

Software Requirements Specification: $F=MA$

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II. Executive Summary

One of the biggest problems affecting college students today relate to their mental health and feeling supported during their degree. Students who come from underrepresented majors such as physics, chemistry, math, etc. can feel as if they are alone in their endeavors and have no one to sympathize with them. In an effort to solve this problem, F=MA is the first social media platform designed to support college students' mental health as well as provide mentorship for them in their respective careers and majors. Some of the key features to help combat this is a mode much like instagram where students from different schools can connect and make posts relating to their research or academics. Students will also have a chance to send requests to mentors to learn about future careers, graduate school etc. Lastly students will be able to post questions or comments on a forum and start conversations amongst their fellow peers with respect to their majors. All of this is to build a community amongst students so they do not feel alone in their endeavors anymore.

III. System Request

Project Sponsor

The F=MA team is a private company that will be working to create the app. The primary contact for the project will be the entire team of F=MA as we will be collectively working on producing a well-formed application for college students and their mentors. There will also be surveys conducted with the users of the F=MA, most importantly from college students, to receive their input to see how the team of F=MA can better the functions of the system.

Business Need

The reason prompting the project for F=MA is surrounded by the biggest problems that college students face today with mental health problems stemming from their academic studies. Another major problem that prompts the reason for starting this project is the imposter syndrome that college students face as well. These two problems are felt at an exaggerated level for college students from small universities who are in majors with less students. They can feel very isolated going through their degree as if it is just them who are having these difficulties. F=MA is the solution to the problems that students face relating to their studies and the effect that has on their mental health, which will be designed as a social media platform for students giving them an opportunity to interact with students and mentors from different schools. The variables in F=MA represent; F for friends, M for Mentors and A for Allies. On F=MA we will be providing a safe space for students to express their hardships and feelings towards their collegiate experiences all while being able to connect to others from different schools who may be going through the same experiences.

Business Requirements

F=MA being a social media platform but one that focuses on the mental health of college students will have to have different capabilities than typical social media apps. Both Mentors and Students should be able to create an account, login to the app with their created account and edit their profile through the settings of the app. F=MA should provide the capability of connecting students to mentors who will be able to support them best to better their mental health and relationship they have with themselves in terms of positive self-talk and not feeling the affects of the imposter syndrome. The system should also be able to connect students to students, to provide fluidity amongst the feelings of students and give them the opportunity to create relationships that they may not be able to at their own institutions. F=MA can also pair students in close distance from different institutions, so they have the opportunity to not only make the connection but also meet each other in person, which can be a systems preference based on the input of students and the experience they wish to have.

Business Value

With F=MA being pursued as a social media platform for college students, there should be an

expectation of high value being outputted from the platform. With a platform for college students to feel a sense of security and mentorship, as an organization there should be an expectation of positive feedback because of the resources that F=MA will be providing for the students. The mentors and Allies will also have a positive experience being that they have the opportunity to provide mentorship and understanding for the students that are willing to be vulnerable about their academic experiences and their feelings towards their academic experiences.

Special Issues or Constraints

Considering F=MA is a project that is being pursued as a semester-long project and a part of the StartUp competition, there is only a short period of time that we have to start and work on the project. The final presentation is on December 15, 2021 so there is a little under 2 months to have a final draft of F=MA to audition at the StartUp showcase.

IV. Feasibility Analysis

Operational Feasibility

In building this platform, we will be in constant contact with the students and colleges that will be using this system. We will be creating surveys before we begin development to make sure that the needs of the students are met. As far as how we will market this system we are not sure yet. We do not know if we will market it to the colleges and universities, who will then sign up and allow their students to join the network, or we will let students sign up on their own. Each of these options has its pros and cons and comes with its own risks. For example, if we market it to the university by saying this system will lower your dropout rate, saving you money in the future, we will be able to make more money than just individual students paying a set price for the system. One drawback to this however is that it is harder to change the sayings of a university to convince them that they need this platform, than it is to change the mind of a student to convince them to use this system. These questions we will obtain clarity on with time as we survey students and universities.

Additionally, our team has some experience with the pain point of this business idea, so we will be drawing from personal experience when designing features of the app. For example, Nick is a physics major and has dealt with first hand the feeling of isolation that comes with having a major that has very few people in it. Nonetheless, we will be able to make a platform that the user will enjoy from both the first-hand experience of our team and the surveys that will be issued to the community.

Financial Feasibility

Some foreseeable development costs are in creating and maintaining a safe and efficient database that should store student information as well as mentor information. Initially, this number may range anywhere from \$1,000 to \$10,000 if we require professional consultation and maintenance¹. There will also be vendor installation costs once the system is ready for deployment, however, this value is yet to be determined. If we choose to use a private surveying online service, then the survey cost may range anywhere from \$192.00 to \$1,428.00 annually.² After the system is deployed, we predict there to be operational costs due to software maintenance and updates. There will also be licensing fees that provide the customer with the product's support, maintenance and updates.

In addition, it is estimated that colleges lose up to \$16.5 billion due to issues of poor social fit, mental health, and academic disqualification in students.³ Through our app, college students will create a community of students with similar interests and college struggles. Through partnered mentorship, students may find college easier to navigate which will improve their confidence and overall mental health. These intangible benefits will most likely lead to a decrease in the number of college drop-outs which will improve colleges' loss of revenue in yearly tuition. It is reasonable to believe that by improving on said issues through our app, both colleges and students will benefit, thus leading to tangible benefits in the long run. One immediate tangible benefit will be seen in the revenue earned from app download and/or annual subscriptions. The method from which revenue will be generated from our app is yet to be determined. We plan to revise this method after analyzing our potential user feedback through our surveys.

Technical Feasibility

We recognize that with a project like ours there come many risks in technical feasibility. For example, do we know the functional area enough to make a quality system that the users will want to use. Nick, our team leader, is a physic major along with a computer science major so he has a very good idea for what other students may want from a product like ours. This limits the risk that can come with lack of familiarity in the functional area. He has witnessed both from his own experience, and from his physics major peers, the struggles that come with that degree. As a result, we as a team will have a good idea of what are the most necessary features required for a successful launch of our system.

¹ CostOwl.com, "How Much Does a Database Design Service Cost?," *CostOwl.com*. [Online]. Available: <https://www.costowl.com/b2b/design-services-database-cost.html>. [Accessed: 13-Oct-2021].

² SurveyMonkey, "Choose a plan that works for you," *SurveyMonkey.com*. [Online]. Available: https://www.surveymonkey.com/pricing/individual/?ut_source=pricing-teams-details#buy-targeted-responses. [Accessed: 13-Oct-2021].

³ Hanson, Melanie. "College Dropout Rates" *EducationData.org*. [Online]. Available: <https://educationdata.org/college-dropout-rates> [Accessed: 14-September-2021]

With regard to familiarity with technology, our whole team has worked with building a website from scratch using HTML, CSS, and Javascript. Additionally, Nick has experience designing iOS applications using XCode and Swift. We are not sure of what platform we will use to host our system, whether we use a website or a mobile application, but we have the necessary skills regardless to make a quality software. (This decision of which to use will come when we survey prospective users in the coming weeks).

Lastly, larger projects by nature pose larger risks in development. Therefore we have devised a plan to implement small features of this project in succession. For example, our system has the larger goal to create forums for many different majors that are separate but have the same functionality. However, based on our experiences as a team, we have decided to design the first version of this system for physics majors, expanding to more majors with updates to the app. But it is this proof of concept we are designing that is much smaller than the whole goal which will be easier to manage. When we are successful with implementing this, we will expand to the different majors, creating the same system for them.

V. Requirements Definition (functional and non functional)

Functional Requirements:

I. Creating an Account

- Upon opening the app, the app will provide its users with 3 options: Enroll University, Login or Sign-Up. Buttons will allow the user to choose between the three options.
- Through Sign-Up, the app will display the 'Sign-Up' page with menu entry boxes for college email address, first name, and last name.
- Assuming that the user wants to create an account, he/she will be prompted to enter a unique college email address (.edu), first name and last name.
- The system will run a verification to confirm that the user has a subscription under their University: Yes, Displays message that an email was sent for account verification. No, displays an error message.
- In the 'Yes' case, the email will provide the user with a temporary 8-digit code that needs to be entered in the application to proceed to the next screen.
- Once the user is authenticated, an account settings page will be displayed in which the user will be able finalize their account by providing an additional email address for account recovery and notifications.
- The user will then have the option to enter his/her college name and year to personalize his/her account.
- This would complete the registration process for either student or college mentor.

II. Logging Into An Existing Account

- Upon opening the app, the app will provide its users with 3 options: Enroll University, Login or Sign-Up. Buttons will allow the user to choose between the three options.
- Through Login, the app will display the 'Login' page with the menu entry boxes for username and password.
- Assuming that the user has an existing account, he/she will be prompted to enter his/her credentials to proceed into the next page ('Home' Page) and access to their account information.
- For security purposes, there will be a 5 failed attempt limit on trying to enter the correct credentials.
- In the case where the user exceeds the failed attempts, the account login screen will display a message that the account is locked for the next 20 minutes.
- Concurrently, an email will be sent to the current email holder to notify them that someone attempted to enter into his/her account.
- At any time when the time blockage is not active, the app will provide options to the user for an account recovery. This is an option for when the user forgot his/her credentials and was denied access to his/her account.

III. Account Recovery

- Upon clicking on "Forgot Username/ Password " the app will redirect the user to another page where he/she will be prompted for the recovery email address.
- If an account is associated with the information provided, then an email will be sent to the provided email with a 5-digit verification code.
- The screen will prompt for a verification code to authenticate the user.
- If the user wants to recover his/her username, then the current username will be shared with the chosen email address.
- If the user needs to reset his/her password, then the menu will require the user to enter a new password twice for confirmation purposes.
- An email will be sent to the user via the recovery email that their account credentials have been successfully changed.

IV. Update My Account

- At the bottom of the 'Home' page, there will be a 'Profile' icon that will redirect the user to their profile information. Another icon within that page ('My Account') will display the user's account information.

- A button titled 'Update Account Info.' will allow the user to update his/her account information.
- This page will show fields of information with 'edit' buttons next to each one.
- The user will enter new information and hit "continue and confirm" to finalize the changes.

V. Delete an Account

- From the 'Home' page, the user will have to click through My Profile> My Account> Update Info. to find the 'Delete Account' option located on the bottom of the page.
- Upon clicking, the user will be prompted with a message urging the permanent deletion of the account.
- Finally, the "continue and confirm" button will finalize the deletion and a notification message will appear letting the user know that the account has been closed and deleted.
- A final goodbye message will be sent via email to the user to express our gratitude for using F=MA and our encouragement to return.

VI. Connecting with Friends

- From the home screen, the user can click on the icon 'Search' located at the bottom taskbar of the screen that will display a list of current users.
- There should be filter options underneath the search tab that will allow the user to filter out potential friends from mentors.
- An alternative would be to enter and search for a person's name or username to request a friend connection.
- The filter options will also help the user to find friends with similar interests such as majors, minors, or hobbies.
- A 'Connect' button under each of the users' profiles will allow the user to send a friend request.
- The request will be sent to the targeted user to notify him/her of a potential connection. If the targeted user accepts said invitation, then both users will have each other's online profile saved to their friendship list.

VII. Connecting with Mentors

- From the home screen, the user can click on the icon 'Search' located at the bottom taskbar of the screen that will display a randomized list of current users.

- The filter options within the search page will allow the users to search specifically for qualified mentors in their fields.
- The (student) user will be able to view a list of mentors with expertise on certain topics such as research and internship opportunities, academic aid, career counseling, and more.
- Similar to connecting with friends, the user may click on the ‘Connect’ button within each mentors’ profile to request a connection.
- The ‘Connect’ page will allow students to extend a greeting to the mentor by sending a “hello” message and short description about what help the student wants to obtain from the mentor. This is in the form of a text-based message.
- The limit for each message is 300 words.
- By clicking on the ‘Send’ button, the message will be finalized and sent to the mentor.
- A notification will then be sent via the app to the student and the user notifying them of the communication log that has begun between both parties.
- If the mentor accepts the connection and responds to the message, another notification will be sent to the student via the app to notify him/her of the most recent activity.
- This process will be the central means of communication between student and mentor on the mobile app.

Nonfunctional Requirements

General non-functional requirements

- I. Security
 - A. All passwords that are created for a user will need to contain at least one number, one special character and one capital letter.
 - B. All the information provided from the user will be stored in an encrypted and secure database
 - C. Login to the app every time it is opened
 - D. Password must be changed every 6 months
 - E. Users must create security questions. They will then be asked to answer these questions whenever they need to change their password
 - F. If there is suspicious activity on an account, like a new device login, they account will be locked out, requiring the user to confirm the account via email.
- II. Usability
 - A. Any time the user wants to reset their password, they are sent an email to change it.
 - B. All post captions will be limited to 250 characters.
 - C. All posts or comments will be limited to 1500 characters.
- III. Reusability

- A. Platform to be made for physics majors but similar environments will be added with the same functionality for other majors.
 - B. Each major's F=MA will be separate but equal in the sense that you are limited to connect with those in your major but it has all the same functionalities
- IV. Maintainability
 - A. Users will be able to report any bugs or glitches with the application.
 - B. Users will also be able to report any new features they would like to see.
 - C. Clear documentation will be kept for developers to stay organized
 - D. Code and architecture metrics will be tracked to tend to issues that may occur and to make improvements immediately
- V. Capacity
 - A. All posts will be limited to 1500 characters while captions are limited to 250.
 - B. For each post, the application will allow square posts to have a size of 1080px by 1080 px at a 1:1 aspect ratio
 - C. Landscape images will have a size of 1080px by 566px at a 1.91:1 aspect ratio and vertical images will have a size of 1080px by 1350 px at a 4:5 aspect ratio.

Non-functional requirements by use case

I. Creating an account

- To prevent any impersonation and ensure a secure account creation, All the information provided from the user will be stored in an encrypted and secure database. This includes all emails, birthdays, security questions and other things that are personal to each user.
- All passwords that are created for a user will need to contain at least one number, one special character and one capital letter. This will help ensure a more secure experience.
- Everything stored in the database will be encrypted, and only accessible by the user.

II. Logging into account

- Anytime a new device logs into the account, the application will send an email to the user, asking the user if they were the one logging in.
 - User confirms login: the user will be allowed into their account, no other precautions will be taken.
 - User does not confirm login: The account will be “locked down”
- Anytime there is suspicious activity in the account, the account will be “locked down” A lockdown means that the account will be inaccessible. All of the user's information in the database will be unavailable.

- A lockdown can only be lifted if the user confirms their account with the email sent to the user's email. The user must also change their password if there is suspicious activity.

III. Forgot username/password

- If the user clicks the forgot username/password button, they will be sent another verification email by the application. This email will have a link that can verify the user's email. They will need to answer a security question that they provided when they made their account.

IV. Making a post

- Each post or comment will be limited to 250 characters for a caption.
- Each post or comment will also be limited to 1500 characters in the body text. Both of these limitations make it easier for someone browsing posts to find what they are looking for.
- For each post, the application will allow square posts to have a size of 1080px by 1080 px at a 1:1 aspect ratio.
- For landscape posts, the application will allow a size of 1080px by 566px at a 1.91:1 aspect ratio.
- Lastly, vertical images will have a size of 1080px by 1350 px at a 4:5 aspect ratio.

VI. Model Driven Architecture

VII. Functional Model

Use case 1 - Registration of New Student

Use Case Name: Registration of New Student		ID: 1	Importance Level: High
Primary Actor: New Student	Use Case Type: Detail, essential		
Stakeholders and Interests: New Student - wants to create an account			
Brief Description: This use case describes how a new student goes about creating an account to use on our system.			
Trigger: On the login page of the app, upon the systems first opening since download, the student will click, “Student Login”			

Type: external
<p>Relationships:</p> <p>Association: New Student</p> <p>Include:</p> <p>Extend: Update Student Information</p> <p>Generalization: Manage Student Information</p>
<p>Normal Flow of Events:</p> <ol style="list-style-type: none"> 1. The student, upon opening the app for the first time, is greeted with the login screen. Buttons such as Student Login, Mentor Login, Student Signup, Mentor Signup, and Change Password are displayed. 2. The student being a new user will hit the button for “Student Signup” 3. They will be prompted to enter a .edu email to verify that they are a student. <ol style="list-style-type: none"> a. If the email is from a university that is subscribed <ol style="list-style-type: none"> i. A temporary pin will be sent to the entered email address for verification purposes. 4. The Student will also enter another email, this one need not be .edu. This one will be used for recovery purposes only. 5. They will also enter the temporary pin along with their actual password, and pick a custom username attached to their profile. 6. Students will now have a chance to customize their account. <ol style="list-style-type: none"> a. If the student desires to enter a profile picture <ol style="list-style-type: none"> i. S-1 subflow is performed b. If the student desires to write a short biography <ol style="list-style-type: none"> i. S-2 subflow is performed
<p>SubFlows:</p> <p>S-1:Enter profile picture</p> <ol style="list-style-type: none"> 1. Student will tap on the setting button in the corner of the screen to edit profile 2. The app will allow for permission to access the camera and photo library of the phone. 3. After giving permissions, the new student can choose a picture from their camera role 4. After clicking save, the picture will be the desired one selected by the student <p>S-2 Enter biography</p> <ol style="list-style-type: none"> 1. Students will tapping on the settings button to edit their profile 2. Student will have at most 200 characters to write a short description detailing information about them 3. After tapping “Save” the desired biography will be displayed on the profile
<p>Alternate/Exceptional Flows:</p>

Use case 2 - Registration of New Mentor

Use Case Name: Registration for New Mentor		ID: 2	Importance Level: High
Primary Actor: New Mentor	Use Case Type: Detail, Essential		
Stakeholders and Interests: New Mentor- wants to register an account			
Brief Description: This use case describes how a new mentor would create an account to use within our system			
Trigger: On the log-in page of the app, the mentor will select “Mentor Sign Up” and making sure to indicate the fact that they are a mentor Type: external			
Relationships: Association: New Mentor Include: Extend: Update Mentor Information Generalization:			
Normal Flow of Events: <div><div>1. The mentor, upon opening the app for the first time, is greeted with the login screen. The buttons that are displayed on the Login screen are as follows, Student Login, Mentor Login, Student Signup, Mentor Signup.</div><div>2. The mentor being a new user will select the “Mentor Signup”</div><div>3. They will be prompted to use an email to create their account<div>a. A temporary pin will be sent to the entered email address for verification purposes</div></div><div>4. The mentor will use the temporary pin to create their actual password and pick a custom username that will be attached to their profile</div><div>5. The Mentor will now have a chance to customize their account<div>a. If the mentor desires to enter a profile picture<div>i. S-1 is performed</div></div><div>b. If the mentor desires to write a short biography<div>i. S-2 is performed</div></div></div></div>			
SubFlows: <div><div>S-1:Enter profile picture<div>5. Mentor will tap on the setting button in the corner of the screen to edit profile</div><div>6. The app will allow for permission to access the camera and photo library of the phone.</div><div>7. After giving permissions, the new student can choose a picture from their camera roll</div><div>8. After clicking save, the picture will be the desired one selected by the Mentor</div></div><div>S-2 Enter biography<div>4. Mentor will tap on the settings button to edit their profile</div><div>5. Mentor will have at most 200 characters to write a short description detailing information about them</div><div>6. After tapping “Save” the desired biography will be displayed on the profile</div></div></div>			

Alternate/Exceptional Flows:

Use case 3 - Making Post

Use Case Name: Making a post		ID: 3	Importance Level: Medium
Primary Actor: Student	Use Case Type: Detail and essential		
Stakeholders and Interests: Student - wants to make a new post, which includes a picture and caption, and be able to edit this at a later date Other students - want to be able to view and react to the post Mentor - want to be able to view and react to the post			
Brief Description: This use case describes how students can make, edit, and delete posts. Posts for this purpose consist of a picture and a caption.			
Trigger: Student taps the “Make Post” button from their account homepage Type: external			
Relationships: Association: Student, mentor Include: Post Extend: Update Student Account Information Generalization:			
Normal Flow of Events: 1. From the student account homepage will tap on the “Add Post” button 2. The student, if they did not already grant permission for access to camera and photo library will be prompted to do so. 3. They will select a picture to post from their photo library or will take a picture at that moment using the phone’s camera 4. After the picture is selected, the student will be able to write a short caption, no word or character limit. 5. Student will tap on “Confirm Post” and the post will be live 6. If the student wishes to make an edit to the post a. S-1 subflow is performed 7. If the student wishes to delete the post at a later date a. S-2 subflow is performed			

SubFlows: <p>S-1: Edit Post</p> <ol style="list-style-type: none"> 1. The student will click on the post that they wish to edit. 2. Upon tapping on the post, the student will tap on “Edit” 3. The student will then be brought to a similar screen to the one they made the post with and be able to change the photo and edit the caption <p>S-2: Delete Post</p> <ol style="list-style-type: none"> 1. The student will click the post that they wish to delete. 2. Upon tapping on the post, the student will tap the “Delete” button 3. Student will be asked to confirm this post being deleted 4. When this is clicked, the post is forever deleted
Alternate/Exceptional Flows:

Use case 4 - Commenting on a Post

Use Case Name: Commenting on a post		ID: 4	Importance Level: Low
Primary Actor: Student	Use Case Type: Detail and Essential		
Stakeholders and Interests: Student making the comment- wants to make a comment on a post of another student Student who owns the post - wants to be able to view the comment of the other student			
Brief Description: This use case describes how a student can add a comment onto another students post and how the receiving student can view that comment and respond to that comment			
Trigger: Student sees a post that they are interested in commenting on and types a response to comment on it Type: external			
Relationships: Association: Student Include: Comment, Post Extend: Making a Post Generalization:			
Normal Flow of Events: 1. The student will scroll on their feed of posts 2. If the student sees a post that they want to write a comment on they will tap on “Write a Comment” 3. They will then type out their response and hit “Enter” to make it public. This will make it viewable to the public and most importantly to the student who owns the post. 4. If the student then wishes to delete the comment at a later date a. S-1 Sublow is performed			

SubFlows:	
S-1: Delete comment <ol style="list-style-type: none"> 1. The student will find their comment and hold down on their comment which will prompt them to delete it. 2. Once this is confirmed, the comment is deleted forever. 	
Alternate/Exceptional Flows:	

Use case 5 - Viewing Students Posts

Use Case Name: Viewing Student Posts		ID: 5	Importance Level: Medium
Primary Actor: Student	Use Case Type: Detail and Essential		
Stakeholders and Interests: Student: Read other students' posts to get ideas for another post or to answer it themselves.			
Brief Description: This use case describes how a student can view another student's post or view comments on one of their own posts.			
Trigger: Student clicks on the “Student Posts” button on the student homepage Type: External			
Relationships: <div>Association: Student</div> <div>Include: Commenting on a post, Post</div> <div>Extend:</div> <div>Generalization:</div>			
Normal Flow of Events: <div>1. The Student, after logging into their account will go to the student homepage.</div> <div>2. The student will then click the button at the top of the screen reading “posts”</div> <div>3. This will bring the Student to a list of posts made by Students that they are friends with, sorted most recently by default</div> <div>4. From here the student can click on the side of the screen to “View My Posts”<div>a. S-1 subflow is performed</div></div>			
SubFlows: S-1: View previous posts from the student			

1. The student will click on the button that reads “View My Posts”
2. They will be shown a list of posts the student has previously made.
3. If a previous post has comments on it made by other students, the button that says “comments” under the post will be colored blue and be bolded.
4. The student can then view comments made on their post from other students
 - a. S-2 subflow is performed

S-2: View comments on previous posts

1. Posts that have a comments them will have a bolded and blue colored “comments” button
2. By clicking the “comments” button, the student will be shown the most recent comments made on their posts.
3. The student has the option to reply to these comments by making another comment
 - a. Use Case: “**Commenting on Post**” is performed

Alternate/Exceptional Flows:

Use case 6 - Connect with friends/adding friends

Use Case Name: Connecting with friends/Adding friends		ID: 6	Importance Level: High
Primary Actor: Student	Use Case Type: Detail, Essential		
Stakeholders and Interests: Student requesting a friend - wants to find other students (friends) that have similar interests etc. Student accepting friend - wants to be able to review that student who is making a friend request, seeing their information, interests, etc and accept or reject that friend			
Brief Description: This use case describes how we allow students to connect with each other on this platform, by allowing students to either search for friends, providing recommendations for friends, and then finally allowing the other student to accept or reject that student			
Trigger: Student searches for and requests a friend. The other student must then accept this request. Type: External			
Relationships: <div>Association: Students Include: Student with whom primary actor is connecting Extend: Update Student Information Generalization:</div>			

Normal Flow of Events:

1. The Student enters the “Search Module”
2. If the student knows the name of another student they want to add
 - a. Follow subflow S-1
3. If the student does not know another student to follow, suggestions will be made available. This will use a ML algorithm to list people that have common interests as the Primary Actor Student and find people similar to existing followers.
 - a. Follow Subflow S-2
4. The student can also search for students based on criteria, and suggestions will be provided for the Student to connect with those friends. Some criteria are grade, college, research interests, classes they are enrolled in, etc.
5. If the student wishes to remove a friend
 - a. Subflow S-3 is performed

SubFlows:

S-1:Directly adding someone by username

1. The Student will type into the search bar to search for the individual with whom they want to add
2. Autocomplete will show the profiles that are the closest to the typed in response
3. The student will tap on the profile of interest and tap on “Request Friend”
4. This will send a request to the other student who will then need to accept or reject the request
5. Perform the use-case Update Student Information to reflect this change

S-2: Finding people from friend suggestions

1. From the recommended profiles, the Student will tap on profiles they are interested in.
2. If the Student wants to add them as a friend, tap “Request Friend”
3. This will send a request to the other student who will then need to accept or reject the request
4. Perform the use-case Update Student Information to reflect this change

S-3: Removing a friend

1. Search for the profile that you want to remove as a friend in the search screen
2. Tap “Remove Friend”
3. Tap “Confirm” when asked if you are sure
4. Perform the use-case Update Student Information to reflect this change

Alternate/Exceptional Flows:

Use case 7 - Asking a question on the forum

Use Case Name: Asking a question on the forum		ID: 7	Importance Level: High
Primary Actor: Student	Use Case Type: Detail, Essential		

Stakeholders and Interests: Student: Selects a category and submits a question related to that category they have selected	
Brief Description: This use case describes how a question is asked on the forum. A student would be prompted to select a category in which they have a question about. Then they could post a question which would then open up a discussion where other students and also mentors could respond giving answers, advice, or tips and tricks to help answer that student's inquiry.	
Trigger: Student posts questions. Other students and mentors can respond to that post directly Type: External	
Relationships: Association: Student Include: forum Extend: Generalization:	
Normal Flow of Events: <ol style="list-style-type: none"> 1. The student enters the discussion module 2. The student could then select a general category about what their question is about (homework, life advice, etc) <ol style="list-style-type: none"> a. If the Student finds the necessary category of interest S-1 Subflow is performed b. If the student cannot find an appropriate category, S-2 Subflow is performed 3. Students would then post their question 4. Post would be added to discussion board and other students and mentors can respond 	
SubFlows: S-1: Selecting Categories for Discussion <ol style="list-style-type: none"> 1. Students can select what category they feel that their question falls under 2. Students would then be redirected to the discussion pages for said category where they would find similar questions S-2: Create category for discussion <ol style="list-style-type: none"> 1. Student will create a new category to write a response with 2. Student will then be the first to write a discussion under the category they just created 	
Alternate/Exceptional Flows:	

Use case 8 - Connect student with mentor

Use Case Name: Connecting Student with mentor		ID: 8	Importance Level: High
Primary Actor: Student	Use Case Type: Detail, Essential		

<p>Stakeholders and Interests:</p> <p>Student - wants to search for and connect with a mentor</p> <p>Mentor - wants to find students to mentor and accept or reject student requests</p>	
<p>Brief Description: This use case describes how students will connect with mentors, and how mentors can find students to connect with.</p>	
<p>Trigger: Student searches for mentor or requests to unmatched with the mentor.</p> <p>Type: external</p>	
<p>Relationships:</p> <p>Association: Student</p> <p>Include:</p> <p>Extend: Update Student Information</p> <p>Generalization:</p>	
<p>Normal Flow of Events:</p> <ol style="list-style-type: none"> 1. The student will go to the search screen and then toggle to “Search Mentors” 2. If the student knows the mentor by name <ol style="list-style-type: none"> a. The S-1 subflow is performed 3. If the student wants to search broadly based on category <ol style="list-style-type: none"> a. The S-2 subflow is performed 4. If the student wishes to unmatched from a mentor <ol style="list-style-type: none"> a. The S-3 subflow is performed 	
<p>SubFlows:</p> <p>S-1: Searching for mentors by name</p> <ol style="list-style-type: none"> 1. The Student types in the name of the mentor and from the text input suggestions for profiles with similar names come up. 2. The student taps on the profile of the mentor they want to connect with and tap “Request” 3. This ends a request notification to the mentor and can either accept or reject the request 4. Perform the use-case Update Student Information to reflect this change 5. Perform the use-case Update Mentor Information to reflect this change <p>S-2: Searching for mentor based on criteria</p> <ol style="list-style-type: none"> 1. The Student will be prompted with a survey with questions that they will fill in by checking boxes. <ol style="list-style-type: none"> a. Some of the questions are: research specialization, institution they work, graduate school attended, location, years of experience, etc 2. Based on these questions, the system will provide a list of the mentors in the database who best fit the qualification that the Student entered. 3. The Student can then request mentors from the suggested ones. 4. Perform the use-case Update Student Information to reflect this change 5. Perform the use-case Update Mentor Information to reflect this change <p>S-3: Removing mentor</p> <ol style="list-style-type: none"> 1. Search for the profile that you want to remove as a mentor in the search screen 	

<ol style="list-style-type: none"> 2. Tap “Remove Mentor” 3. Tap “Confirm” when asked if you are sure 4. Perform the use-case Update Student Information to reflect this change 5. Perform the use-case Update Mentor Information to reflect this change
Alternate/Exceptional Flows:

Use case 9 - Adding response to a question on the forum

Use Case Name: Adding response to a question		ID: 9	Importance Level: Medium
Primary Actor: Student, Mentor	Use Case Type: Detail, Essential		
Stakeholders and Interests: Student: wants to answer question asked by student on the forum Mentors: wants to answer questions that may need professional help			
Brief Description: This use case describes how students and mentors can respond to discussion questions posted by their fellow students.			
Trigger: Students and mentors answer discussion questions Type: External			
Relationships: <div>Association: Student, Mentor Include: Forum Extend: Generalization: Answering a post</div>			
Normal Flow of Events: <div>1. Student or mentor will enter the discussion part of the system, introducing them to a feed of recent forum questions. The Student or mentor can also just query in a search bar for keywords of recent posts if they do not want to just answer some recent questions. 2. Mentors and Students will select a discussion prompt they wish to answer a. Follow S-1 3. Students who posted the post would be notified that they have received a response a. Follow S-2</div>			
SubFlows: <div>S-1: Adding an answer to a discussion prompt 1. Users would be able to add a response to a question</div>			

<ol style="list-style-type: none"> If a mentor responds, their response will have first priority when viewing the entire discussion post <p>S-2: Notification to a student that their post has received a response</p> <ol style="list-style-type: none"> Students would receive an email that there is a response for them to read <ol style="list-style-type: none"> The email will specify if it was a student or a mentor response The email will be sent to the email that is on file The students can also opt to mute notifications for this post
Alternate/Exceptional Flows:

Use case 10 - Login once you have account

Use Case Name: Login once you have an account		ID: 10	Importance Level: High
Primary Actor: Student	Use Case Type: Detail, Essential		
Stakeholders and Interests: Student - A student will fill in the login information requirements and then proceed to their account information once their information is validated. Mentor - Similar to a student’s use of the login field and button, a mentor will need to enter their login information to access his/her account.			
Brief Description: <div>This use case helps to understand how a user with an account will need to enter his/her credentials to access their account.</div>			
Trigger: Clicking on Login Button Type: External			
Relationships: <div>Association: Current User - Student Include: Extend: Generalization: Entering login credentials</div>			
Normal Flow of Events: <div>1. A current user arrives at the login screen of F=MA. 2. Current user enters his/her email address that was associated with his/her account during registration.</div>			

<ul style="list-style-type: none"> a. S-3 is performed as an alternative <p>3. Current user enters his/her password that was associated with his/her account during registration.</p> <ul style="list-style-type: none"> a. S-4 is performed as an alternative <p>4. Current user clicks on the login button, which will trigger the php and MySQL programs to validate the user's credentials.</p> <ul style="list-style-type: none"> a. S-1 and S-2 are performed
<p>SubFlows:</p> <p>S-1: If the information is valid, then the user proceeds to the next page/screen and has access to his/her account.</p> <p>S-2: If the information is not valid or no information is entered, then the user is notified that the information entered was incorrect.</p> <p>S-3: If the user forgot his/her email address, then another button is displayed for retrieving the current email address that is associated with the account.</p> <p>Execute forgot user email use case.</p> <p>S-4: If the user forgot his/her password, then another button is displayed for retrieving the current password that is associated with the account.</p> <p>Execute forgot password use case.</p>
<p>Alternate/Exceptional Flows:</p>

Use case 11 - Delete Account

Use Case Name: Delete Account		ID 11	Importance Level Low
Primary Actor: Student	Use Case Type: Detail, Essential		
Stakeholders and Interests: Student - wants to delete their account			
Brief Description: This use case describes how we allow the student to delete their account			
Trigger: Student clicks on “Delete Account” in settings Type: External			

Relationships:	Association: Student Include: Extend: Update Student Information Generalization:
Normal Flow of Events:	<ol style="list-style-type: none"> 1) The Student will go onto their profile page in the application 2) The Student will click on “Settings” in the top of the screen 3) The Student will scroll to the bottom of the options and click “Delete Account” 4) This will send a email confirmation to the email assigned to that student at sign-in which the student will need to view to confirm they want their account deleted <ol style="list-style-type: none"> a) If the Student does not confirm via the email that they want their account deleted, it will remain active
SubFlows:	
Alternate/Exceptional Flows:	

Use case 12 - Change Password

Use Case Name: Change Password	ID 12	Importance Level High
Primary Actor: Student	Use Case Type: Detail, Essential	
Stakeholders and Interests: Student - wants to change their password for security reasons		
Brief Description: This use case describes how a student will be able to change their password from the original one they set for their account during sign-up.		
Trigger: Hitting “Change Password” in settings Type: External		

Relationships:		Association: Student
		Include:
		Extend: Manage student account
		Generalization:
Normal Flow of Events:		
<ol style="list-style-type: none"> 1) The Student will go onto their profile page in the application 2) The Student will click on “Settings” in the top of the screen 3) Inside of “Settings” the Student will hit “Change Password” 4) The Student must then insert their current password that is active for their account <ol style="list-style-type: none"> a) On the backend, the system will verify that this is a correct password for that account 5) If the password is correct <ol style="list-style-type: none"> a) SubFlow S-1 is followed 6) If the password is incorrect <ol style="list-style-type: none"> a) Subflow S-2 is followed 		
SubFlows:		
<p>S-1: Change Password</p> <ol style="list-style-type: none"> 1. The student will type their new password which they want to use 2. The system will check that it follows the correct characters (At least 8 characters, a number and a special character(!@#\$%&*)) 3. If the password is a valid password <ol style="list-style-type: none"> a. The student will then need to retype that password b. If that password is correctly retyped, the database is updated for the student’s new password <p>S-2: Retype Current Password</p> <ol style="list-style-type: none"> 1. The student gets another chance to type in the password and will then type it in again 2. If the password is now correct <ol style="list-style-type: none"> a. Follow Subflow S-2 		
Alternate/Exceptional Flows:		

Use Case 13 - Update Student Information

Use Case Name: Update Student Information		ID 13	Importance Level High
Primary Actor: Student	Use Case Type: Detail, Essential		

Stakeholders and Interests:

Student - has to be able to make updates to their information

Brief Description:

This use case describes how when a change is made to any property that is related to the student account, password change, profile picture change, email change etc how this modification is made to the student account

Trigger: Other use cases that trigger this

Type: External

Relationships:

Association: Student

Include:

Extend:

Generalization:

Normal Flow of Events:

1. If the student email is changed
 - a. Follow S-1 Subflow
2. If the student recovery email is changed
 - a. Follow S-2 Subflow
3. If the student password is changed
 - a. Follow S-3 Subflow
4. If the student profile picture is changed
 - a. Follow S-4 subflow
5. If the student changes their profile caption
 - a. Follow S-5 Subflow
6. If the student makes a post
 - a. Follow S-6 Subflow

SubFlows:

S-1: Update Email

1. Update the student email in the database

S-2: Update recovery email

1. Update the student recovery email in the database

S-3: Update Password

1. Update the student password in the database

S-4: Update profile picture

1. Update student profile picture in the database
2. Display new profile picture for the students profile page

S-5: Update Bio Caption

1. Update the student profile caption in the database
2. Display the new information for the students profile

S-6: Update Students post

1. Update the students posts in the database

2. Display post in feed
Alternate/Exceptional Flows:

Use case 14 - Update Mentor Information

Use Case Name: Update Mentor Information		ID 14	Importance Level High
Primary Actor: Mentor	Use Case Type: Detail, Essential		
Stakeholders and Interests: Mentor - has to be able to make updates to their information			
Brief Description: This use case describes how when a change is made to any property that is related to the student account, password change, profile picture change, email change etc how this modification is made to the student account			
Trigger: Other use cases that trigger this Type: External			
Relationships: Association: Mentor Include: Extend: Generalization:			
Normal Flow of Events: 1. If the student email is changed a. Follow S-1 Subflow 2. If the student recovery email is changed a. Follow S-2 Subflow 3. If the student password is changed a. Follow S-3 Subflow 4. If the student profile picture is changed a. Follow S-4 subflow			

5. If the student changes their profile caption <ul style="list-style-type: none"> a. Follow S-5 Subflow 6. If the student makes a post <ul style="list-style-type: none"> a. Follow S-6 Subflow
SubFlows: <ul style="list-style-type: none"> S-1: Update Email <ul style="list-style-type: none"> 1. Update the mentor email in the database S-2: Update recovery email <ul style="list-style-type: none"> 1. Update the mentor recovery email in the database S-3: Update Password <ul style="list-style-type: none"> 1. Update the mentor password in the database S-4: Update profile picture <ul style="list-style-type: none"> 1. Update mentor profile picture in the database 2. Display new profile picture for the mentor profile page S-5: Update Bio Caption <ul style="list-style-type: none"> 1. Update the mentor profile caption in the database 2. Display the new information for the mentor profile S-6: Update mentor post <ul style="list-style-type: none"> 1. Update the mentor posts in the database 2. Display post in feed
Alternate/Exceptional Flows:

Use Case 15 - Changing Email

Use Case Name: Changing Email		ID 15	Importance Level
Primary Actor: Student	Use Case Type: Detail, Essential		
Stakeholders and Interests: Student wants to change the password associated with the account due to that email being inactive, or the student is entering a new school with a new email.			
Brief Description: This use case describes how a student will change the email that is associated with their account			

Trigger: Clicking the “Change email password” Type: External	
Relationships:	Association: Student Include: Extend: Manage Student Account Generalization: Entering login credentials
Normal Flow of Events: <ol style="list-style-type: none"> 1. The Student will go onto their profile page in the application 2. The Student will click on “Settings” in the top of the screen 3. The Student will hit the option for “Change Email” 4. If the Student wishes to change the .edu email <ol style="list-style-type: none"> a. Follow Subflow S-1 5. If the student wishes to change their recovery email <ol style="list-style-type: none"> a. Follow Subflow S-2 	
SubFlows: <p>S-1: Change .edu email</p> <ol style="list-style-type: none"> 1. The student will tap “Change Student Email” 2. This will send a confirmation to the recovery email 3. The Student will then open that email and type in a new .edu email 4. 	
Alternate/Exceptional Flows:	

VIII. Structural Model

CRC 1

Class Name: Student	ID: 1	Type: Concrete, Domain
Description: A college student who is an account member at F=MA		Associated Use Cases: 6 1 - Registration for New student 5 - Viewing a student’s post 4 - commenting on a post

		6 - connecting with friends 7 - asking questions 13- Updating student information
<u>Responsibilities</u> Add Name Add Last Name Add College Year Add College/ University Name Add email address Update email address Update Name Update Last Name Update College Name Make a comment View post Ask a question Request a mentor Find a friend		<u>Collaborators</u> Account Comment Post Discussion Board Request for a mentor Request for a friend

Attributes: Name (String) Last Name (String) College Year (Integer) College Name (String) Email address(String)
Relationships: <div> Generalization (a-kind-of): <u>Person</u> </div> <div> Aggregation (has-parts): <u>Account</u> </div> <div> Other Associations: <u>Comment, Post, Discussion Board, Friend Request, Mentor Request</u> </div>

CRC 2

Class Name: Person	ID: 2	Type: Concrete, Domain
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Description: A Person is any platform user that is identifiable by a name, last name, or email address.		Associated Use Cases:
<u>Responsibilities</u> Add Name Add Last Name Add Email Address Update Name Update Last Name Update Email Address	<u>Collaborators</u> Student Mentor	

Attributes: Name (String) lastName(String) emailAddress(String)
Relationships: Generalization (a-kind-of): <u>None</u> Aggregation (has-parts): <u>Account</u> Other Associations: <u>None</u>

CRC 3

Class Name: Mentor	ID: 3	Type: Concrete, Domain
Description: A mentor is anyone that is either an alumni or a person in academia that can provide a student with guidance.		Associated Use Cases: 7 2 - Registration for new mentor 4- commenting on a post 5 - viewing a student's post 9- answering a question 10- login 11 - delete account 14- update mentor information

<u>Responsibilities</u>	<u>Collaborators</u>
Add Name Add Last Name Add Year of Graduation Add Name of Alma Mater Add email address Update email address Update Name Update Last Name Update Name of Alma Mater Contribute a post Comment on a post Answer a question	Account Post Comment Discussion Board

Attributes: Name (String) Last Name (String) Year of Graduation(Integer) College Name (String) Email address (String)
Relationships: Generalization (a-kind-of): <u>Person</u> Aggregation (has-parts): <u>Account</u> Other Associations: <u>Discussion Board, Post, Comment</u>

CRC 4

Class Name: Comment	ID: 4	Type: Concrete, Domain
Description: How the person adds their input onto a post		Associated Use Cases - 2 : Adding Response to question Commenting on a post

<u>Responsibilities</u>	<u>Collaborators</u>
Post Comment Add Comment Delete Comment	<u>Collaborator1</u>

Attributes: Comment(text)
Relationships: <div> Generalization (a-kind-of): Action on a post </div> <div> Aggregation (has-parts): Account </div> <div> Other Associations: Responding to a question and adding to a post </div>

CRC 5

Class Name: Request for a friend	ID: 5	Type: Concrete, Domain
Description: How a student will request for a friend on F=MA		Associated Use Cases - 1: Connecting with friends / Adding Friends (6)
<u>Responsibilities</u> Send Request Reject Request Accept Request	<u>Collaborators</u> Student to Student Student to Student Student to Student	

Attributes: Name(string)	
Relationships: <div> Generalization (a-kind-of): Action in order to make friends on F=MA </div> <div> Aggregation (has-parts): Account </div> <div> Other Associations: n/a </div>	

CRC 6

Class Name: Request for a Mentor	ID: 6	Type: Concrete, Domain
Description: How a student will request for a mentor on F=MA		Associated Use Cases - 1 : Connecting Student with Mentor (8)
<div> <div> <u>Responsibilities</u> <u>Responsibility1</u> Send Request Reject Request Accept Request </div> </div>		<div> <div> <u>Collaborators</u> <u>Collaborator1</u> Student to Mentor Student to Mentor / Mentor to Student Student to Mentor / Mentor to Student </div> </div>

Attributes: Name(String)

Relationships:	
Generalization (a-kind-of):	Action to connect students to mentors on F=MA
Aggregation (has-parts):	Account
Other Associations:	n/a

CRC 7

Class Name: Account	ID: 7	Type: Concrete, Domain
Description: An account should store and manage the information for the user (student, or mentor). Account should also manage the username and password necessary for logging onto the platform. Each user is associated with an account ID.		Associated Use Cases: 7 1- Registration for New Student 2- Registration for New Mentor 3- Making a post 4- Commenting on a post 6- Connecting with Friends and Mentors 10 - Logging in as Old User 12 - Updating Password
<p style="text-align: center;"><u>Responsibilities</u></p> Manages User name Manages Password Manages Email address Manages history of Friendship Manages history of Mentorship Manages history of Posts Manages history of Responses Manages Student Information Manages Mentor Information		<p style="text-align: center;"><u>Collaborators</u></p> Student Mentor

Attributes: User name (text String) Password (text/ characters) Email address (text/ String) Account ID (integer(s))	
Relationships: <div> Generalization (a-kind-of): <u>None</u> </div> <div> Aggregation (has-parts): <u>Comment, Post, Friend Request, Mentor Request,</u> </div> <div> Other Associations: <u>Student, Mentor, Discussion Board</u> </div>	

CRC 8

Class Name: Discussion Board	ID: 8	Type: Concrete, Domain
Description: This explains how a discussion board will be formed and how both mentors and students will add to the discussion post.		Associated Use Cases - 2: Asking a question on the forum (7) Adding Response to a question (9)
<p style="text-align: center;"><u>Responsibilities</u></p> Adding Question Adding Category of Question Answering Question		<p style="text-align: center;"><u>Collaborators</u></p> Both Mentors and Students will be able to take all of the actions stated in responsibilities

Attributes: Name(String) Text, in terms of both questions and responses to questions(String - Text)
--

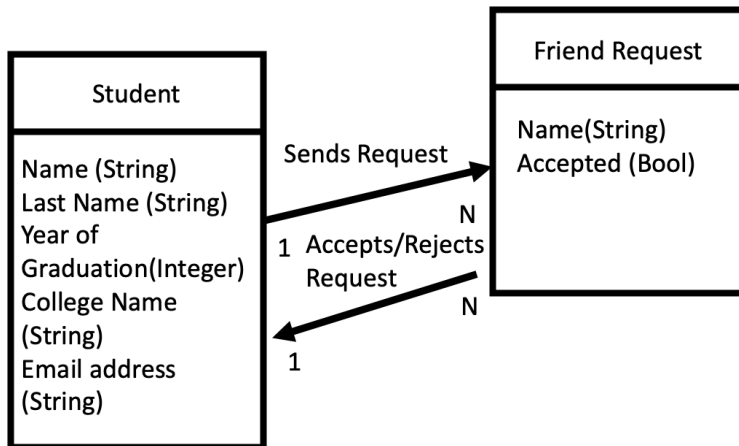
Relationships:

Generalization (a-kind-of): Action both mentors and students will be able to take

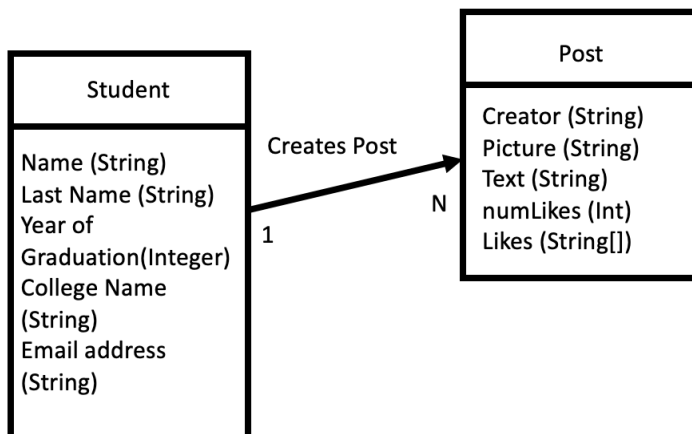
Aggregation (has-parts): Both Mentors and Students will be able to add to this

Other Associations: Responding to questions on the forum

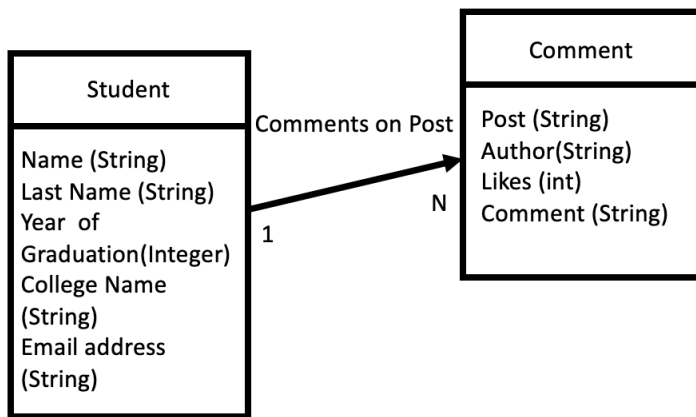
Class Diagram 1: Requesting A Friend



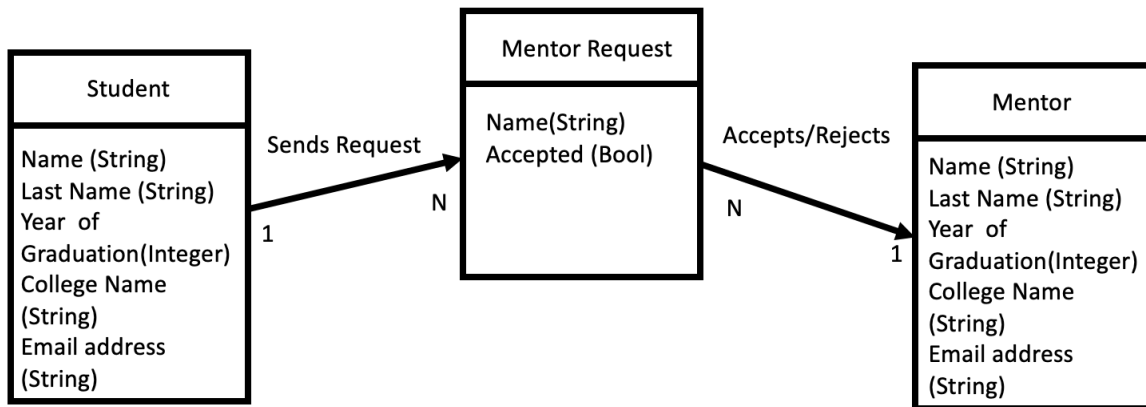
Class Diagram 2: Creating a Post



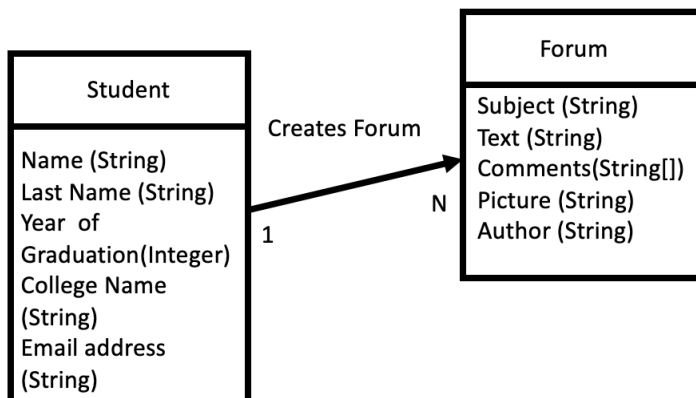
Class Diagram 3: Commenting on a Post



Class Diagram 4: Request to Mentor



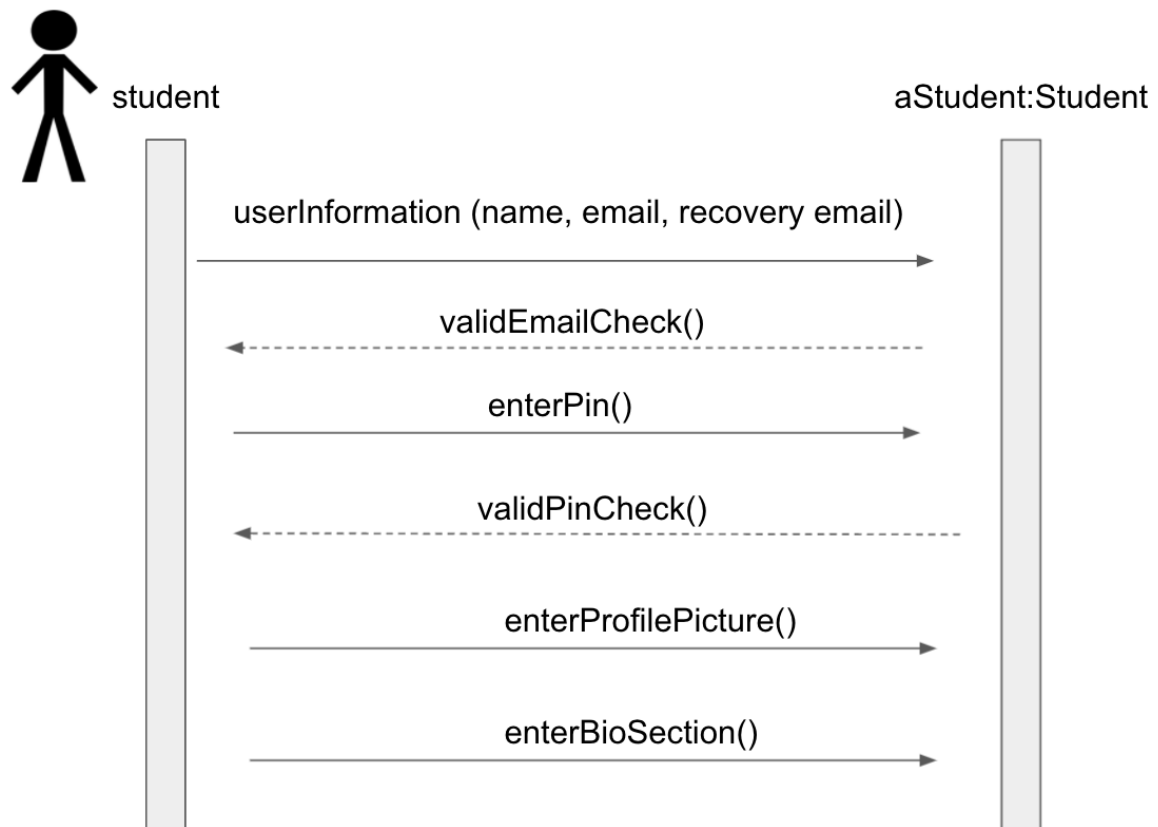
Class Diagram 5: Creating a Forum Post



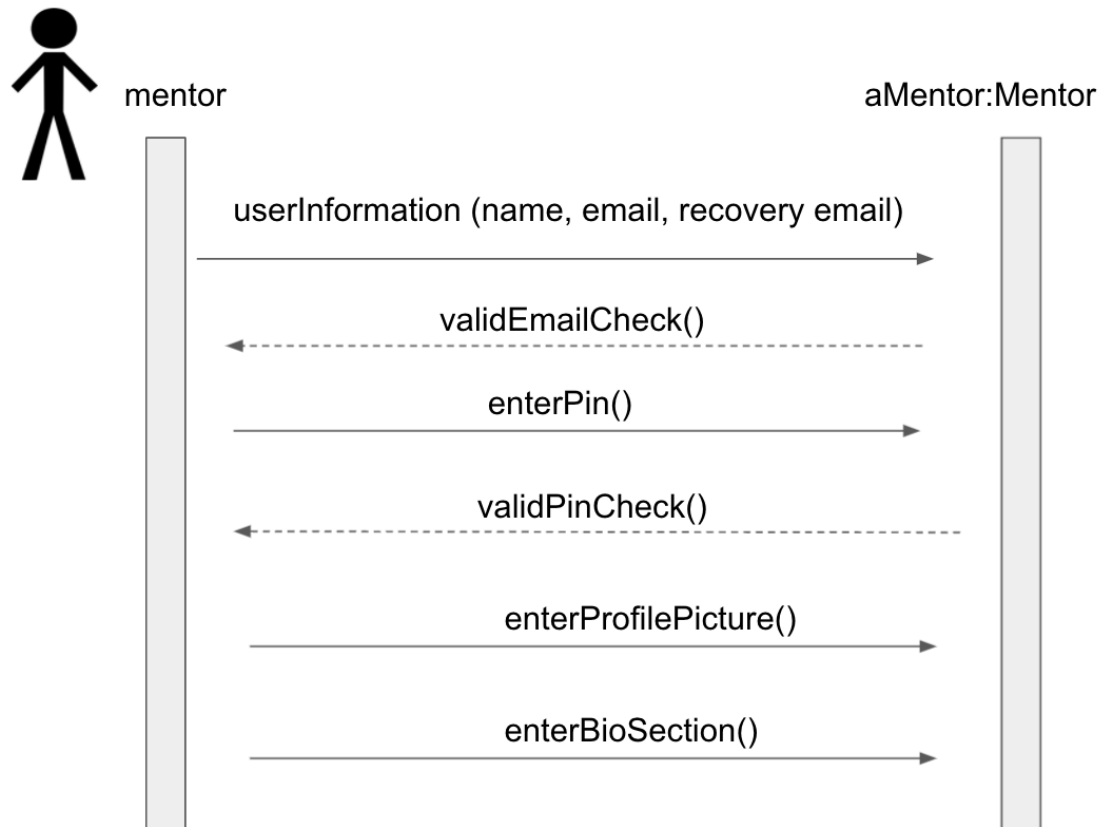
IX. Behavioral Model

A. Sequence Diagrams

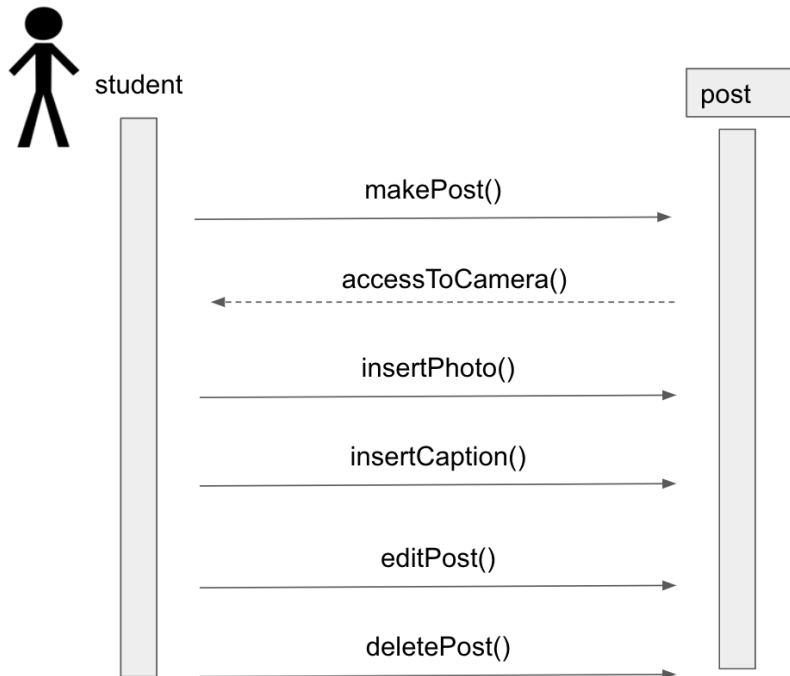
Sequence Diagram : Registration of New Student



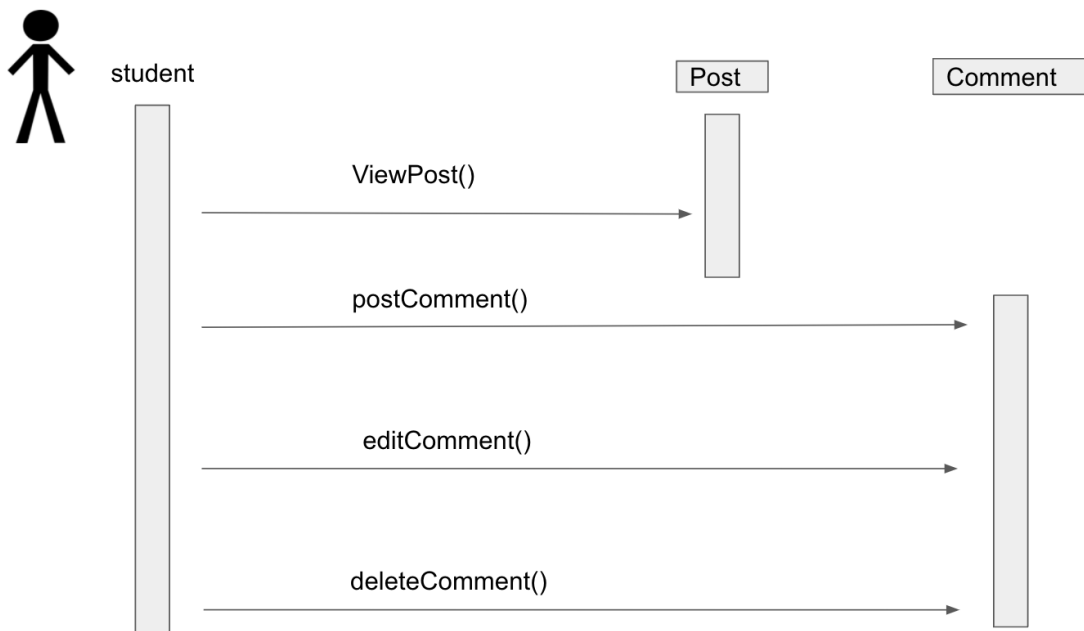
Sequence Diagram : Registration of New Mentor



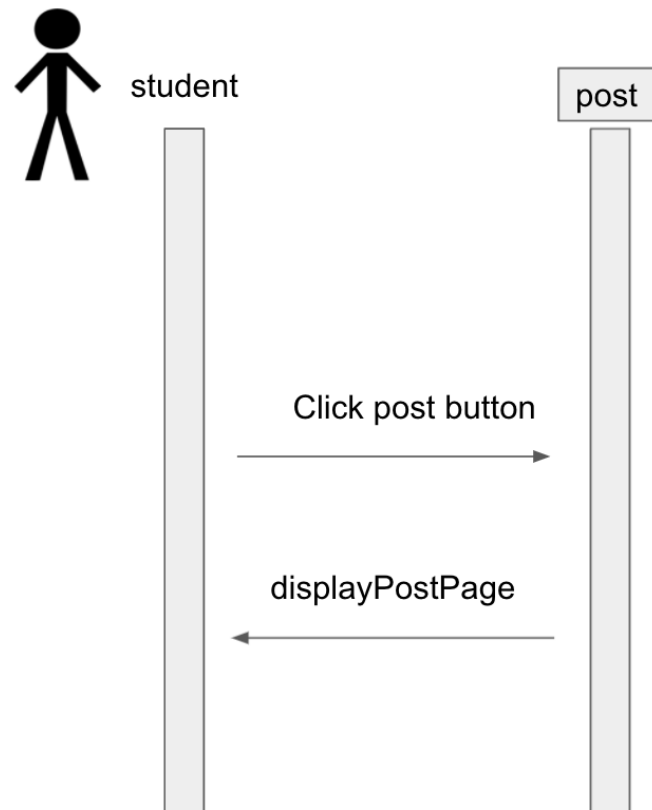
Sequence Diagram : Making a Post



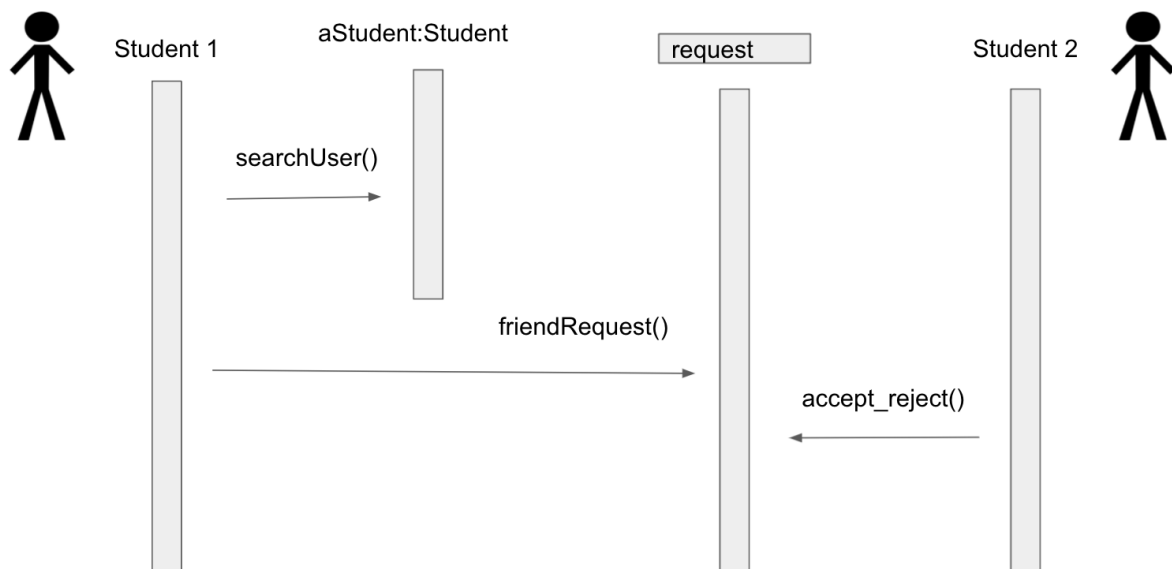
Sequence Diagram : Commenting a Post



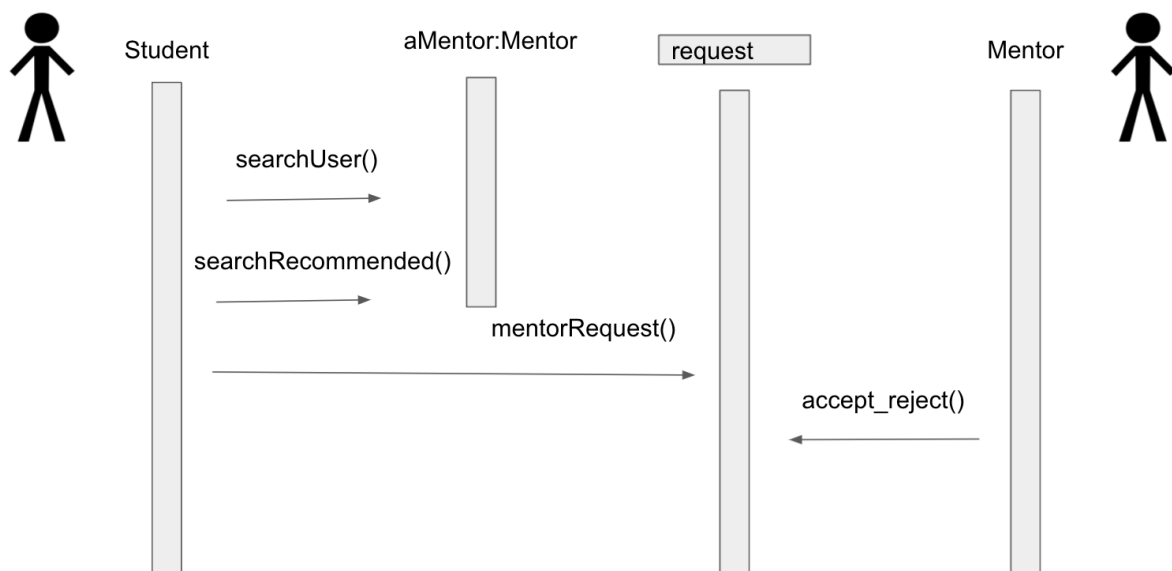
Sequence Diagram : Viewing Students Post



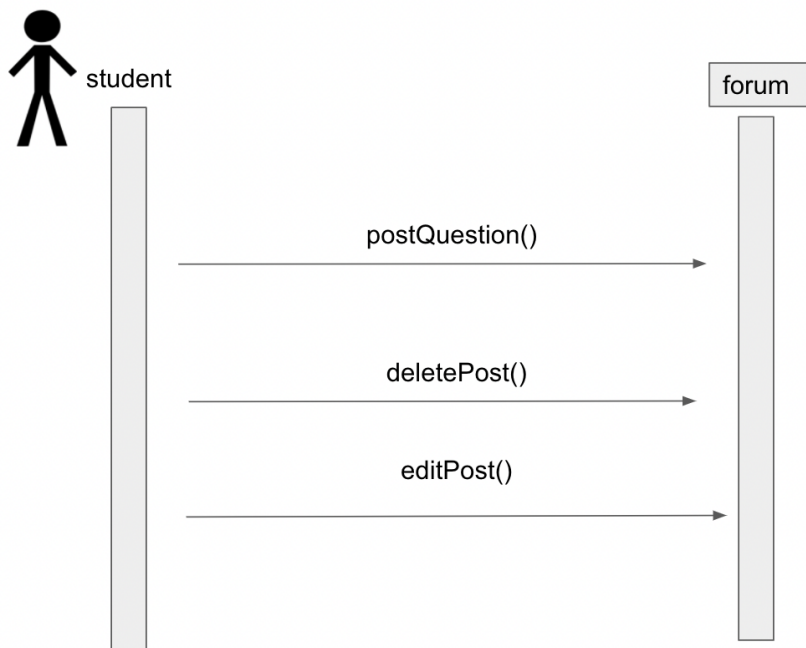
Sequence Diagram : Adding Friends



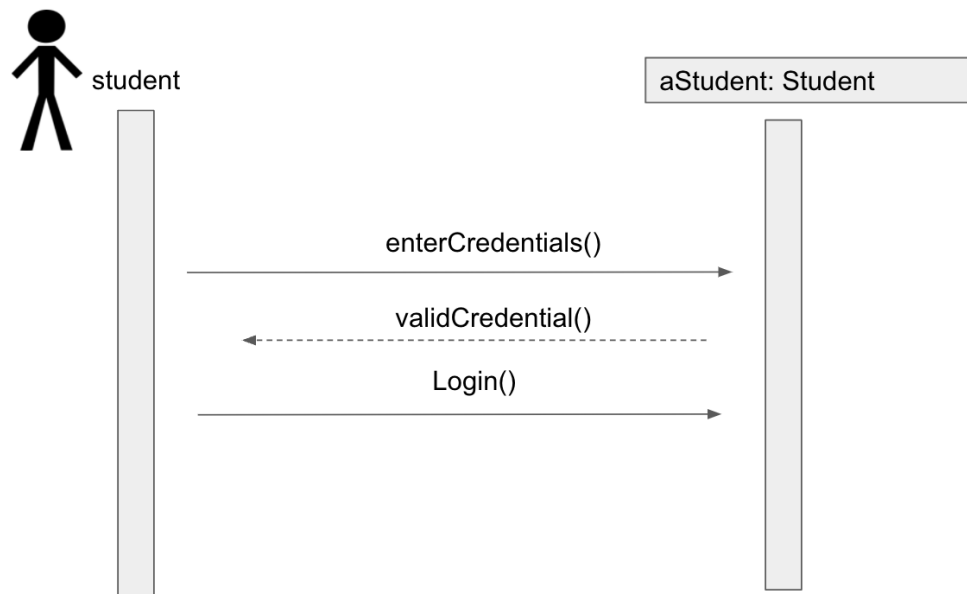
Sequence Diagram : Adding Mentor



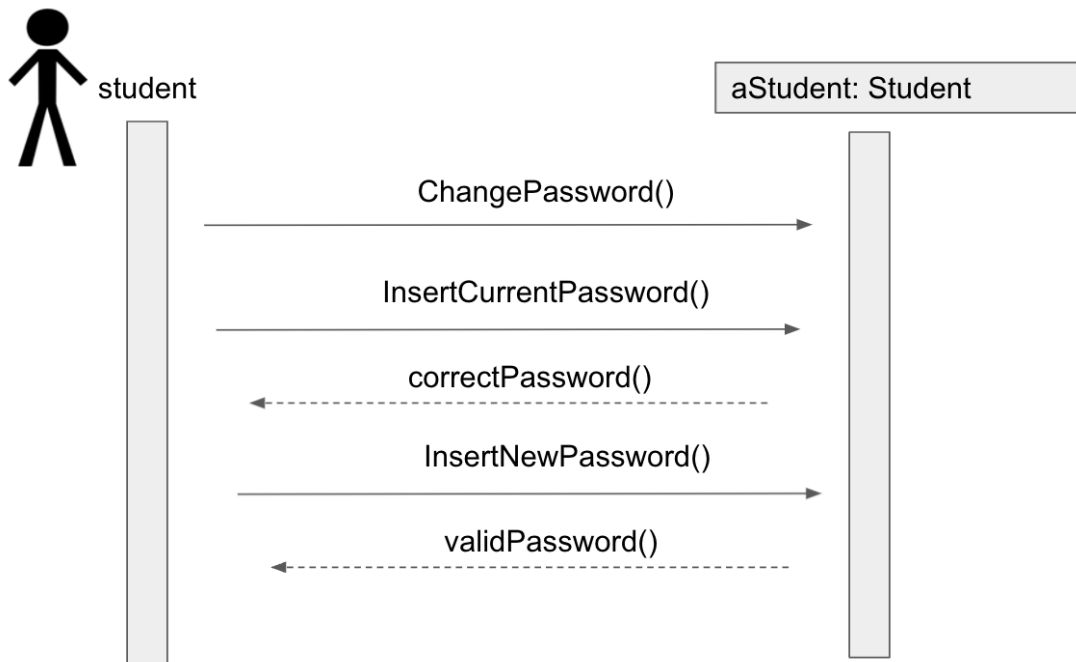
Sequence Diagram : Asking a question on the forum



Sequence Diagram : Login

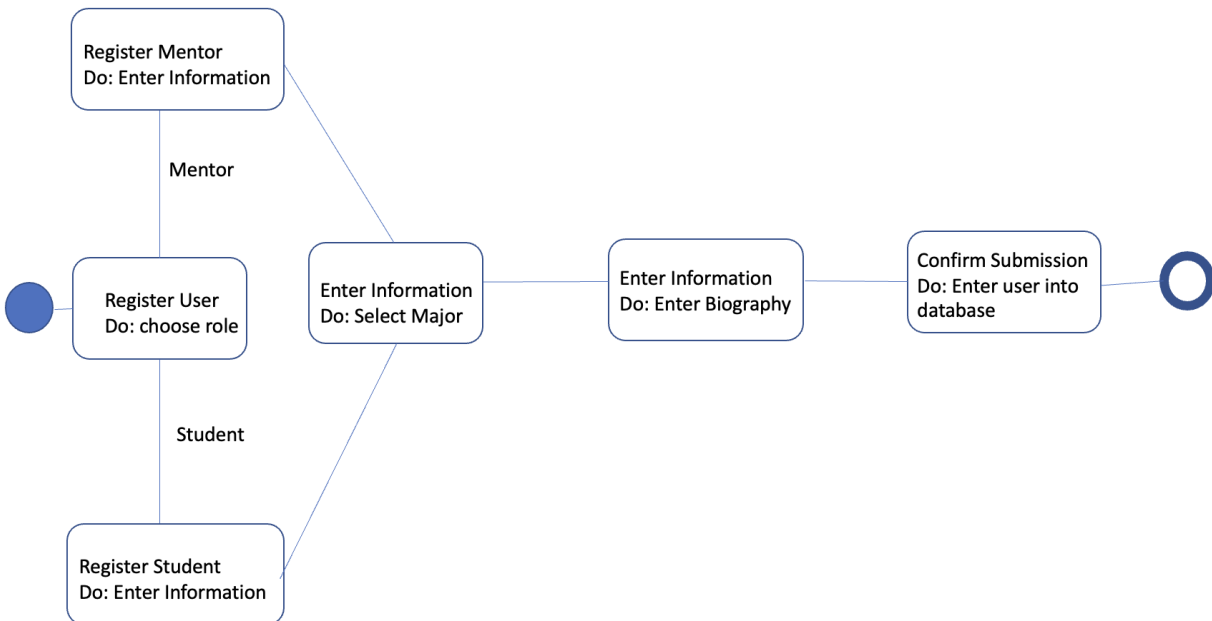


Sequence Diagram : Change Password

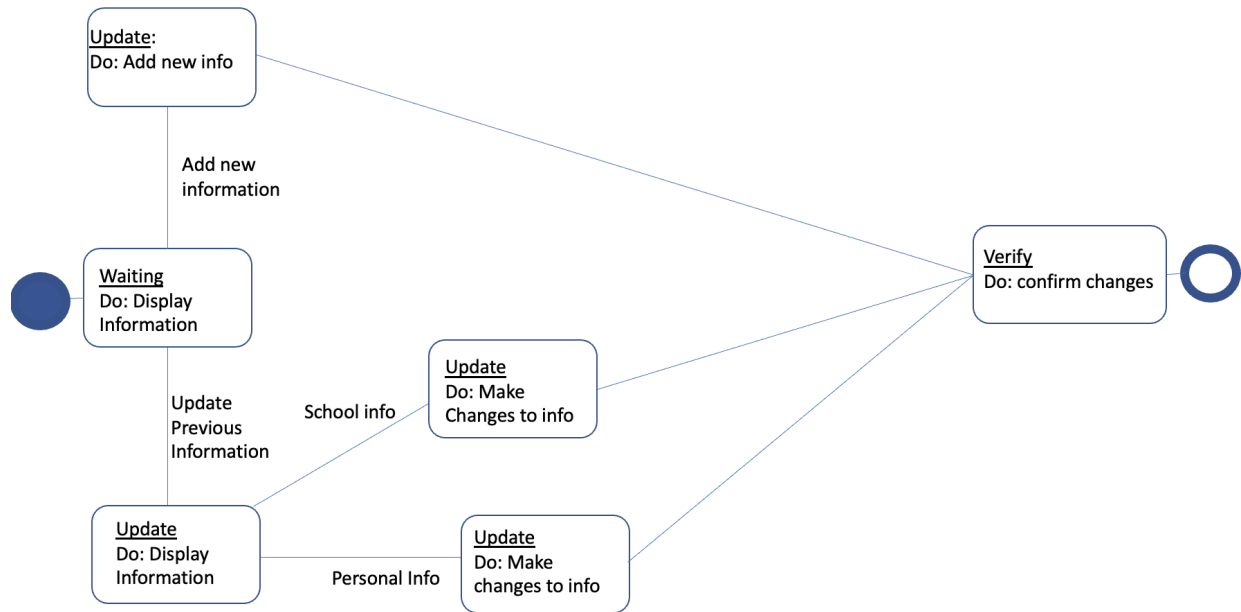


B. State Diagram

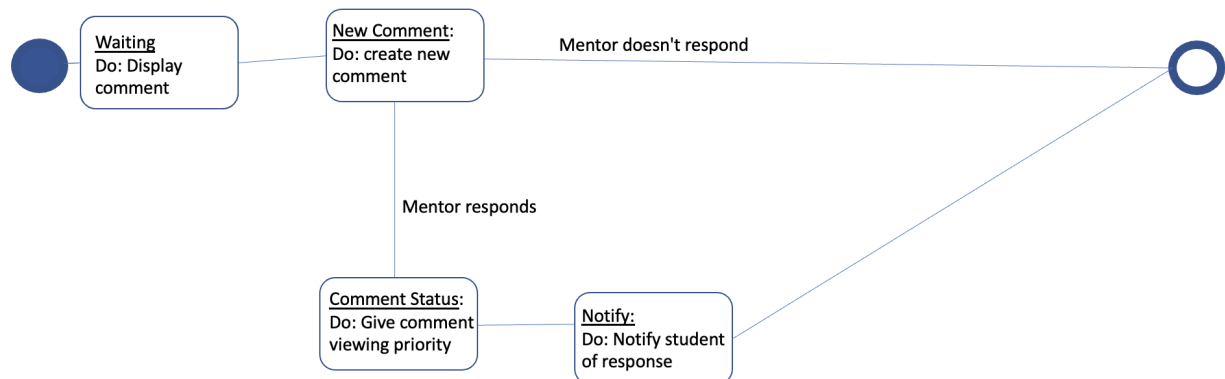
Register a User



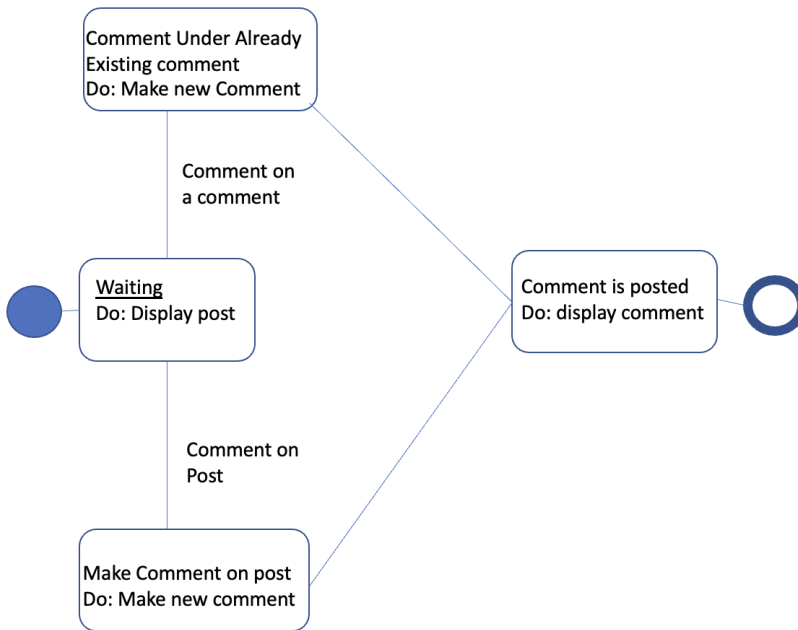
Update Student Info



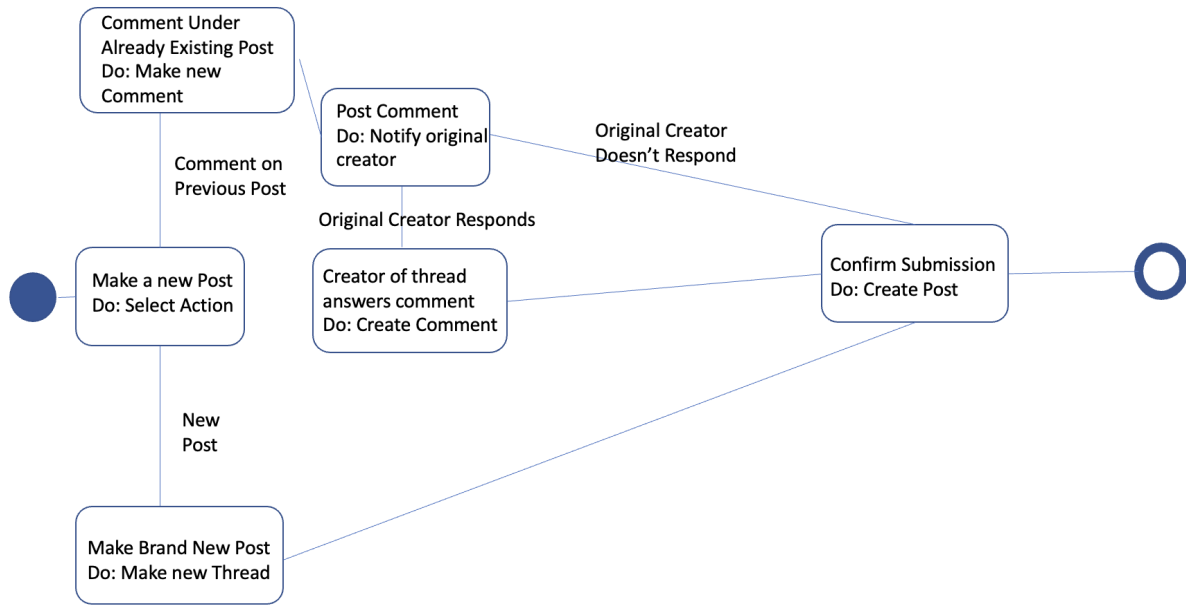
Adding Response to Comment



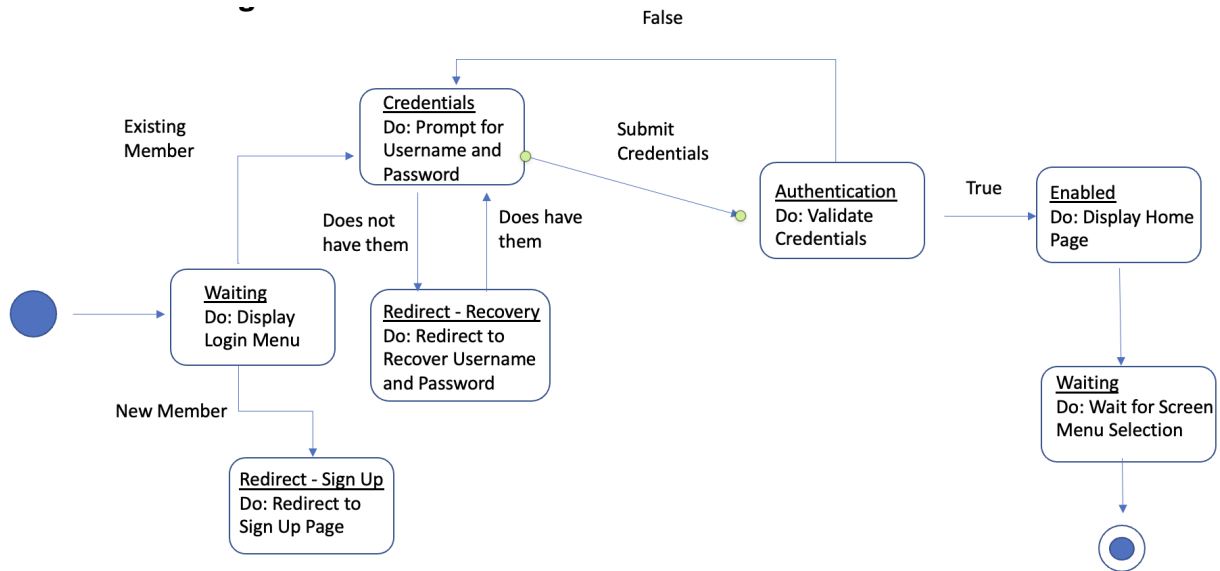
Comment on a post



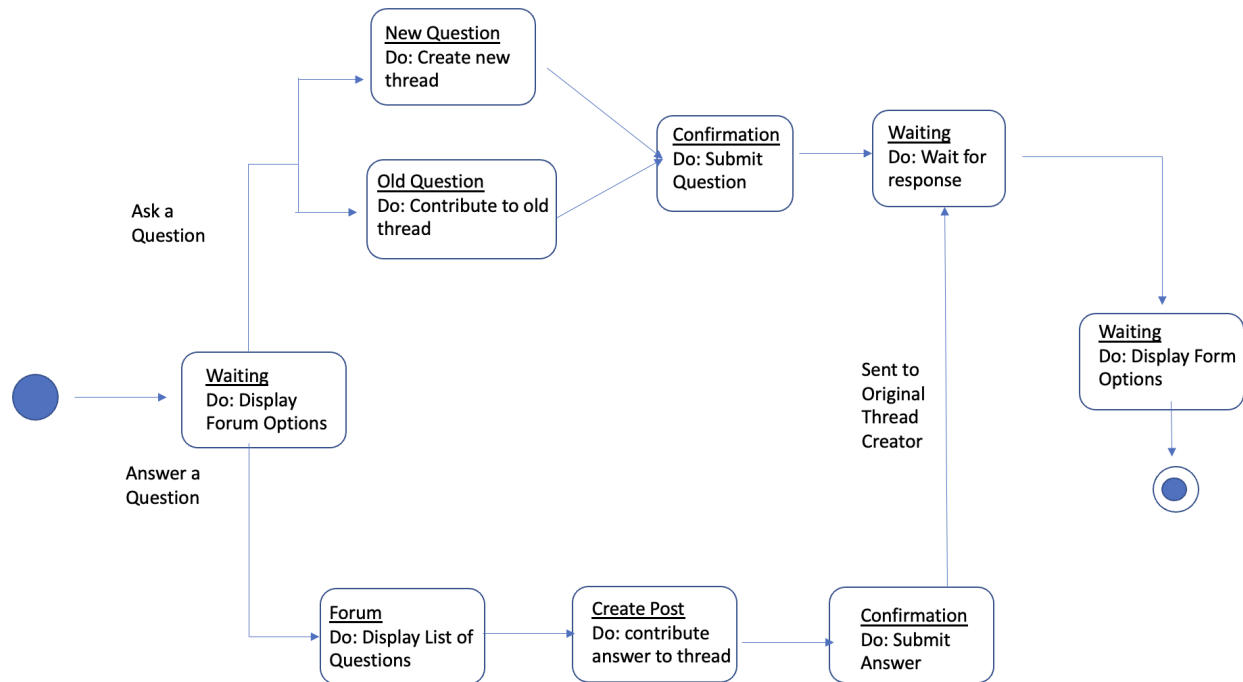
Make a Post



Account Login

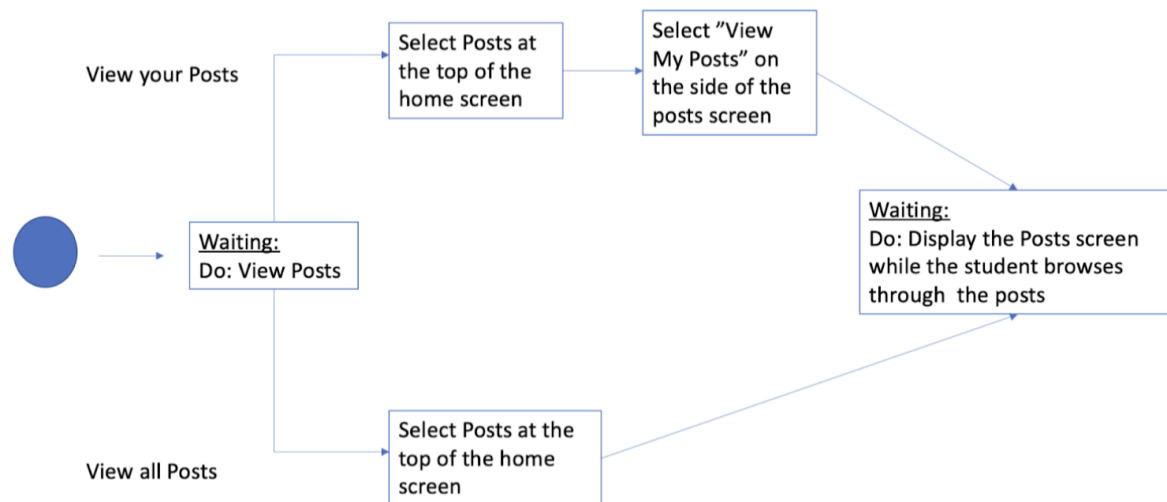


Discussion Board



Viewing a Students Post

Viewing a Students Post



X. Time Schedule

The work on this project began in early September when we formed our team of software developers to work on this goal. From then, we have been working on the System Requirements Specification which will be finished on November 14, 2021. Upon completion of this, we will immediately begin work on the Detailed Design Document, designing and creating the modules for this system. This will be done by December 15, 2021. After our winter break, we will resume work on this during the Spring semester, when we start to implement this project. We hope to begin implementation quickly after the start of the semester, using our screenshots as a template for our screens. We will have some of our developers working on the frontend while we have other developers work on the database to store the information for the student accounts, mentor accounts, posts, forums, comments etc. We will plan on merging the front end to back end during the month of March. It is our intention to have most of the functionality of the system done by April so we can spend all of the month of April in the testing phase.

XI. Potential Risks

One potential risk is the market to which we wish to appeal. We are hoping to convince universities to purchase our product and offer it to students to help with their mental health and to build a greater sense of community. Some universities have their own systems in place and it will be hard to convince universities to spend the money on our product. If we were to offer this service for students on an individual basis, there is the risk that the service will not be worth the upcharge of a university that already offers free counseling and services. We believe that our knowledge of the functional area is enough for us to make a quality product. We have first-hand experience of what students would want out of a product like ours. Our team at the very moment has good first-hand experience but it may become an issue if we end up expanding and needing a bigger team.

XII. Future Changes

The main objective in the creation of F=MA was to provide physics majors a space to connect with mentors and other students and discuss issues and problems that have arisen in college. Some members of the team have had first-hand experience with the struggles of pursuing a degree in physics. It is mentally and emotionally straining. Once we have established a well-working product, we hope that we can expand the product to other majors who can benefit from this service. Students who major in physics are always a very small percentage of students at any given university. We hope that we can expand this product to other smaller groups of students. These groups include but are not limited to Mathematics majors, and Computer Science majors. We hope that we can expand the product to house these groups of students in their own

space, where we can have Math students paired with Math mentors and Physics students paired with Physics mentors.

XIII. Glossary

A - stands for allies in $F=MA$

Allies - those who may not have experienced what the students and mentors have personally but sympathize with them and give $F=MA$ their support ; an example to an ally would be the institution for funding a subscription to $F=MA$ for their students

F = MA - being a social media platform but one that focuses on the mental health of college students will have to have different capabilities than typical social media apps

F - stands for friends in $F=MA$

Forum - the main source of discussion on the $F=MA$ app, how students and mentors will discuss about their feelings, ask questions relating to coursework or research and share experiences

Friends - the students of $F=MA$, this is related to the connecting with other students in the major by sending them friend requests

M - stands for mentors in $F=MA$

Mentor - the source of mentorship through $F=MA$ will be working closely with the students and tailoring their work to what the students need to best succeed. Mentors would be students who are recent graduates or people who are working in the field such as post doctoral fellows, professors or others in the field who can provide mentorship to the students

Student - the main user for the app $F=MA$ and the person in which $F=MA$ is tailored to help

Imposter Syndrome - involves feelings of self-doubt and personal incompetence that persists despite your education, experiences and accomplishments

XIV. Reference Documents

A. Dennis, B. Wixom, and D. Tegarden, Systems Analysis and Design, 5th Edition, Wiley, 2002.

CostOwl.com, “How Much Does a Database Design Service Cost?,” CostOwl.com. [Online]. Available: <https://www.costowl.com/b2b/design-services-database-cost.html>. [Accessed: 13-Oct-2021].

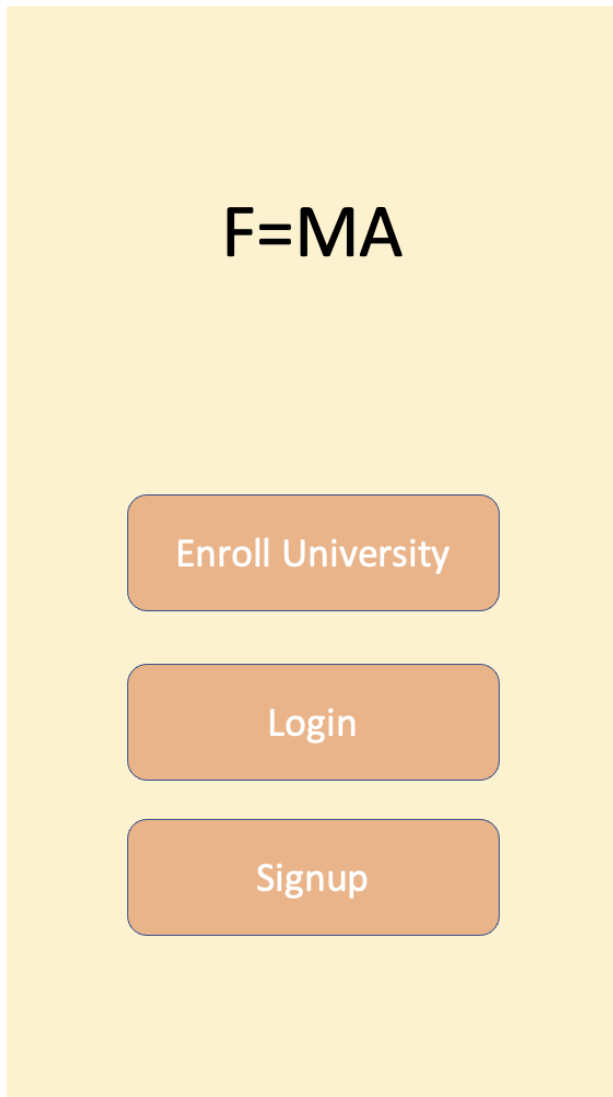
Hanson, Melanie. “College Dropout Rates” EducationData.org. [Online]. Available: <https://educationdata.org/college-dropout-rates> [Accessed: 14-September-2021]

SurveyMonkey, “Choose a plan that works for you,” SurveyMonkey.com. [Online]. Available:

https://www.surveymonkey.com/pricing/individual/?ut_source=pricing-teams-details#buy-targeted-responses. [Accessed: 13-Oct-2021].

XV. Prototype Snapshots

Screenshot 1: Landing Screen on first open



Screenshot 2: Login Screen

login

Student Login

Mentor Login

Forgot Password

F=MA

Screenshot 3: Signup Screen

Sign-Up

Student Signup

Mentor Signup

F=MA

Screenshot 4: Student Signup

Student Sign-Up

.edu Email

Enter

Screenshot 5: Student Signup Second Screen

Student Sign-Up

Enter the pin that has been sent to
your email

Pin

Enter

Screenshot 6: Student Signup- Information Input

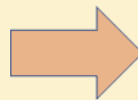
Student Sign-Up

Username

Password

**Re-enter
Password**

**Recovery
Email**



Screenshot 7: Profile Page for Student



[Insert Image Here]

Username
Name
Major
College

Insert short bio here...

Post 1

Post 2

Post 3

Post 4

Post 5

Post 6

Post 7

Post 8

Post 9

Forum

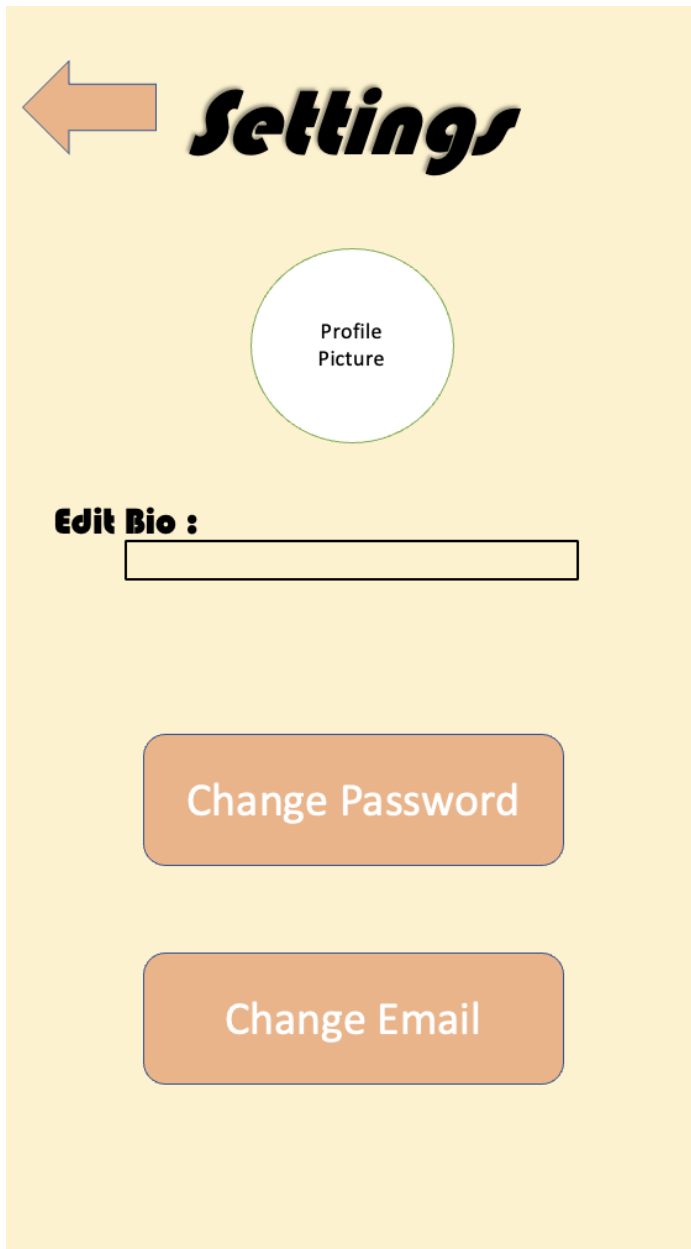
Search



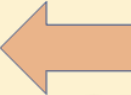
View Posts

Profile

Screenshot 8: Account Settings





Screenshot 9: Password Change Screen



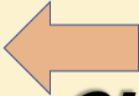
Change Password

Current Password

Enter

Screenshot 10: Enter new password screen



Change Password

Enter New Password:

Re-enter New Password:

Enter

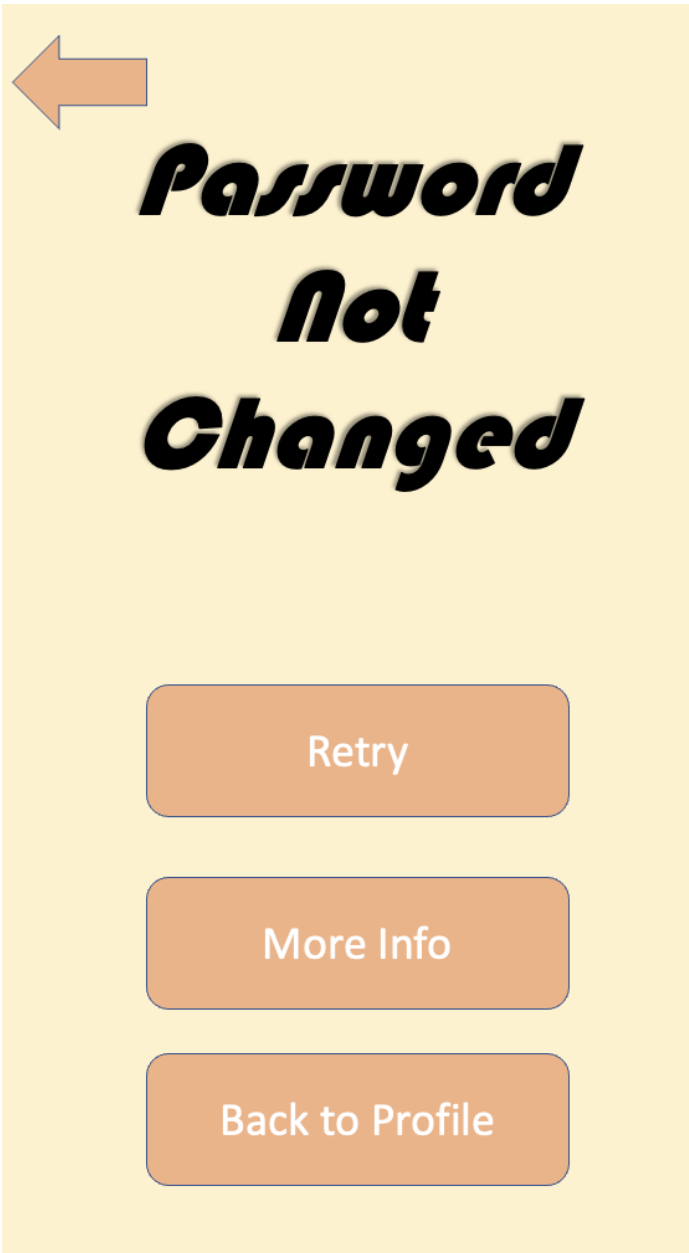
Screenshot 11: Password successfully changed confirmation

***Password
Successfully
Changed***



Back to Profile

Screenshot 12: Password not changed screen



Screenshot 13: Create Forum Screen

Create a Forum

Subject :

Write a Caption:

Add Photo:



Create Forum

Screenshot 14: Create comment for forum post

Subject : *Name in Bold*



Original Text.....

Comment 1 :

Comment 2 :

Comment 3 :

Insert Your comment here

Post Comment

Screenshot 15: Login Screen

F=MA

login

**Username or
Email**

Password

Enter



Screenshot 16: University enroll screen

F=MA

Enroll School

School Name

Majors: Click all that apply

Physics	<input checked="" type="checkbox"/>
Mathematics	<input checked="" type="checkbox"/>
Chemistry	<input checked="" type="checkbox"/>
Computer science	<input checked="" type="checkbox"/>
Etc	<input checked="" type="checkbox"/>
Etc	<input checked="" type="checkbox"/>
etc	<input checked="" type="checkbox"/>

Payment Method

Enter

Screenshot 17: Post feed screen



Screenshot 18: Search for friends/mentors

Search

Students

Mentors

#hashtag

Keyword

Profile Picture

Username
Name

Profile Picture

Username
Name

Profile Picture

Username
Name

Profile Picture

Username
Name

Profile Picture

Username
Name

Forum

Search

View
Posts

Profile

Screenshot 19: Request a friend from their profile

<div>[Insert Image Here]</div>		<div>Username</div> <div>Name</div> <div>Major</div> <div>College</div>		
<div>Insert short bio here...</div>				
<div>Request</div>				
<div>Hidden Post 1</div>		<div>Hidden Post 2</div>		<div>Hidden Post 3</div>
<div>Hidden Post 4</div>		<div>Hidden Post 5</div>		<div>Hidden Post 6</div>
<div>Hidden Post 7</div>		<div>Hidden Post 8</div>		<div>Hidden Post 9</div>
Forum	Search	<div>+</div>	View Posts	Profile

Screenshot 20: Feed of forum posts

forum

Type to search...

Trending Topic #1

Author username

Trending Topic #2

Author username

Trending Topic #3

Author username

Trending Topic #4

Author username

Trending Topic #5

Author username

Forum

Search



View
Posts

Profile