

From Traditional to 360-Degree Feedback in Performance Evaluation of Bhutan

Sagar Bhujel^a, Rinchen Zangmo^b, Sonam Wangmo^c, Yeshe Wangchuk^d and Kezang Jurmey^e

¹Department of Information Technology, College of Science and Technology, Royal University of Bhutan, Rinchending,

Phuentsholing, Bhutan

^a02042013013.cst@rub.edu.bt, ^beit2012025.cst@rub.edu.bt, ^c02042013022.cst@rub.edu.bt, ^dyeshiwangchuk.cst@rub.edu.bt,

^eeit2012013.cst@rub.edu.bt

Abstract—Performance evaluation of tutor is important at universities and colleges. At College of Science and Technology, Royal University of Bhutan, all tutors receive feedbacks of performances from the students of which they are teaching and the feedback results are too vague to serve the purpose of performance evaluation. 360-degree feedback concept is useful for performance evaluation in which the tutor is evaluated from different points of view (subordinate, students, peer, supervisor and beneficiary). Thus, to identify the clear evaluation, it is important to build web-based 360-degree feedback system in performance evaluation. In this paper, we introduce web-based application titled “Feedback Analytic System” in the college to realize 360-degree feedback concept. It also presents the current working of traditional feedback system in Bhutan and problem associated with it, methodology, design and the implementation. The proposed system was created using Laravel 5.3 framework, PHP 7.0.1, SQL (Structure Query Language), Bootstrap, CSS (Cascading Stylesheet) and JQuery.

Keywords-Feedback Analysis, Performance evaluation, Anonymous, Accuracy, questionnaires

I. BACKGROUND

Teacher plays a vital role in the lives of the Students. Effective teacher vastly improves student learning outcomes. With the changes in the educational environment, the Royal University of Bhutan has realized the importance of constructive feedbacks as the best way to serve students while also enhancing professionalism and staff performance for achieving the University’s teaching, research and service goals.

The strategy of applying the 360-degree feedback or multi-level feedback was considered to improve the knowledge and capabilities of the staff. In 360-degree feedback, the staffs receive ratings of their performance from its subordinates, peer, beneficiary, supervisor and students.

Under the Royal University of Bhutan (RUB), the college is made up of President as chairman, Dean Academic Affairs, Dean Student Affairs, Dean Research and Industrial Linkage, Head of Departments and Academician. All of this category of staffs are eligible to receive feedback or is considered as the feedback recipient. They can also be feedback respondent for his/her peer, supervisor, subordinate and beneficiary. It is mandatory for all staff holding academic positions to have feedback from their students and for managerial position to have feedback from their subordinate.

The policy of Performance Management System (PMS) of RUB includes promoting competency, meritocracy, efficiency and staff motivation, and enhance both the organizational and individual development and effectiveness by identifying knowledge and skills required (development needs) for

performing the job efficiently. Hence, the appropriate platform for 360-degree feedback system is required to allow the staffs to provide and receive feedback based on role and responsibility.

It is also important for the college to be able to update, manage, maintain and retrieve user’s information as and when required while also managing the staffs feedback to all the registered academic staffs in the college. For such a scenario, the use of an efficient and effective database is a must and therefore the college requires a website that provides such services.

II. INTRODUCTION

To crossover the traditional feedback system and move towards effective 360-degree feedback mechanism with enhanced professionalism and staff performance for achieving the university’s teaching goals, this project is proposed, to help the staff maintain transparency, efficiency and motivated in the college level.

The Royal University of Bhutan has completed a document titled Performance Management System (PMS) Chapter 7, to be followed by all the colleges under RUB. It states how the 360-degree feedback shall be used for the assessment of staff in the university wherever possible. Every staff of the university shall be provided with information on performance management system. Existing staff shall familiarize themselves with the performance management system, and new staff shall be provided with this information through an induction/orientation program. Such document plays an important role in familiarizing the staffs to have honest assessment.

Feedback Analytic System will provides a platform for the colleges to better administer its primary responsibility in managing the users (staff and student) based on roles and responsibility and manage feedback provider and recipient. It will help the college in terms of advancing, and improving the traditional means of giving feedbacks. Currently, the means of providing feedback is from the student to the tutor. However, this method of giving feedback is inefficient and ineffective especially to achieve the university teaching goals. Feedback Analytic system developed allow staffs to have feedback from multiple source (supervisor, subordinate, peer, beneficiary and student). FAS will provides an easy-to-use interface for giving and receiving feedback results.

III. LITERATURE REVIEW

[1]Examines multi-user feedback system based on performance and appraisal using *Fuzzy* logic. They showed that 360-feedback based appraisal is a comprehensive method where the feedback to an individual is given by multiple persons. This feedback were represented in graphical chart which depicts which faculty is going to have the appraisal for the current year and which faculty need room for improvement.

[2] study was based on improving the teaching qualities of teachers using student feedback in the medical college. They took feedback from the fourth semester students. The quality of testing were evaluated based on the feedbacks. Upon getting the feedbacks, teachers were given three months to improve their skills. After three months they were once again evaluated to access the effectiveness. With their system most of the teachers and students were happy with the format of the feedback.

[3] stated that student rating have steadily continued to take precedence on faculty evaluation system in western countries. They claimed that Students rating faculty's performance are the most if not only the influential measure of teaching. Student evaluating teaching effectiveness have traditionally served two function: as formative, and as summative measurement of teaching. They claimed that the formative use of students evaluation is where feedback is provided to the instructors who wish to modify their teaching while the summative function of teaching evaluation provides information for administrative decision.

[4] stated that feedback is one of the most powerful influencing factor while learning. A teaching support system should be researched and developed to improve learners' quality. They pointed out that the corrective feedback develops learners' learning quality and teachers' teaching quality and they also stated that the right feedback at right frequency will guide to improve and raise educational achievement and learning environment.

[5] states that Effective feedback must answer three major questions asked by a teacher and/or by a student: Where am I going? (What are the goals?), How am I going? (What progress is being made toward the goal?), and Where to next? (What activities need to be undertaken to make better progress?) These questions correspond to notions of feed up, feedback, and feed forward. The "success criteria," and goals without clarity as to when and how a student (and teacher) would know they were successful are often too vague to serve the purpose of enhancing learning were also considered. They felt that feedback is the 'consequences' of performance.

[6] journal talks on the advantage of implementing the feedback system, and why evaluation is necessary. It consists of an evaluation cycle where the feedback plays a vital role. It concentrates on purpose of having feedback in course evaluation. Apart from why having to evaluate, it also concentrates on why are we evaluating? It concludes that evaluation always gives a positive learning environment. It elaborates that having a feedback is not enough. It explains why involve students as the feedback providers and the methods of collecting the feedbacks. After the feedbacks gathering and collection process, the analysis and interpretation of those collected feedback initiates.

[7]stated that the core of education is teaching and learning, and the teaching-learning connection works best when we have effective teachers working with every student every day. He claimed that Teacher evaluation is, first, about documenting the quality of teacher's performance; then, its focus shifts to helping teachers improve their performance as well as holding them accountable for their work. He argued that the basic needs in a quality teacher evaluation system are for a fair and effective evaluation based on performance and designed to encourage improvement in both the teacher being evaluated.

IV. PROBLEM STATEMENT

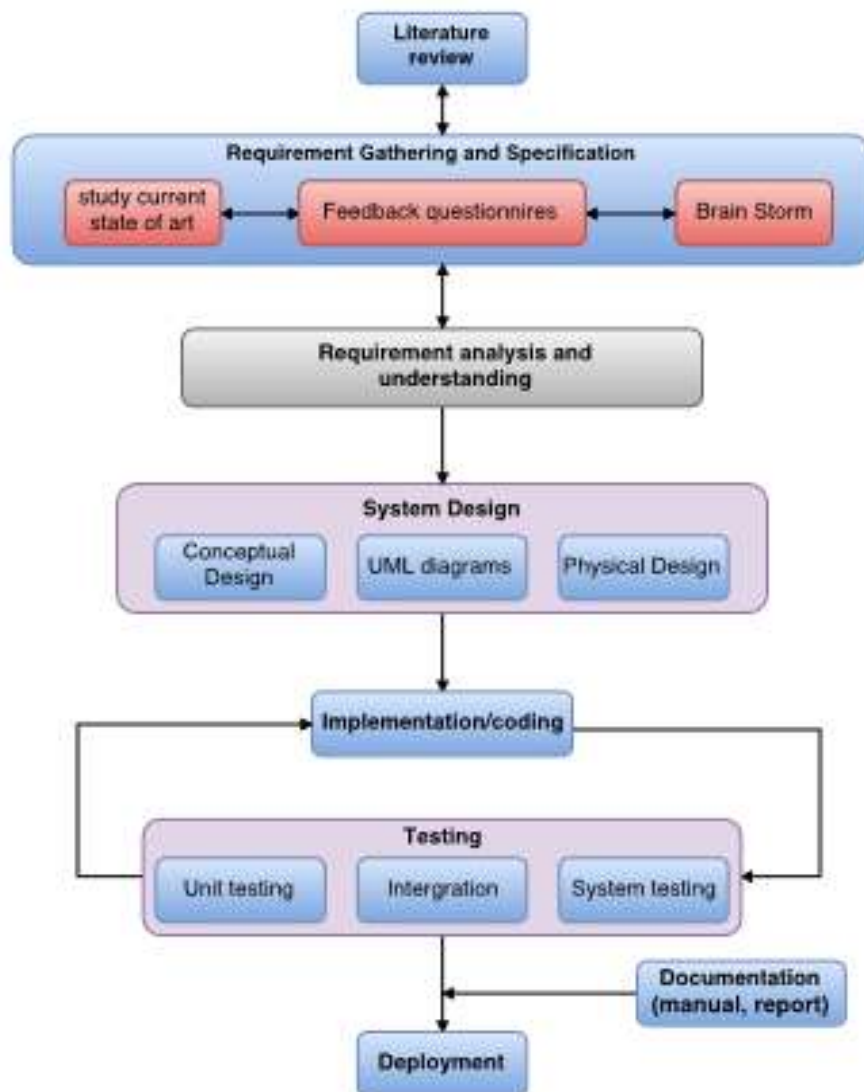
The existing feedback system is integrated with the Virtual Learning Environment (VLE) of the college. Only those tutors who teach the student will get the feedback. Feedbacks from the students only. Other tutor who do not participate in teaching have no platform to provide and receive feedback. To give feedback, student must be enrolled in the module. The feedback form will be enabled by the module tutor. This leads to the question of confidentiality/ anonymity? Many student felt that the anonymity is not maintained thereby honest feedback is not provided. Moreover, Feedback result is shown in percentage wise. Which in turn affect the clarity of feedback result. It is felt that an individual assessing another individual does not help in developing the skills and ability of staffs. Some may assess their personal view and other may assess for the sake of assessing with no honest feedback. Analyzing the feedback result is also a big issue for the staffs. Hence, we are

motivated to build the Feedback Analytic System (FAS) for the college.

Feedback analytic system shall be the platform where the staffs get opportunities to receive suggestion on the quality of education they have provided to students and the roles that they played with the rest of the staffs. Currently, there are no online system in the colleges that support 360-degree feedback and we felt the need to build a system that manages all the feedback recipient and feedback provider based on roles (President, Dean's, HOD's, Academicians, students, councilor, technician). Therefore, the need of such a reliable, efficient and effective system motivated us to carry out this project.

V. METHODOLOGY

The prototyping model will be implemented in developing feedback analytic system. The prototype is built, tested and then reworked as necessary until an acceptable prototype is finally achieved. Our system focuses more on GUI development and have high level of user interaction which best suits the prototyping model. Developing the prototype of Feedback analytic system requires iterative process since some users may feel the lack of some important information to be considered by the developer during the design. Prototyping will help to identify the missing functionality of the develop system.

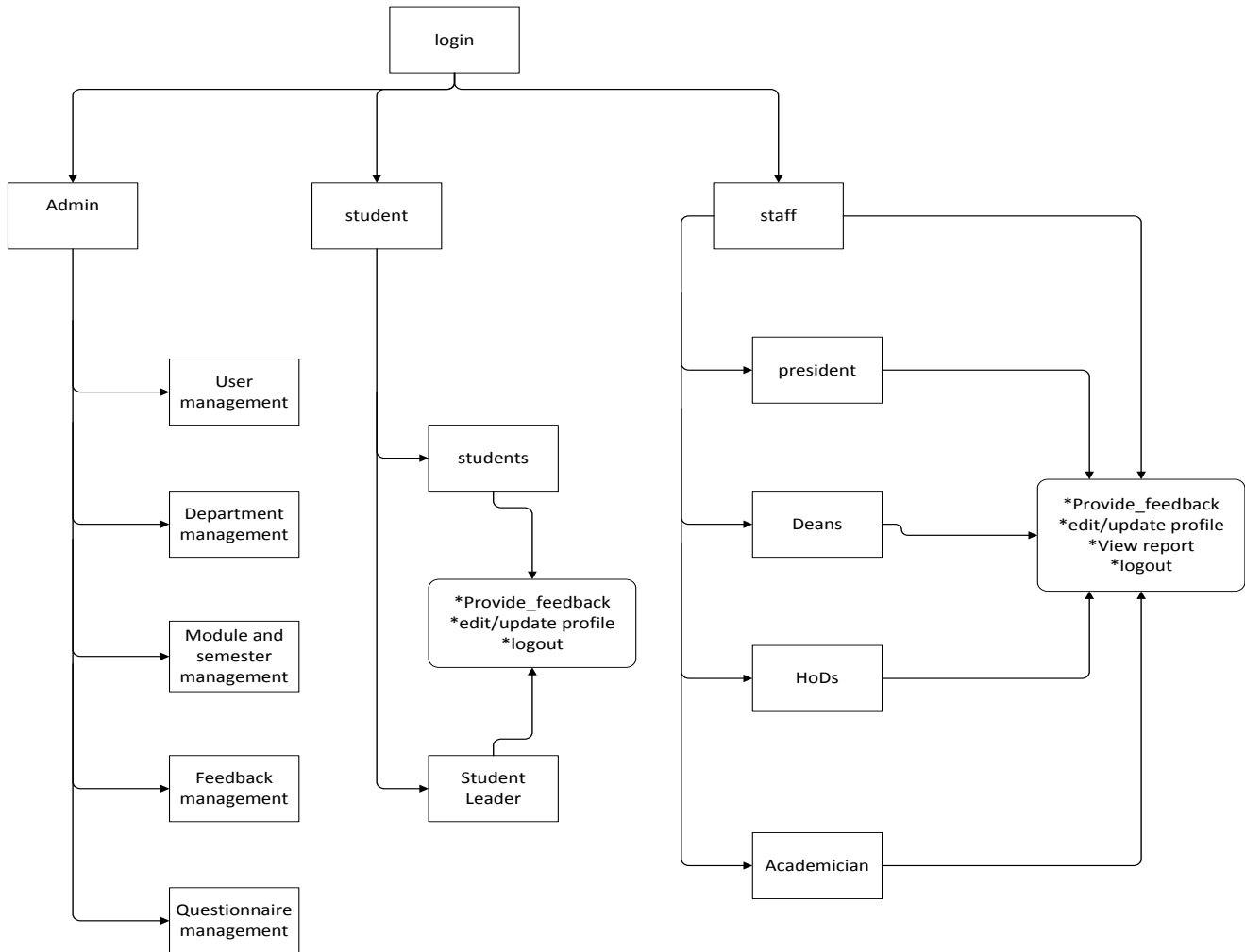


A. Functional requirement

The functionalities of feedback Analytic System includes:

- Login based on the roles.
- System will allow all staff users to view their feedback result.
- Allow anonymous feedback provider
- All student to subscribe for the semester, department, modules.
- System will allow the staff and student users to provide feedback.

B. Users role



VI. DESIGN

This section highlights the design of the feedback Analytic System. We design use case diagram to show the functional requirement of the system and the data flow diagram level 0 and level 1 to show how the processes operate one another and in what order.

A. Use case Diagram

Use case diagram are software requirements that specify functionality of an actor.

Actors involved in our system are:

*Supervisor:*Supervisor involves Head of Department (HODs), Deans and Director of College of Science and Technology. Supervisor will give feedback to its subordinates.

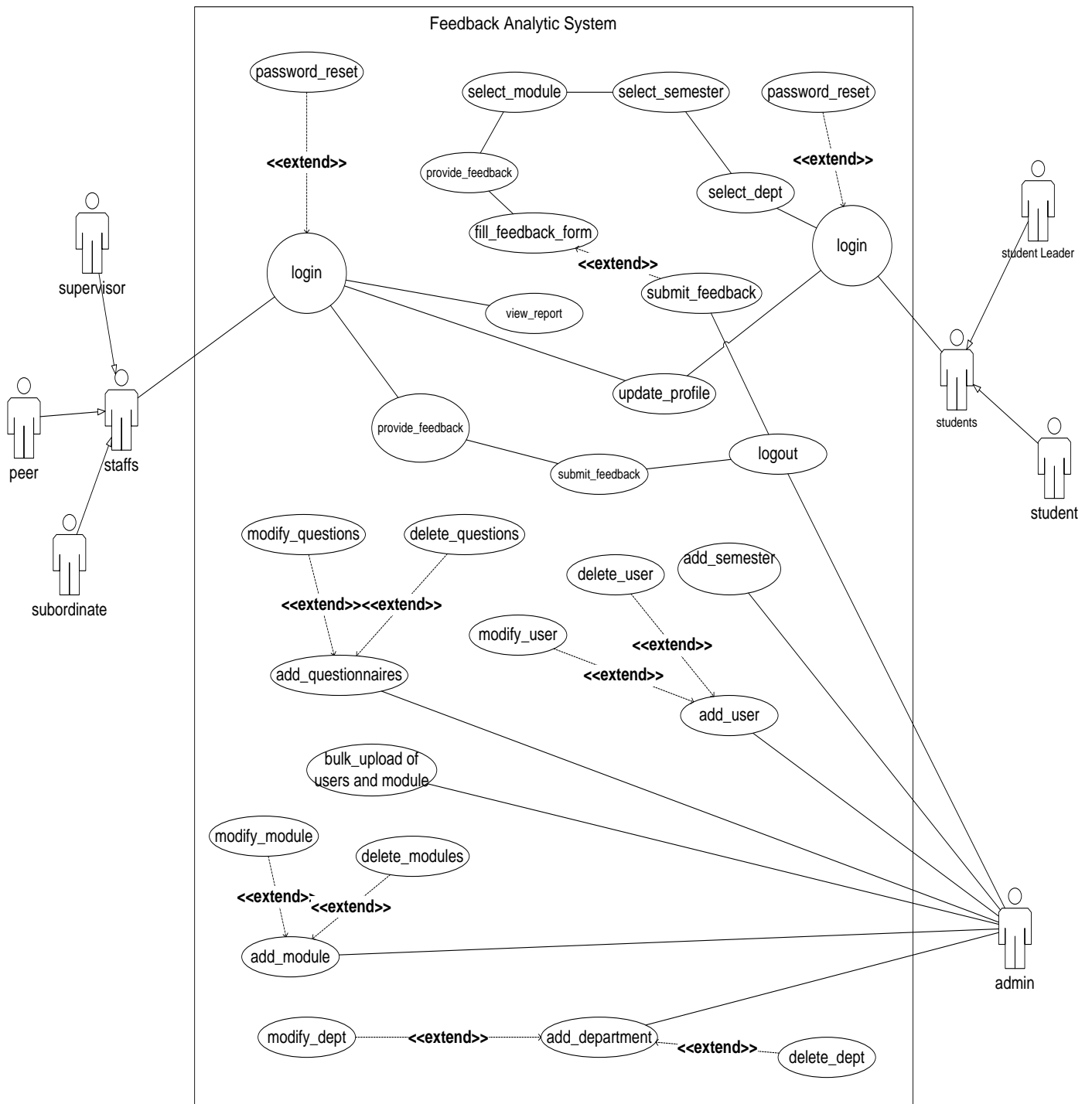
Subordinate: Subordinates involves teaching staffs in the college who will provide feedback to its manager or head.

*Peer:*The staff with same role in the college will be considered under peer. For example, the peer of IT HOD will be Electrical HOD, Civil and Architectural HOD and ECE HOD.

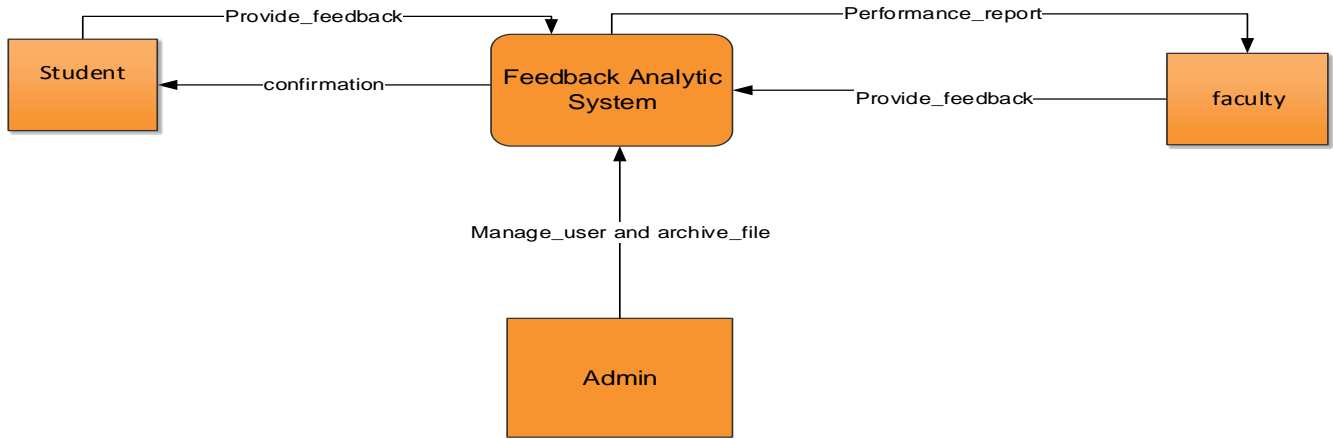
*Student:*The registered and the student of the college under different department taking different courses will be categorized under actor Student.

*Admin:*Admin controls the operation of the system. Admin performs the back-end operation. The ICT officer of the college will be the admin of the feedback analytic system.

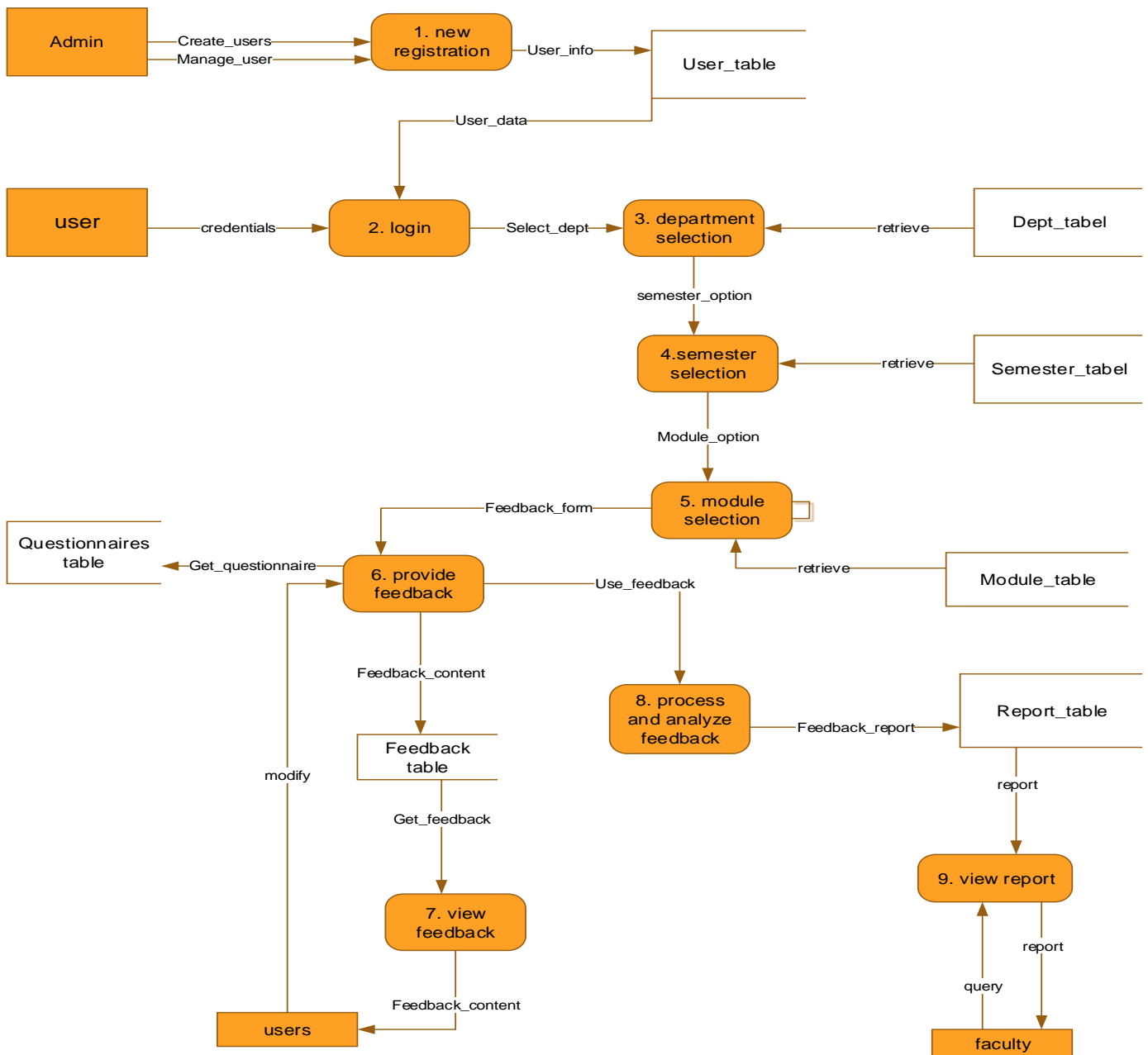
User: This is the user which is generalized from student, peer, subordinate and supervisor. Users are the one who can fill feedback and provide feedback.



B. DataFlow level 0 Diagram



C. DataFlow level 1 Diagram



VII. OUTPUTS

Front-end



Staff page



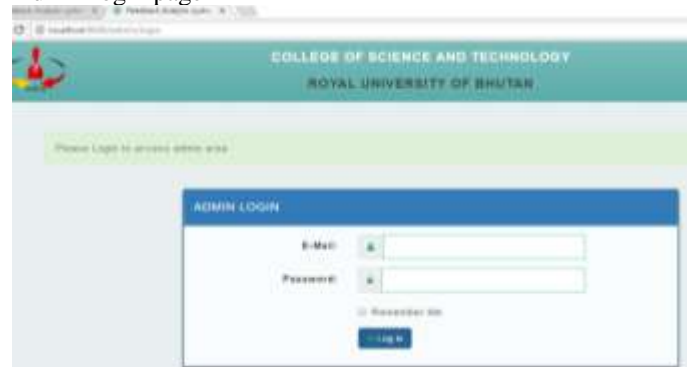
Feedback questionnaires index



Student page



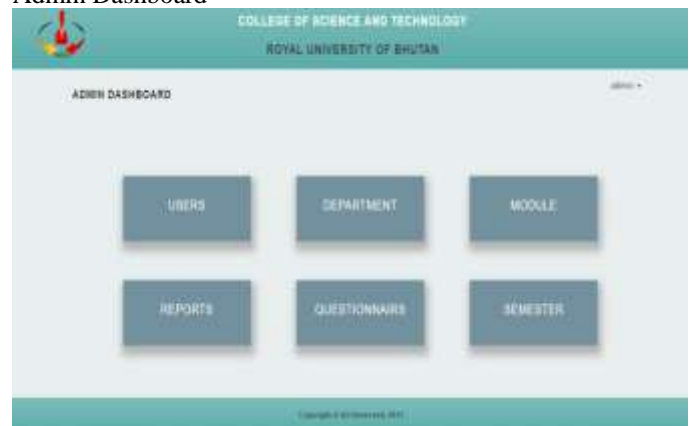
Admin login page



User edit Page



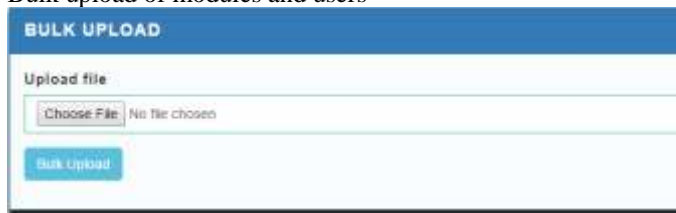
Admin Dashboard



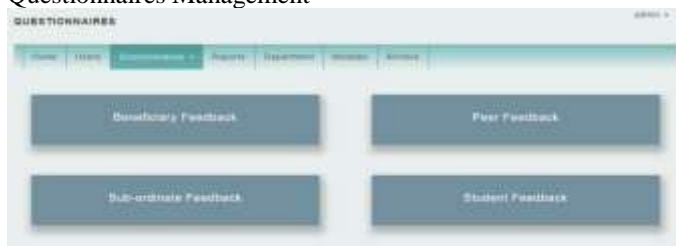
User management



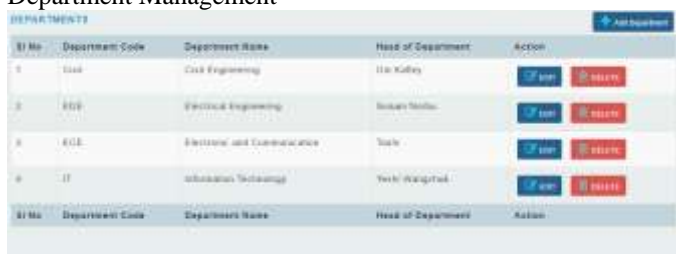
Bulk upload of modules and users



Questionnaires Management



Department Management



VIII. CONCLUSION

The project titled “Feedback Analytic System” is developed mainly to enhance teaching learning environment in college. It is also to help staffs maintain transparency, efficiency and motivate people in teaching professions. This particular project is to provide a systematic platform for the college to better manage its primary responsibility in managing users based on roles and responsibility, to assess one another to help one another performance in teaching learning.

Feedback Analytic System is a replacement system for our old feedback system which was integrated with our virtual learning environment. It provides easy-to-use interface for the users. This system is developed using open source tools such as Laravel as our main framework and HTML, PHP and JavaScript as out building language.

This developed system will provide all the functional requirements such as providing feedback, viewing feedback,

auto save features and anonymity and also provide an archive feature for future reference.

References

- [1] A. D. Shah and S. A. Ladhake, "Multi user Feedback system Based on Performance and Appraisal using Fuzzy Logic Based System-Design and Implementation," International Journal of Engineering Research and Application, pp. 674-680, 2014.
- [2] M. Husain and S. Khan, "Student's Feedback; an effective tool in teachers evaluation system," p. 5, 2016.
- [3] Y. Chen and L. B. Hoshower, "Student Evaluation of Teaching Effectiveness: an assessment of student perception and motivation," Assessment & evaluation in higher Education, p. 19, 2003.
- [4] S. Panhoon and S. Wongwanich, "An Analysis of Teacher Feedback for Improving teaching quality in primary schools," Procedia-Social and Behavioural Service, pp. 4124-4130, 2014.
- [5] J. Hattie and H. Timperley, "The Power of Feedback," American Educational Research Association, 2007.
- [6] E. Keane and L. M. Labhrainn, "Obtaining Student Feedback on Teaching and Courses quality," p. 19, April 2005.
- [7] J. H. Stronge, "Teacher Evaluation and School Improvement," Improving the Educational Landscape, 2004.
- [8] M. Hardil, D. Hom, R. Perez and L. Williams, "Which chart or graph is right for you.," Tableau Software, Inc.
- [9] S. Park, S. Takahashi and T. White, "Learning Technique (LT) program Developing effective teacher feedback system 90 day cycle report," spring 2014.
- [10] "MySQL," 1 May 2014. [Online]. Available: <http://www.mysql.com/why-mysql/white-papers/top-10-reasons-to-choose-mysql-for-next-generation-web-applications/>.
- [11] "Apache Friends," 19 April 2014. [Online]. Available: <https://www.apachefriends.org/index.html>.
- [12] "PHP Documentation," 30 April 2014. [Online]. Available: <http://www.php.net/manual/en/preface.php>.
- [13] RUB, "Chapter 7: Performance Management System (PMS)," Royal University of Bhutan.