



Term Project Description

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LAB GRADING SYSTEM

EXECUTIVE SUMMARY

Objective

Objective is to design a mobile app that can be used for evaluation of lab experiments of any course, based on the rubrics defined by that course.

Background

According to the new *Output Based Education* (OBE) paradigm, each course has some *Course Learning Outcomes* (CLO)'s. All the assessment methods designed to evaluate either for lab or theory session are mapped to achieve one or more of those CLO's. Particularly to evaluate labs, Lab rubrics are defined at the time of course creation. *Rubric* means "a scoring guide used to evaluate the quality of students' constructed responses".^[1] Usually it is an evaluative criteria, quality definitions for those criteria at particular levels of achievement, and a scoring strategy.

Since under OBE the target is to achieve the successful attainment of a CLO, therefore the rubrics are also defined to evaluate that CLO, under defined criteria along with the level of achievement and its corresponding scoring strategy.

Each *Experiment* **E** is mapped to one or many questions each having some marks { Q1:10, Q2:8, ... } where each **Q** is designed to judge the achievement of any particular CLO { {CLO3}, {CLO1} , }. To score that achievement of a particular **CLO** a rubric **R** from the set of defined rubrics {R1, R2 , R3} for the course is used. Each rubric **R** has defined levels of achievement and percentage score associated with that level {H: 90%, AA:80%, A:60%, BA:40% }

For e.g. **Q1** has 10 marks and is designed to evaluate **CLO3**, and to evaluate that rubric **R1** and **R3** are used.

Evaluating using rubrics makes evaluation process bias free.

Project Deliverables

The project has the following functionalities to provide a complete system that can be used for end to end assignment evaluation:

1. **Course Creation:** this module handles the addition , modification of a course
 2. **Teacher Creation:** There are multiple teachers in a system with each being associated with one or multiple courses. This provides the functionality to manage teachers and their associations with courses.
 3. **Student Registration :** This module handles the management of student enrolment to a course.
 4. **CLOs Creation:** Each course has associated CLO's with this. This model provides the functionality to add the CLO's a selected course, provided in form of a text file, or update them before the start of labs.
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5. **Rubrics Definition :** This module adds the rubrics defined for the course provided in a particular format and can modify defined rubrics unless lab evaluation starts.
 6. **Lab Creation :** This module provides the ability to add and update the labs. That is to create a lab along with its detailed break down
 7. **Lab Evaluation :** This module provides the ability to evaluate the individual lab questions according to the defined rubrics for individual students.
 8. **Lab Reporting:** This module provides the reporting individual lab scores, student wise total score, and student wise CLO' attainment report.
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ATTENDANCE RECORDING SYSTEM

Objective

Objective is to design a mobile app that can be used by the teachers and students to record attendance in any lecture session. System employs both the usage of manual recording of attendance or using biometric attendance as well.

Background

Attendance is a used feature to ensure student involvement in the classes. But recording it in a timely manner can be an extra activity often consider burden by the instructor. Therefore the idea is to delegate the process to students to record their presence in classes. But given the control to students means it needs to be ensured 1) actually student is marking presence 2) presence is marked during lecture 3) and presence is marked while the student was present in the class.

Project Deliverables

The project have the following functionalities to provide a complete system that can be used for end to end assignment evaluation:

1. **Class Creation:** This module handles the management of Class/Session.
 2. **Course Creation:** This module handles the management of courses.
 3. **Teacher Creation:** There are multiple teachers in a system with each being associated with one or multiple courses. This provides the functionality to manage teachers and their associations with courses.
 4. **Student Registration:** This modules handles the management of student enrolment to a course. Along with their finger prints.
 5. **Manual Attendance:** This module is used by teacher to mark the attendance manually for any particular lecture. Teacher should be able to search students by roll number for easy access.
 6. **Automatic Attendance :** If allowed by the instructor this module is used by individual students to mark their attendance using biometric features in the respective class.
 7. **Attendance Reporting:** This module allows the system to generate various levels of attendance reports. Course wise and individual student wise and daily attendance reports are recorded.
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Lab Grading System 1 Lab Grading System 2 Lab Grading System 3			
M1-M4	62,3	106,124,165	103,105,107
M5-M6	17,52,54,06	157,158,168,176	115,123,125
M7-M8	51,15	108,111,164	116,159,160,101

Attendance Recording System 1 Attendance Recording System 2		
M1-M4	73,72,26	109,110,112,163
M5-M7	67,60,27,5	102,153,161
