

Overview:

Our objective for this assignment is the initial design phase of a web-based tutoring system. My design decisions were informed by my experience as a tutor, both in person and online, and as a classroom instructor. I also consulted with my partner, a Media Specialist in Alachua County schools, who participated in a COVID-era online tutoring program known as “Beyond the Bell.”

I based my user stories on four distinct roles: student (client), tutor (service provider), teacher (stakeholder), and administrator. For simplicity’s sake, I combined numerous administrative functions into one role, including business manager, supervisor, and tutoring session mediator.

I designed the system around a single log-in interface. Depending upon the user’s credentials, they will be brought to an admin, student, tutor, or teacher portal. From that portal, the appropriate functionality will be available to them.

At the admin portal, again, depending on credentials, they will have access to business manager functionality (e.g., payroll and billing), supervisory (e.g., managing tutors and oversight of the question bank), and/or live session monitoring. The live session monitors act as intermediaries between students who show up without an appointment for a live tutoring session and tutors who are on standby waiting for drop-ins. I wanted students to have the opportunity to drop in and receive services without an appointment, envisioning, for instance, a student doing homework that a parent is unable to assist them with who needs immediate assistance. At the click of a mouse, they could pop into the system and, after registering the type of work that they need help with, be immediately paired with either a one-on-one tutoring experience or a small group session of students working with a tutor on related material. My partner played this role at Beyond the Bell, and it is critical, particularly given student demand for services during peak times.

While students will be able to drop in without an appointment, one possibility with this system is that students will identify specific tutors that they work well with and will establish an ongoing relationship. Once logged into the system, the student can schedule appointments with a tutor of their choice, access recordings of previous sessions, and offer reviews of individual tutors and individual sessions in order to provide a critical feedback loop that will help to build high quality tutoring relationships.

Tutor portals will have an employee side, allowing them to review and alter their tutoring schedule, interact with payroll, and review performance reports. Once they are in session with a student, either scheduled or drop-in, they will have access to an interactive instructional space with a rich array of instructional tools, a question bank,

and details about that student's past performance. All tutoring sessions will be recorded and will be made available to students, the tutor, and administrators.

Lastly, teachers, while they are not central to this system, do have potentially important contributions. Users with teacher credentials will be able to monitor class-level as well as individual student performance, upload class assignments that they foresee students needing assistance with, and will be able to provide feedback about individual tutors that students have shared with them. Ultimately, teachers establish the learning objectives, so the more information they are empowered to provide the tutors, the more effective the tutors will be in helping students achieve those objectives.

Lastly, I created communication channels and made tutors the central hub. Tutors can communicate with students, teachers, and administrators. I chose not to create a communication channel between students and teachers within this system so as not to duplicate already existing communication channels and potentially create confusion for students or extra work for teachers.

This assignment has been a somewhat new experience for me, and I found the user stories, in particular, to be very insightful and instructive. I can see how the initial investment in this phase of the process can pay significant dividends later.

User stories:

User stories: as a [who; actor/role] I want [what; function/action] so that [why; goal/benefit]

Roles: student, tutor, teacher, administrator

As a student, I want:

- 1) a large and diverse bank of available practice problems so that I do not run out of examples as I build and demonstrate mastery.
- 2) my online tutor to be able to supplement any practice problems that I struggle with so that I can try to understand it from a different perspective.
- 3) a clear sense of when I have demonstrated mastery and am prepared to move on to another topic so that my study time is efficient.
- 4) a tutor available on-demand so that I can get help when I need it.
- 5) the ability to schedule sessions with a specific tutor so that once I find someone that I work well with, I can continue meeting with them at a time that works for both of us.
- 6) to be able to access my tutoring sessions from a variety of devices (phone, tablet, laptop/desktop) so that I have greater flexibility in seeking help.
- 7) periodic quick reviews of material I have already covered so that I maintain mastery over time.

- 8) the practice problems to be closely aligned with what I am studying at school so that I can succeed in my classes.
- 9) an opportunity to rate my tutors so that I can avoid tutors who are not helpful.

As a tutor, I want:

- 1) an open line of communication with my students' teacher/s so that I have a clear sense of the learning objectives that the student will be assessed on as well as any insights about the student that the teacher may have to share.
I also want to be able to update the teacher on the outcomes of our tutoring sessions so that the teacher has a good sense of the students' level of mastery from my perspective.
- 2) a wide range of learning objects and tools (e.g., whiteboard, digital manipulatives, graphics, videos) so that I have multiple pathways of representation for my diverse students' needs.
- 3) succinct explanations for each practice problem with links to background material so that I can hear the authors' perspective and get a quick refresher on topics that I am not as familiar with.
- 4) a record of each student's level of mastery of each topic so that I can scaffold our tutoring sessions appropriately.
- 5) the ability to easily input and alter my tutoring availability so that I can schedule my tutoring sessions around other responsibilities and respond to student requests for sessions.
- 6) the ability to track my hours and projected paychecks so that I can budget appropriately.
- 7) the ability to message my students outside of our tutoring sessions so that I can aid in their motivation and help build a positive support network.
- 8) the ability to record and share our sessions so that the student, their parent, and/or my supervisor can review them.
- 9) a dashboard that shows trends in peak tutoring days/times so that I can plan my availability around when I am most likely to be engaged with students.
- 10) a feedback mechanism from students, teachers, and/or administrators so that I know where I am being most effective and in which areas I could benefit from some professional development.
- 11) the ability to peruse and select specific practice problems so that I can best demonstrate what the student needs help with.
- 12) an option to easily report practice problems that are incorrect, culturally biased, and/or poorly-worded so that the problem bank gets improved over time.
- 13) standby access to IT support so that any glitches that occur can be dealt with immediately and cause minimal disruption to the tutoring session.

As a teacher, I want:

- 1) a dashboard that offers an overview of all students and a more specific window into each individual student so that I can track their time on task and mastery over the various topics that we are covering.
- 2) the ability to upload assignments that I think the students might struggle with so that they can work on these with their tutor.
- 3) insights into which tutors are particularly helpful (i.e., highly effective and/or highly rated by the students) so that I can recommend those tutors to my students and report their effectiveness to the system admin.

As an administrator, I want:

- 1) the ability to review individual tutoring sessions and insert comments within recordings so that I can better support my tutoring staff.
- 2) a scheduling dashboard that shows both individual tutor schedules as well as a meta schedule so that I can foresee any gaps in tutoring coverage.
- 3) a summary dashboard that calculates tutor hours completed for each tutor so that I can more easily compile payroll and billing.
- 4) an easily decipherable feedback loop from students and teachers so that I can assess tutor effectiveness.
- 5) the ability to modify and/or add practice questions to our question bank so that the quality of our question bank improves over time.
- 6) a classification system for my tutors indicating their grade level and subject specialty areas so that I can make the best matchings with students.
- 7) a registration and live monitoring system indicating which students are working with which tutors on which topics so that I can pair multiple students at a time with a tutor as needed.