# Project Backlog

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## Problem Statement

Our project, InClass, solves the issue of in class attendance by including a broad range of features, including class attendance via a QR code and geolocation of students, in class quizzes, file sharing and more. Additionally, our project is totally web based to avoid cluttering students devices with unnecessary app and desktop applications downloads. InClass aims to be the single comprehensive solution to professors and students needs during class.

## Background Information

Many other classroom interaction services are popular on campuses, including iClicker, TopHat, or Kahoot. These programs are often limited in scope, however, and miss critical features that the other applications perfected. iClicker only offers the ability to do in-class quizzes that most professors use for attendance, and TopHat misses the opportunity for file sharing that would improve class communication. Our application seeks to solve this issue by combining these features, as well as adding additional classroom-sharing features that will make it easier for professors and students to get what they need out of lectures.

## Environment

We are developing this application for web environments, but with emphasis on mobile usage. For development, we will be using an Angular 6 front end and bootstrap styling. We will design the front end to be optimized for mobile browsers. On the backend we will be using Ruby on Rails, with a PostgreSQL database. We will communicate between the frontend and backend with rails ActionCable and a Json REST API.

## Functional Requirements

| Backlog ID | Functional Requirement | Number of Hours | Status |
|---|---|---|---|
| 1 | As a user (student/professor) I want to be able to login to my account. | 3 | Sprint 1 |

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| 2 | As a user (student/professor) I want to be able to log out of my account. | 3 | Sprint 1 |
| 3 | As a user (student/professor) I want to be able to sign up for an account. | 3 | Sprint 1 |
| 3 | As a user (student) I want to be able to be marked present for a class using the camera on my phone. | 10 | Sprint 2 |
| 4 | As a user (student/professor) I want to be able to view classes I have registered. | 3 | Sprint 1 |
| 5 | As a user (student/professor) I want to be able to drop my class after the semester. | 3 | Sprint 1 |
| 6 | As a user (student), I want to be able to marked present for a class using geolocation. | 10 | Sprint 2 |
| 7 | As a user (student/professor), I want to be able to view leaderboards of other students in my class. | 6 | Sprint 2 |
| 8 | As a user, I want to be able to view slides on my computer, and I want my slides to advance as my professor advances the slides. | 10 | Sprint 2 |
| 9 | As a user (student), I want to take quizzes that my professor assigns. | 10 | Sprint 1 |
| 10 | As a user (student) I want to be able to add a class to my roster. | 3 | Sprint 1 |
| 11 | As a user(professor) I want to be able to create a new class for students to join. | 3 | Sprint 1 |
| 11 | As a user (professor), I want to open attendance and show the QR code. | 6 | Sprint 2 |
| 12 | As a user (professor), I want to assign quizzes to my students in class. | 6 | Sprint 1 |
| 13 | As a user (professor), I want to share files | 10 | Sprint 1 |

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| | that are used in class to my students. | | |
| 14 | As a user (professor), I want to be able to display quiz results to students. | 5 | Sprint 1 |
| 15 | As a user (student) I want to view the class average scores on quizzes. | 5 | Sprint 1 |
| 16 | As a user (student), I want to be able to be able to use the application on my mobile phone and laptop. | 10 | Sprint 1 |
| 17 | As a user (student) I want to see visual graphs of class grades. | 10 | Sprint 2 |
| 18 | As a user (student) I want to be able to anonymously ask questions for the professor to answer in real time. | 6 | Sprint 1 |
| 19 | As a user (professor/student) I want to be able to view questions of other students. | 6 | Sprint 1 |
| 20 | As a user (student), I want “Yeah” (like) a posed question. | 4 | Sprint 1 |

**Non-Functional Requirements**

1. Our application will transition between pages smoothly. (6 hours)
2. Our application will store user information securely. (6 hours)
3. Our application will be easy to use and user friendly. (6 hours)

**Use Cases**

| Case | Action | System Response |
|---|---|---|
| Log in | 1) Go to webpage<br>3) User enters login information and submits | 2) Website displays log-in prompt<br>3) Server validates credentials and redirects to home |
| Log out | 1) Go to webpage<br>3) Click ‘Log out’ in corner | 2) Website displays main page<br>4) Successfully logs out user |

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| Mark present during class (QR) | 1) Go to class page<br>3) Select attendance<br>5) Scan QR code | 2) Display class page<br>4) Display camera feed scanner<br>6) Verify QR Code<br>7) Mark present in database<br>8) Display signed in screen |
| View Classes | 1) Go to home page | 2) Display registered classes |
| Drop class | 1) Go to class page<br>2) Click ‘Drop Class’ button | 3) Display class page<br>4) Remove student from class in database |
| Mark present during class (Geolocation) | 1) Go to class page<br>3) Select attendance | 2) Display class page<br>4) Check location<br>5) Mark present in database<br>6) Display signed in screen |
| View class leaderboard | 1) Go to class page<br>2) Click “View leaderboard” | 2) Display class page<br>4) Display class leaderboard |
| View class slides in sync | 1) Go to class page<br>3) Click “Follow Presentation” | 2) Display class page<br>3) Display class slides |
| Take in-class quiz | 2) Click banner or icon on class page<br>4) Submit answers | 1) Display banner on class page when quiz is active<br>3) Display Quiz Prompt<br>5) Process answers and display results |
| Add a class | 1) Click add class button<br>3) Enter class code | 2) Display dialog to enter class code<br>4) Add student to class in database and show a success message. |
| Open attendance | 1) Click “Take Attendance” | 2) Display dialog showing number of students signed in |
| Assign quizzes | 1) Click “Create Quiz” button<br>4) Click “Send” button on quiz | 2) Display prompt to fill in quiz data<br>3) Add quiz to “Quizes” section on class page<br>4) Send quiz to all students |

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| Share files | 1) Click upload file to class<br>3) Select file | 2) Display prompt to upload a file<br>4) Upload success message displayed |
| Display quiz results | 1) Go to class page<br>3) Click view quizzes | 2) Display class page<br>4) Display past quiz grades |
| View Class average. | 1) Go to class page | 2) Display average grade on class page |
| Responsive Design | 1) Go to webpage on mobile<br>3) Go to webpage on Desktop | 2) Display options to take quiz and attendance<br>4) Display class slides |
| View class grades graphically | 1) Go to class page<br>3) Click class grades graphically | 2) Display class page<br>4) Display a graph of the class grades |
| Ask real time questions | 1) Go to class page<br>3) Click ask a question<br>5) Submit question | 2) Display class page<br>4) Display prompt to type question<br>6) Show question submitted message |
| View other students questions | 1) Go to class page<br>3) Click view questions | 2) Display class page<br>4) Display list of questions |
| Like other students questions | 1) Go to class page<br>3) Click view questions<br>5) Click the like icon on a question | 2) Display class page<br>4) Display list of questions<br>6) Number of likes increments and the question rises appropriately. |