# Feasibility Report
# Classroom360

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## Task to be Undertaken:

This idea is to solve multiple problems faced by an institution(customer). Assuming that the customer is setting up tablets for each bench in the classroom, we need to develop software (web application) to make the class more interactive, record attendance, raise queries, take feedback, ask queries and make effective communication with the professor in and outside the class. We are also asked to develop a web application for the students to see their timetables, announcements, class materials etc. The main aim is to create a workspace for students to make their lives easy.

## Customer:

These requirements are assumed to be proposed by an educational institution or a university. They are willing to place tablets on each bench of a classroom and the company is asked to develop software for the tablets to make the class more interactive and systematic. We are also asked to develop a website so that students can access resources and many more things. These are the things we can do to keep in touch with the customer and understand the requirements in more detail while the project is in development.

- Meetings can be conducted on a regular basis to provide updates of our project and show our progress. During the meetings, we can also provide demonstrations of specific parts of the project.
- After the meetings, we can take feedback and clarifications on the system. Any changes required in the system will be noted
- Weekly reports will also be passed by the team to the customer.
- We will also be using online document-sharing tools like Google Drive and project management tools and share access with the customer so they can view the progress.
- We will also be having some on-site visits by the customer to provide a better understanding of the project.

## Preliminary Requirements Analysis:

1. Users and Roles:
- This application has two interfaces, one for the students and the other for the teachers. They will have their own authentication.
- The teacher can create a course and enrol students in the course.
2. Student dashboard:

- Here the student has a complete overview of different things he can do with the web app
- There will be a personalized calendar and to-do list.
- The students can also view the courses they are enrolled in and click to check out more about the course.
- There will be a general announcements tab about the institution and important dates will be updated in the calendar.

3. Course Tab:

- Once the student has entered a particular course he can view all the different things about the course.
- Student can see when their next class is scheduled.
- They also receive alerts about their attendance shortage and assignment dues
- They can submit their assignments which are later accessed by the teacher
- Students can also access resources of the course

4. Classroom:

- Once the student enters a class they log in on their tab on their bench and join their scheduled class.
- At first, the attendance is taken and after 10 minutes attendance is closed.(special cases where the teacher can mark their attendance)
- The teacher can view the whole layout of the class
- The teacher can also put up questions where students have a place to answer the questions
- A place where students can post their doubts (and a feature where they can post anonymously)
- A feature to avoid any discrepancy in attendance: to send random prompts for small durations

5. Teacher dashboard:

- A place where the teacher can view the courses he/she created
- A general institution announcement tab
- The teacher can view the time table of the students of a particular course and schedule an extra class.

6. Teacher Course dashboard:

- A place to view the next scheduled classes.
- An override to cancel any class and send announcements to students.
- Create an assignment submission and issue a due date

## **The process:**

This project will be done in an iterative refinement process as our system is dynamic and evolving in nature. This process breaks the process into smaller iterations and cycles and works on that part of the system.

- First, we make initial requirements and objectives and then outline the things to do.
- In the first iteration, we first make a simple system consisting of user authentication, and announcements(communication). We keep improving this according to the requirements.

- Then we go to the next iterations like developing the student and teacher dashboard in one iteration and go on with the classroom interface in the next iteration
- We simultaneously get feedback from the customer at each and every iteration (feedback loops) making changes in the part of the system.
- Refine security measures in each iteration to protect the user data.
- We maintain the user documentation at each iteration.

## Outline Plan:

1. Take the requirements from the customer and document them. Properly question the customer to illuminate the dark corners of the requirements.
2. Perform a preliminary requirements analysis
3. Form a team of developers with minimum members for the front end and backend. For this project, we chose 3 developers for the front end and 2 developers for the back end.
4. After we frame the SRS document we enter the design phase.
5. We begin the design phase. First, we make the high-level design then the detailed design.
6. Next, we choose our frameworks. We chose Bootstrap for the front end, Django for the backend, and MongoDB as our database.
7. Then we make a detailed project plan outlining and distributing resources.
8. As we chose an iterative process, first we developed a prototype capable of user authentication and announcements.
9. In the next iteration, we develop the general student and teacher dashboard. Including a calendar and other requirements as per the SRS document.
10. In the next iteration, we develop the course dashboard for the teacher and student.
11. In the final iteration, we do the classroom interface and layout including the attendance system.
12. The system is demonstrated at each iteration to the customer and feedback is taken to modify and evolve the system.
13. Then we go for a full-scale deployment and maintain the system.
14. Proper documentation is also maintained at every iteration.

## Risk Analysis:

- If there are any technical difficulties in solving a problem we can approach any senior developers and spend more resources in troubleshooting it.
- If there is any delay in feedback with the customer we can form new ways of improving communication so that there is no delay in the project
- If there is any compromise in a security breach we can make robust security measures including encryption and access control.
- Inadequate testing could lead to a flawed product so we can allocate more time and users to test it further.

## Technical Requirements:

- So we chose 3 developers for the front end and 2 developers for the back end.
- We chose to use Bootstrap and React for the frontend, Django for the backend and MongoDB for the database.
- We also need APIs for geolocation and single-user authentication.