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# SOFTWARE REQUIREMENTS SPECIFICATION

for

## Online Examination System

Version 1.0

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# Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Purpose . . . . .	3
1.2	Intended Audience and Reading Suggestions . . . . .	3
1.3	Project Scope . . . . .	3
<b>2</b>	<b>Overall Description</b>	<b>5</b>
2.1	Product Perspective . . . . .	5
2.2	User Classes and Characteristics . . . . .	5
2.3	Product Functions . . . . .	5
2.4	Operating Environment . . . . .	7
2.5	Design . . . . .	7
<b>3</b>	<b>System Features</b>	<b>9</b>
3.1	Description and Priority . . . . .	9
3.2	Functional Requirements . . . . .	9
<b>4</b>	<b>Other Nonfunctional Requirements</b>	<b>10</b>
4.1	Security . . . . .	10
4.2	Capacity . . . . .	10
4.3	Usability . . . . .	10
4.4	Documentation . . . . .	10
4.5	Software Quality Attributes . . . . .	10
4.6	Software Constraints . . . . .	10
4.7	Hardware Constraints . . . . .	11
<b>5</b>	<b>Other Requirements</b>	<b>12</b>

# 1 Introduction

## 1.1 Purpose

As due to ongoing pandemic, all physical classes and exams are not possible, so due that new ways of assessment is required. Now, for teachers it is very difficult to take exams online and track records of students. So, "Online Examination System" is the solution. It is the website for taking online exams. It has various unique features like auto evaluation, speed and accuracy. Also it helps environments by reducing the use of paper.

## 1.2 Intended Audience and Reading Suggestions

This SRS is for developers, project managers, users and testers. Further the discussion will provide all the internal, external, functional and also non-functional informations about "Online Examination Systems".

## 1.3 Project Scope

"Online Examination System" creates a space for Admin, Instructors and Students for taking online exams.

Admin's main work is to assign students and teachers to a course. Also, admin can add/delete students and teacher from any course.

After the assigning the Instructors for a particular course, Instructors can login to their account and can edit their profile. They can see participants for their course. They make announcements regarding assignments and exams. They can prepare assignments and exams for the students. The exams can be of both type, subjective or objective. The objective paper can be auto evaluated also. After assigning marks for a particular exam, the Instructor can assign weightage to different exams and based on that final score for each is calculated by this system. Also Instructors can set cutoff marks for particular grade and then grades will be calculated automatically.

Students also can edit their profile. They can see other participants for a particular course. They can see announcements and upcoming exams and assignments schedule. They can give exams, for subjective type, they can add attachments or type the answers and for objective type, they can choose the options. They can also view their grade sheets of past courses.

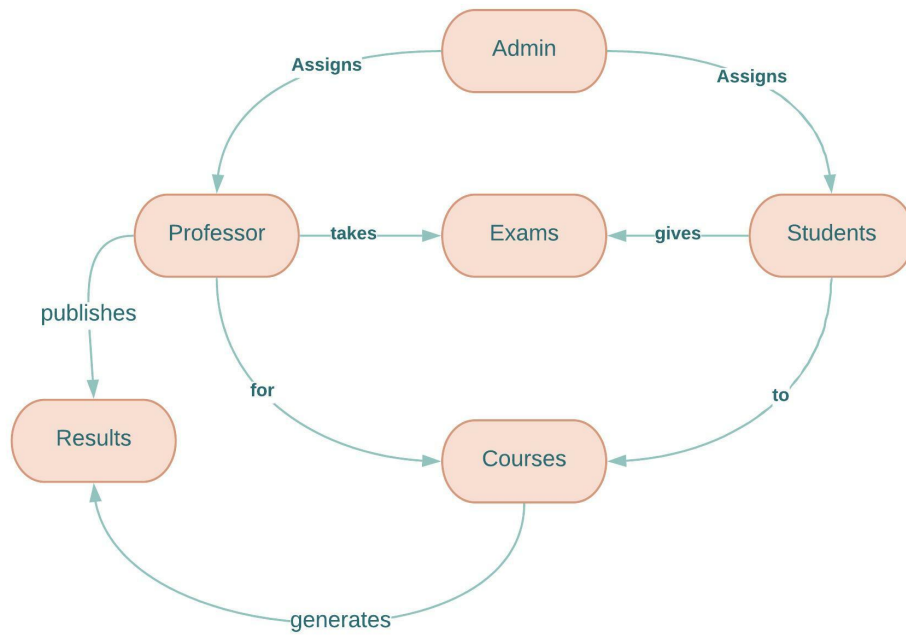


Figure 1.1: Entire work-flow

Figure 1.1 (Entire work-flow) is the overview of the project. Connection of all the entities are dependable to each others. This gives the simple idea about the functional activities of the project.

Admin cycle, In the Figure 1.1 "Admin" assigns "Students" and "Instructors" to "Courses"

Student cycle, In the Figure 1.1 "Student" gives "Exams" for particular "Course" ;

Teacher cycle, In the Figure 1.1 "Teachers" prepares "Exams"; "Teacher" publish "Grade Sheets".

So, every entity is very much interactive with each other.

## 2 Overall Description

### 2.1 Product Perspective

The Online Examination Portal is easier and more convenient way to take exams online. It is a one step solution for taking exams online, take and submit assignments, maintain records about all instructors, students, and admins, and also maintain results of all exams conducted.

### 2.2 User Classes and Characteristics

This Online Examination Portal has basically 3 types of users.

- Instructor
- Students
- Admin

### 2.3 Product Functions

Through Online Examination Portal, instructors can take exams of students in an easier and more convenient way. They can also give assignments to students. For exams, instructors can add questions along with correct answers, assign a time limit for exam, and

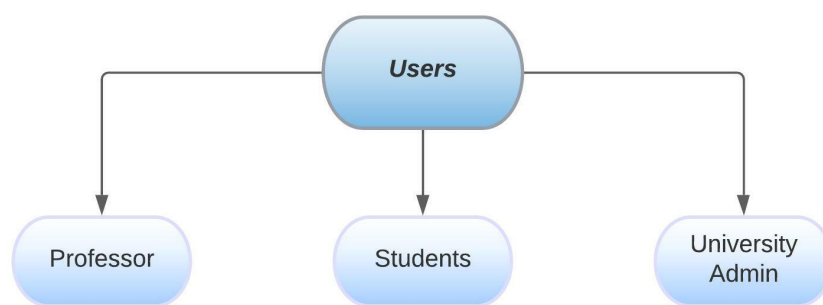


Figure 2.1: type of users

the system will automatically calculate marks obtained and declare grades accordingly. All the details regarding grades obtained, marks obtained in each exam, list of students, instructors and admin along with their general details are stored in the system.

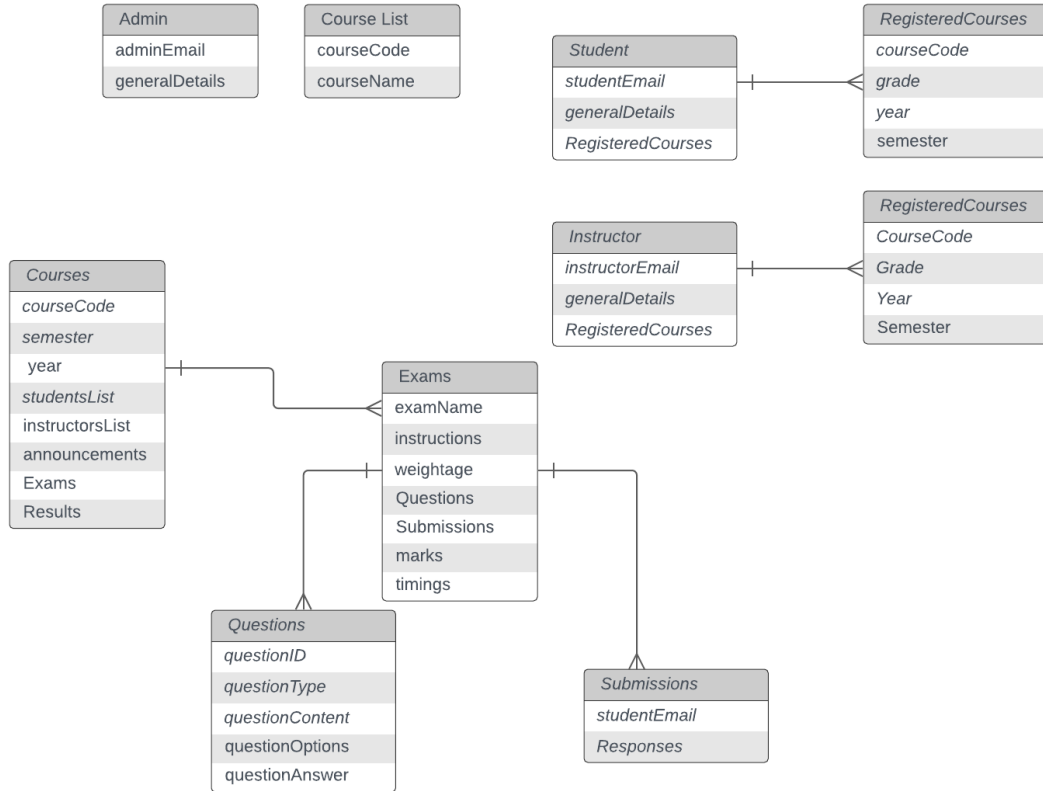


Figure 2.2: Data Flow Diagram

Students have studentEmail, generalDetails and RegisteredCourses. Each of the Registered courses have respective CourseCode, Grade, Year and Semester.

Instructors have instructorEmail, generalDetails and RegisteredCourses. Each of the RegisteredCourses have CourseCode, Grade, Year and Semester.

Admins have adminEmail and generalDetails.

All of the courses are listed in the Course List which consists of courseCode and courseName. Details about courses include semester, year, studentsList (list of enrolled students), instructorList (list of teachers teaching the course), announcements regarding the course, exams and Results.

Details about exams include examName, instructions about exam, weightage for the exam, Questions, Submissions, marks and its timings. Each of the questions have questionId, questionType, questionContent, questionOptions and questionAnswer.

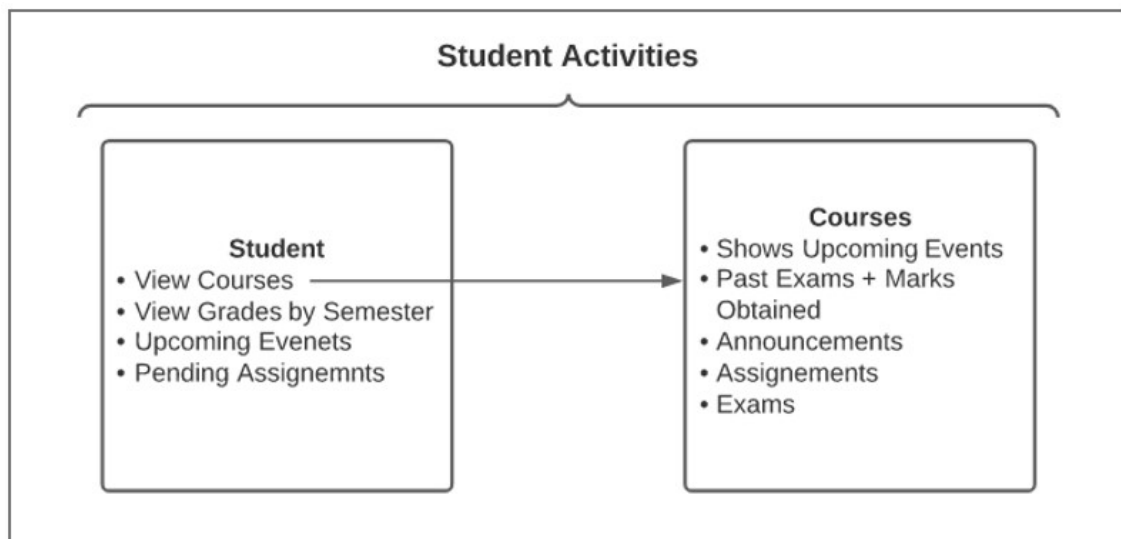
## 2.4 Operating Environment

The website will be operate in any Operating Environment - Mac, Windows, Linux etc.

## 2.5 Design

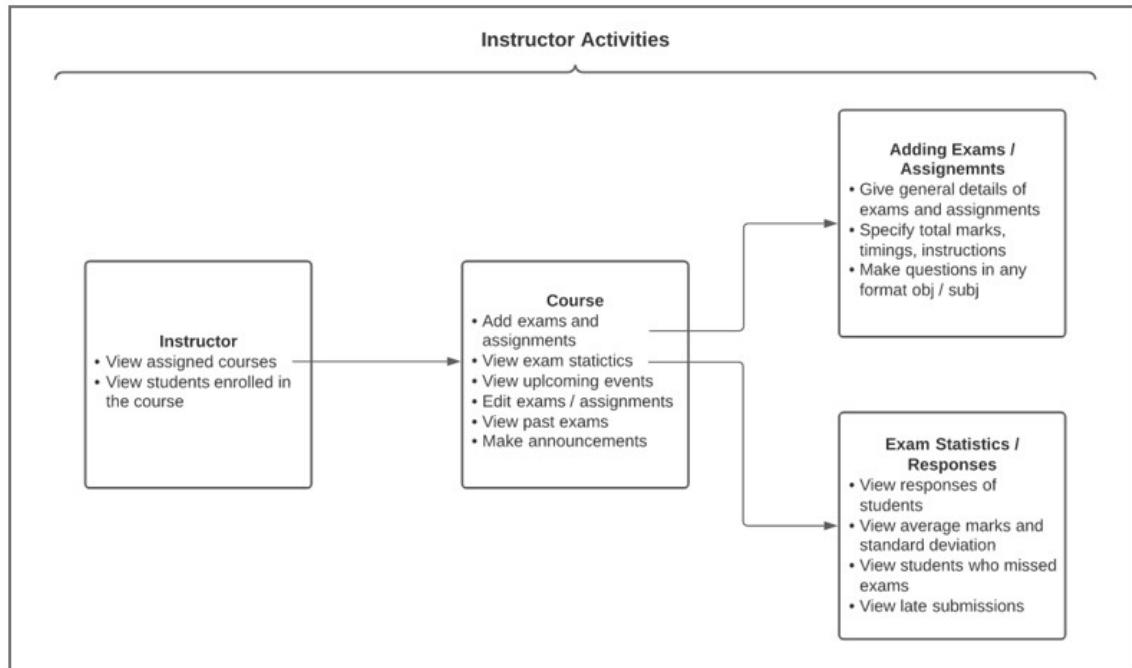
### Student Interface:

Students can login into the Online Examination Portal by their Email ID. After login, students can see upcoming exams, pending assignments. marks and grades obtained in previous exams, assignments and semester grades. They can also edit their profile. Students can take exams on this portal in a user friendly interface. After exam is over, marks will be automatically calculated by the system and result will be declared accordingly.



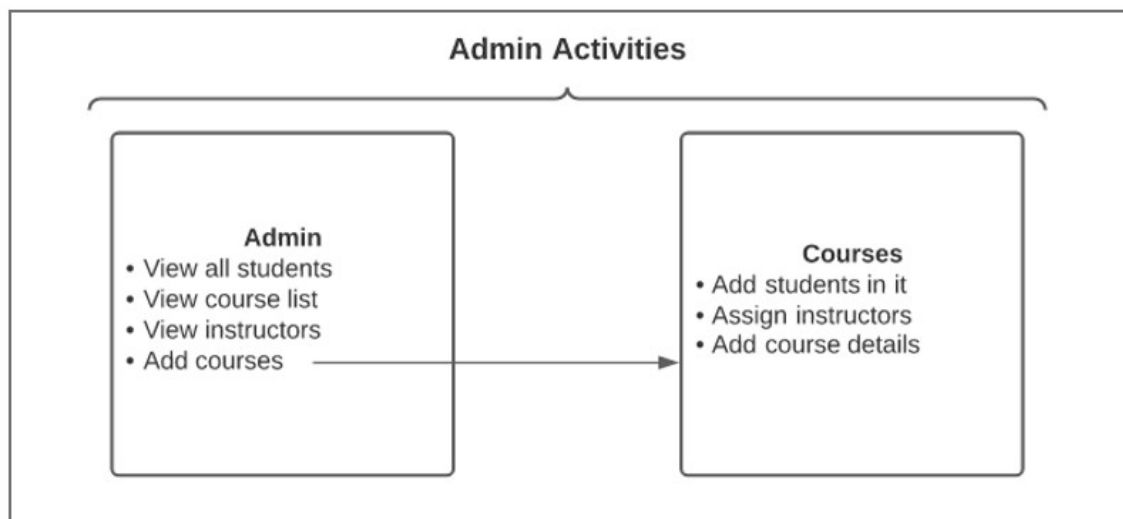
### Instructor Interface:

Instructors can login into the portal by their Email Id. After login, instructor can view all courses which he/she is teaching. After clicking on one of the courses, instructor can do any of the listed actions. Instructors can add exam/assignment, allot a time limit for it, add questions to the examination along with correct answers. Exam will be automatically evaluated and grades will be assigned accordingly. Instructor can also view upcoming exams, past exams, list of students enrolled in the course along with their grades and add announcements for the course.



#### Admin Interface:

Admin can login into the portal with his/her email id. After login, admin can view list of students, courses and instructors. Admin can also create courses. After creating courses, admin can add students and instructors fir the course. He/She can also specify details about course like year, semester, course code and name.





## 3 System Features

"Online Examination System" is an online examination web software. The main work that the site does are to conduct exams, auto-evaluation and generates the results (grade sheets) of all the students of a particular course.

### 3.1 Description and Priority

"Online Examination System" has features that are main and also some are sub. But all the feature is necessary for this software.

The features with priority up to down -

1. Conduct Exams : This is the goal feature of this software. This is used by the professors to create the exams and students can submit there responses in it.
2. Auto - Evaluation : This is the most important feature for the professors to evaluate the answer sheets. This is fast and a completely accurate feature which automatically evaluate the answer sheets.
3. Result Creation : This feature is operated by teachers. After the completion of the semester, they can see the final marks of all the students and click a button to create the result of the students.
4. Grade Formula Setting : This is a sub-feature of the result creation feature. In this, professors just need to enter a grade for range of marks and the software does the remaining.
5. Admin : They are the head of the website and has the power to add/delete a course and also to add/delete a student or a professor in a particular course.
6. Teacher : Teacher takes the courses, take exams and can generate the results.
7. Student : Student takes the courses and solve assignments and exams and can also see their final grade sheets.

### 3.2 Functional Requirements

The "Online Examination System" website is being build on .Nodejs, Express framework, javascript language, React, JSX extension, JavaScript and MongoDB.

Back-End - .Nodejs, Express framework, javascript language

Font-End - React, JSX extension, JavaScript.

Database - MongoDB.

## **4 Other Nonfunctional Requirements**

### **4.1 Security**

Authorization and secure Database. Any sensitive information stored in the database will be protected and encrypted so as to prevent any breach in privacy of the users. Login will be independent for admin, students and instructors.

### **4.2 Capacity**

This software does not need any storage requirement from users local PC, but there would necessarily be a big requirement depending on the institution which would be using this for conducting exams.

### **4.3 Usability**

The system will be designed such that every user from all sides whether it be admin, student or instructor can use it without any problem. It would have a good user interface which would be user friendly.

### **4.4 Documentation**

Proper documentation and readme (instructions) to use it. The code will be well documented with a detailed readme and informative comments all throughout the code.

### **4.5 Software Quality Attributes**

Maintain the quality of the database so that it is user friendly to every user.

### **4.6 Software Constraints**

The availability of required software will be constrained for the development of the system such as database and development tools.

## **4.7 Hardware Constraints**

To store persistent data, the system requires a database. So that the database ought to have backup capabilities. Data will be stored on the cloud to ensure its faster interaction with the software.

## 5 Other Requirements

"Online Examination System" needs maintenance as it is a long process software. It will need re-factoring and further the requirements can be changed as the field is changing frequently.