



PickOn Software

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INTRODUCTION

Student participation and engagement is difficult to foster in online classrooms. **This is problematic for student learning, as 86.7% of instructors felt participation and engagement contributed greatly to a student's ability to learn and retain information.** Currently, professors must do their best with the limited tools of software like zoom to encourage participation

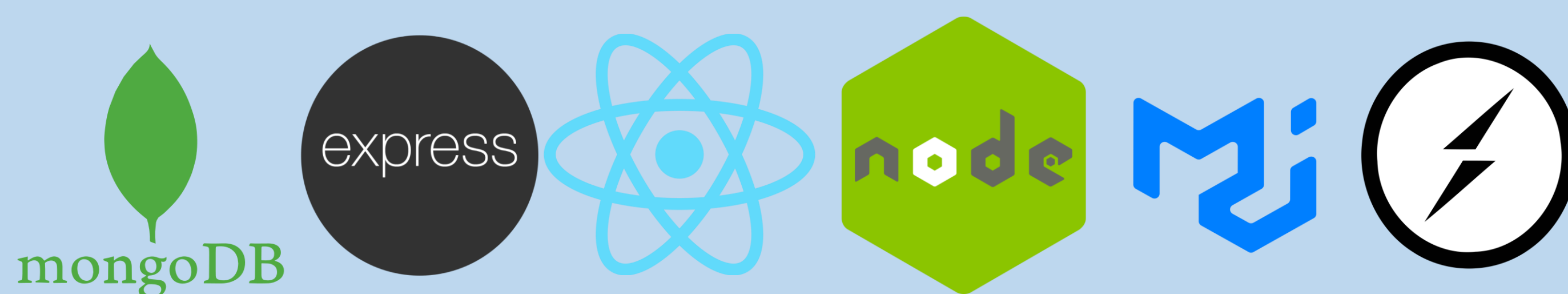
METHODOLOGY

Followed the Agile Project Management methodology and applied Issue Driven Project Management. Three major milestones were established at the beginning of the project and served as goals to work toward throughout the semester.

Milestones

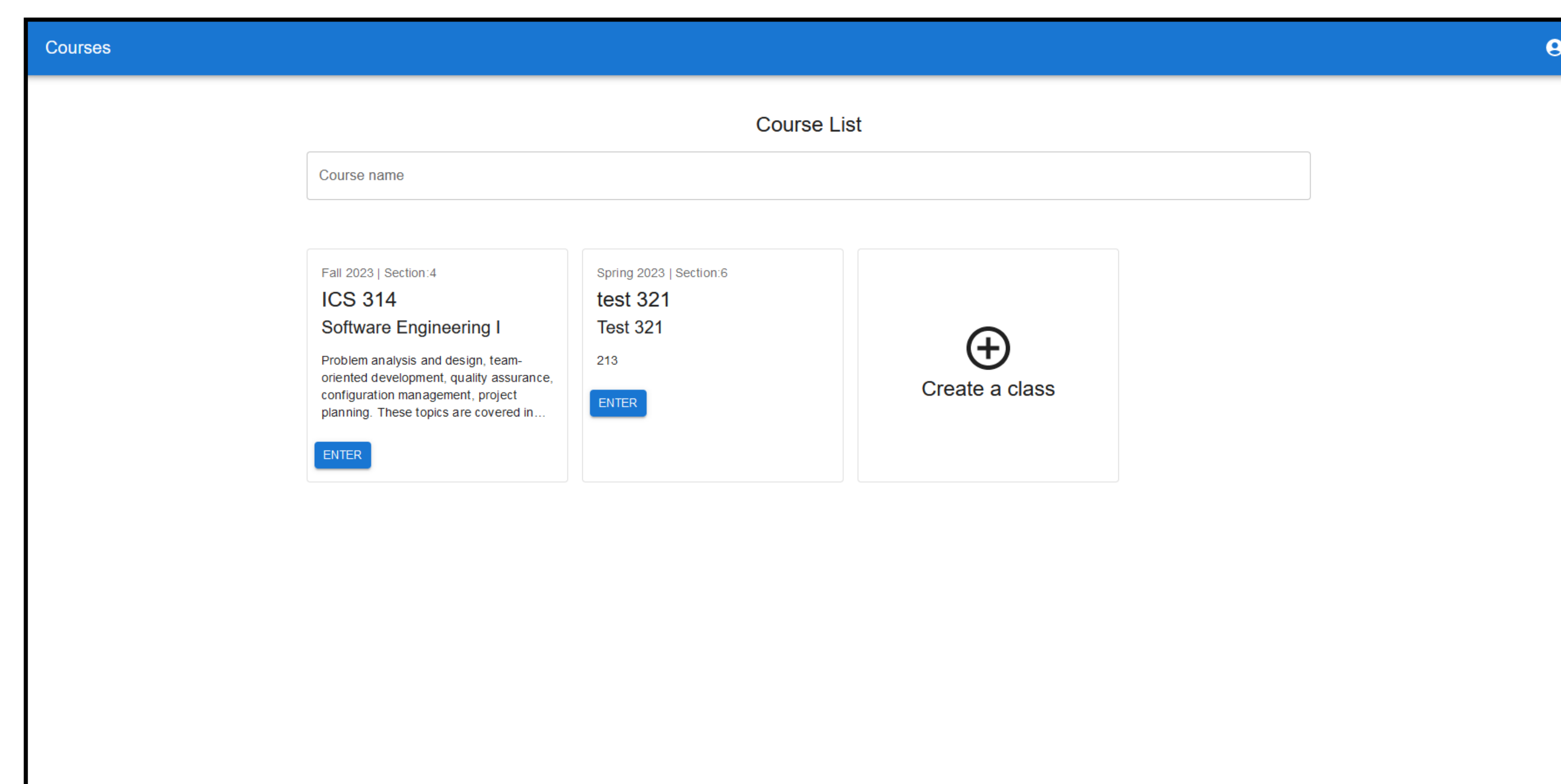
- Basic app up and running, completion of 1 mode
- Completion of 3 modes
- Completion of all 4 modes and additional functionality

Tech Stack



SOLUTION

Our solution was to develop a web application with four different "modes". These modes help encourage participation in different ways, creating a better learning environment whether it be online or in person



Home page



Mode: Competition

Competition mode in which students will answer questions as fast as they can. Each question gives a score based on the student's speed as well as the accuracy of their answer. Scores will be tracked and displayed throughout the mode, and the student's final placements will be determined by their ending score.



Mode: Group

Cooperative mode in which students are randomly divided into groups. Students will work together to come up with answers as a group which will be submitted at the end of the allotted time.



Mode: Anonymous Submission

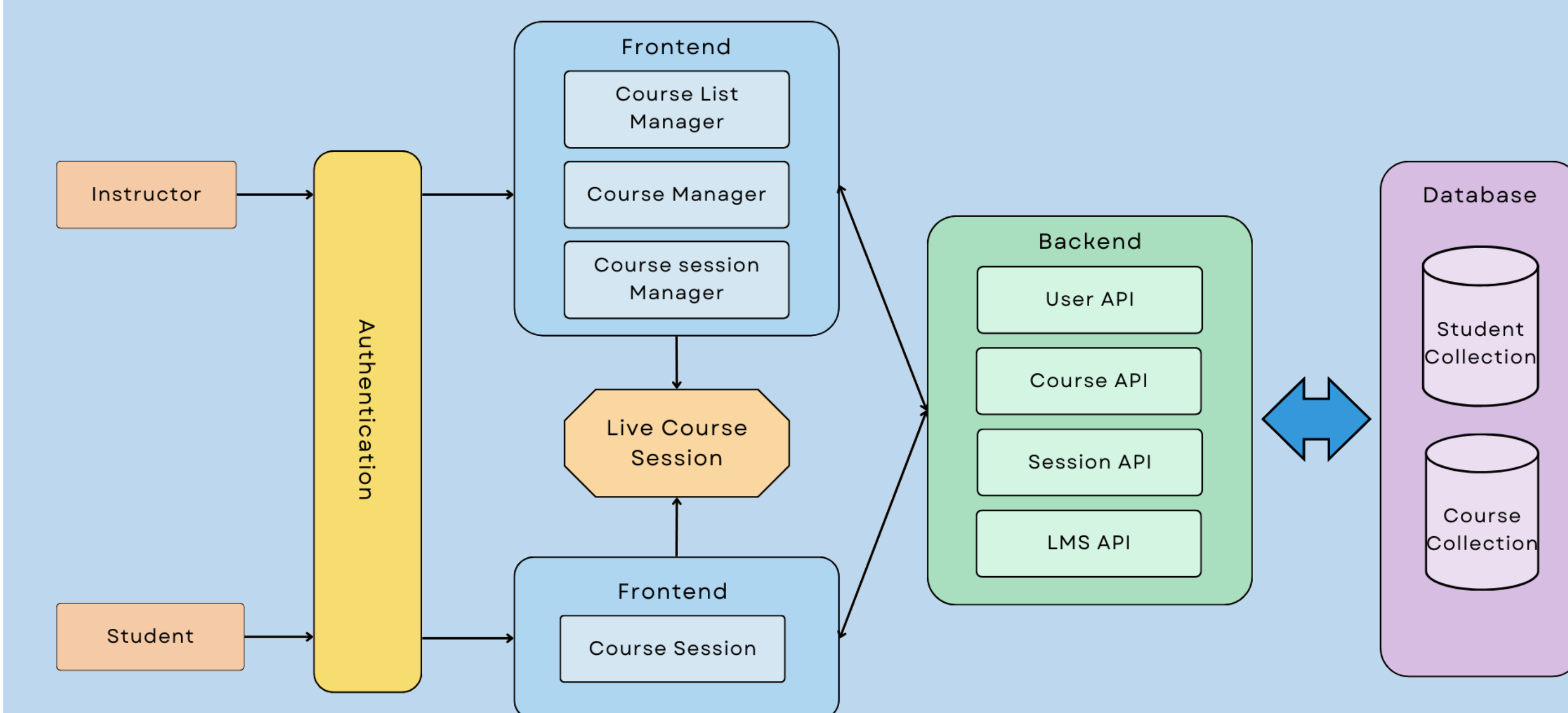
Students will submit answers individually in this game mode while being completely anonymous. Answers will be received by the instructor and may be displayed, but there will be no indication of who the answer belongs to. Mode made to encourage participation and remove fear of judgement.



Mode: PickOn

Mode in which students are 'picked on' randomly from available students in the student roster. Selections are such that all students will have chances to answer. Students may also elect to volunteer themselves to answer, in which case they will be considered 'picked' and won't be randomly selected until everyone has been 'picked on'.

The Four Game Modes



CHALLENGES

- **Real-time communication between different clients:** Difficult to synchronize component functionality with communication between clients
- **Underestimation of task complexity:** Underestimated how long some issues would take to implement, stalling progress and pushing our schedule back

LEARNINGS

- Hands-on experience with MongoDB, Express, React, Node stacks development
- Gained experience working with web socket programming
- Gained experience working with a client/sponsor and address any feedback from them

NEXT STEPS

- Testing in a classroom to get a feel for how it works in a real-world environment
- Implement feedback received from the classroom test

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