

# Requirements and Specification Document

## Classroom360

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## **1. Project Abstract:**

This system is for an institution to make the class more interactive and systematic and an easier way to keep in contact with the teacher. This system has a user authentication separate for the teacher and the student. The student can access their course materials, view announcements, join classes, see their personalized calendar etc. Teachers can make announcements, create classrooms, question students etc. Attendance is also managed in a proper way to avoid proxies. Students can also submit their assignments and later be viewed by the teacher. At the end of the course, the teacher can grade them and close the course.

## **2. Document Revision History:**

Rev 1.0-2/10/2023 – initial version

## **3. Customer:**

The customer of this software is an institution/ a university. They are setting up tablets on each bench of a classroom and we are required to build software for those to make the class more systematic and interactive. So this project can be used by colleges or institutions where we can provide a fixed database for all the students and staff. (and the access to modify them to the admin). So they also needed the requirement that students should also be able to keep in contact with the teacher outside the class.

## **4. Competitive Landscape:**

- ☐ So, some of the main competitors here are Microsoft Teams, Google Workspace etc.
- ☐ The main strengths of these platforms are that they are heavily marketed and already in use by many customers. They are also integrated with Office 365 and some AI-powered features.
- ☐ But they also have some weaknesses. For example, there is no proper way to record a student's attendance. In a manner, this software keeps attendance in check and is also one of the main differentiating features is the offline classroom interface that we are building. This kind of interface is not done by any competitor.
- ☐ And we also focus on a calendar and to-do list personalized to the student and teacher which is not there in teams. They also do not have proper communication between the institution and the rest. We can make announcements and holiday declarations properly.
- ☐ So one of the major competitive barriers with the project is that we cannot provide that much security robustness as our competitors do but we can make satisfactory security measures.

## **5. Specifications:**

### **1. Must have Use-Cases:**

1. User authentication:

- ☐ Scenario: Here the user, based on their role can log in to the website via their credentials.
  - ☐ There will also be a forgot password option where they can reset their password via email.
  - ☐ If the credentials are wrong they get an alert specifying the issue.
  - ☐ Acceptance test: The user can log in based on their credentials and also log in later on in the application.
2. Course Creation and Management:
- ☐ The teacher can create courses, give them a title, and description, and can automatically make students of a particular branch join it. The teacher can choose from a given list of branches. The teacher can also edit the course details or unenroll students from the course.
  - ☐ On the other hand, the students from their home page can view what courses they are enrolled in. They can also view their grades allotted after the end of the course on the profile page.
  - ☐ The admin has no role in this.
  - ☐ Acceptance test: The teacher can create, edit, enrol and delete the course from the course page of the teacher. The students enrolled in the course can view it on their home page.
3. Creation of Classrooms:
- ☐ So the teacher can schedule classes(rooms) and can also cancel rooms. These are completely transparent and can be viewed by the students on the course page.
  - ☐ The admin has no role over this.
  - ☐ Acceptance Test: The teacher can create, edit and delete rooms and can be viewed by the students.
4. Attendance System:
- ☐ When the student enters the room, attendance is taken automatically without any prompt from the teacher. The attendance is locked after some time.
  - ☐ The teacher has complete override access to take away a student's attendance or give it even if he is late.
  - ☐ The admin can access data.
  - ☐ Acceptance test: It can be tested by some students joining the class and then seeing their attendance records on the profile page. Can also test the override system as mentioned above.
5. Classroom Interface:
- ☐ After the teacher schedules a class, the students can join it from the course page and then enter the room and so can the teacher.
  - ☐ So in the interface, the student has a raise hand button, and a raise query button with two options one normally and the other anonymously.
  - ☐ On the other hand, the teacher can post a query and the student can answer it. The teacher can also conduct polls and select a person at random. The teacher has a complete view of the classroom and see who is present or not.

## 2. Useful Use Cases:

### 1. Announcements:

- ☐ So, the admin can make announcements about the institution and announce holidays which are marked on the calendar.
- ☐ These announcements are viewed by the other users.

### 2. Profile Page:

- ☐ The student can view their personal information on their profile page and edit them.
- ☐ Attendance data and grades are also displayed.
- ☐ There is also a navigation bar so that the student can directly be redirected to the application.

### 3. Teacher Announcement System and Assignment Submission:

- ☐ So the teacher can make announcements about the course and also edit and delete them.
- ☐ The next thing the teacher can create assignment submissions give a due date and later view them when submitted by a student
- ☐ The student can view which assignments to submit and submit it on the course page. They have an input field to submit their assignment.

### 4. To-do List and Calendar:

- ☐ Here the teacher or the student can see their to-do list when they click on a particular date. They can also edit and delete a task.
- ☐ Holidays created by the admin are also displayed in the calendar.

## 3. Optional Use Cases:

### 1. Alert System:

- ☐ So the students receive any important alerts regarding attendance, due dates or behaviour on the home page. They act and later delete the notification.

### 2. Attendance Prompts:

- ☐ When in the classroom interface, students get random prompts for a short duration to check whether he is in the class or not. He can just answer the prompt with a single click.

## Non-Functional Requirements:

- ☐ All the data inputs are based on the respective scenario to upload profile photos we take png or JPEG input. For assignment submission, we use pdf input, and the others are text fields.
- ☐ We need a neat and modern GUI with appropriate text sizes and colour schemes.
- ☐ The Frontend part should be made according to the W3C standards that is to provide accessibility.
- ☐ This website should be compatible with all famous browsers such as Chrome, Firefox, Safari etc. We should also make the page compatible with mobile browsers.
- ☐ We also need a web server and database i.e., a domain to host our website.