STUDY MATCH

4/21/2018

Group name: 404 Not Found

Software Engineering (CSc 4350) - Spring 2018

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Index Page number

1. Problem Statement:

We want to bring studying, learning, and the idea of sharing knowledge to be as seamless as it is to meet people or even order food with the click of a button.
As students, we have dozens of options to serve us when it comes to our convenience. If we want food, UberEats, Grubhub, Postmates, all available at the quick download of an app. If we want to meet new people, we can go to a university event, we can go swiping through dating apps, we can ask people for help. But if someone wants to study, if someone needs help, if someone has questions they cannot find an answer to, it isn't as easy nor has the continuity. Because of this, thousands of students miss out on the opportunity to utilize the greatest tool we all have, each other.
Our system is built around the idea that students from our university can share together, study together, and grow together to help each out at an academic level.

2. Scheduling and Planning:

2.1 Outline Plan:

o What is the single most serious challenge you see in developing the product on schedule?

We may not have enough expertise to complete the coding on time.

o Write down 2+ risks you can foresee in completing this project (table below)

o Ways to avoid or lessen/ minimize the risks (table below)

2.2 Scheduling:

Risk	Affects	Description	Minimize Risks

Product Competition	Business	Most students make GroupMe in each of their classes, which allows them to reach out to the people in their class There are many large Facebook groups based at GSU (Book Exchange)	We need to make aggressive advertising for the site. We can also add a report function for when a study partner is using the site for reasons other than intended and ban the user if verified.
Programming Delay	Project	Not having enough time to program enough features and security measures necessary for this product.	Plan accordingly based on a tight schedule.
Size Underestimation	Project and Product	Underestimating the necessary size of the system, based on the number of users now and future.	Perform a school wide survey to get an approximation of how many students will be using the system.
Resources	Project	Having the capability to house this system in terms of servers or other required hardware.	Potential Solution: partner with a company or organization that has the bandwidth to maintain the system.

2.3 Scheduling

Task	Effort (person-days)	Duration (hours/or days/ etc)	Dependencies
1.Communicating on slack	5	hours per person	N/A
2.Meetings	5	50 hours per person	Task 1
3. Use Cases	5	4 hour per person	Task 2

4. Use Case Diagrams	2	8 hours per person	Task 3
5. Test Cases	5	8 hour per person	Task 2
6. Class Diagram	5	9 hours per person	Task 2
7. Sequence Diagram	5	8 hours per person	Task 6
8. System Design Diagram	5	8 hours per person	Task 7
9. Implement the System Design	5	10 hours per person	Task 8
10. System Testing	2	3 hour per person	Task 9
11. Test Documentation	2	2 hours per person	Task 10
12. Video	5	2 hours per person	Task 1-11
13. Video Editing	1	20 hours per person	Task 12

3. Tools

1. Slack, Github and Google Doc.

4. Requirements Analysis

1. Use Cases

- **Identifier:1**
- **Iteration: 1**
- **Summary: GSU email sign up and verification**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User signs up for an account to use the system**
    2. **System sends verification email**
    3. **User verifies GSU email via system-generated email**
- **Alternative Paths: None**
- **Exception Paths:**

  1. User enters non-GSU email.

  2. User can't reuse the email.

- **Extension Points: User is allowed to create new account**
- **Trigger: User is in need of study community within GSU**
- **Assumptions: User is a GSU student**
- **Precondition: User must have a valid GSU email**
- **Postcondition: User requirements are sufficient to create account**
- **Author: All**
- **Date: 02/14/2018 (Revised: 3/5/2018)**

- **Identifier: 2**
- **Iteration: 1**
- **Summary: Create new account and create password**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User directed to log in creator page after successful verification.**
    2. **User prompted to create password; Password must be at least 8 characters long and must include at least one special character.**
    3. **User proceeds to login**
- **Alternative Paths: If user enters invalid password, system prompts user to try again**
- **Exception Paths:**
  1. User enters password that does not meet the requirements

- **Extension Points: User is allowed to create account**
- **Trigger: User clicks on verification link to bring them to account creation page**
- **Assumptions: Username is panther email address**
- **Precondition: Student has verified their GSU email successfully**
- **Postcondition: User requirements are sufficient to create account**
- **Author: All**
- **Date: 02/14/2018; (Revised 3/5/2018)**

- **Identifier: 3**
- **Iteration: 1**
- **Summary: User redirected to web page home screen**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User enters email and password**
    2. **User logs in**
- **Alternative Paths: User doesn't log in/forgot password**
- **Exception Paths: Wrong username, wrong password**
- **Extension Points: User accesses system database**
- **Trigger: User has credentials to log in**
- **Assumptions: User has successfully registered to use the system (see identifier 2)**
- **Precondition: User has successfully created login credentials to access system**
- **Postcondition: User can search for partner(s) needing help in similar areas**
- **Author: All**
- **Date: 02/17/2018 (Revised: 3/5/2018)**

- **Identifier: 4**
- **Iteration: 1**
- **Summary: User creates personal profile**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User directed to profile creation page**
    2. **User enters personal details (Name, Age, Sex)**
    3. **User is required to enter major, classes, type of student (undergrad vs grad, further classification optional)**
- **Alternative Paths: User doesn't enter information**
- **Exception Paths: User enters invalid classes or major**
- **Extension Points: User allowed to move on toward searching for study partner(s) and/or post and discuss their questions and topic on the discussion board**
- **Trigger: User logs in for the first time**
- **Assumptions: User has created an account**
- **Precondition: User has a valid account (see identifier 3)**
- **Postcondition: User can search for study partner(s)**
- **Author: All**
- **Date: 02/17/2018; (Revised 3/5/2018)**

- **Identifier: 5**
- **Iteration: 1**
- **Summary: User is now able to search for potential study partner(in person or online)**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User can access search option from home screen**
    2. **User can filter based on major, course, student type**
    3. **List of potential matches based on filter parameters and their profile is provided to User**
- **Alternative Paths: User can search for discussion boards**
- **Exception Paths: User is not accepted by any potential matches**
- **Extension Points: User can then set up a study time and place**
- **Trigger: User is in search of academic help**
- **Assumptions: User is looking for a tutor, study partner, or study guides after creating an account**
- **Precondition: User has created and built their profile, and is looking for academic assistance or is interested in providing academic assistance**
- **Postcondition: User can now collaborate with their study match however best fits their needs, online or in person**
- **Author: All**
- **Date: 02/19/2018 (Revised: 3/5/2018)**

- **Identifier: 6**
- **Iteration: 1**
- **Summary: Discussion board feature is available to users to post their questions or discussion topics**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User have the option of utilizing the discussion board feature to post more specific questions or discuss matters pertaining to their classes**
    2. **User can utilize the "New Post" option**
    3. **When creating a new thread, user must enter a subject and message**
    4. **User must select relevant class for filtering purposes**
- **Alternative Paths: Users can exercise Online chat or pursue study match in person**
- **Exception Paths: None**
- **Extension Points: Another user can respond to the original post.**
- **Trigger: User has a specific question or would like to openly dis*-cuss something pertaining to their question.**
- **Assumptions: User would like academic help from their peers**
- **Precondition: User has created and built their profile, and is looking for academic assistance or is interested in providing academic assistance**
- **Postcondition: Users will get a response to their thread from other users**
- **Author: All**
- **Date: 3/6/2018, (Revised: 3/7/2018)**

- **Identifier: 7**
- **Iteration: 1**
- **Summary: Users can read and respond to a post in the discussion board**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **User can read other users' post containing topic or question**
    2. **User can utilize the "Reply" option**
    3. **Reply is posted underneath original post**
- **Alternative Paths: Users can exercise Online chat or pursue study match in person**
- **Exception Paths: None**
- **Extension Points: Original user or other readers can rate the answer**
- **Trigger: User has a response or answer to a specific question or topic**
- **Assumptions: User would like to provide academic help to their peer**
- **Precondition: User has created and built their profile, and is interested in providing academic assistance**
- **Postcondition: User's' comment will be posted as a response and potentially get rated**
- **Author: All**
- **Date: 3/6/2018, (Revised: 3/7/2018)**

- **Identifier: 8**
- **Iteration: 1**

- **Summary: The original poster can mark the original post as solved**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **Original poster(User) reads the responses on his thread**
    2. **User can mark the response solved if they are content with an answer**
- **Alternative Paths: Original poster(User) does not mark any responses "Answered"**
- **Exception Paths: None**
- **Extension Points: None**
- **Trigger: User searching for answer to their thread**
- **Assumptions: User would like to receive an answer to their thread**
- **Precondition: User has created a thread**
- **Postcondition: Thread is marked "Answered"**
- **Author: All**
- **Date: 03/06/2018, Revised: (3/7/2018)**

- **Identifier: 9**
- **Iteration: 1**
- **Summary: Users can rate a thread with a "Thumbs up" or "Thumbs down"**
- **Actors: User, Database**
- **Basic Course of Events:**
    1. **Users read threads and comments**
    2. **User can rate the threads and comments with a thumbs up or thumbs down**
- **Alternative Paths: User can comment or leave thread**
- **Exception Paths: None**
- **Extension Points: None**
- **Trigger: User is in search for academic help**
- **Assumptions: User has some knowledge over the subject matter**
- **Precondition: User browsing through threads**
- **Postcondition: Comment is rated "Thumbs up" or "Thumbs down"**
- **Author: All**
- **Date: 03/06/2018, (Revised: 3/7/2018)**

4.2 Test Cases

1) <u>Sign Up and Verification</u>

Description:	**Ensures that a valid GSU student can sign up.**
Test Inputs:	**GSU email to verify.**
Expected Results:	**Verification email is sent to the GSU email.**
Dependencies:	**None**

Test Steps

1. **Form values are not left blank.**
2. **Entered email ends with student.gsu.edu**
3. **Password is valid.**
4. **Verify that the retrieved email doesn't already exist in database.**
5. **Send verification email.**
6. **Confirm sign up.**
7. **Save user into Users database.**

Owner: **All team members (Revised: 3/7/18)**

2) Create Account

Description: **User will be allowed to enter study match website.**

Test Inputs: **GSU email and password.**

Expected Results: **User will enter initial home page and password will be stored in database.**

Dependencies: **Sign up and verification step**

Test Steps:

1. **Enter login page**
2. **Set password**
3. **Password will be stored in database.**
4. **User succeed to login**

Owner: **All team members (Revised: 3/7/18)**

3) Login

Description: **Ensures that only registered student can access the system.**

Test Inputs: **GSU email and password.**

Expected Results: **User is allowed an access to the system.**

Dependencies: **User need to create account.**

Initialization: **Users database is loaded.**

Test Steps

1. **No fields are left empty.**
2. **Entered email and password exists in database.**
3. **User is redirect to the system.**

Owner: **All team members (Revised: 3/7/18)**

4) Create Personal Profile

Description: **User will create their profiles in order to communicate**

Test Inputs: **Name, Major, Classes, approximate available time, type of student (undergrad or grad)**

Expected Results: **User profile information will be saved into database.**

Dependencies: **User log in.**

Test Steps:

1. **Fill in username, major, classes, student type(undergrad or grad)available time.**
2. **Profile information is saved in database.**
3. **Users have personal profile.**

Owner: **All team members (Revised: 3/7/18)**

5) Search Study Partner

Description: **Users will search their potential study partner for study**

Test Inputs: **Major, course, approximate available time, rate, level, location and student type.**

Expected Results: **User will find their study partner based on their searching conditions.**

Dependencies: **User's profile**

Test Steps:

1. **Select conditions**
2. **Search study partner**
3. **System will show potential study colleague**
4. **User will accept recommend or deny**

Owner: **All team members (Revised: 3/7/18)**

6) Posting on discussion board

Description: **Users can user discussion board instead of studying in person**

Test Inputs: **posting**

Expected Results: **Users can use discussion board to post to ask about their study questions.**

Dependencies: **Create personal profile**

Test Steps:

1. **User post their question on the discussion board**
2. **Database will records questions.**

Owner: **All team members (Revised: 3/7/18)**

7) Answer

Description: **Users can respond to a past discussion board after they read**

Test Inputs: **comments**

Expected Results: **Users can share their studying and respond on the discussion board**

Dependencies: **discussion board**

Test Steps:

1. **Users read the post that is related to their studying**
2. **Users would respond**
3. **Database records will keep in the future for other users**

Owner: **All team members (Revised: 3/7/18)**

8) Mark

Description: **Users can mark the original posters**

Test Inputs: **Mark**

Expected Results: **Users can mark the original poster if they are content with an answer**

Dependencies: **Respond**

Test Steps:

1. **Original Poster(Users) read the response on their thread**
2. **Users can mark it as solved**
3. **Database will keep marked threads**

Owner: **All team members (Revised: 3/7/18)**

9) Rate

Description: **Users can rate thread with "Thumbs up" and "Thumbs down"**

Test Inputs: **"Thumbs up" and "Thumbs down"**

Expected Results: **Users will rate people who joined study match or comments, and the rate will be shown on their profile.**

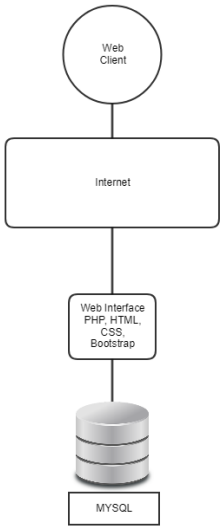
Dependencies: **Chat and Discussion board**

Test Steps:

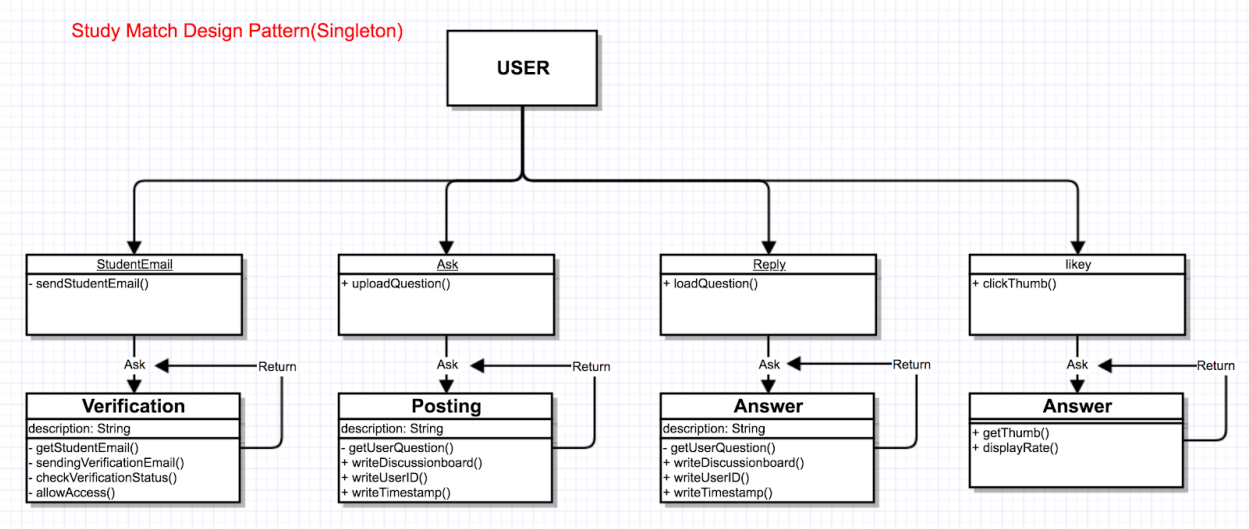
1. **Users rate posting by "thumbs up" or "thumbs down"**
2. **The result will be stored in database.**
3. **Database records will be kept in the future.**

Owner: **All team members (Revised: 3/7/18)**

5. Architecture



6. Design



7. Implementation

https://github.com/mmomin12/SE-Project

8. Testing

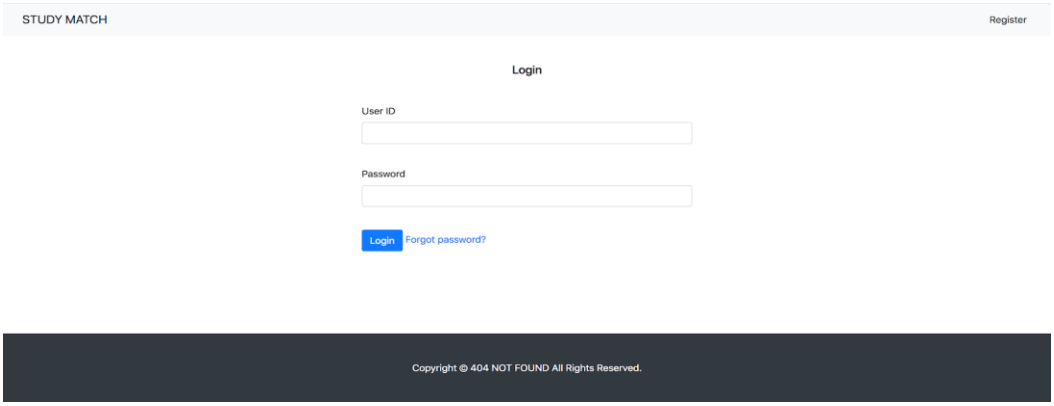
Manual testing

Bug Description	How did we found the bug	How did we fixed the bug
Confirmation Email Not Send	User did not receive the verification email	Changed phpmailer() STMP code
User Profile Information Does Not Store In DataBase	After clicking the submit button Data Was not sent in to database	We found the variable that was misspelled and changed the variable name to the correct one
Confirmation link in the email did not work	Verification link would not activate the account.	Wrong link was sent to the email. We fixed by sending the right link

a) Deployment:

o User's Guide:

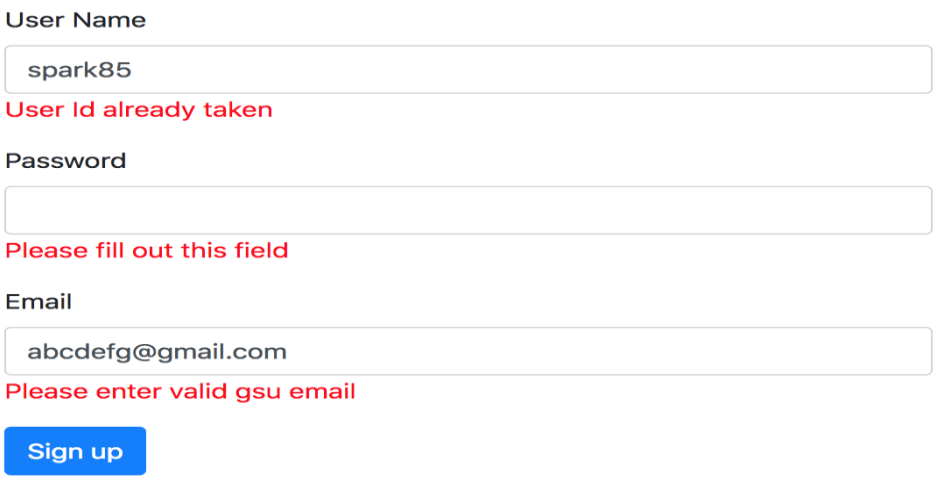
1. Enter http://www.gsustudymatch.com/



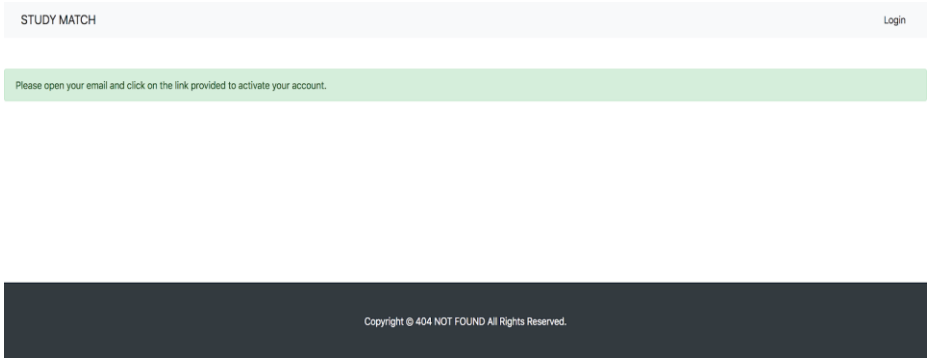
2. If you do not have account, click the register

3. Fill the all requirement. User Email should be end up with student.gsu.edu

4. If ID is already existed or email does not end up with "@student.gsu.edu" user will get error message



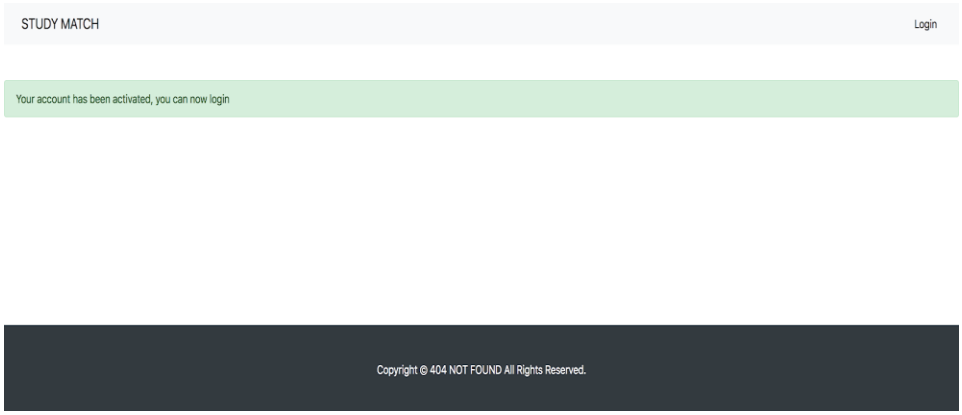
5. If user fill the form out completely, user can see this message.



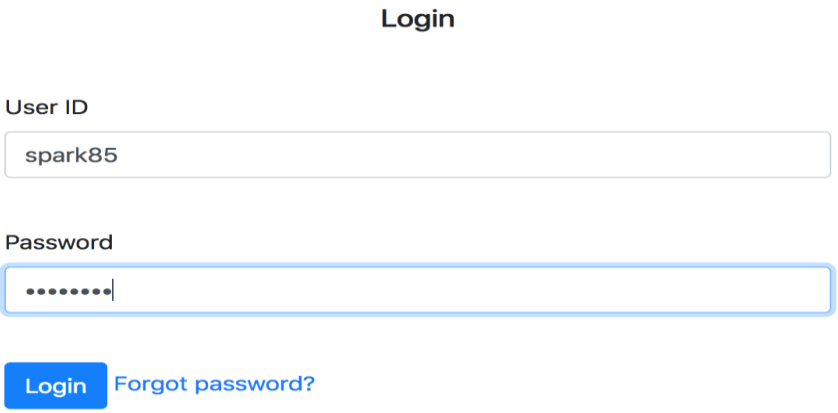
6. After registrating, study match system will send verification email.

Click the “Verify Now”

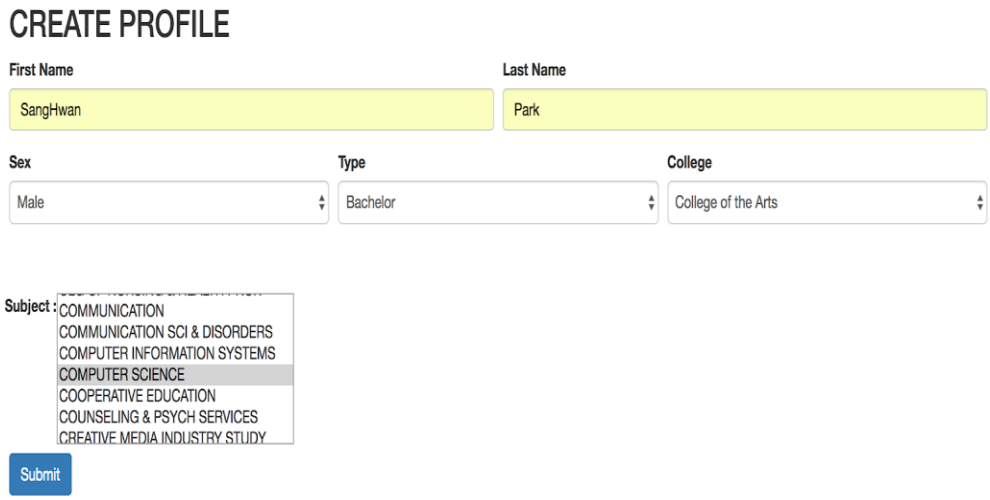
7. If user’s verification is succeeded, user can see this message



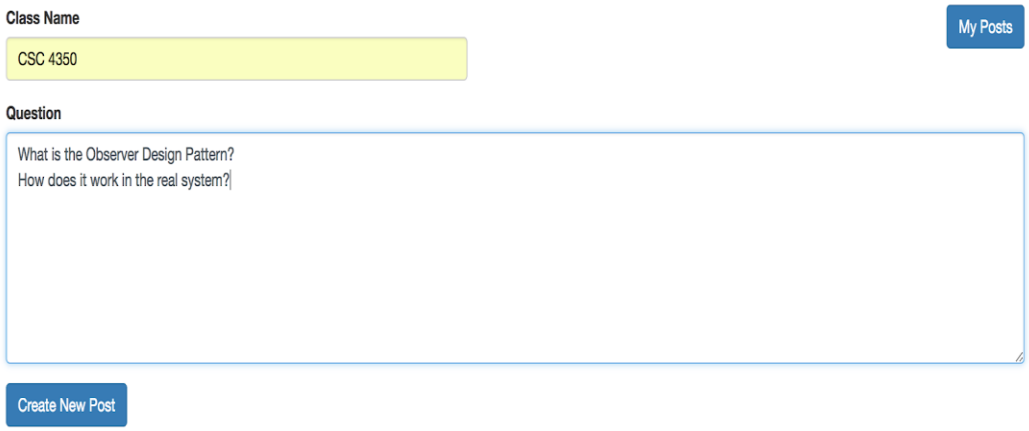
8. Login



9. Create User Profile



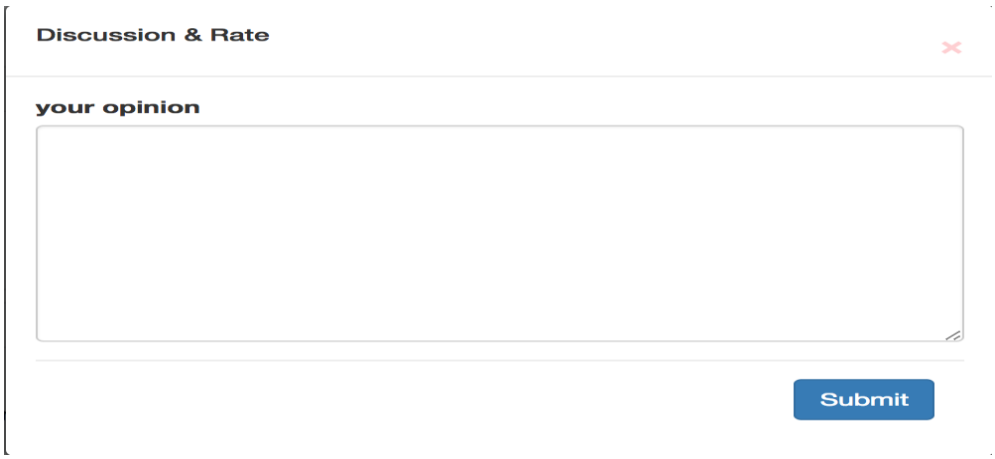
10. Write class name and queries and Click create new post button



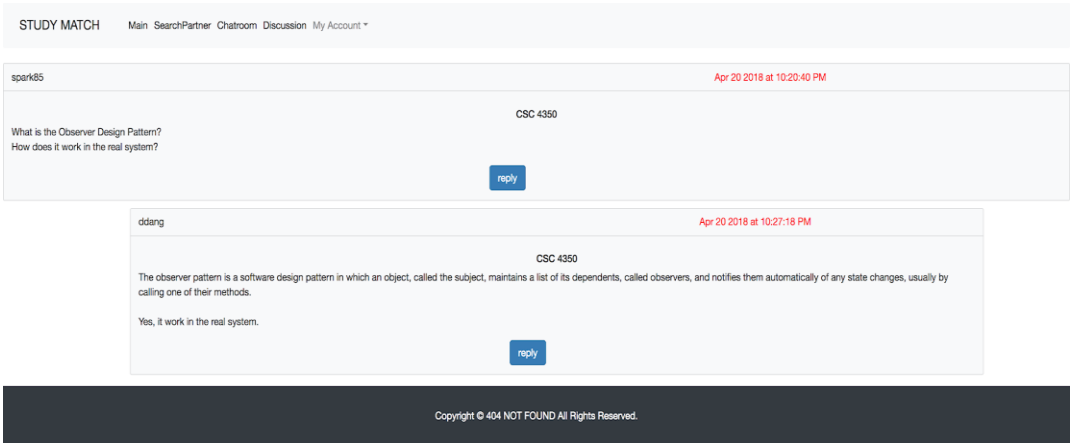
11. User can check their post.

12. User can answer the question(Click the answer button then click reply button)

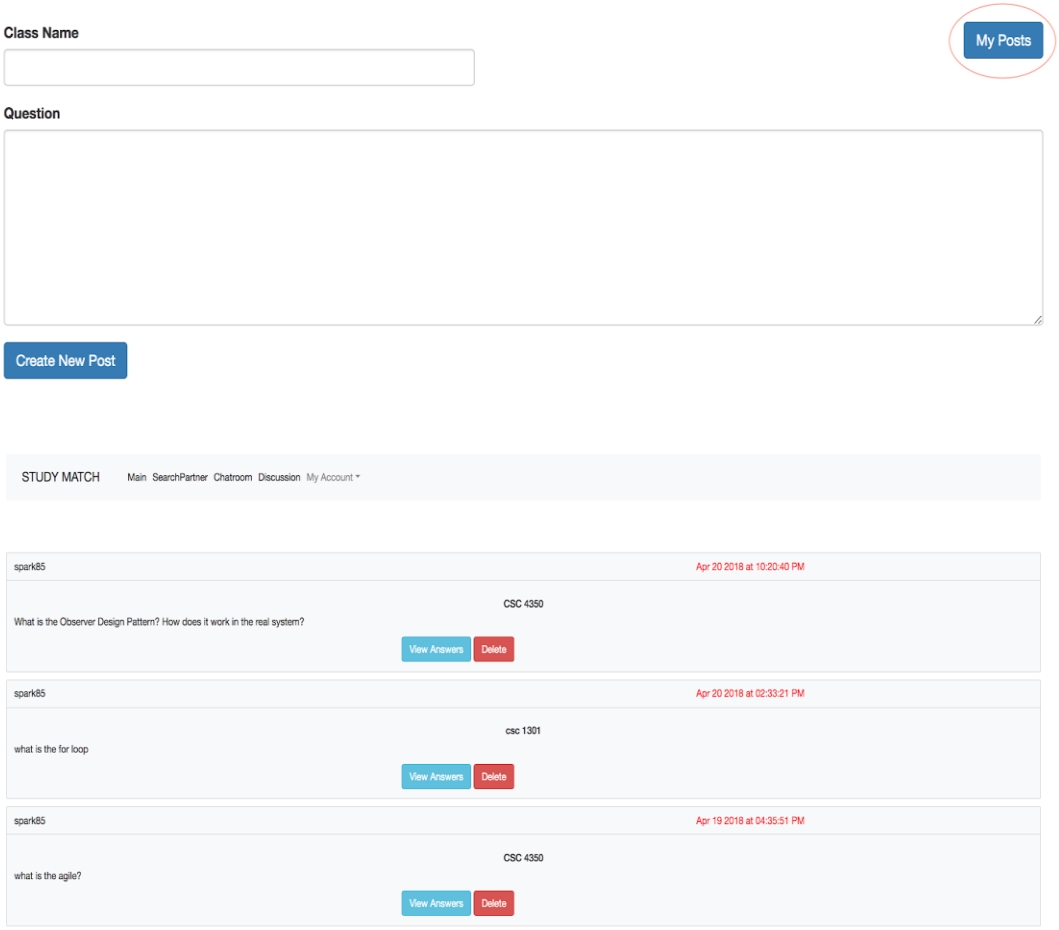
    Write the answer then click the submit button.



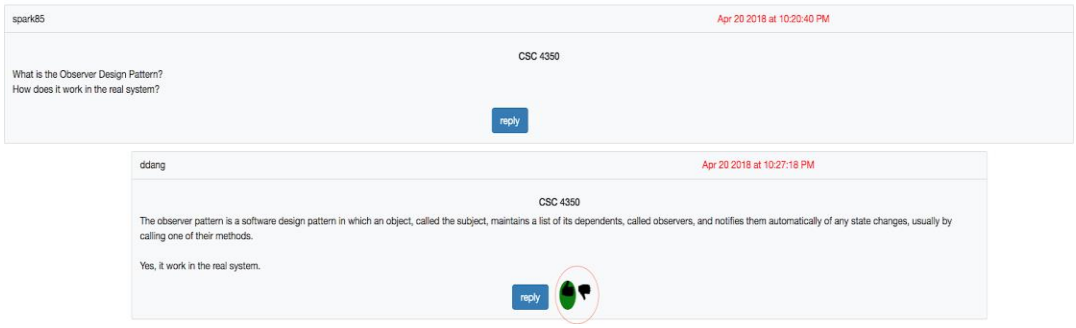
13. Poster can check his/her posts



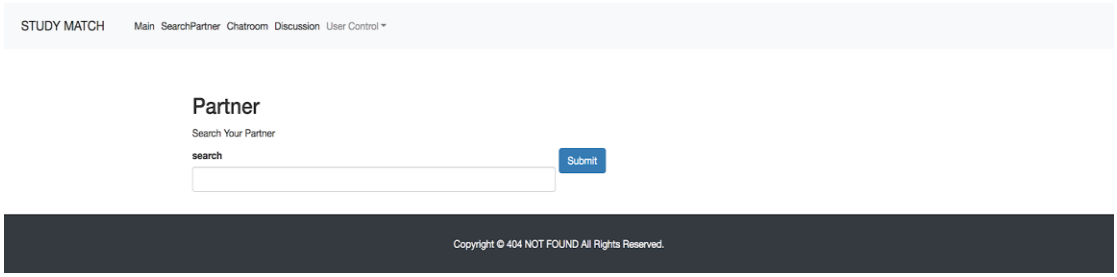
14. User can check their own posts(click My Posts)



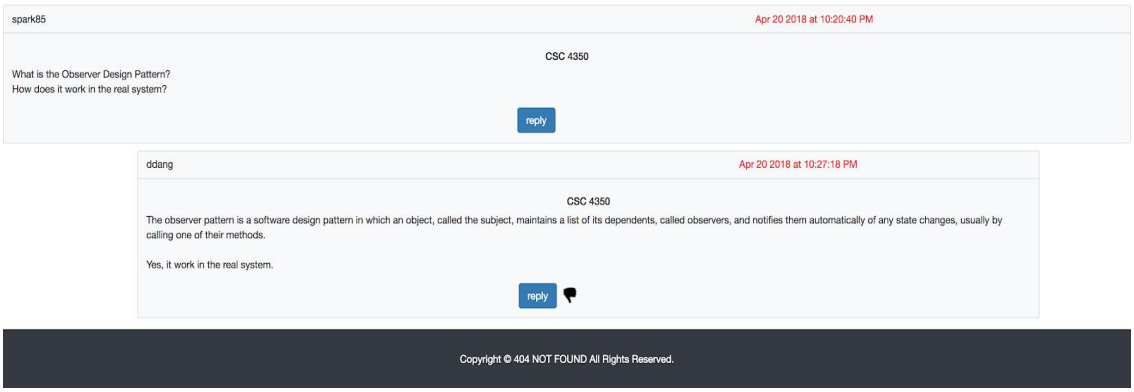
16. User can rate others answer(click the view answer button → click thumbs up or down)



17. User can search study partner based on their profile(we have not completed this function)



18. Other user can see the answer, but they can not rate.



b) Self-Reflection on your Project

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- **- Discussion of how well the project agrees with its original goal**
- We originally wanted create a website to help other students find a study partner whether the partner is in the same class as the student or not. As students ourselves, we understand how difficult it can be to find someone to study with and when we found one, we know how valuable it can be. This is the primary reason we came up with this project idea. There are many other services on the internet that provide this same service, but we could not find one that specifically targeting GSU students. Our project current state is obviously a work in progress, but we feel that we have met the majority of the original goal we set out to do has been accomplished. We have discussed completing and polishing the website as well as the possibility of creating a mobile app version.
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- **- What went well and what went wrong in planning and scheduling in terms of effort and time estimations?**
- Planning had both its positives and negatives. For this group things picked up in a slow pace mainly because our first choice, as a team it might've been effective, but we were highly encouraged to veer another way. Because we had picked a topic later than most groups we underestimated the time it would require in order to stay ahead of the assignments. During this time, it was difficult for everyone to get their schedules on the same page.
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- As time got closer and assignments required more time, planning went well and the team did well in meeting 2-3 times a week for minimum of 3 hours a night. As the assignments and coding required more time, meetings were critical so everyone would do their parts for the early deadline.

- **- How GitHub and Slack help in managing the project?**
- GitHub became our number one source in order for the team to keep all our files up to date and if anyone needed to look for something, it would be accessible from there. Having started communicating through WhatsApp, Slack became a new feature that of us were unfamiliar. Once we all got the hang of it, it was very beneficial for the team's communication.
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- **- What type of development process would you have chosen?**
- We would have chosen the Agile model with emphasis on Scrum because of we ended up meeting twice a week almost every week to finish the assignments and discuss our plans. If we do incremental design and implementation of the website in smaller increments, it will likely be easier and the final product would had been better.
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- **- Would you think the requirement would have been better understood had a prototype approach been chosen, why and why not?**
- It would not have made a significant difference in the understanding of the requirements. This is due to the fact that ours is a website, which evolves, as any website does at every stage. It is

difficult to prototype a website when you are designing and coding for it. Any stage of deployment of any feature is essentially a 'prototype'.

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- - **An analysis of the design:**

o Any changes that would improve the design?

As we have learned in class, requirement engineering is very important step before we get to the design phase. If we were to do our project again, we would focus much more on the requirements part. We would be as specific as possible and create our use and test cases to correctly align with the requirements. The class and sequence diagrams would in turn helps the implementation and testing succeed.

o **Would you use the same design if you were doing the project again?**

We would use the same design again if we were to do the project again. We believe our design is good for this project based on what we learned in class. The class and sequence diagrams portray the interactions of the object we have outline in the use cases. We had a little difficulty with the implementation due to inexperience with php and time management.

o **Would you use test-driven development as a design technique or not and why? Read this:** https://msdn.microsoft.com/en-us/library/aa730844(v=vs.80).aspx

If we adopt a test-driven development as a design technique and create a test suite for each user case, the planning and design would have been much easier. The implementation phase would go much smoother because we would be able to immediately and automatically test whether our codes are correct or not.

- An analysis of the suitability of the language/technology environment (IDE) for such a system, including a discussion of how the language/technology helped or hindered the project

The main goal for this project is to create a web-base application to help other students find a study partner. PHP is the best language when it comes to websites. We have chosen to use NotePad++ because at the time of implementation, the software has what we need to do the codings with its tabbed feature and color coded text. Unfortunately, not many of us know php very well so the language barrier has slowed our progress quite a bit. We had to scale back the chatroom and partial search features due to inexperience with the language and not having enough time. If we were to do this project again, we would still choose php because it simply is the best choice for web-base application, but we would use a more developed IDE to aid use like Eclipse. We would also have much more experience with the language and would be able to implement other features that we wanted to do.

c) Revise, complete, and include your documents from A1, A2, A3, A4, A5, A6, and A7.

o Based on the feedback and the additional topics covered in class, you are to revise, refine, complete and include your problem statement, requirements, system modeling, system design **(**architectural design, class diagram, sequence diagram), implementation, testing, deployment, Self-Reflection on your Project, and Appendix with A7. o Make sure that the whole report is a one report: