SW Engineering CSC648-848 Fall 2023

Gators Tutor Project

Team 5

Team Members:

Daivik Purani - Team Lead [dpurani@sfsu.edu]

Jovanny Ramos - Front-End Lead

Akshar Gothi - Back-End Lead

William Ambriz - GitHub Master

Esau Bojorquez Medina - Documentation

Siarhei Pushkin - Documentation

Milestone 1

Document Version	Date submitted	Description
1.0	9/28/2023	First version
1.1	10/05/2023	Second Version

Table of Contents

Executive Summary

Project name:

Gators Tutor (temporary name)

Project Summary:

Gators Tutor is a user-friendly online tutoring platform exclusively designed for San Francisco State University (SFSU) students. Our primary goal is to empower SFSU students by granting them access to experienced tutors across various subjects. Our unwavering commitment to academic excellence is reflected in our mission to enhance the educational journey of every SFSU student through top-notch tutoring services.

One distinctive feature of Gators Tutor is SFSU-specific search. For example, when you search for tutors on Gators Tutor, you can filter results by SFSU-specific classes, ensuring that you receive personalized support that aligns with your academic curriculum. Whether you're seeking assistance in mathematics, science, business, languages, writing, or other subjects, our platform is finely tuned to cater to the specific academic needs of SFSU students. But we don't stop there. At Gators Tutor, we believe in transparency and accountability. That's why we allow students to rate their tutors. This feature lets you share your experiences and help other students make informed decisions

when selecting a tutor. It's our way of ensuring students receive the best support on their academic journey.

Moreover, we also empower SFSU students not only to seek academic assistance but also to become tutors themselves. If you excel in a particular subject, you can join our ranks of esteemed tutors, collaborate with your peers, and earn additional income while helping fellow students excel in their studies.

Our dedicated team is comprised of individuals who are passionate about education and committed to the SFSU community. We strive to create an efficient, simple, and user-friendly platform for our fellow students, equipping them with the tools needed to achieve their educational goals.

Overall, our platform is the perfect place for any SFSU student seeking assistance in their classes or wanting to help others and earn extra money. Gators Tutor is your comprehensive academic support destination. Our user-friendly interface makes signing up as a tutor, searching for a tutor, or scheduling online tutoring sessions effortless, ensuring academic support is always within your reach.

Personae and Main Use Cases

Our Personae

- Emily, Freshman student

- Alex, the Experienced Biology Tutor

- Professor Rodriguez, the Admin

- Mark, Senior Student

Persona 1

Emily, Freshman student

Background

- Emily is a freshman at San Francisco State University (SFSU), majoring in psychology.

- She's new to the campus and university life, and the transition has been challenging.
- Emily is struggling to keep up with her coursework and needs help understanding basic psychology concepts.

Emily is a first-generation college student, and her transition to university life has been particularly challenging. She comes from a small town and is now navigating the bustling city of San Francisco for the first time. The cultural shift and the demands of university coursework have left her feeling overwhelmed and out of her depth. She's determined to succeed in her psychology major but needs help to grasp the foundational concepts. Emily is also keen to make friends and establish herself within the SFSU community, but her academic struggles have been stressful.

Persona 2

Alex, the Experienced Biology Tutor

Background

- Alex is a senior biology major at SFSU with a strong academic record.

- He has a passion for teaching and wants to earn some extra money by tutoring fellow students.

- Alex has previously tutored classmates and has experience in explaining complex biology concepts.

Alex is an ambitious student who has excelled academically at SFSU. He is passionate about biology and enjoys helping his peers understand challenging concepts. As a senior, Alex is looking for opportunities to give back to the university community and earn some extra money to support himself through his final year of studies. His past experiences tutoring classmates have instilled in him a sense of fulfillment, and he sees tutoring as a way to combine his passion for teaching with his financial needs.

Persona 3

Professor Rodriguez, the Admin

Background

- Professor Rodriguez is a faculty member at SFSU and serves as an admin on the tutoring platform.

- She believes in the importance of academic support and wants to ensure the platform runs smoothly.

- Professor Rodriguez also oversees the platform's compliance with university policies and regulations

Professor Rodriguez is a dedicated faculty member at SFSU with a long history of involvement in academic support programs. She has seen firsthand the impact of tutoring and mentorship on student success and firmly believes in the importance of these services. In her administrative role on the tutoring platform, she is committed to ensuring that SFSU students can access high-quality academic support. Professor

Rodriguez also takes compliance with university policies seriously, as maintaining the platform's integrity is crucial to its success and the university's reputation.

Persona 4

Mark, Senior Student

Background

- Mark is a senior computer science student at SFSU.
- He's always on the go and prefers using his smartphone for most tasks.
- Mark values the convenience of accessing resources and services through his mobile device.

Mark is a highly motivated senior who balances his computer science studies with a part-time job and involvement in various student organizations. He's always on the move, attending class meetings and working daily shifts. Mark relies heavily on his smartphone for convenience and efficiency in managing his busy schedule. He values quick and seamless access to resources and services, including academic support. He prefers using mobile apps for their flexibility and accessibility, reflecting his commitment to maximizing his time and productivity.

Use Cases:

Use Case 1

Emily is in need of a tutor for her psychology class that she is taking at SFSU. She navigates to the Gators Tutor website after being told that her school has a proper site to find SFSU tutors. Then Emily begins to use its search function and enters her specific course name/ID. After scrolling through a list of available tutors, Emily selects a tutor. When she goes to book her appointment, a sign-up page will be prompted. After quickly setting up a profile, she will be able to finish up her appointment for tutoring.

Use Case 2

Emily has used Gators Tutor in the past and had a positive experience with her previous tutor. She needs help again with her new psychology class. Instead of searching for a tutor from scratch, she logs in to her existing account, where she can access her previous tutor's profile. She quickly schedules another tutoring session, saving time and ensuring continuity in her learning.

Use Case 3

Since Alex wants to become a tutor for his school, he visits the Gators Tutor website. He looks up his courses to see how many tutors are in his field of study. Then he decided to sign up as a tutor. On the navigation bar, he easily finds the Sign Up section and begins the profile-creating process. During the process, he can choose to serve as a tutor. This is where Alex provides his academic background, including his senior status as a biology major and his strong academic record. In his description, Alex highlights his passion for teaching and mentions his prior experience in tutoring classmates and explaining intricate biology concepts. After completing the signup process, Alex eagerly awaits approval. This will allow him to start his tutoring services and help fellow students in biology.

Use Case 4

Alex decides to enhance his tutoring profile further by adding video introductions. He logs in to his Gators Tutor account, navigates to the "Edit Profile" section, and uploads a short video introducing himself, explaining his tutoring approach, and sharing his passion for biology. This personalized touch makes his profile stand out and attracts more students to his tutoring services.

Use Case 5

Professor Rodriguez regularly monitors the pool of tutors to maintain the platform's quality and adherence to university policies. Logging into her admin dashboard, she navigates to the "SFSU Tutors" section, where she can review the profiles of all registered users. Professor Rodriguez examines each tutor's qualifications, expertise, and credentials to ensure they meet the platform's standards.

This also included a review of any material/data, such as images, videos, or links. Her diligence helps guarantee that Gators Tutor continues to run smoothly while upholding the university's policies and regulations.

Use Case 6

Professor Rodriguez receives a report about a tutor who has received multiple complaints from students regarding unprofessional behavior. She investigates the matter by logging in to her admin dashboard and reviewing the tutor's interactions with students. After confirming the issues, she takes appropriate action, which may include a temporary suspension or counseling for the tutor.

Use Case 7

Mark, a busy senior computer science student at SFSU, values the convenience of accessing services on his smartphone. Needing tutoring support, he opens the Gators Tutor website, which he's heard is the ideal platform for finding SFSU tutors. Mark enters his course details using the SFSU course search feature, and a list of available computer science tutors appears on his screen. After selecting a tutor, he proceeds to book his tutoring session. At this point, the app prompts him to sign up. In a few swift steps, Mark sets up his profile on his phone and successfully schedules his tutoring appointment, all while on the go. This seamless mobile experience aligns perfectly with his preference for convenience.

Main Use Cases for the Online Tutoring Platform:

1. **Student Access to Tutors**: SFSU students like Emily can easily connect with qualified tutors for help with their coursework.

2. **Tutor Sign-Up and Management**: Students like Alex can become tutors, creating profiles, setting rates, and offering their expertise to help their peers.

3. **Admin Oversight**: Faculty members like Professor Rodriguez can manage the platform, ensuring it aligns with university policies and maintains a high standard of tutoring quality.

4. **Mobile Accessibility**: Students who prefer mobile access, like Mark, can conveniently find tutors, schedule sessions, and access resources through the platform's mobile app.

List of main data items and entities

Entities:

User Accounts:

- Admins

- Registered Users

- Non Registered Users

Profile Information:

- Personal details (name, age, contact information)

- Educational background (Grade level, classes taken, major)

Content:

- Study materials (textbooks, notes, practice questions)

- Tutor-created content (lesson plans, quizzes)

- User-generated content (questions, answers, explanations)

Ratings and Reviews:

- User ratings for tutors and study materials

- Written reviews and feedback

Messaging and Notifications:

- On site messages

Search:

- Search queries and filters

- Courses available

Account Settings:

- Privacy settings

- Email preferences

- Password management

Data Items:

User Data:

- User IDs

- Usernames

- Email addresses

- Passwords

- User Accounts

Content Data:

- Content IDs

- Content types (text, video, quiz)

- Content ratings and reviews

- Content tags and categories

Rating and Review Data:

- Rating scores

- Written reviews

Messaging Data:

- Time and Date

- Tutor selected

Search Data:

- User search queries

- Class search

- Tutor search

Account Settings Data:

- Privacy settings (public, private)

- Notification preferences

- Security settings

List of functional requirements

Unregistered users:

1. Unregistered Users (students) shall be able to search for tutors by major or SFSU-specific subject;

2. Unregistered Users (students) shall be able to search for tutors by name;

3. Unregistered Users (students) shall be able to view details about tutors, view their pricing, and read reviews, if any.

4. Unregistered Users (students) shall be able to begin to write reviews on tutors before being prompted to log in or register;

5. Unregistered Users (tutors) shall be able to begin applying to become a tutor on the platform before being prompted to register (lazy registration for tutors).

Registered users:

6. Registered Users (students) shall be able to send messages to tutors;

7. Registered Users (students) shall be able to book appointments with tutors;

8. Registered Users (students) shall be able to post reviews on tutors;

9. Registered Users (students) shall be able to apply to become a tutor;

10. Registered Users (tutors) shall be able to create profiles with their details (major, qualification, price, etc.);

11. Registered Users (tutors) shall be able to post available time slots for tutoring;

12. Registered Users (tutors) shall be able to send messages to students regarding their tutoring sessions.

Admin:

13. Admins shall approve tutors before tutors are added to the platform;

14. Admins shall approve all posts before they go live on the platform;

15. Admins shall approve student reviews before they go live on the platform;

16. Admins shall be able to edit or delete tutor posts.

Tutor Posts:

17. All tutor posts shall have a title;

18. All tutor posts shall have a description;

19. All tutor posts shall have a submit button;

20. All tutor posts shall have an image/video submission field;

21. Media files shall only be accepted in certain formats (png, jpg, jpeg, mp4);

22. All tutor posts shall display the time and date of the submission;

23. All tutor posts shall display the User who created the post;

24. All tutor posts shall have a character limit.

List of non-functional requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0

2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers

3. All or selected application functions shall render well on mobile devices

4. Data shall be stored in the database on the team's deployment server.

5. No more than 50 concurrent users shall be accessing the application at any time

6. Privacy of users shall be protected

7. The language used shall be English (no localization needed)

8. Application shall be very easy to use and intuitive

9. Application shall follow established architecture patterns

10. Application code and its repository shall be easy to inspect and maintain

11. Google analytics shall be used

12. No email clients shall be allowed. Interested users can only message to sellers via in-site messaging. One round of messaging (from user to seller) is enough for this application

13. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.

14. Site security: basic best practices shall be applied (as covered in the class) for main data items

15. Media formats shall be standard as used in the market today

16. Modern SE processes and tools shall be used as specified in the class, including collaborative and continuous SW development

17. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Fall 2023. For Demonstration Only" at the top of the WWW page nav bar. (Important so as to not confuse this with a real application).

Competitive analysis

Competitor 1: Chegg.com

Website Features: Offers a wide range of educational resources, including textbook rentals, homework help, test prep, and study tools. The website has a user-friendly interface, and their services cover various academic subjects and levels.

Pricing: Employs a subscription-based model, providing access to most of its features for a monthly fee. They also offer a free trial period. The pricing is competitive for students seeking multiple educational resources.

Customer Feedback: Generally receives positive reviews for its textbook rental service and homework help features. Students appreciate the convenience and cost-effectiveness of the platform.

SWOT Analysis:

Strengths: Broad range of educational resources, competitive pricing, strong brand recognition.

Weaknesses: Reliance on a subscription model, potential limitations in certain subject areas.

Opportunities: Expanding into new educational services, enhancing subject coverage.

Threats: Competition from other online education platforms, evolving student needs.

Market Research: Chegg.com operates in a growing market for online education services, with a focus on students in higher education and high school.

Competitor 2: Brainly.com

Website Features: A collaborative learning platform where students can ask questions and get answers from their peers. It covers a wide range of academic subjects and levels. The website features a community-driven Q&A format, with user-generated content.

Pricing: Offers free access to its basic services, but it also offers a premium subscription called "Brainly Plus" for additional features like faster answers and ad-free browsing.

Customer Feedback: The platform generally receives positive reviews for its concept of peer-to-peer learning and community support. Users appreciate the free access to educational resources.

SWOT Analysis:

Strengths: Peer-to-peer learning concept, wide subject coverage, strong user community.

Weaknesses: Limited advanced content, reliance on user-generated answers.

Opportunities: Expanding premium offerings, diversifying content types.

Threats: Competition in the online education space, potential issues with content quality.

Market Research: Brainly.com operates in a growing market for online educational support and homework help, catering to students from various academic backgrounds.

Competitor 3: CourseHero.com

Website Features: A range of educational materials, including study guides, class notes, textbook solutions, and access to course-specific resources. The platform's interface is user-friendly, and it covers a wide array of academic subjects and courses.

Pricing: Subscription-based pricing model, providing users with unlimited access to its library of resources for a monthly fee. They also offer a free basic membership with limited access. The pricing is competitive for students seeking supplemental course materials.

Marketing: Promotes its services through digital marketing, email campaigns, and partnerships with educational institutions. They engage with students through targeted content, blog posts, and webinars on study strategies.

Customer Feedback: Mixed reviews from users. While some students appreciate the extensive resource library, others express concerns about the quality of user-generated content and the subscription model.

SWOT Analysis:

Strengths: Extensive resource library, competitive pricing, partnerships with educational institutions.

Weaknesses: Mixed reviews due to content quality concerns, reliance on a subscription model.

Opportunities: Expanding into new educational services, improving content quality.

Threats: Competition from other online education platforms, evolving student needs.

Market Research: Operates in a competitive market for online education services, catering primarily to college and university students.

Features	Chegg.com	Brainly.com	Course Hero.com	Gators tutor
SFSU course search	+	+	+	++
SFSU tutor search	-	-	-	++
Reviews/Feedback	+	+	+	+
Study Material (class based)	+	+	+	++
Scheduling/Booking	+	+	+	++

Does not have: - Okay: + Superior: ++

Summary:

We plan to help SFSU students find the right match with tutors. Gators tutor aims to capitalize on these competitor insights by offering SFSU students a platform that not only provides comprehensive subject coverage and a flexible subscription model but also prioritizes the curation of high-quality content and advanced session management tools. Furthermore, Gators Tutor will integrate specific features such as course lookup. Which is tailored specifically to students taking courses at San Francisco State University.

High-level system architecture and technologies used

Server-Side Language: JavaScript

Frameworks: React, Node JS (v18.17.1)

Markup languages: HTML, CSS, JSON

Database System: MySQL (v8.0.33)

Server Host: AWS

Instance details:

Operating System: Ubuntu;

Platform details: Linux/UNIX;

Instance type: t2.micro;

1 vCPU

1 GiB Memory

Volume: 8 GiB, EBS, General Purpose SSD (gp2)

APIs:

Web Analytics: Google Analytics

IDE: Microsoft Visual Studio Code

SSL Cert: Let's Encrypt

Project Management: Trello

ChatGPT: YES

Use of ChatGPT

We used ChatGPT for our project, and here are the details:

1. **Version Used**: We used ChatGPT version 3.5 for our project.

2. **Review of ChatGPT Class Slides and Policies**: Yes, we reviewed the ChatGPT class slides and policies to ensure that we were using the tool responsibly and ethically.

3. **Overall Helpful**: ChatGPT was quite helpful for our project, and we would consider using it for similar activities in the future.

Tasks and Usefulness:

a. **Generating General Project Ideas** - HIGH: ChatGPT was very useful in generating general ideas for our project. We provided it with some initial concepts, which helped us expand on those ideas and develop new ones. This benefited our project by giving us a broader range of options to choose from.

b. **Improving Project Summary** - MEDIUM: We used ChatGPT to improve our project summary slightly. While it provided some useful suggestions, we found that it was more effective for generating ideas than refining existing content.

d. **Drafting Content for Presentation** - MEDIUM: We drafted the content for certain sections of our presentation (personae and use cases section) and then used ChatGPT

to refine and polish it. While it helped enhance the language and coherence, it wasn't as useful as it was for generating general ideas.

In summary, ChatGPT was a valuable tool for our project, especially for generating ideas and improving certain sections. While it was helpful for content refinement, its primary strength lay in the creative and generative aspects.

Team and roles

Daivik Purani	Team Lead
Jovanny Ramos	Front-End Lead
Akshar Gothi	Back-End Lead
William Ambriz	GitHub Master
Esau Bojorquez Medina	Documentation
Siarhei Pushkin	Documentation

Checklist

☑ So far all team members are engaged and attending team sessions when required - **DONE/OK**.

☑ Team found a time slot to meet outside of the class - **DONE/OK**.

☑ Back end, Front end leads and Github master chosen - **DONE/OK**.

☑ Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing - **DONE/OK**.

☑ Team reviewed class slides on requirements and use cases before drafting Milestone 1 - **DONE/OK**.

☑ Team lead ensured that all team members read the final M1 and agree/understand it before submission - **DONE/OK**.

☑ Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.) - **DONE/OK**.