaire management
6) The use case module survey
7) The use case module information system
8) The use case module statistical reporting
9) The use case module management U article
10) The use case module management user in the system
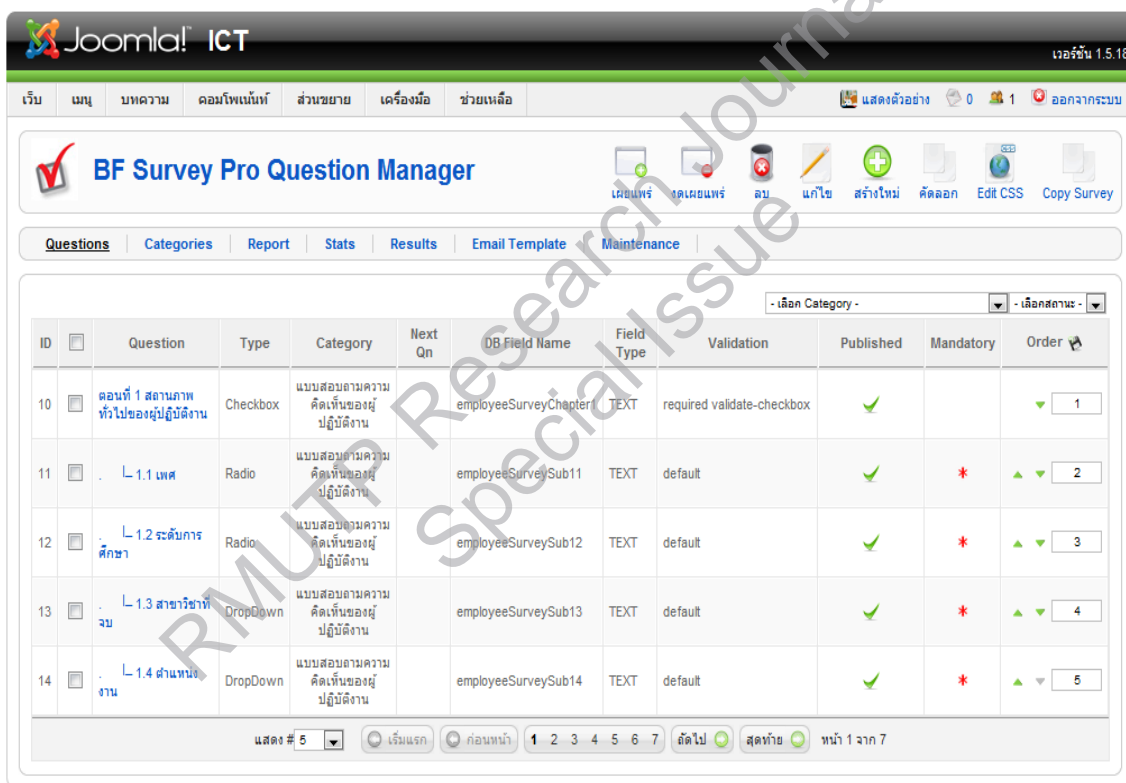11) The use case module edit website

Figure 3 shows question manager by BF survey component of Joomla.

As of the ability of system, users can create a questionnaire using tools such as radio box, check box, text field, text box, date, radio group and drop-down list as shown in Figure 4. This is possible for a comprehensive survey using the form of the five types of questionnaire:

1) Choose one of two answers. (Dichotomous)

2) Multiple choice single answers, multiple answers. (Multiple Choice)

3) Multiple choice answers. (Checklist)

4) The order will be posted out of level of importance or priority post. (Ranking)

5) A priority (Scale)

Then a host computer (server) was rented to install and test the system.

Figure 4 shows the questionnaire in various types.

2.3 The technology was transferred to the teachers, staff, student and people who are interested, 30 in total in 1 day. The technology transfer recipients can create online surveys including all questionnaire forms with ease in a short time without any programming knowledge as shown in the Figure 5.

Figure 5 shows web page design by the recipients of technology transfer.

2.4 Evaluation research was divided into three parts: 1) the efficiency and integrity of the software (software testing) 2) the satisfaction of users via surveys, and 3) the evaluation of achievement of the technology transfer recipients.

3. Results and Discussion

Research results are summarized 3 sections as follows:

3.1 The efficacy and integrity of the software covers 11 modules as the questionnaire Content Management System developed with all functions worked perfectly according to the extent required. It was also shown in the statistical reports such as frequency, percent and graph as shown in Figure 6.
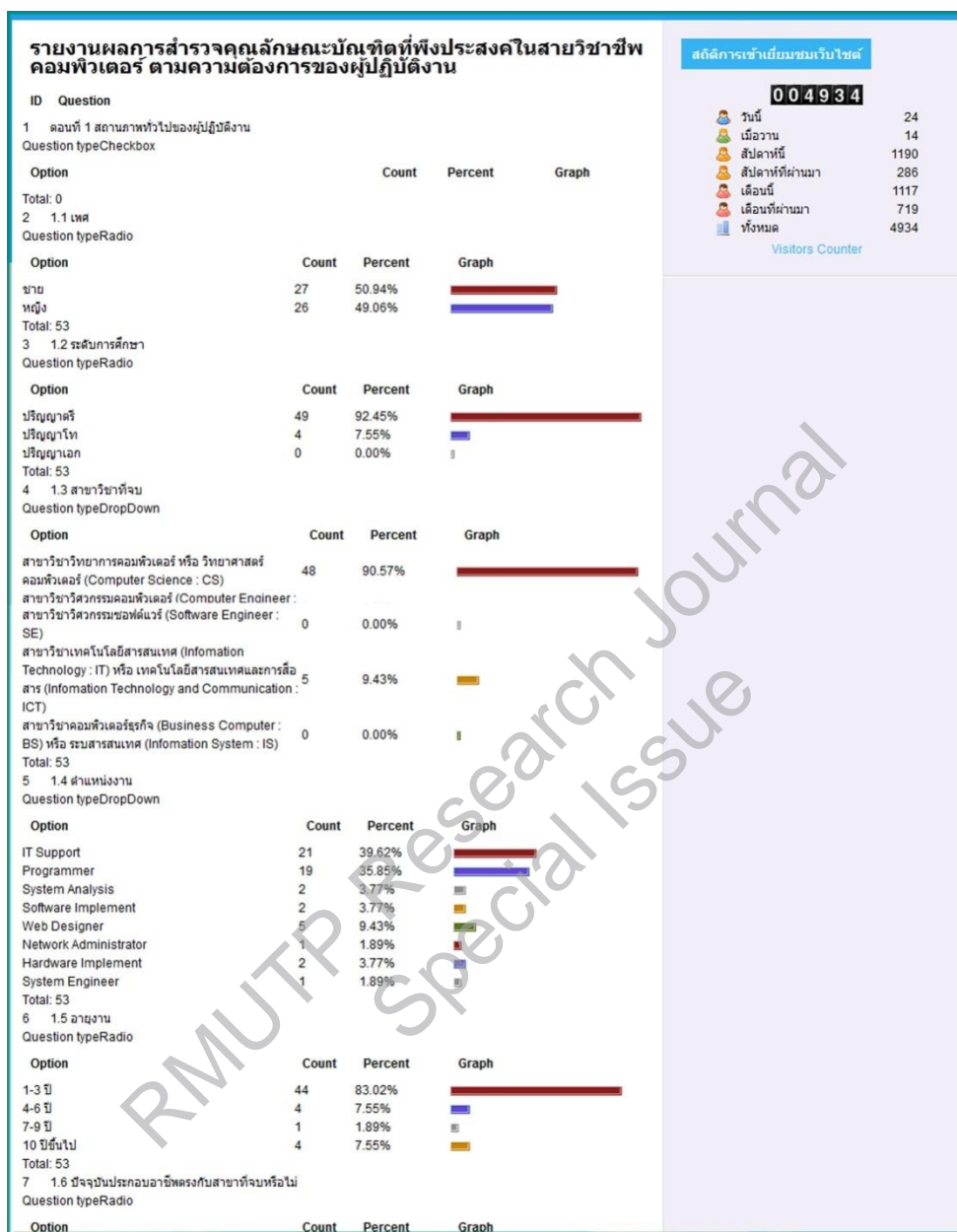
Figure 6 shows reports and statistical data analysis and graphs.

3.2 The analysis of satisfaction with the system through a poll finds 21 users were with the highest level of satisfaction (47.6 percent). Details are shown in Figure 7.
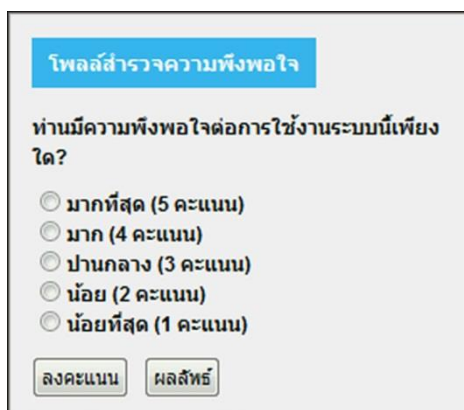
Figure 7 shows a poll on the questionnaire content management system.

3.3 Regarding learning achievement of the recipients of technology transfer, it was found that the mean of satisfaction was at the highest level ($\overline{X}$ = 4.78). The recipients of technology transfer commented that a system had a menu and description resulting in easy access. After applying and training, anyone can create a questionnaire for their own use as shown in Table 1.

Table 1 shows the satisfaction of participating in technology transfer.

Assessment topics	$\overline{X}$	Satisfaction level
1. The transfer of knowledge and creating questionnaire.	4.68	Most
2. The questionnaire Content Management System.	4.73	Most
3. Overall satisfaction.	4.93	Most
Total average	4.78	Most

4. Conclusion

The research result reveals that the questionnaire content management system to analyze the characteristics of graduates in the field of computer developed by web technology 2.0. Moreover, it was found the setup of the system on internet network met the purposes. The mean value of satisfaction of the technology transfer recipients was at a highest level ($\overline{X}$ = 4.78). It is recommended that anyone can create a questionnaire to use for themselves. Also it can be concluded that this questionnaire content management system has the efficiency to analyze the characteristics of graduates in field of computer.

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