SW Engineering CSC648-848 Fall 2023

Gators Tutor Project

Team 5

Team Members:

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Milestone 1

Document Version	Date submitted	Description
1.0	9/28/2023	First version

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Executive Summary

Project name:

Gators Tutor (temporary name)

Project Summary:

Gators Tutor is an innovative online tutoring platform designed exclusively for the vibrant San Francisco State University (SFSU) community. Our primary mission is to empower SFSU students by providing them with seamless access to experienced tutors across diverse subjects. Our commitment to academic excellence is unwavering, and we aim to enhance the educational experience of every SFSU student by delivering top-notch tutoring services. We understand that the quality of educational support available often determines students' academic success. To bridge this gap, we have carefully selected a group of tutors who are either current SFSU students or esteemed university alumni. Gators Tutor is a one-stop shop for academic support, offering tutoring services in various subjects, including mathematics, science, business, languages, writing, and many others. We recognize that SFSU students have diverse educational needs, and our platform reflects this understanding by offering an extensive range of tutoring services tailored to the specific requirements of each student. We also understand that the lives of college students today are busy and unpredictable. Therefore, we have streamlined the process of scheduling

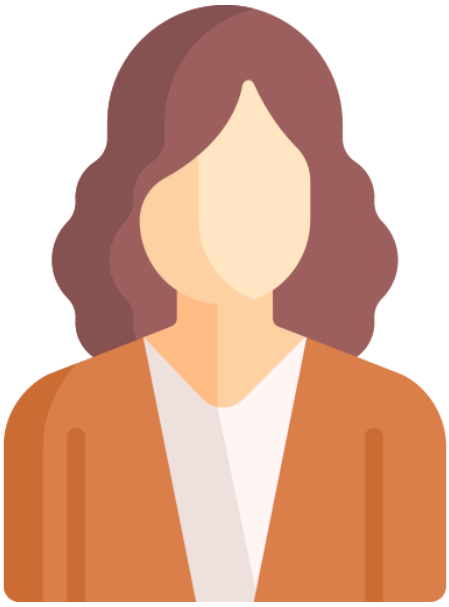
online tutoring sessions, ensuring that academic support is always within reach. Our platform facilitates effortless communication between students and tutors, enabling instant feedback and clarification whenever necessary.

At Gators Tutor, we are committed to enhancing the educational journey of SFSU students. We aspire to boost learning outcomes, foster confidence in every student, and alleviate the stress associated with academic challenges. Our commitment to personalized tutoring ensures that each student receives the individualized attention they need to thrive academically.

Overall, Gators Tutor is a valuable academic resource for the SFSU community. Our mission is to create an environment of excellence that provides students with the necessary tools to succeed and reach their educational goals. Pursuing knowledge with Gators Tutor is an exciting and rewarding journey, and academic success is readily achievable. We invite you to join us in revolutionizing education at San Francisco State University.

Personae and Main Use Cases

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.

Use Case

- Emily uses the online tutoring platform to search for a psychology tutor.

- She easily finds an available tutor who specializes in introductory psychology.
- Emily schedules a tutoring session to clarify her doubts and get a better grasp of the subject.

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.

Use Case

- Alex signs up as a tutor on the online tutoring platform, creating a tutor profile.
- He sets his availability, rates, and areas of expertise (biology).
- Alex gets matched with students seeking biology tutoring and schedules meetings to help them with their coursework.

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.

Use Case

- Professor Rodriguez accesses the admin dashboard to manage and monitor the platform's operations.
- She reviews tutor profiles, ensures they meet the university's standards and approves them.
- The admin dashboard also allows her to track usage and maintain a high-quality tutoring environment for SFSU students.

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.

Use Case

- Mark accessing the tutoring platform through his mobile device.
- He searches for a computer science tutor while waiting for a class to start.
- Mark schedules a tutoring session directly from his smartphone and receives reminders for his upcoming session.

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:

- Students
- Tutors
- Admins

Profile Information:

- Personal details (name, age, contact information)
- Educational background (current grade, school, college, major)
- Tutor qualifications (subject expertise, certifications)

Content:

- Study materials (textbooks, notes, practice questions)
- Tutor-created content (lesson plans, quizzes)
- User-generated content (questions, answers, explanations)

Session Management:

- Tutoring sessions (scheduled, past, upcoming)
- Session details (date, time, location, subject)

Ratings and Reviews:

- User ratings for tutors and study materials
- Written reviews and feedback

Messaging and Notifications:

- Mobile/Phone notifications

- Email notifications

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

Session Data:

- Session IDs
- Session timestamps
- Session status (scheduled, in-progress, completed)
- Session communication logs

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:

- Notifications
- Session Reminders

Search Data:

- User search queries
- Class search
- Tutor search

Account Settings Data:

- Privacy settings (public, private)
- Notification preferences
- Security settings

Analytics Data:

- User engagement metrics (page views, session duration)
- Content popularity and usage statistics

Geolocation Data:

- User locations
- Tutor availability based on

List of functional requirements

Minimum requirements:

A. Browsing, searching, reviewing, and contacting the available tutors;
B. Uploading tutor information (CV, comments, images, video, audio, pricing, etc.);
C. Functions for site administrators who will be required to approve each uploaded tutor info before it can go live, as well as delete inappropriate items or users.

Important constraints:

A. Due to site security issues and limitations of cloud servers where the application will be developed and deployed, the use of any e-mail clients is not allowed. Hence, messaging between sellers and buyers will be done via in-site messaging (e.g., use a message window to enter message text, which is stored in the database and accessed via the dashboard of the recipient).
B. To verify that the person who is registering is affiliated with SFSU, it will only be required to verify that the email of the registering person has the suffix string ”sfsu.edu” at the end – no PW activation via email nor access to the SFSU database to verify real emails will be required, nor allowed.
C. No payment transactions nor any payment user interface (not even simulated) shall be developed. The assumption is that payments are separately negotiated and executed upon delivery of service.

Website:

1. The search bar shall be present throughout all pages;
2. The Navigation bar shall be accessible to all Users;
3. The Navigation bar shall have a Home page;
4. The Navigation bar shall have a Login page;
5. The Navigation bar shall have a Sign-Up page;
6. The footer shall be present throughout all pages;
7. The SFSU logo shall be present throughout all pages;

   [When clicked, it shall redirect to the Home page].

Registered users:

1. Registered Users(tutors) shall be able to add and edit their posts;
2. Registered Users (tutors) shall be able to delete their posts;
3. All registered Users shall be able to search on the platform;
4. All registered Users shall be able to send and receive messages;
5. All registered Users shall be able to receive notifications from other registered Users.

Unregistered users:

1. Unregistered Users shall not be able to upload information;
2. Unregistered Users shall not be able to send messages or communicate in any way with registered users or admin;

Admin:

1. Admin shall be able to delete any user;
2. Admin shall be able to delete other tutor posts;
3. Admin shall be able to approve tutor posts before they go live;
4. Admin shall be able to edit tutor posts;
5. Admin shall be able to send and receive messages on the platform;
6. Admin shall be able to receive notifications on the platform.

Tutor Posts:

1. All tutor posts shall have a title;
2. All tutor posts shall have a description;
3. All tutor posts shall have a submit button;
4. All tutor posts shall have an image/video submission field;
5. Media files shall only be accepted in certain formats (png, jpg, jpeg, mp4);
6. All tutor posts shall display the time and date of the submission;
7. All tutor posts shall display the User who created the post;
8. 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 tailored to meet the unique requirements of the San Francisco State University community, ensuring that our platform addresses the distinct needs of our users effectively.

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**.