



King Saud University
College of Computer and Information Sciences
Information Technology Department

Graduation Project Proposal



Web-based application to support the accreditation process

Prepared by

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Introduction

Education is very important for any nation. It is one of the most important investments for any country. It helps people to work and live in a better way and can create opportunities for sustainable and viable economic growth now and into the future.

Improving of education and the learning process is essential for any academic institute. This can be achieved by continuous evaluation, assessment and monitoring of the students and the learning process to achieve better quality.

KSU strategic plan is to provide high quality education to students, and to provide the society with highly skilled creative graduates. One of the tools to achieve this goal is to seek national and International accreditation for all programs in all colleges in the university.

Accreditation ensures that academic programs meet national standards. It can be defined as: "a type of quality assurance process under which services and operations of post-secondary educational institutions or programs are evaluated by an external body to determine if applicable standards are met. If standards are met, accredited status is granted by the agency" [1]. It provides a formal process of ongoing evaluation and improvement.

To achieve accreditation for any program the following steps are required:

- Define skills that student on the program should achieve.
- Cover the skills by the different modules in the program.
- Assessing student each semester and analyze their results to check the achievement of the different skills.
- Monitoring the students through the different semesters and check their progress.
- Finding the weaknesses in the teaching process or the student's capabilities and proposing improvement.

The process is not easy to follow and requires much time and effort from the instructors to evaluate and assess the different students and to analyze and document the findings.

Fortunately, advances in information technology have provided opportunities to improve the learning process and simplify the evaluation process. It can provide many tools to support the assessment process and reduce the time and effort required for such tasks.

In this project we aim to build web-based application for the school of Architecture to help in the evaluation and assessment of the design modules and design projects which represent the one of the major topics and the major skills required for architecture students. This will help to monitor and improve the learning process and to support the accreditation process.

The Problem

Improve quality of education is a goal for any academic institution. KSU seeks to improve the teaching and learning processes and achieving national and International standard via accreditation of its programs in all faculties. Assessment and evaluation of students and analyzing their results and defining their weaknesses is a major issue for improving education and for achieving accreditation. So in our project, the problem can be summarized as follows:

- Improving teaching and learning experience is essential for any academic institution
- Achieving accreditation is one of the important tools to improve teaching and learning
- Evaluation and assessment of modules represent a major issue to achieve accreditation and to improve education
- An efficient and continuous evaluation process needs much time and efforts from instructors to mark based on skills rather than on topics, to analyze and integrate results and extract useful conclusions, to spot weaknesses on the teaching process or in the students' capabilities.
- The limitation of time makes it difficult for the lecturers to identify student's weakness and to assess each student individually to review her/his progress.
- Lecturers usually do not know much about students past results to follow their progress and improve their weaknesses
- Documentation of results and the main statistics that can be extracted and generating required reports need much effort and time that can be saved if technologies are used.

Project Goals and Objectives

3.1 The Goal

The main goal of the project is to save the instructors time and efforts and use the web technology to improve the learning process and the education quality by simplifying the evaluation and assessment processes, the analysis of results and the monitoring of the students progress and weaknesses. All of these can be achieved through a web application. The system is requested by the Architecture Department to support the evaluation of the design modules and the accreditation process.

3.2 The Objectives

- Understand the accreditation process and investigate the accreditation requirements
- Collect and understand the Architecture Department requirements for the evaluation of the design modules
- Explore and review how web technology can be used to support the assessment of required design skills and the analysis of results.
- Design a system that allows real-time assessment of student's skills and course outcomes, analyses results and provides statistics for students, instructors, sections and modules.
- Design a system that allows lecturer to monitor students progress and to spot their weaknesses through the different semesters
- Develop a system that generates reports about students and modules and supports the accreditation requirements.
- Provide a clear, understandable and easy to use interface suitable for non technical users.
- Design a web-based system that ensures usability and accessibility

The Solution

Our solution is a web-based application that can be accessed by instructors, coordinators and examiners. Some functions of the system are:

- The instructor can upload a list of students in his class
- The instructor can input the required skills to be assessed and the learning outcomes.
- The instructor can change the skills to be assessed or the weight for each skill based on the project type.
- The examiners can use the system in real-time to assess the student projects based on the different learning outcomes.
- The coordinator can analyze the results, integrate them and shows graphs for the different statistics.
- The instructor can use the system to monitor student progress and to receive reports about student weaknesses and abilities.
- The coordinator can see the comparison between different instructors' marks and different section achievements.
- The instructors can see the achievement levels for each learning outcome and student outcome over all sections.
- The system shall display report about the progress level of selected student over different semesters and the development of their design skills.

Project Scope:

The scope of our project is to design a web-based application required by the school of Architecture .The main users of the system are coordinator, instructors and examiners of the design modules in the department. It will be support the accreditation process by presenting achievements of course learning outcomes and student outcomes. Also it will integrate and analyze results and provides several statistics as comparison between different instructor's marks, comparison between the different sections achievements, achievement levels for each learning outcome and student outcome per student, section and over all sections. Moreover, it produces reports that are needed for accreditation. The language that will be used for this web-based application is English.

Hardware and Software Tools:

6.1 Hardware:

No.	Device	Manufactory	Quantity	Description
1	laptop	Samsung	3	Used for development.
2	Printer	HP	1	Used to print the requested documents.
3	Personal Computer	Dell	2	Used for writing documents. Both PCs operate on Windows8.

Table 1: Hardware specification

6.2 Software:

No.	Software	Publisher	version	Description
1	Office Timeline	Microsoft	2.01.13.00	To draw the planning dates timeline.
2	Dropbox	Dropbox		To share project documents and files easily.
3	IBM Rational Software Architecture	IBM		To draw case, sequence, collaboration diagrams.
4	SQLite	SQLite	3.8.8.2	To create and manage the database of our system.
5	Notepad++	Notepad++	6.7.4	To develop our web-based system and the implementation language will be (php,html5,css and JavaScript)
6	MS Office	Microsoft	2010-2013	To write the project document.

Table 2: Software specifications

Cost (if applicable)

Cost estimating is one of the most important steps in project management. A cost estimate establishes the base line of the project cost at different stages of development of the project [2]. Often the success or failures of the project contracts are based on knowledge and approval of that cost. After we estimate cost of our project we found that the cost will be about 2000 SR for web hosting.

Timeline

	Task name	Duration	Start	Finish
1	Writing proposal	10 days	19 Feb	1 Mar
2	Background	8 days	12 Mar	19 Mar
3	Literature review	7 days	29 Mar	5 Apr
4	System Analysis	20 days	9 Apr	21 Apr
5	System Design	7 days	23 Apr	30 Apr
6	Final document	7 days	30 Apr	18 May

Table 3: TimeLine

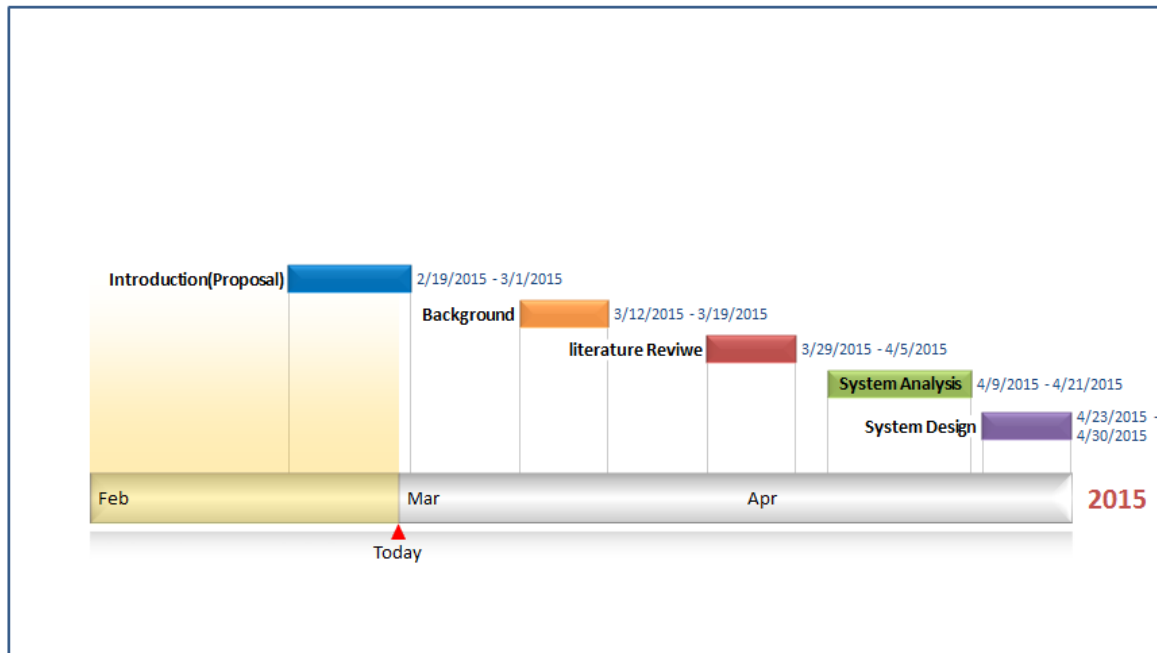


Figure1: timeline.

Roles and Responsibilities

Role	Responsibilities	Participant (s)
Supervisor	<ul style="list-style-type: none"> • Giving guidelines for each required tasks. • Reviewing all deliverables and providing comments. 	Dr. Hala Mokhtar
Team Leader	<ul style="list-style-type: none"> • Contacts with the Executive Sponsor and notify her about any problem. • Manage the teamwork. • Make plans to stay on time • Collect team members' work and combine all the parts of the projects. 	Maria Alkhelifa
Leader Assistant	<ul style="list-style-type: none"> • Manage the teamwork. • Collect team members' work and combine all parts of projects 	Afnan Alawad
System Designer	<ul style="list-style-type: none"> • Designs logo, interface, and architecture • Data (Database schema design). • Writes pseudo code. 	All Members
System Developer	<ul style="list-style-type: none"> • Implement pseudo code • Combining all elements of the program design and testing it. • Testing sample data-sets to check that output from the program works as intended. • Evaluating and increasing the program's effectiveness. 	All Members
System Analyst	<ul style="list-style-type: none"> • define the software requirements • Draw system models 	All Members
System Tester	<ul style="list-style-type: none"> • Perform partition testing, unit testing and system testing. • Ensure the project meets the specifications in each phase. • Try to repair any problem appears. 	All Members
Reviewers	<ul style="list-style-type: none"> • Review the document. • Report comments about the document, and return it to the authors for amending 	All Members

Table 3: Roles and Responsibilities

References

[1] Marjorie Peace Lenn, “ World , Global Trends in Quality Assurance in Higher Education”, Education News & Reviews, v. 5, no. 2, Spring 1992, pages 1 and 21

[2]Chris Hendrickson, “Project Management for Construction Fundamental Concepts for Owners, Engineers, Architects and Builders”, 2000 (2nd ed.)[Online]. Available: http://pmbook.ce.cmu.edu/05_Cost_Estimation.html