SW Engineering CSC648/848 Spring 2021

TwoHelpYou

Project Application And Name: Provide tutoring to SFSU students – "TwoHelpYou."

Team Number: Team 01

Team Members and Roles:

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Milestone: Milestone 1

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History:

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M1V1	2021, October 09

SW Engineering CSC648/848 Spring 2021 Team 1 Milestone 1

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1. Executive Summary

It is challenging to decide on any particular website among the various online tutoring services to help students excel in their coursework. Our products hope to provide the students of San Francisco State University (SFSU) with a better alternative. Our team aims to provide a simplified experience for those who choose to use our product. This experience would not be an overload of information or too broad in material to the users. By currently only focusing on the students here at SFSU, we hope to make it easy to tutor and find tutors. This specialization makes it easier to find the course they need help in and not some subject overview. Other services may only provide a wide range of assistants in the broad understanding of math or science. Still, our team hopes that our product "**TwoHelpYou**" can provide pinpoint assistance on their particular course at SFSU.

Our team's decision to name our product "**TwoHelpYou**" is also our goal. We can provide two parties with assistance, students past and present, to help other students. Our team hopes to only employ students and graduates from SFSU who have bravely pathfinding the courses offered at SFSU for tutoring and are willing to share their experience. By having students who have taken the course be tutors, we can provide other students seeking help with a unique experience. This experience would be more specialized and specific assistance that guides them down the path of success for that particular class that other services may not be able to provide. Such as the specific material covered in the syllabus and the style or method sought by the professor. Due to narrowing our audience of users, we can contract and simplify the search to make it easy for students to find help in the course they are taking. At the same time, it will easily allow tutors to sign up for which classes they are qualified to tutor by listing what courses they have completed. By employing students and graduates, we can also proudly support and give back to our community which is the dream of all alumni.

As students here at SFSU, we like to say we know the needs of our community because we are a part of it. Being part of this community with the ability to give back, we hope to connect students. By connecting the students, we can help them by providing a job or assistance in their classes. Hosting a platform for them to connect, we create a positive feedback loop of former and current students assisting one another. Our mission statement is to provide a platform and service for students to connect and help other students.

2. Personae and Main Use Cases

1.	**Name:** Anish Gupta	**Age:** 25	**Education Level:** Post Grad
	About: • Based in Bay Area • Recently graduated with a degree in Economics • Deciding between further studies and a job		
	Goals: • Looking for part-time work opportunities • Wants more experience for his portfolio • Wants to be a teacher in the future		
	Skills: • Proficient with mobile and web apps • Proficient with computers in general • Great interpersonal skills • Prior teaching experience		
Pain Points: Having graduated and missed the environment and the extra pocket money he earned from teaching jobs. He was looking for a new avenue to make some money and be productive while figuring out my next steps. He was also looking for opportunities to add more experience to my portfolio.			

2.	**Name:** Calvin Michele	**Age:** 21	**Education Level:** Undergrad
	About: • Based in Bay Area • Junior pursuing a double major in Communications and Political Science • Loves the college environment and meeting new people • Loves outdoor activities such as hiking, white water rafting, and rock climbing		
	Goals: • Looking to Graduate on time and with a respectable GPA • Wants to pursue a job in legislation • Thinking about going to law school		
	Skills: • Proficient with mobile and web apps • Great interpersonal skills		
Pain Points: Covid has made it very difficult to interact with fellow classmates due to online classes. I feel very disconnected from my peers and find it difficult to reach out for help.			

3.	**Name:** Salomé Beaulieu	**Age:** 19	**Education Level:** Highschool Grad
	About: • Foreign exchange student from Lyon University, France • Recently graduated from high school • Majoring in Fine Arts		
	Goals: • Wants to experience American culture and make new friends • Wants to get better at English (speaking and writing) • Wants to move to New York in the future		
	Skills: • Familiar with mobile and web apps • Knows English but is not fluent		
Pain Points: Being an exchange student, the language barrier makes it difficult to get academic help in person. Her English is very decent but communicating can be troublesome sometimes with the different accents.			

4.	**Name:** Theodora Kennedy	**Age:** 16	**Education Level:** Highschool Student
	About: • Based in Bay Area • High School Student taking concurrent classes at college • Loves Mathematics and Physics • Doesn't really fit in with people her age		
	Goals: • Looking to learn more about STEM subjects • Wants to graduate early from High school • Wants to make more friends at her intellectual level		
	Skills: • Proficient with mobile and web apps • Extensive knowledge of Mathematics • Passion for all STEM subjects		
Pain Points: Being much younger than most people in my classes, she feels intimidated and sometimes scared hanging out around campus or going to school events to make friends. She also lives at home and attends regular high school three days a week, so I need another avenue to connect and meet people at my academic level. I feel like online tutoring evens the playing field and removes my age from the equation.			

5.	**Name:** Mark Hammond	**Age:** 31	**Education Level:** Technical Degree
	About: • 10+ years of industry experience in metal fabrication • Business owner • Going to college to get a web development degree/certification		
	Goals: • Looking to expand his web development knowledge • Looking for help on coursework after work hours • Wants to grow his business using online advertising and marketing		
	Skills: • Familiar with mobile and web apps • Great communication skills • Great time management skills • Detail-oriented		
Pain Points: He cannot dedicate enough time to attend school events and get help at the library since he works full time. He need help after hours or on the weekends when most school tutoring resources are closed.			

1. **Anish Tutor Post Use Case:** Anish is looking for part-time work and a way to pass his time while figuring out his next steps when he finds "**TwoHelpYou**." He looks through the homepage and about page to find that "**TwoHelpYou**" provides a place for students to get help and offer help. He sees this as very appealing as he was a TA for several of his professors during his undergrad. He signs up for an account using the signup link on the top of the page. He is taken to a form in which he can fill out his accolades and expertise. Anish hopes that this will allow him to find some part-time work and add to his portfolio when applying for jobs or grad school.

2. **Calvin General User Forum Post Use Case:** Feeling lost in his course work, Calvin looks up tutoring and academic help websites. He finds "**TwoHelpYou**" and navigates to the homepage. There he uses the search function to search for the subject that he is struggling with. He is served a list of results that pertain to his selected subject, including study groups, experts who can help, and forum topics and pages relating to the subject matter. Calvin navigates to the forum, discusses concepts he is struggling with, and posts his questions about the coursework.

3. **Salome Tutor Search Use Case:** Salome is struggling with her GE writing course. Although she took several English classes in France, long-form writing and in-person communication in English are complex and slow for her. She needs someone who can go over her writing and help her edit and correct grammar mistakes. A friend of hers sends a link to "**TwoHelpYou,**" and she navigates to the homepage. There she uses the search function to find tutors and resources for her English course. She is then presented with a list of results showing her profiles of tutors who specialize in English and have ESL experience. She selects one that appeals to her and fills out the scheduling form with her desired subject and the time frames in which she is available.

4. **Theodora Lazy Registration Use Case:** Teddy is bored at home on a Wednesday night. She is done with all her high school homework as well as her college coursework. At 16, there isn't much to do for her on a weeknight since she has an early curfew. Being fascinated with the mathematics class, she is taking at college; she looks up the course number on google. There she finds a link to the course page on "**TwoHelpYou**." On the course page, there is a list of tutors and students who are either taking the class and need help or are experts in the subject and are providing support. Scrolling through the page, she also finds an independent study group that focuses on complex analysis, a higher-level subject she doesn't yet have prerequisites. She clicks on the study group to see that anyone can join and be a part of the academic discourse. She clicks the join button and is taken to a signup page to enter her e-mail, username, and password. She is then redirected to the group page, where she can begin to participate immediately.

5. **Mark Tutor Scheduling Use Case:** Mark gets home from work around 6:30 PM; after dinner, he needs to work on his upcoming homework. Being a night student, he doesn't have time to go to homework help sessions or office hours, held on Wednesday 3-5 PM when he is at work. Mark looks for help online for some of his homework questions and finds "**TwoHelpYou**," a tutoring site. He clicks the link and is taken to the homepage of the website. He sees a search bar on the top of his screen, which he uses to find the web development resources he is looking for. He clicks the search button and receives a list of tutors who have expertise in web development. From the list, he finds a Master student whose profile shows that they have already completed their degree in computer science and have expertise in the specific course he is searching for. On the profile page, he finds a button labeled "Schedule Tutoring Session" and clicks it. This button takes him to a form for the tutoring session with the selected tutor. He can choose the subject he needs help in, the dates and times he is free to meet, and the goals he wants to achieve through the session. Within a day, the tutor he selected reaches out to him to introduce themselves and confirm their meeting time. Mark can now get much-needed help on his assignments after hours when convenient for him and his busy work schedule.

3. List of main data items and entities

1. Unregistered User
   - Unregistered user are able to browse the website
   - Unregistered user are able to view reviews
   - Unregistered user are able to search tutors related to the course
   - Unregistered user are able to create an account
   - Unregistered user are able to view tutors profile
2. Registered General User:
   - Registered user are able to search tutors related to the course
   - Registered user are able to make reviews
3. Registered Tutor User:
   - Registered tutor user are able to offer their tutoring service
   - Registered tutor user are able to make profiles
   -
4. Admin
   - Admin is able to delete reviews
   - Admin is able to suspend user profile
   - Admin is able to delete user profile
   - Admin is able to suspend tutor profile
   - Admin is able to delete tutor profile
5. Posting
   - Register users are able to post questions
6. Tutoring Schedule
   - Tutor Schedule will be displayed on the tutor profile page.
7. Registration Form
   - Registration form is able to create an account for the new unregistered user.
   - Required Information:
     - SFSU email: Valid SFSU Id
     - First Name: Legal First Name
     - Last Name: Legal Last Name
     - Password: Character must have 8 or more characters including at least one uppercase and one special character
8. Profiles
   - Profiles are created for tutors with their status of availability and available schedule
   - Profiles can have reviews and rating
   - Profile can have profile picture
9. Forums
   - Forum is a place where students and tutors can post questions
   - Registered user can reply to the post
10. Search
    - Users can search through list of available tutors
    - Users can search through list of available courses tutors are offering
    - Users can search through list of forums

4. Initial list of functional requirements

Unregistered User

1. Unregistered User shall be able to create an account with sfsu email
2. Unregistered User shall be able to search a post using course number
3. Unregistered User shall be able to search a post using major name
4. Unregistered User shall be able to search a post using tutor name
5. Unregistered User shall be able to search a tutor using course number
6. Unregistered User shall be able to search a tutor using major name
7. Unregistered User shall be able to search a tutor using tutor name
8. Unregistered User shall be able to view a post that is created by other student
9. Unregistered User shall be able to look at forum
10. Unregistered User shall be able to view tutor profile

Registered General User

11. Registered General User shall be able to use all function from Unregistered User
12. Registered General User shall be able to login in with their sfsu email
13. Registered General User shall be able to log out
14. Registered General User shall be able to post question
15. Registered General User shall be able to post to forum
16. Registered General User shall be able to schedule a meeting with a tutor

Registered Tutor User

17. Registered Tutor User shall be able to use all function from Registered General User
18. Registered Tutor User shall be able to set up their profile
19. Registered Tutor User shall be able to respond to student post to answer question
20. Registered Tutor User shall be able to set up schedule that tutor is able to meet student

Administrator

21. Administrator shall be able to use all the function from Unregistered User
22. Administrator shall be able to use all the function from Registered General User
23. Administrator shall be able to use all the function from Registered Tutor User
24. Administrator shall be able to delete post
25. Administrator shall be able to approve tutor
26. Administrator shall be able to suspend accounts
27. Administrator shall be able to delete accounts

5. 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 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

Feature	Tutoring .sfsu.edu	TutorMe .com	Wyzant .com	FindATutor .org	TwoHelpYou
Leave a review about a tutor	-	+	+	-	+
Forum page where anyone can post a question and can answer questions.	-	-	+	-	++
Choose/Search for a specific tutor by using text search view their profile	-	+	+	-	++
Have group study session with other students and a tutor	+	-	-	-	+
Virtual tutoring sessions using website tools	-	+	+	-	+
Chat with a tutor before and after a session	-	-	+	-	+

+ feature exists; ++ superior; - does not exist

Summary

Our website will have a feature that will let users review the tutor they had a session with by leaving a rating and a comment on the tutor's profile. Anyone with a registered account, tutors or students, can post a question or post onto the forum page as long as it's site appropriate and can answer any question or reply to a post on there. Users, registered or not, can search for specific tutors by using the search function on the website. They can search by name or by subject and see the results and view the tutor's profile to see what subjects they can tutor in and their average rating and reviews left by registered users. Users can schedule group study sessions with other users and with a tutor. When a user has a virtual study session with a tutor, they can connect on the website. They can use tools like a whiteboard, screen share, code, and word editor and save the files onto the local device. When a user has chosen the tutor they want to work with, both can communicate with one another by using the website's chat feature before and after a session.

7. High-level system architecture and technologies used

The software components, frameworks, APIs, tools and systems to be used, supported browsers and deployment platform (SW and server) to be used in the development:

- Server Host: AWS EC2 1vCPU 1GB RAM

- Operating System: Ubuntu 20.04 LTS (HVM) 64-bit x86

- Server Database: MySQL v8.0.26

- Web Server: Node.js v14.17.6

- Server-Side Language: JavaScript

- Additional Technologies:

  - Web Framework: Express.js v4.16.1/v4.17.1

  - IDE: Visual Studio Code

  - Web Analytics: Google Analytics

  - SSL Cert: Bcrypt v5.0.1

  - Express-Handlebars v5.3.3

  - React: v17.0.2

8. Team and roles

Name	Role	E-mail
Justin Lam	Team Lead/Document Master	jlam18@mail.sfsu.edu
Wesley Xu	Front-End Lead	wxu3@mail.sfsu.edu
Dinesh Thapa	Back-End Lead	dthapa@mail.sfsu.edu
Aviral Puri	Github Master/Front-End Developer	apuri2@mail.sfsu.edu
Chung Hei Fong	Front-End Developer	cfong7@mail.sfsu.edu
Kurt Resayo	Back-End Developer	kresayo@mail.sfsu.edu

9. Checklist

No.	Item	Status
1	All team members are engaged and attending ZOOM sessions when required	Done
2	The team found a time slot to meet outside of the class	Done
3	Back end, Front end leads, and Github master chosen	Done
4	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.	On Track
5	The team lead ensured that all team members read the final M1 and agreed/understood it before submission.	Done
6	Github organized as discussed in class (e.g., master branch, development branch, a folder for milestone documents, etc.)	Done