SW Engineering CSC648/848 Fall 2024

BRAIN BUFFS (Team 1)

Milestone 2 Part I

Team Members:

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Change History:

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1. Executive Summary

Brain Buffs is a tutoring website by SFSU students for SFSU students. We understand what students want, a simple to use website to quickly search for someone who has experienced and excelled at the course that they are currently having trouble with.

Our functions shall be to allow SFSU students to browse for tutors and make it easy to register as a student and/or a tutor on our website. Users shall be able to search for SFSU specific courses by subject and course number. Users shall be able to create booking requests using their name and school email to contact tutors. Tutors shall be able to make tutor posts about what courses they are available to tutor for, which shall require approval from website admins. Tutors shall be able to check their dashboards for booking requests sent by users. These functions are uniquely specialized for SFSU students, only students with SFSU emails will be able to register and all the classes available for tutoring will be SFSU curriculum.

Brain Buffs is made up of SFSU students, Shun Usami, Adharsh Thiagarajan, Devon Huang, Thiha Aung, and Kim Nguyen, all of whom understand the importance of community-led academic success. Our goal for this website is to foster academic growth and collaboration among peers.

2. List of main data items and entities

Defined Terms:

Guest

- Not Currently logged in.
- Can browse and **search** for tutors, it is not required to **login** for this feature.
- Can **login** or **register**.

User

- Represents anyone who has **registered** on the platform.
- Can be a student, a tutor, or both.
- Can create **booking requests**, browse and **search**.
- Can make a **Tutor posting** that would need to be approved by **Admin**.

Admin

- Manages and oversees the platform.
- Responsible for approving all **tutor postings** before they go live.
- Ensure that the platform's content is appropriate and compliant with the platform's policies.
- Can delete inappropriate **users** and **tutor postings**.
- Doesn't need **login**, manages through workbench.

- Can **ban** a user which will prevent them from logining in.

Tutor Posting

- Application process offered by a **user** who wants to be a tutor.
- applicants can advertise their subjects, services, rates, a detailed description of their offerings, a profile picture for the **tutor posting** (the picture will be a .jpeg image stored in a file system), and their CV(must be uploaded as a .pdf file).
- Are visible to **users** and **guests** searching for tutors and are subject to approval by the **admin**.

Booking Request

- Allows **users** to contact a tutor on the platform.
- Allow students to coordinate meetings.
- Is only seen privately by the tutor being requested.

Dashboard

- Interface for registered **users** (both tutors and students).
- Tutors can view their scheduled sessions, while students can track their **booking requests** with tutors.

Search

- This allows both unregistered and registered **users** to **search** for tutors based on tutor name, class subject, and rates.

Registration

- Enables **guests** to sign up for the platform, providing name and student email to create an account (this information is stored in the database).

Login

- A guest enters valid credentials (usually a student email and password) to access the platform as a **user**.
- After logging in, **users** gain full platform access and can interact with the site's features such as sending **booking requests** to tutors, viewing their **dashboard**, **searching** and browsing.
- Used by a pre-existing registered **user**.

Banned User

- Shall not **login**
- Can search and browse

Rating

- **User** can leave a 1-5 star rating for tutor

Data Items:

User

- email
- password
- name
- banned status
- create timestamp
- update timestamp

Tutor Posting

- creator (the user that is posting)
- profile picture (optional)
- CV (.pdf, optional)
- title
- subject name
- class number (SFSU specific class number)
- description
- pay rate
- create timestamp
- update timestamp

Booking Request

- sender's user id
- Tutor posting id
- content
- create timestamp
- update timestamp

Subject

- subject name

3. Functional Requirements

Priority 1

Guests

1. **Search Tutor Postings:** Guests shall be able to search tutor postings based on subjects, class names, professor names, tutor names, and ratings.
2. **Browse Tutor Postings:** Guests shall be able to browse and view the search results of tutor postings.
3. **Register:** Guests shall be able to register an account using their SFSU email and password.
4. **Login:** Guests shall be able to login using their SFSU email and password.

Users (Students and Tutors)

5. **Inherit Guests Capabilities:** Users shall be able to do what guests can do except Register and Login.
6. **Send Booking Request:** Users shall be able to send booking requests to tutor postings.
7. **Create Tutor Postings:** Users shall be able to create new tutor postings with subjects, availability, rates, custom descriptions, and a PDF document.
8. **Delete Tutor Postings:** Users shall be able to browse their own tutor postings and delete them.
9. **Browse booking requests:** Users shall be able to browse the booking requests sent to their tutor postings.

Admin

10. **Approve Tutor Postings:** Admins shall be required to review and approve created or edited tutor postings before they go live.
11. **Delete Inappropriate Users/Tutor Postings/Booking Requests:** Admins shall be able to delete users, tutor postings, and booking requests that violate platform policies.
12. **Ban Inappropriate Users:** Admins shall be able to ban users that violate platform policies so that banned users shall not be able to login.

Priority 2

Guests

No requirements

Users (Students and Tutors)

> 13. **Edit Tutor Postings:** Users shall be able to edit the existing tutor postings.
> 14. **Logout:** Users shall be able to log out from their account.
> 15. **View banned status:** Users shall be able to view their banned status if they are banned.

Admin

> No requirements

Priority 3

Guests

> No requirements

Users (Students and Tutors)

> 16. **Schedule Sessions:** Users shall be able to request sessions integrated into tutor profiles.
> 17. **Rate Tutors:** Users shall be able to leave ratings and reviews for tutor postings.
> 18. **Unregister:** Users shall be able to unregister their account.

Admin

> No requirements

4. UI Storyboards for each main use case

Case 1: Student Schedules a Tutoring Session:

Users shall be able to search for available tutors on the website based on SFSU-specific classes without the need to log in or register. For example, CSC 510 is the SFSU specific class to ensure

browsing class is exclusive for only the SFSU community.

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Brain Buffs About   ALL ▼ | CSC 510   🔍   Start Tutoring Login Register

Brain Buffs

The Tutoring website created by SFSU students,for SFSU students

Recent Posts

Dragon Petroleum

Recently
approved tutor
with good
qualifications,
excellent helping
students in CSC
510, CSC 415 …..

Users shall be able to see available tutors related to the course they are searching.

Brain Buffs About

ALL ▼ | CSC 510 🔍
CSC
MATH
PHYS
ECON

Start Tutoring   Login   Register

Available Tutors
Found 5 available

| | Robert Bien
Computer Science
★ ★ ★ ★

The Tutor as OS, web dev more…. | **Book** |

| | Dragon Petroleum
Computer Science
★ ★ ★ ★ ⌐

The Tutor as SWE, AI ethics more…. | **Book** |

| | Anthony Soup
Computer Science
★ ★ ★ ★ ⌐

The Tutor as Web dev, SW dev more…. | **Book** |

Users shall be able to click on the action button (<mark>book</mark>) under the specific tutor profile to send booking messages on our website.

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Brain Buffs About   CSC | CSC 510   🔍   Start Tutoring Login Register

Available Tutors
Found 5 available

Robert Bien
Computer Science

ok

Message to Robert

Make sure you provide contact….

Hi Robert,

my name is SU and I would like to schedule Tutoring booking for CSC 510. I want to prepare for my midterm which is next week. So, May I get tutoring appointment this week if possible. Please send confirmation to my email su@sfsu.edu

100/500

ok

Submit Request

ok

Case 2: Users create account and login to book tutoring sessions

Users shall be able register accounts and login on Brain Buffs to complete the booking sessions, manage their booking requests.

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Brain Buffs About   [ALL ▼ | CSC 510   🔍]   Start Tutoring Login Register

Welcome Back

| SFSU email |
| Password |
| Login |

Don't have an account? Register

Forgot your password?

Only users with SFSU.edu email addresses can register, ensuring the platform is exclusive to the SFSU community.

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Brain Buffs About | ALL ▼ | CSC 510   🔍 | Start Tutoring Login Register

Create an Account

Name
SFSU email *
Password*

Have an account? Login

Accept the terms and conditions   ☐

Submit

Case 3: User wants to become a Tutor on Brain Buffs

Faculty recommends students to use Brain Buffs for Tutoring Support and also encourages high-performing students to become tutors on Brain Buffs. Users shall be able to apply to become paid tutors on Brain Buffs within this page.

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Brain Buffs About   [ALL ▼ | CSC 510   🔍]   Start Tutoring Login Register

Wanna be a Tutor?

Subject ▼
Course#
Description
Pay Rate   *$ / hr*

Attach CV
Upload Profile Picture

May take up to 24 hours to approve

Submit

Case 4: Tutor Updates Availability and Manages Sessions

Once they are qualified, tutors shall be able to manage the booking requests. Once the tutor logs in to their accounts, it shows their dashboard page like this.

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Brain Buffs About   [ALL ▼ | CSC 510   🔍]   Dashboard   (D.P)

| Booking Request | Tutor Posts |

(S U)   Message: ~~~~~~~~~~~~~~~~~
                      ~~~~~~~~~~~~~~~~

(A.T)   Message: ~~~~~~~~~~~~~~~~~
                      ~~~~~~~~~~~~~~~~

Users shall be able to view their own tutor postings on their tutor dashboards.

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Brain Buffs About   ALL ▼ CSC 510   🔍   Dashboard   D.P

Booking Request | Tutor Posts

Computer Science

CSC 648 SWE   Pay rate/ hr
Description: ~~~~~~ $42.00   Delete

CSC 850 AI Ethics   Pay rate/ hr
Description: ~~~~~~ $42.00   Delete

Case 5: Student Manage their Booking Requests

Students can also manage their booking requests on their dashboards.

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Brain Buffs About

ALL ▼ CSC 510

Start Tutoring S. U

Booking Request | Session History

D. P

CSC 648 SWE

Description

Pay Rate/hr

$ 42.00

Cancel

Case 6: Student Provides Feedback and Rates Tutors

After a successful tutoring session, students can navigate to the session history and leave a review for the tutor.

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Brain Buffs About

ALL ▼ CSC 510

Start Tutoring S. U

Booking Request | Session History

M. L

CSC 415 OS

Description

Date & Time

Pay Rate/hr

$ 42.00

Rate Tutor

5. High level Architecture

a. DataBase Organization

user

- **PK** id
- email
- password
- name
- is_banned - status indicating if was banned by **admin**
- created_at
- updated_at

tutor_posting

- **PK** id
- **FK** user_id
- **FK** subject_id
- profile_picture_url - URL or file path (can be external storage like s3)
- cv_url - URL or file path (can be external storage like s3)
- class_number
- pay_rate
- description
- approved - status indicating if it was approved by **admin**
- created_at
- updated_at

booking_request

- **PK** id
- **FK** tutor_posting_id
- **FK** sender_id
- description
- created_at
- updated_at

subject

- **PK** id
- name

b. Media Storage
- Photos and media will be stored directly in the remote server

c. Search/filter architecture and implementation
- SQL precise search with %like search on text field e.g. subject + class number
- Filter will be a drop down selection of all/subjects

6. Key risks

1. Skills Risks
- **Risk**: Some team members may not have sufficient experience with the specific technologies and frameworks we are using, potentially leading to delays in development.
- **Plan**: Organize training sessions and workshops to upskill team members on necessary technologies. Additionally, consider pairing less experienced members with those who have more expertise for mentorship. Limit the project scope to a minimum viable set.

2. Schedule Risks
- **Risk**: Meeting the Milestone 2 deadline is challenging due to workload from other classes and limited development time.
- **Plan**: Prioritize tasks by focusing on critical features and use Agile sprints to track progress, ensuring key tasks are completed on time. Limit the project scope to a minimum viable set.

3. Teamwork Risks
- **Risk:** Communication gaps among team members may have led to misunderstandings regarding project responsibilities and expectations.
- **Plan:** Facilitate more on Discord and coordinate if there is a task and needs someone else to look over. Limit the project scope to a minimum viable set.

7. Project management

For Milestone 2 and future tasks, we transitioned from GitHub Issues to Trello for task management. The team lead creates task cards on Trello, assigns them based on team members' skills, and sets deadlines. Team members may break tasks into smaller subtasks as needed.

We use Trello boards structured into **Backlog**, **TODO**, **Doing**, **Code Review**, and **Done** to track progress. Regular check-ins help ensure tasks stay on schedule.
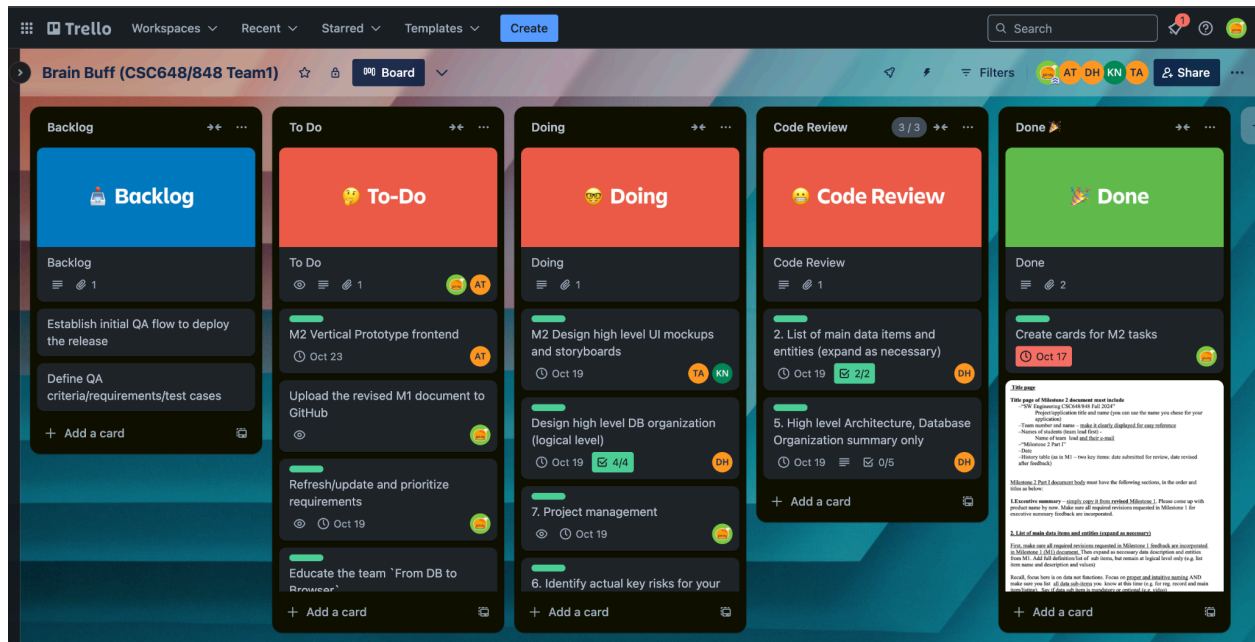
8. Use of GenAI Tools like ChatGPT and Copilot for Milestone 2

Tools being used:
- ChatGPT (Version 4)
- Figma

Tasks and Usefulness:

1. **Creating UI Mockups**
   - **Usefulness**: MEDIUM
   - While the main tool used was Figma, ChatGPT provided useful suggestions for structuring the **login and registration pages** by describing common UX patterns. This input helped streamline the wireframe creation process, focusing on usability and SFSU-specific requirements.
2. **Refining Functional Requirements**
   - **Usefulness**: HIGH
   - ChatGPT helped break down complex user stories into smaller, manageable requirements, particularly for **SFSU-specific search functionalities**. This ensured that the team captured all essential details while improving clarity and alignment with project goals.
3. **Identifying Key Risks**
   - **Usefulness**: MEDIUM

- ChatGPT was used to brainstorm potential risks for the project, such as **schedule slippage** and **integration challenges** between the front-end and back-end teams. This allowed the team to outline clear mitigation strategies and stay proactive in addressing these risks.

Key Examples and Prompts:

1. **Task: Brainstorming SFSU-specific features.**
   - **Prompt**: "Suggest features for a university-specific tutoring platform."
   - **Output**: "The platform could include features like filtering tutors by course or department, a built-in messaging system, and the ability to view tutor availability based on the university's class schedule."
2. **Task: Drafting an executive summary.**
   - **Prompt**: "Draft an executive summary for a tutoring web application targeting SFSU students."
   - **Output**: ChatGPT produced a clear and concise executive summary, highlighting the platform's unique features and its benefits for SFSU students.

Additional Insights:

- **Speed vs Accuracy**: While these tools significantly sped up the workflow, there was a need to thoroughly review and test the generated output, particularly for code snippets, to ensure they met the project's specific requirements.

9. Team Lead Checklist

So far all team members are fully engaged and attending team sessions when required	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	ON TRACK
Team reviewed suggested resources before drafting Milestone 2	DONE
Team lead checked Milestone 2 document for quality, completeness, formatting and compliance with instructions before the submission	DONE
Team lead ensured that all team members read the final Milestone 2 document and agree/understand it before submission	DONE
Team shared and discussed experience with genAI tools among themselves	DONE