



ISLAMIC UNIVERSITY OF TECHNOLOGY

**Teacher Evaluation System of
Islamic University of Technology**

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***A thesis submitted to the Department of CSE
In partial fulfillment of the requirements for the degree
B. Sc. Engineering in CSE
Academic Year: 2013-2014***

A Subsidiary Organ of the Organization of Islamic Corporation
Dhaka, Bangladesh

Declaration of Authorship

This is to certify that the work presented in this thesis is the outcome of the work carried out by Abdullah Al Saleh and Ishmam Haque Bhuiyan in the Department of Computer Science and Engineering (CSE), IUT, Dhaka, Bangladesh. It is also declared that neither of this thesis nor any part of this thesis has been submitted anywhere else for any degree or diploma. Information derived from the published and unpublished work of others has been acknowledged in the text and a list of references is given.

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Abstract

Automation system is now being used in every aspects of life. It has made our life easier and the possibility of covering greater area of work has increased due to the automation process. Completing track of work and keeping records of work has become much easier because it reduced the huge amount of paper work which was needed before. The systematic automation of virtually every facet of life activity has today become more of a necessity than just mere luxury and the putting of such system online is even becoming increasingly imperative. With this respect the idea to develop an Online Teacher Evaluation System is being conceived. With a total population of over 1200 and each student each student evaluate the teaching of an average of six subjects and corresponding labs, the volume of paper work that has to be done, sorted and listed is enormous. Every semester around 12000 evaluation sheets are collected by the respective department secretaries. Getting to summarize those evaluation sheets is a time consuming and difficult work. So to make this evaluation system fully functional and the whole process easier, the idea of teacher evaluation system has been introduced. Each student is assigned a username and password with which he can access the system and evaluate only the teachers who were in that particular semester. Teachers can also access the system and see their evaluation. Head of the departments and vice chancellor can also access the system with various privileges. Only the VC has unrestricted access across the system. There will also be an admin in the system. He is the one who is responsible for creating new users and their passwords, granting different level of the system according to the user. In a nutshell, if the system is deployed, it will make the evaluation process suitable and easier and reduce the huge amount of paperwork. The system offers very user friendly interface, graphical representation of evaluation and gives an overview of whole evaluation system.

Contents

<i>Declaration of Authorship</i>	2
<i>Abstract</i>	3
Chapter 1: Introduction	8
1.1 Project background:	8
1.2 Overview of the significance of teacher evaluation:	8
1.3 Motivation:	9
1.3.1 Time Factor:	9
1.3.2 Volume of Papers:	9
1.3.3 Encourage to evaluate:	9
1.3.4 Reach of internet:	10
1.4 Teacher Evaluation System of IUT:	10
1.5 Impact of the Project:	10
1.6 Objectives:	11
Chapter 2: Literature Review:	12
2.1 Structure of Teacher Evaluation System:	12
2.2 Teacher Evaluation system in other parts of the world:	12
2.3 Factors to Consider:	12
2.4 Conclusion:	13
Chapter 3: Initial Study:	14
3.1 Project definition:	14
3.2 Identify Problems:	14
3.3 Different Sector of the Project:	15
3.4 The Traditional System:	15
Chapter 4: Feasibility:	16
4.1: Definition:	16

4.2 Technical Feasibility:	16
.4.3 Economic feasibility:	17
4.4 Operational:.....	17
Chapter 5: System Analysis:.....	18
5.1.1 Observation:	18
5.1.2 Questionnaire:	18
5.2 Analyze the current System:	19
5.3 Input and output of current System:.....	20
5.4 Requirement Analysis:	20
5.5 Features of New System:	21
Chapter 6: Proposed System.....	22
6.1 Features:.....	22
6.2 Various Module of the Proposed System:	22
6.3 Advantages of the Proposed System:.....	23
Chapter 7: Technical review:.....	24
7.1 Requirements Gathering:.....	24
7.2 Scripting language:.....	24
7.2.1 Client side scripting:.....	24
7.2.2 Server side Scripting:.....	25
7.3 Database Design:	25
7.4 Entity Relationship Diagram:.....	25
Chapter 8: System Design and Implementation	26
8.1:Main Home Page of the System	27
8.2: Admin Panel.....	28
8.3: Student Registration	29
8.4: All students managed by admin	30

8.5: Student page.....	31
8.6: Department Head Page.....	32
8.7: Evaluation Sheet	33
8.8: Evaluation graph	34
8.9 Problems faced during implementation:.....	35
Chapter 9: Evaluation and Conclusion:	36
9.1: Evaluation of the Project Objectives:	36
9.2 Future Works:	36
9.3: Conclusion:	37
Appendix: Definition of the terms used	38

Chapter 1: Introduction

1.1 Project background:

Recently all renowned universities around the world have embarked on modernizing their activities by integrating Information and Communication Technologies (ICT) tools into the university administration process and developing appropriate software for various needs of the university. The Islamic University of Technology (IUT) can therefore not afford to be left behind in this era of computerization. Also creating an automated system will allow us to save a lot of time and the total process of evaluation can be easily controlled.

1.2 Overview of the significance of teacher evaluation:

The systematic automation of virtually every facet of life activity has today become more of a necessity than luxury and putting of such systems online is even becoming increasingly imperative. It is with this conviction in mind that the idea to develop an online Teacher Evaluation System for IUT is being conceived. As this evaluation process involves different level of access in the authority so making this system automated with security is essential. Around 1200 student in different department evaluate in around 12000 copies of evaluation sheets which becomes a Herculean task to summarize a teacher's performance in the class as well as in the lab. With this view and considering the hard work our objective is to make online teachers evaluation system where there will be flexibility from both authority and students side.

1.3 Motivation:

Our attention was drawn to this particular project for four main reasons which gave us the strong interest to study the existing manual system, analyse and develop its automated versions.

1.3.1 Time Factor:

In the manual teacher evaluation process, it has been noticed that too much time is needed to get all the students evaluate the teachers within a semester and this has often lost entire periods of classes of the teachers concerned.

1.3.2 Volume of Papers:

The sheer volume of papers involved in the manual process is another strong rationale in undertaking this project. In fact, the paper load is voluminous that the respective departmental secretaries find it almost impossible to process each and every of the thousands of evaluation form every semester.

1.3.3 Encourage to evaluate:

The necessity for each student to obligatorily evaluate the teacher is also another strong reason why we undertook this project. It has been observed that in the manual process, many students either absconded or dodged away from the evaluation process and because there is no efficient mechanism to ensure that every student had evaluated the teachers, many students went unnoticed and unpunished. This automated system therefore solves this problem by ensuring

that every student does what is required of him appropriate sanctions will be meted against them.

1.3.4 Reach of internet:

By making the system go online, it facilitates the evaluation process for the students because of the exposure of the expanse of the internet; the students can evaluate the teachers at their convenience, anytime and anywhere within the prescribed time limit, unlike the manual system which required that all the students have to be present in the classroom to do the evaluation.

1.4 Teacher Evaluation System of IUT:

Traditionally, IUT has always evaluated its teachers at the end of the course work in each semester of the academic year. Until now the process is done manually. The OTES-IUT is therefore simply an automation of this manual process.

1.5 Impact of the Project:

The impact of such a project cannot be over-emphasized. Firstly, it contributes to the modernization of the university's administration system by automating one of its key departmental activities. Moreover, it provides a comprehensive approach to the whole process of teacher evaluation. The time-consuming nature of the hitherto manual process will now be a thing of the past. Furthermore, students will now be a certainly motivated and even constrained to carry out the evaluation exercise.

1.6 Objectives:

The main objectives of the project are as follows:

- Participate in the modernization and computerization of IUT's system of administration
- Make the evaluation process more credible and ameliorate the teaching standard of the university
- Reduce the unnecessary work load of the secretary and eliminate the time consuming manual process
- Establishing a reliable and more accurate means of evaluating the teachers and giving wider access to various authorized users of the system.

Chapter 2: Literature Review:

2.1 Structure of Teacher Evaluation System:

Across the world, schools and universities are in the process of building better teacher evaluation systems that not only identify highly effective teachers but also systematically provide data and feedback that can be used to improve teacher practice. The Developing of a Comprehensive Teacher Evaluation System is a tool designed to assist schools and universities in constructing high quality teacher evaluation system in an effort to improve teaching and learning.

2.2 Teacher Evaluation system in other parts of the world:

The research community has long recognized that importance of teachers to student achievement. Although research has shown that teachers are the most significant school based factor in student achievement, traditional methods of evaluation teachers have not been able to capture or explain differences between effective and ineffective teachers.

2.3 Factors to Consider:

- Stakeholders might consider the following factors in selecting a particular model:
- Grant requirements as applicable
- Existing of impending university's rules and regulations that affects the evaluation process
- Goals and priorities at the educational institution

- The human and resource capacity of the university
- The training needed to implement the system with fidelity
- Stakeholder support for changes in teacher evaluation
- Technological capacity, including the ability to link teachers with students
- The traditional system already in the use and their level of acceptance by the administration
- Teachers' and administrators' preferences for certain types of measures.

2.4 Conclusion:

Creating and designing the teacher evaluation system in an effective and sustainable manner is a difficult process. But these kinds of system are very much needed if any educational institution wants to really get the perfect evaluation of teachers. It will also make the teachers more serious and they will be more careful in taking the classes in proper way. The main thing that it will enable us to grow up effective teaching.

Chapter 3: Initial Study:

3.1 Project definition:

The Online Teacher Evaluation System of the Islamic University of technology (OTES-IUT) is a dynamic web-based system designed to automate the evaluation of teachers by their students at the end of each semester and generate an aggregate of the overall performance of a teacher as per the evaluation of his work by the students.

3.2 Identify Problems:

The challenge here is to build an efficient and fully automated system of evaluating teachers while taking into consideration all the practical constraints and incorporating the latest tools and techniques used in such systems elsewhere. The following problems/questions were identified among others:

- Identifying the different categories of users
- Registration of users
- Defining the different levels of access for each category of users
- Determining the privilege of each user once he is logged into the system
- Outlining the different evaluation criteria
- Which courses of which semester, department and programme are to be evaluated by which students?
- Measures needed to constrain the students in undertaking the evaluation exercise
- The platform to be used for such system
- Issues related to deployment and maintenance of the system have also been identified.

3.3 Different Sector of the Project:

The system provides functionalities that are available to all the concerned stakeholders and extends to all the five academic departments of the university. The system encompasses various modules for such as registration of students by the system administrator, login verification, teacher evaluation, and review by the respective heads of the departments etc. only valid and duly registered students can access the system and proceed with the evaluation process.

3.4 The Traditional System:

IUT's traditional system of evaluating teachers has the following characteristics:

- It is paper based system. Students are provided with printed evaluation forms to fill
- It is done on a semester basis and conducted towards the end of each semester
- The evaluation process of a teacher is carried out during his class time
- After the evaluation process of a teacher is completed, the forms are the submitted to the department
- It is averaged and a copy is provided to the teacher and the head of department
- A summary of all teachers' average evaluation form is submitted to the chief of establishment and the vice chancellor
- The data is then stored in the archives of the university for record keeping

Chapter 4: Feasibility:

4.1: Definition:

A feasibility study is defined as an evaluation of existing system and a way of selecting the best system that meets the performance requirements. This entails identification, description and evaluation of candidate systems and selection of the best system for the job. The feasibility study is conducted once the problem is clearly understood.

The following is a summary of the different feasibilities carried out in developing the system:

- I. Technical feasibility
- II. Economic feasibility
- III. Operational feasibility

4.2 Technical Feasibility:

A feasibility study is defined as an evaluation of existing system and a way of selecting the best system that meets the performance requirements. This entails identification, description and evaluation of candidate systems and selection of the best system for the job. The feasibility study is conducted once the problem is clearly understood.

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.4.3 Economic feasibility:

The project is economically feasible only if tangible and intangible benefits outweigh the cost and we can say the proposed system is feasible based on the following conclusions:

- I. The cost of developing the full system is reasonable and within the reach of all university
- II. The cost of hardware and software for the application is very minimal
- III. System requirements, both hardware and software are easily available and economically sustainable in the short, medium and long term as well

4.4 Operational:

In our project, we used MySQL database[3]. Much of the dynamic content in the website comes in real-time using data fetched from a database. The specific information presented to a higher level user or interface is created dynamically after the user has made a request. To accomplish this operational exigency, the following steps were taken:

- I. A large database rich in content is queried
- II. Relevant data are extracted from the database
- III. The content objects are transmitted to the client environment for display

Chapter 5: System Analysis:

5.1.1 Observation:

We have visited a lot of universities' websites such both in Bangladesh and in other countries of the developed world to see how they have automated their administrative and pedagogic services namely the evaluation of their teachers by their students and also to identify the style of their implementation and how they display information.

5.1.2 Questionnaire:

We have developed a set of questionnaire for the current system and prospective user of our developed system in order to get a clear idea about the user requirements and expectations and also to identify the problematic areas

that are to be solved and the needs of the users that must be attended to. Some of the questions we asked potential future users include among others:

- I. What are some of the facilities you would like to find on our proposed system?
- II. How do you want your profile information to be displayed? Partially or fully ?
- III. What are most appropriate evaluation criteria that must be included in the evaluation system?
- IV. In what way would you like interact with the system? As a desktop application or as a web based system?
- V. What are some of the difficulties you are facing when using the current manual system?

5.2 Analyze the current System:

Analysis is done to know about the current system of IUT in details. All the types of users are considered along with the privileges that they get. During the requirement analysis, focus was on determining the user needs and requirements, studying the application area depth to find out the strength and weakness of the current system.

- **Current System**

This documentation contains the information about the current system in details and presents graphical flow.

- **Data Flow Diagram of Present System**

Detail diagram about the data flow in the system.

- **Fact Finding**

Fact finding means the survey of the existing system and analyzing the needs and discussions with the management on how to improve it.

- **Final Proposal**

This document contains the descriptions of the current system, basic problems, limitations and proposal of the new system, initial new system requirements and advantages of the new system.

- **Requirement Specification:**

Requirement specification specifies the requirements which will be followed in the new system or upgraded from the existing system for the system to run properly and efficiently.

5.3 Input and output of current System:

The Input/output process of the current system contains the following modules:

- I. Admin register the various users
- II. Admin sign-in
- III. User sign-in
 - Student
 - Teacher
 - Departmental user (Head or secretary)
 - Chief of Establishment
 - Vice-Chancellor
- IV. Student Evaluation
- V. Evaluation processing (input/output)

5.4 Requirement Analysis:

In these projects the following fields were identified in the questionnaire prepared for the users:

- Design of the system
- Operational method of the system
- Working dimension of the system
- Working capabilities
- Basic structure etc.
- Proposed System Analysis

5.5 Features of New System:

- **Centralization:** There should be a designated person who will manage the system and who will have the responsibility of keeping it updated and running smoothly.
- **Timely Availability:** Students should be able to evaluate their teachers on time; usually the period slate for teacher evaluation in IUT is at least one week before the end of the semester course work. Measures should be taken to ensure that every student undertakes this exercise.
- **Accessibility of Information:** All relevant information regarding the whole evaluation process and system should be easily accessible to all the concerned users at different levels anywhere and at the proper time.

Chapter 6: Proposed System

6.1 Features:

- The authentication of the various users:
 - Student
 - Teacher
 - Department Head
 - Vice-Chancellor
 - System Administrator
- Registration of students into the system by the admin
- Provision of evaluation forms to the students
- Graphical representation of the aggregated evaluation result for a particular teacher or a particular department
- Limitation of registration to only current students.

6.2 Various Module of the Proposed System:

- I. Student Module: Here the students get registered into the system and their validity is confirmed by the system administrator before they can access the system to evaluate any of their teachers in the current semester
- II. Teacher Module: This module enable the teachers to access the system using his username and password. he can view anytime his evaluation history in a graphical form but only for the courses he has taught in that particular semester.
- III. Admin Module: The system administrator enters and validates other users of the system. He authenticates the various users and ensures that each one is using the system within his privileges and limits.
- IV. Department Module: This portal is for the respective departmental heads and their assigned secretaries. It enables the re respective heads to see the averaged evaluation of each of their teacher in all the courses he has taken

in a particular session and global performance of his department's teachers.

- V. Vice-Chancellor/Chief of Establishment Module: This is the top most level and it gives general access to the highest authority of the university for their appraisal of the performance of teachers in all the departments of the university.

6.3 Advantages of the Proposed System:

The proposed system offers the following advantages:

- The automation of the evaluation system saves time for both the teacher and the departmental secretary and head.
- The new system provides anonymity and privacy of users. Students will not be individually identified by their teachers, so the fear of retribution is eliminated
- The system is easy to use and highly user friendly
- It provides an easy way for the university authority to quickly review and assess the teachers' performance in the classroom
- The provision of students' usernames ensures that each student participate in the exercise, else action will be taken against them by the authority
- The computerization of the summation and aggregate calculation eliminates the possibility of having human errors which are inherent in the manual process

Chapter 7: Technical review:

7.1 Requirements Gathering:

For successfully building a system, first we have to identify the necessary requirements of the system. All the things those are necessary for the project is gathered and discussed properly so that we can understand the requirements of the projects properly.

For this project we first collected information about the traditional paper based teacher evaluation system. We collected information from the department secretary and teachers of different departments. We analyzed the collected data, solved the problems that we faced. Thus gradually in this fashion we managed to identify all the requirements.

7.2 Scripting language:

Scripting language are class of component programs that are either executed in client side by the user web browser or executed by the web server in the server side.

7.2.1 Client side scripting:

Client side scripting is a class of component program that is executed in the client side by the users web browser instead of server side. In our project, we have used:

- Html
- Php
- Javascript
- JQuery
- Css

When a request is sent to the server the necessary files are sent to the users computer on the browser on which they reside. These client side language are executed on the user browser.

7.2.2 Server side Scripting:

Server side scripting is a class of component program on the web that is executed on the web server. In our project we are going to use php for the logical part.

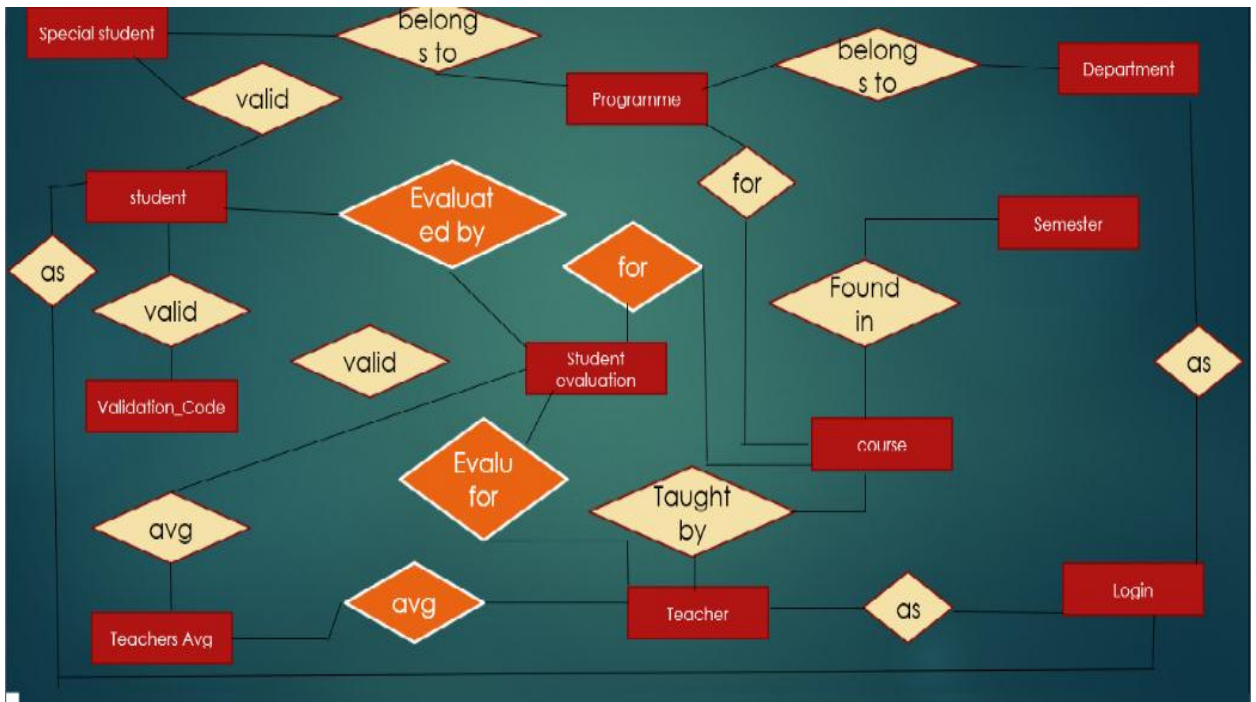
7.3 Database Design:

The first step in designing database is to identify independent entities in the system. We then the list of attributes. Among the attributes, we determine which attribute uniquely identify an entity to use it as primary key. The crucial part of the database design is to determine the relationships between entities. The four possible relations are one to one, one to many, many to one and many to many.

7.4 Entity Relationship Diagram:

E-R diagram is a collection of symbol and notations which convey some meaning. Before we show our E-R diagram we will introduce the basic notations which are:

- Entity is represented by rectangle.
- Attribute by an ellipsis.
- Relationships by a diamond shaped symbol connecting two entities.



Chapter 8: System Design and Implementation

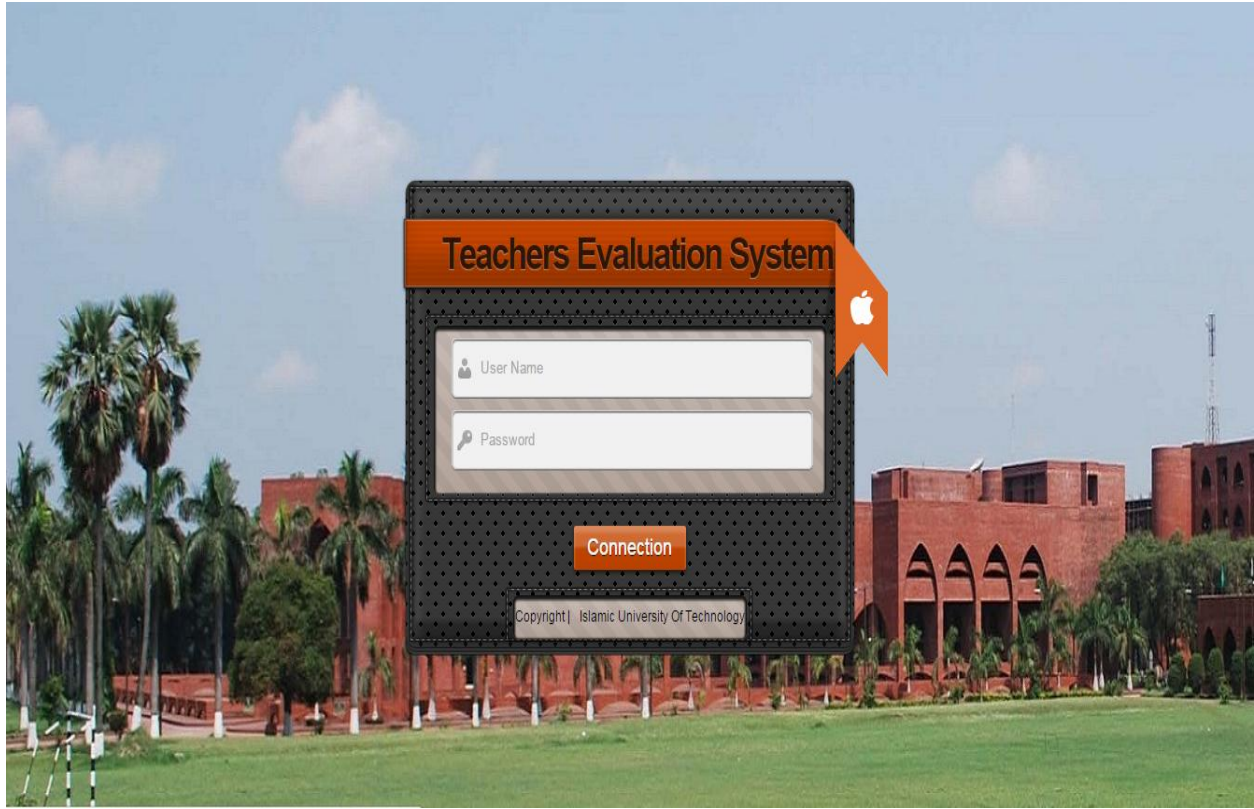


Figure 8.1:Main Home Page of the System

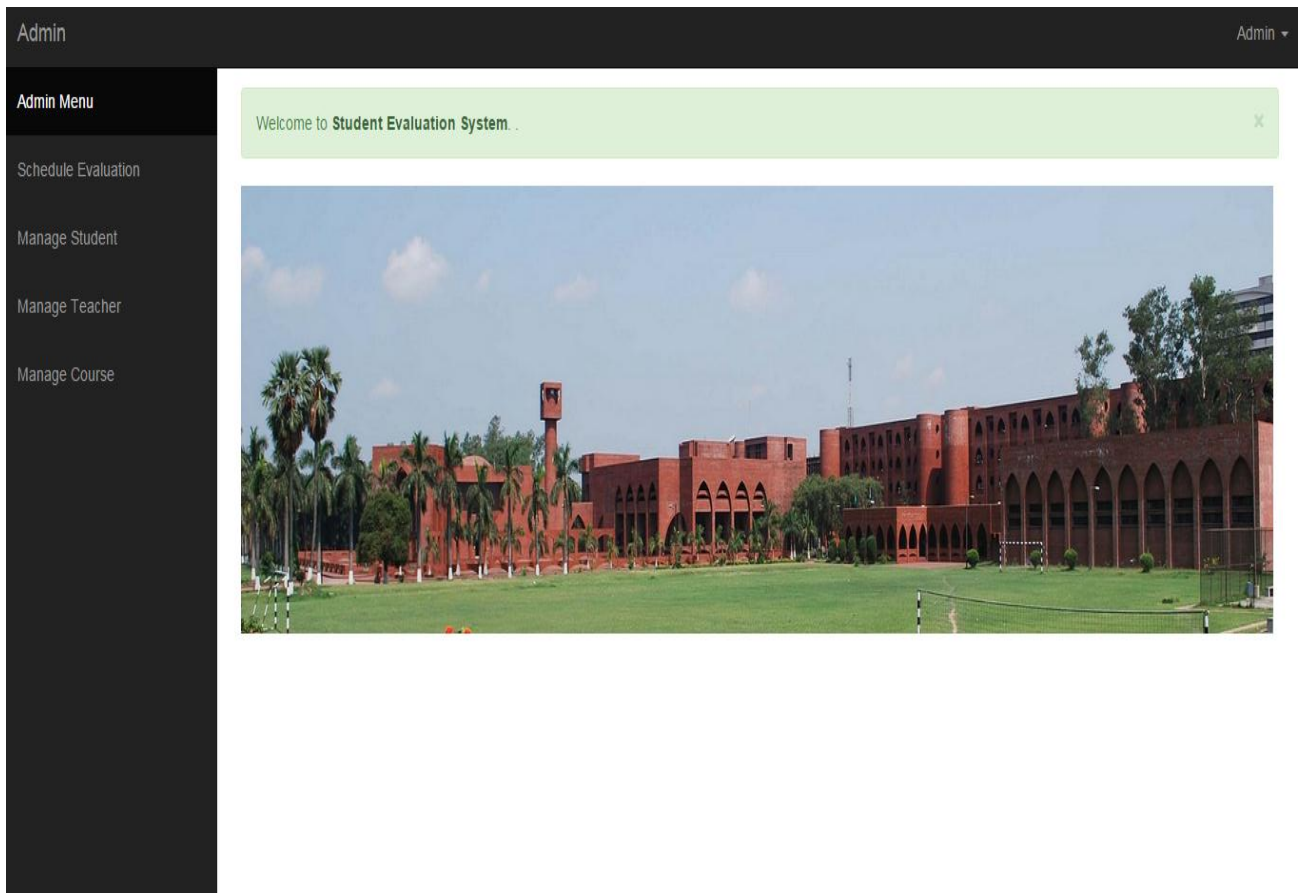


Figure 8.2: Admin Panel

Admin Admin

- Admin Menu
- Schedule Evaluation
- Manage Student**
- Manage Teacher
- Manage Course

Student's Information

Enter student's ID

Enter student's name

Enter password

Student's Department

Select Department

Student's Program

Select Program

Academic year

Select Program

Semester

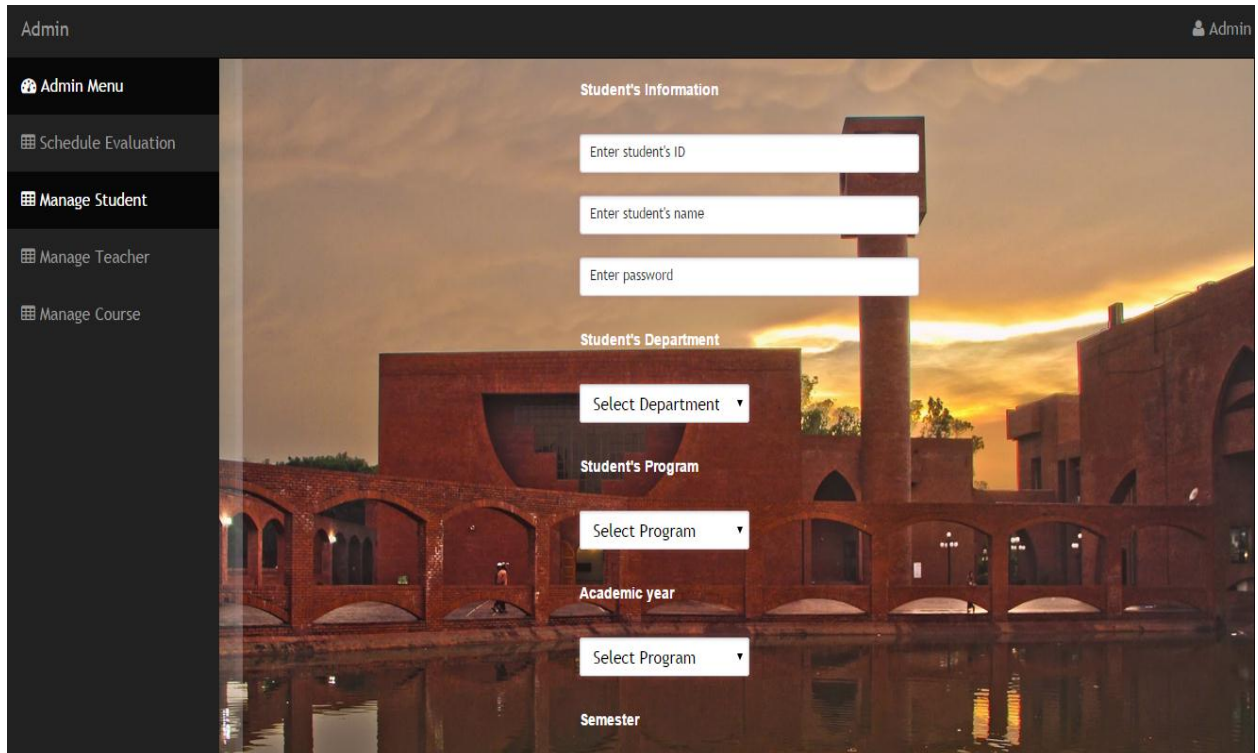


Figure 8.3: Student Registration

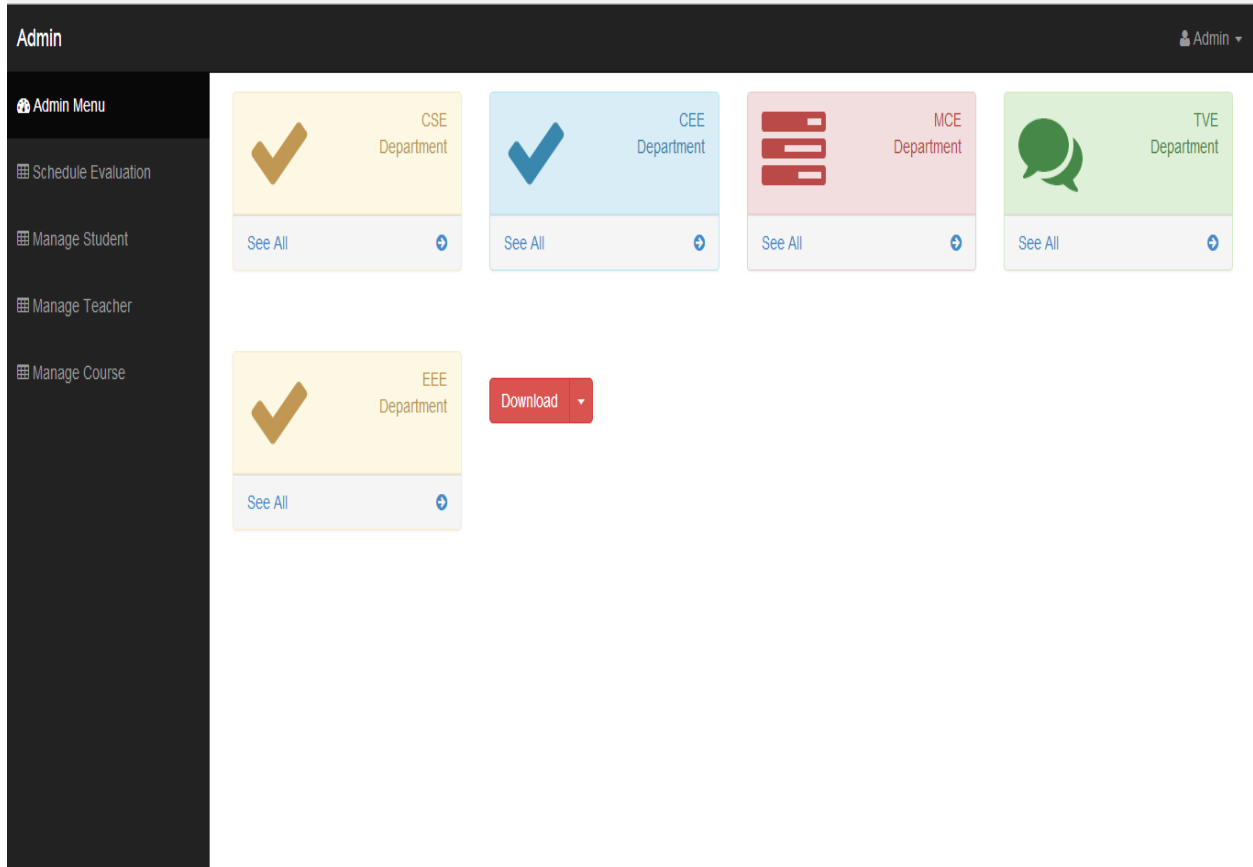



Figure 8.4: All students managed by admin

Student Student Part ▾

Student Menu

- Evaluate Theory
- Evaluate Lab

Welcome to **Student Evaluation System** . ✕



Student's Information
Student name : sda
Department : CSE
Semester : 8th
Academic year : 2014-15

Figure 8.5: Student page

[See evalutaion of a semester](#)

[Logout](#)

Please enter the following information

Academic year :

Semester :

Course id :

Figure 8.6: Department Head Page

EVALUATION SHEET FOR CLASS ROOM TEACHING OF IUT TEACHERS						
Course id : cse4831	Course name : simulation	Student id : 104437	Student id : 2014-15			
Serial No	Description	Very Poor	Poor	Moderate	Good	Very Good
Introduction & Motivation						
1	Relate Each lesson to the past experience of the students	•	•	•	•	•
2	Made the beginning of the lesson interesting and motivating	•	•	•	•	•
Presentation and organisation of lesson						
3	Ability of the teacher to organise the course effectively	•	•	•	•	•
4	The communication skill of the teacher	•	•	•	•	•
5	Necessary knowledge on the subject matter	•	•	•	•	•
6	Used illustration, examples of practical use	•	•	•	•	•
Use of teaching aids						
7	Use of the board was effective7	•	•	•	•	•
8	Used varied instructional materials,devices and techniques	•	•	•	•	•
Classroom environment & student participation						
9	Allow the students to ask questions for clarification	•	•	•	•	•
10	Answer questions raised by the students skill-fully	•	•	•	•	•

Figure 8.7: Evaluation Sheet

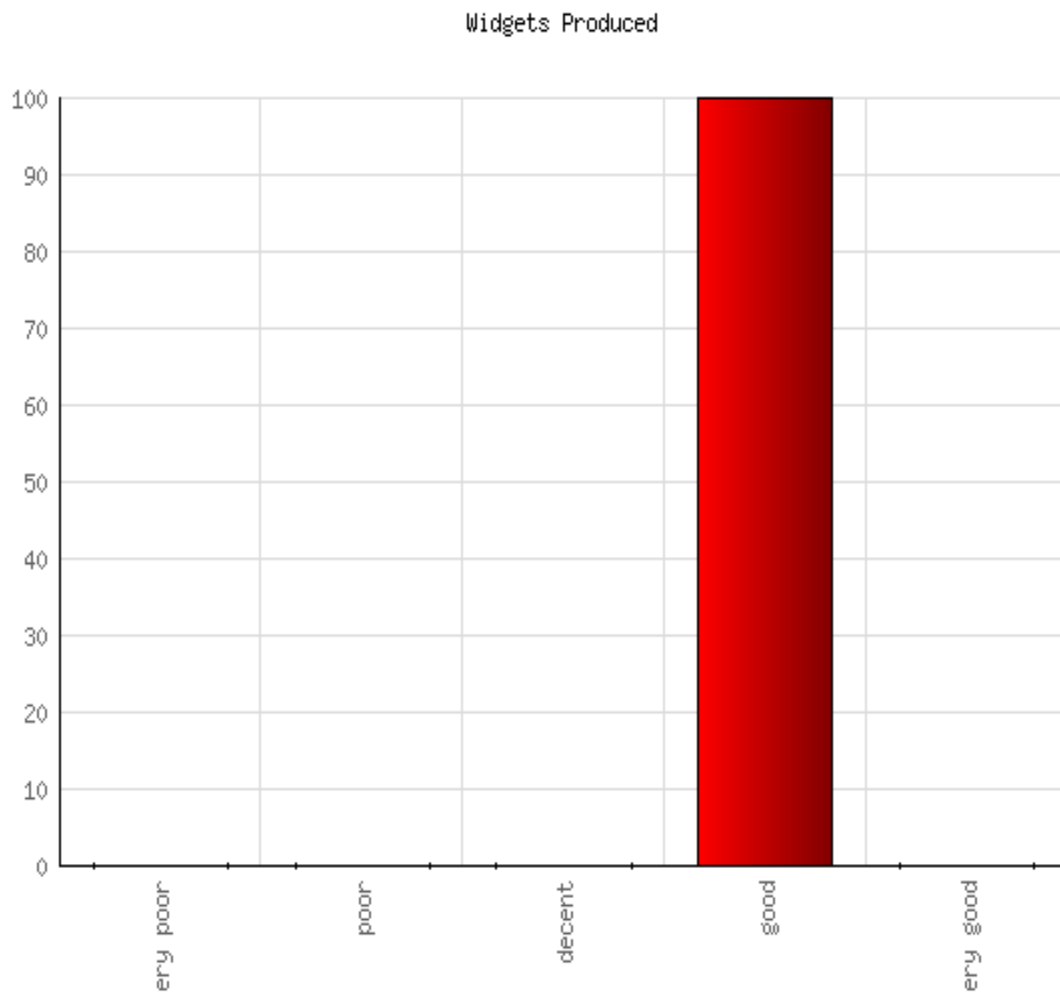


Figure 8.8: Evaluation graph

8.9 Problems faced during implementation:

There are some problems that we faced during the work of the project. These are discussed below:

- Issues related to the design, background color are some of the most difficult problems that we faced.
- Creating the complex database was also a difficult task. As there are various types of users in the system and also different users have different privileges, managing them altogether was a difficult task.
- We also faced some problems while implementing the graph.

Chapter 9: Evaluation and Conclusion:

9.1: Evaluation of the Project Objectives:

Our teacher evaluation system is a new system which has to be run to check whether it works properly and efficiently. We therefore completed many parts but some parts are needed to be modified which we will try to implement in our future work. The following objectives have been achieved:

- The System contains various typed of user defined checking methods like data duplicity, integrity and inconsistency.
- The system checks each and every inputted data by performing the above mentioned methods.
- The system is capable to show alert, confirmation, information messages to the user as per requirements.
- Database has been properly implemented.

9.2 Future Works:

The system can be upgrade by implementing some new functions which will be more helpful for the user. Also the security system can be upgraded to make the system more useful. Some future works that we intend to do are given below:

- Implementing some new function to make the system more user friendly.
- Security is a big issue in these kinds of system. We intend to use higher level of security to make the system more secured.

9.3: Conclusion:

Teacher evaluation system is a system which will help a great deal in the process of evaluation. Overall we had been able to achieve the design and development goals that were necessary. We agree that more functionality can be added and the whole project can be improved further to make the system a better and secured system.

Appendix: Definition of the terms used

- **Admin:** The only authorized person who takes care of the overall system, register user, block user or delete user, register teachers, schedule evaluation period, assign courses to the teachers etc.
- **User:** A regularly registered student of the university, teacher, department head and vice-chancellor are the main users of the system.
- **Registration:** The process of filling up a form providing all the necessary information and saving that information in the database so that a user can be identified for verification and authentication.
- **Course Evaluation:** It is the process of filling up a prescribed form for grading a teacher's performance accordingly. It is done exclusively by the student. The result of those evaluations can be seen by teachers, department heads and vice-chancellor according to their privileges.
- **Entity-Relationship Diagram:** It is a diagram which represents the relationship that exists between different entities given in database. It is a concept which is used for designing database management systems.