SW Engineering CSC648/848 Fall 2021

Project Title: Gator Learn

Team Number: 04

Names of Students:

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Milestone: 1

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History Table:

Date	Revision
10/09/2021	Created as the first version
10/27/2021	Revised according to CEO's feedback

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1. Executive Summary

Prior to the pandemic, students could easily seek help from resources provided by the school on campus. However, this has totally changed, and students are struggling to find these resources remotely. The pandemic has changed the way students approached their learning. Remote learning has made it difficult for students to seek help with their academic assignments as our community practices social distancing. With that in mind, the idea behind Gator Learn came to fruition. The basic idea behind this application is to help Gator students find the necessary help for their assignments remotely to enhance their remote learning experience.

During this time, we understand that our fellow Gators are under pressure more than ever with the drastic changes in how we approach our learning sessions. We are trying to alleviate some of the academic pressure by creating Gator Learn. Gator Learn is a web application that will provide a way for San Francisco State University students to easily find tutors that will help them with their assignments, tailored specifically to our offered Gator courses. With an easily accessible menu to find your particular course, professor, or assignment, our web app outshines other competing academic assistance sites as a Gator student. At Gator Learn, the tutors can be former Gator alumni, Teaching Assistants, or professors who have experienced what it is like to be part of the San Francisco State University community. They will be able to relate with the students seeking help and be able to provide the necessary assistance for each student. In short, Gator Learn will allow San Francisco State University students to have access to qualified tutors for all their assignments.

Gator Learn will be produced by a very diverse Team 04 group from San Francisco State University. Each member of the group has come from different backgrounds that has one goal in mind: produce a product that will benefit our fellow students at San Francisco State University and help them achieve their academic goals. As a team, we believe we will produce a product that will compete with other similar apps that are available online. Our team is also composed of San Francisco State University students and understands what our peers are struggling with as we struggle with it ourselves. With the team member’s expertise and experiences, the Gator Learn will be a product that will not only help current San Francisco State University but also future students. And, as we improve our product, hopefully it can expand to help other students from other universities.

2. Personae and Main Use cases

Key Personas (Categories)

- Non-registered User
  - Junior student **(1)**

- Registered User
  - Senior student **(2)**

- Site Admin
  - Attends SFSU...graduate/alumni/current student **(5)**
  - Does NOT attend SFSU

- Tutors
  - External tutor, unfamiliar w/ SFSU and its amenities **(4)**
  - Internal tutor, familiar w/ SFSU and its amenities **(3)**

Personas

1. **Jane -** A junior SFSU student, unregistered

   - Recent transfer to SFSU
   - Typically organized and well-prepared with her work
   - CS major, struggles with consistency on her apps/projects
   - Discouraged with difficulty
   - Great skills navigating WWW/mobile

https://www.forbes.com/sites/kristenmoon/2019/03/05/college-planning-junior-year-checklist/?sh=7ee8fd1c4cff

2. **Josh** - A senior SFSU student, registered

- Busy with work and study at same time
- Eng major, excels at his analytical papers
- Poor time management
- Need help with his Math class
- Okay at navigating WWW, prefers mobile

https://www.orderoochaos.com/triple-t/10-organizing-tips-tackling-senior-year-high-school

3. **John** - An internal tutor

- Completed undergrad at SFSU
- Very studious and conscientious of his time
- Wants his students to do well and excel
- Impatient with non-diligent students, wants to be straightforward
- Great at navigating through WWW/mobile

https://www.dreamstime.com/portrait-young-male-teacher-background-school-blackboard-teacher-s-day-knowledge-day-back-to-school-study-image159722312

4. **Janet** - An external tutor

- Completed grad and undergrad decades ago from prestigious school
- Poor technological usage skills
- Wants to connect with students in order to tutor properly
- Great communication skills
- An endearing and lovable demeanor, and patient
- May struggle on mobile (farsightedness)

https://www.123rf.com/photo_116459514_cheerful-senior-businesswoman-in-glasses-looking-at-camera-happy-older-team-leader-ceo-manager-femal.html

5. **Donovan** - A Site Admin
    - Professor at SFSU
    - Knows how to work with databases
    - Excellent skills navigating WWW

https://www.gettyimages.com/photos/university-professor-portrait

Use Cases

1. **Signing up as Internal or External tutor**

John is a former student at SF State University. He used to be an excellent student during his undergrad journey. As he follows the SFSU page on Twitter, he came to know about the tutoring website. He knows very well about the stressful moments for students in their class. Therefore, he wants to sign up as a tutor in order to help the students to succeed in their class. He was familiar with the online applications. So, he went ahead and registered his account and while editing the information he was prompted to sign-up (lazy registration).
On the other hand, Janet is a 50 years old business woman. She completed her grad and undergrad decades ago from UC Berkeley. She is great at communicating and a very patient woman. She always wished and wanted to connect with students to help in their studies. She was able to easily sign up on our website because the website was very self-explanatory and easy to go through the whole process.

2. Browsing as a non-registered user

Jane recently transferred to SF State University. Being a junior is always a stressful year during college. She is an excellent student and very organized with her study life. She had a good GPA when she transferred with a Computer Science major. Because she is new, she has not made good friends yet. However, she is starting to need one whom she can work together with in her class. She does not want to mess up her grade as well. Fortunately, she heard about the "Gator Learn" from one of her friends in the class. She was so happy to go through the website and get help from a tutor. Jane is very good at self-navigating the websites. So she went to a website and started searching for tutors by major or course. She also found one according to her course and wants to schedule tutoring sessions with that respective tutor to help herself stay accountable. Before being able to schedule an appointment, Jane is prompted to register or login. Since Jane is a non-registered user she goes through the registration process.

3. Scheduling appointment as a registered user

Josh is a senior student with an English major at SF State University. He is very busy with work and studying together. Because of this he is having a hard time managing time for his study. In the middle of the semester, he feels like he needs help with his math class. While he was working, he only had a phone with him, so he used his phone to navigate through our website. Since he has already registered on our website, he can sign in and start looking for the tutor he needs help with. He logs in, searches for the class, and checks for the availability of the math tutor. After checking the available spots, he schedules an appointment for him.

4. Managing users by Site Admin

Donovan is an admin at "Gator Learn" who was also a professor at SF State University. He has an important role in this tutoring application. He has the permission to approve or reject the new users (students/tutors). He supervises whether or not the users have met all the requirements. He has access to the database of the application and manages the data and list of tutors and students on the website. However, he will not be able to edit/alter the details about users. He gets notified

when the users change anything in their account and checks his inbox for the next wave of applicants to judge.

5. Adding personal information as a registered user

Jane, Josh, Janet and Donovan are registered and valuable users of "Gator Learn". They want to add their personal information into their profile so that everyone in the website can know about them from the profile. Once they log in and go to their profile settings, they will find a place to add their bio. They write something about them and submit their information and wait for the admin's approval.

6. Reviewing tutors as registered students

Jane and Josh were able to schedule an appointment and get the tutoring help from their respective course tutors. After the tutoring sessions, they wanted to rate their tutors because they can help other students decide who they can go to for study help. Therefore, on our website students can also leave feedback and suggestions for the tutors. If any of the tutor gets a very bad rating and review from students, the admin has a full right to delete their account from the website thereby removing the tutor.

3. Main data items and entities

1. Major: A category of classes designated to a specific major/topic (ex. CSC in CSC-648).

- **Course:** A course at SFSU belonging to a major
  - Availability: Shows whether the course is available this semester at SFSU.
  - Course Number: The course number (ex. CSC-648).
  - Requirement: States if the course is required for the major.

2. Catalog: A listing of all courses and majors at SFSU, currently available or not. Used for creating a database of all SFSU majors and courses on the website.

3. Profile page: A user-customizable page. A student or tutor can use this page to provide more information about themselves.

- Contact information.
- (Students) Course and major information.
- (Tutors) Credentials and qualifications.
- Other miscellaneous information.

4. Tutoring Session: A listing for tutoring in qualified courses. Created by tutors and can be applied to by students. The following local details of the tutoring session can be seen by users browsing and are defined by the tutor:

- **Session Properties**
  - Open/Full Status: Displays whether a particular session is still available or has filled to capacity.
  - Timeslot: The time slot that the tutoring session is available.
  - Date: The date that the tutoring session is available.
  - Location: The location of the tutoring session is, also shows whether it is in-person or online.
  - Tutor-able courses/majors: A collection of courses that the tutor is qualified and able to tutor in the given session.
  - Language: Languages, other than English, that the tutor can fluently communicate in for the session.
  - Review: An area for students to leave feedback of the tutoring session that they received.

5. Anonymous / Unregistered User: A person who has simply found the website and is using it without signing up. All other users have these privileges.

- User shall be able to browse the website.
- User shall be able to register for an account with their SFSU information.
- User shall be able to sign up for a tutoring session appointment without an account. Completion of the session appointment requires an account to be created at the end.

6. Registered Student: A student currently enrolled at SFSU who has signed up for the website. They are able to customize their account and sign up for tutoring sessions with verified tutors.

- **User Info**
  - SFSU ID: The student's SFSU ID used for registration.
  - SFSU Email Address: The student's SFSU email used for registration.
  - Name: The student's name that is used across the website.
  - Username: The student's username that is used for logging in.
  - Password: The student's password that is kept confidential from other users, excluding administrative permissions.
  - Avatar: An optional image representing the student on the site.

- **Other Data**
  - Session List: A collection of the student's upcoming tutoring sessions that they applied for.
  - Enrolled courses/majors: A collection of courses that the student is enrolled in or wants tutoring in.

7. Unverified Tutor: A tutor user who has signed up for the website recently. Requires verification from an administrator and has limited access and functionality across the website until they have it.

- **User Info**
  - Name: The tutor's name that is used across the website.
  - Username: The account's username that is used for logging in.
  - Password: The account's password that is kept confidential from other users, excluding administrative permissions.
  - Avatar: An optional image representing the tutor that may appear on the site.
  - Verification: Verification status of the tutor to be updated by the administrator once credentials are cleared.

- **Other Data**
  - Credentials/Qualifications: Provided to administrators through messaging to complete the verification process.
  - Unverified tutors shall be able to check their verification status on the website.
  - Unverified tutors shall not be allowed to create tutoring sessions until they are verified.

8. Registered Tutor: A tutor user who has signed up for the website that's been verified and approved by administrators. Registered tutors are then allowed to create tutoring sessions for majors or specific courses.

- Inherited Data and Functions from Unregistered User
- **Other Data**
  - Session List: A collection of the tutor's upcoming tutoring sessions that have been posted on the site.
  - Session History: A collection of the tutor's past tutoring sessions that shows reviews made by students.

- Tutor-able courses/majors: A collection of courses that the tutor is qualified and able to tutor in the given session.
- Proof of Verification: Status on their account for other users to see, showing that they are a legitimate and approved tutor on the website.

9. Administrator: Has full system control of the website. Administrators can approve tutor users and can access and modify permissions of other users. They can also monitor and remove tutoring session listings and profile pages for breaking website guidelines.

10. SFSU Teacher/Professor: As an SFSU-exclusive site, a professor can also use the site for office hours and tutoring sessions themselves. This user is a more privileged tutor user on the site, which gives them the same access and functionality as tutors as well as others.

- **Student List:** A list of students that are enrolled in their courses on the website.
  - Can view a student's upcoming tutoring sessions.
  - Can send a message to all students of a course or class at once.

11. Inbox: A place for communication within the tutoring website.

- Create and send message: A user creates a message to another user on the site. Filling out the title and contents of the message is required before sending.
- Reply: A user can respond to a message with their own.
- Read message: A receiving user accesses the contents of the message that was sent to them.
- Delete message: A receiving user deletes a sent message to them from their inbox.

12. Message: A message sent from one user to another on the site. Defined by the following local details:

- Message Properties
  - Sender: The user who sent the message.
  - Receiver: The user who is receiving the message.
  - Date: The date that the message was sent.
  - Time: The time that the message was sent.
  - Title: The title/header of the message as it will appear in the inbox without opening it.
  - Contents: The contents of the message.

4. Initial list of Functional Requirements

Unregistered user:

1. Unregistered user shall be able to register to the website
2. Unregistered user shall be able to access the contact page of website
3. Unregistered user shall be able to browse courses of website
4. Unregistered user shall be able to view the tutors available
5. Unregistered user shall be prompted to create an account (lazy reg.)
6. Unregistered user shall be able to see course details and requirements
7. Unregistered user shall be able to search for tutors

Registered user:

Registered users inherits all the features of unregistered users

Students/Tutors

8. Registered user shall be able to login to the website
9. Registered user shall be able to access the FAQ of website
10. Registered user shall be able to edit preferences and profile
11. Registered user shall be able to change status to online/offline
12. Registered user shall be able to logout
13. Registered user shall be able to upload files
14. Registered user shall be able to have drop-in sessions with tutors
15. Registered user shall be able to provide feedback
16. Registered user shall be able to sign up/remove courses
17. Registered user shall be able to change their username
18. Registered user shall be able to change their profile picture

Admin

19. Admin shall be able to change usernames.
20. Admin shall be able to reset user passwords.
21. Admin shall be able to delete accounts permanently.
22. Admin shall be able to approve or reject user profiles.
23. Admin shall be able to monitor course access
24. Admin shall be able to override course limitations
25. Admin shall be able to provide online support for technical issues
26. Admin shall be able to test the general system

5. Non-Functional Requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in Milestone 0. Application delivery shall be from chosen cloud server.
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 must render well on mobile devices
4. Data shall be stored in the database on the team's deployment cloud server.
5. No more than 50 concurrent users shall be accessing the application at any time
6. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English (no localization needed)
8. Application shall be very easy to use and intuitive
9. Application should 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 e-mail clients shall be allowed.
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. Application shall be media rich (images, video etc.). Media formats shall be standard as used in the market today
16. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
17. For code development and management, as well as documentation like formal milestones
    required in the class, each team shall use their own github to be set-up by class instructors and started by each team during Milestone 0
18. The application UI (WWW and mobile) shall prominently display the following exact text on all pages *"SFSU Software Engineering Project CSC 648-848, Fall 2021 For Demonstration Only"* at the top of the WWW page. (Important so as to not confuse this with a real application).

6. Competitive Analysis

Features	Wyzant	Chegg	Skooli	Nettutor	Gator Learn
UI Simplicity	++	+	+	-	+
Ease of Browsing	+	++	+	+	+
Ease of Search	+	++	+	+	+
Lazy Registration	+	+	+	-	+
Online/ In-person Service	+	+	+	+	+
Exclusive to SFSU students/staff	-	-	-	-	+
One-on-One / Group / Drop-in tutoring	++	-	+	+	+

++ -> Superior, + -> Feature Exist, - -> Feature doesn't exist

Gator Learn focuses on providing tutoring services exclusively to San Francisco State University students. With this, we narrowed down the scope targeted to a limited audience on providing best services to just a particular university. The searching is very convenient in this web application by selecting the major and typing in the class code. Also, the browsing is user-friendly. Our web application will also focus on providing drop-in-tutoring sessions along with one-on-one/group tutoring to have better access and availability. No payment or subscription is required to use services from this web application. Unregistered users are allowed to navigate through the app to search their queries. Gator Learn also offers simplicity in UI and has better user experience unlike other applications that has busy and cluttered interfaces.

7. High Level System Architecture and Technologies Used

1. Server Host
    - AWS 1 vCPU 1 GB RAM
2. Operating system
    - Ubuntu 20.04
3. Server Database
    - MySQL
4. Web server
    - Apache v2.4
5. Server-Side Language
    - Python 3.7

Additional Technologies:

Web Framework: Flask
IDE: VsCode, PyCharm/ Jupyter
Web Analytics: Google Analytics
SSL Cert: Lets Encrypt (Cert Bot)

8. Team and Roles

ROLES	NAME	SFSU EMAIL ID
Team Lead, Back End Member, Document Master	Manali Seth	mseth@mail.sfsu.edu
Front End Lead	Htet Soe	hsoe1@mail.sfsu.edu
Back End Lead	Aarshil Patel	apatel13@mail.sfsu.edu
Github Master, Frontend/Backend Member	Aditya Mohan	amohan3@mail.sfsu.edu
Front End Member	Seela Pant	spant@mail.sfsu.edu
Front End Member	Christian Samatra	csamatra@mail.sfsu.edu
Back End Member	William Yu	wyu5@mail.sfsu.edu

9. Checklist

All team members are engaged and attending ZOOM sessions when required
DONE

Team found a time slot to meet outside of the class
DONE

Back end, Front end leads and Github master chosen
DONE

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

Team lead ensured that all team members read the final M1 and agree/understand it before submission
DONE

Github is organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)
DONE