YeetPost
A Web-Based Alternative to Yik-Yak

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***Abstract*—Yik-Yak was a social media application that allowed users to view forums within a 5 mile radius; however, the application got removed from the mobile market in 2017. With the removal of Yik-Yak, there has been a migration of users to different mobile applications. Although these mobile applications offer many unique solutions, none of them focus on providing location-based forums, and none of them have a web application counterpart. YeetPost is a location-based forum web-application that brings familiarity to the user experience and design of Yik-Yak.**

I. Introduction

On April 28, 2017, anonymous forum-posting app YikYak announced the shutdown of its company, and on May 5, 2017, the app was removed from the mobile market [1]. Yik-Yak was banned from several schools because of cyber-bullying; when the company tried to address that issue with their latest update, sevaral of the Yik-Yak's attractive attributes disappeared. This started the decline of Yik-Yak and the migration of customers to other mobile solutions, such as Jodel and Whisper [2]. These applications provide unique solutions to addressing the cyber-bullying in their own app by providing a better flagging and reporting system; they also provide other unique features that make their applications different than Yik-Yak. However, none of these applications have a location-based application or a web-application counterpart.

YeetPost is going to be a location-based forum web-application. It will have a unique user interface similar to Yik-Yak. This means users already used to Yik-Yak can migrate easily to this application. YeetPost will also address the issues found in several existing Yik-Yak counterparts, and it will implement what is already successful in those applications. YeetPost will provide users the ability to view and post forums in cities around the United States. These forum posts are called yeets and are able to be filtered by popularity and recency. Also these yeets allow for social interactions such as commenting, upvoting, and flagging. YeetPost will also provide a similar crowd-flagging system similar to Jodel and Whisper.

II. Problem Statement

People want a location-based forum application like Yik-Yak. However, apps like Yik-Yak have had a lot of cyberbullies; Yik-Yak also did not have a website counterpart. Thus, we will create a location-based forum web application called YeetPost, that allows crowd sourced flagging which dissuades cyberbullying.

III. Background

A. Current Solutions Available

The most popular alternative to Yik-Yak is Jodel. Jodel is a European application that reached out to former Yakkers and asked for suggestions to improve the overall experience of an app like Yik-Yak. They responded with several options such as keeping the herds of Yik-Yak, improved notification, and an improved flagging system. This flagging system sends the flagged reports to a dedicated team called moderators that look over it carefully.These moderators decide what to do with the flagged jodels and categorize them. Some jodels may fall into the suicide category, and the user receives the National Suicide Hotline number [3]. According to [2], Jodel is the closest application designed like Yik-Yak; however, there exists other alternatives such as Whisper.

Whisper is an app designed for users to post anonymous thoughts or confessions called whispers. These whispers are in form of cards with their confession overlaying a background. The whispers can be responded in forms of other whispers. This means a forum post reply is another forum post [2]. Whisper provides crowd-sourced flagging as well to deal with cyberbullies.

Furthermore, crowd-sourced moderations shown in Whisper and Jodel are popular in many social media. Flagging in Flickr leaves the user with three choices, "beyond the pale," "against the rules," and "incorrectly classified" [4]. Crowd-sourced moderation from applications like Jodel, Whisper, and Flicker have proven to be efficient. YeetPost will have crowd-sourced moderation as well. Since YeetPost is a new application, the flagging system will work simply. If A user can flags a post; he/she will have to give a reason for flagging. YeetPost will give the user the ability to choose from two reasons, inappropriate or abusive. If a post has five flags, the post would be sent to the moderator through an email, and the moderator would decide what to do next. If a post is removed, the moderator will send an email to the user saying their post has been "deyeeted" from YeetPost. For the time being, YeetPost's moderators would be the developers. This may change in future updates of the application.

While all of these apps are great. Jodel and Whisper have clunky reply systems. In Jodel, your reply looks like another Jodel, while in Whisper, you can only reply in other whispers that form new discussions. Replying in jodels or whispers, make the thread difficult to follow. YeetPost is not going to have replies in forms of yeets; rather, it will have a comment system similar to Facebook and LinkedIn. As mentioned before, Yeet Post will provide users the ability to post yeets in conjunction with their locations. Since this is the first version,

YeetPost will sort through location by having a drop-down list of major cities from the United States. YeetPost will be available on a website in summer 2020 with hopes to hit the mobile market around the same time.

B. The Role of User Experience in YeetPost

1) The Definition of User Experience: What is the definition of User Experience (UX) of a product, and how can we apply it to the development process of YeetPost? [5] says user experience is compromised of broad design concepts such as aesthetic values and positive emotional outcome.

A questionnaire was used in a survey, which provided statements of User Experience, definitions of User Experience, and asked for background information from each respondent. The people taking the survey had to respond to statements with a richter scale, from ”strongly disagree” to ”strongly agree”. If they did not understand a statement, they had to indicate their lack of understanding. Two-hundred and seventy-five people did the survey. Ultimately only one variable affected a user's understanding of User Experience: their country of residence. For example, the survey showed that Finnish respondents valued emotional attachment more than American respondents [6].

In conclusion, the survey showed that people understand UX to be dynamic, context-dependent, and subjective. The responders' opinions are based on the potential benefits that users may receive from a product. The results from the survey also suggest that a User's Experience of a product is also dependent on his or her environment. What culture is the user from [7]? Did the user use the applications with a crowd [6]? This is why companies often use different websites for different countries [7].

2) User Experience Honeycomb: The broad, vague definitions and statements of User Experience are unhelpful to new developers. Therefore, the development of a product like YeetPost needs a clear guideline. Peter Morville boiled down the design of an application into seven fundamental guidelines called the User Experience honeycomb as depicted in Fig. 1.

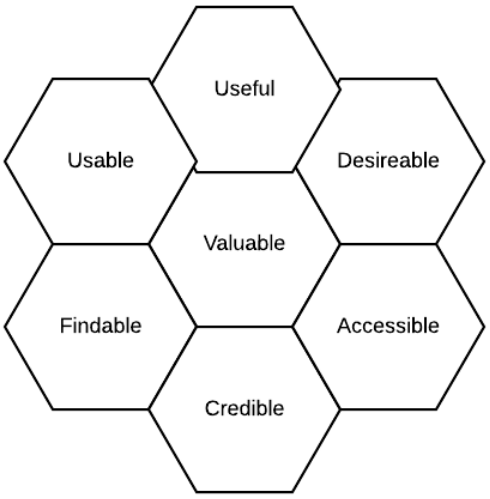

Fig. 1. User Experience Honey Comb

The seven fundamental guidelines are as follows usable, useful, desireable,accessible, credible, findable, and valuable. A usable application is one that is easy to for beginners to use. The misconception is that every application should be easy for beginners to pickup; however, there exists applications such as, Blender, which is a graphical software for creating 3D models [8]. It also has a steep learning curve; however, once a user learns Blender that application becomes very useful to him/her [9]. A useful application is one that solves the user's problem in the best way possible [10]. In this case, Blender, after the steep learning curve, allows users to create 3D models effectively . The next guideline, desirability, focuses on the visual aesthetic of the application; the application needs to be attractive to target a specific audience. The accessible guideline focuses on who can access the application. For example, if we make a website for a low income country, the website should be able to run on older versions of Internet Explorer and older versions of Google Chrome. Furthermore, credibility questions if the product being put out is trustworthy. If there is a website with ads about downloading free ram, this website will obviously look suspicious to consumers. An application meets the findable guideline if a user can easily find the information the he/she is looking for in the application. Lastly, a valuable application is one that encompasses the UX Honeycomb [11].

3) Utilizing the User Experience Honey Comb: The user experience honeycomb is essential for all businesses, for it provides guidelines that designers can choose from to enhance their product. For example, is it better to make the application more findable or to make the application more desireable [12]? This lets the development team focus on what is really important. Studies have shown that local web applications are significantly different around the world. According to [7], a Chilean site may want to make their website more accustomed to the Irish market, thus it may have to change their application's overall design. By changing their design, they make the application more desireable for the Irish market. By using the UX honeycomb guidelines, we can see why ugly websites such as Wikipedia, Reddit, and Craigslist maintain billions of visits per month: the user interface just works to effectively solve a problem; as one quote says, ”It's ugly but it works” [13]. Ugly websites like Craigslist focus on the useful and usable honeycomb guideline, which makes them popular among their users. Craigslist just solves a problem really well which makes it useful, and it is easy to use for beginners which also makes it usable.

4) The Fall of Yik-Yak with regards to User Experience Honey Comb: When Yik-Yak updated to version 4.0.0, the application lost focus on parts of their UX honeycomb. For example, version 4.0.0. of Yik-Yak removed anonymity; in terms of the honeycomb, this app became less useful for a lot of people. There were user reviews saying “Anonymity is the sole reason for which I downloaded this app in the first place. Handles just ruins it!” and “I see no point of using this app if its going to be no longer anonymous!” Furthermore, Yik-Yak also removed one of its biggest features which was

the herd function. This function allowed users to follow other users and see their yaks [2]. With these two removed, parts of the UX honeycomb was out of focus. The unique service Yik-Yak set out to provide, which made its application useful was no longer there. Yik-Yak was no longer an anonymous forum posting application. All this led the once prized 400 million dollar company to be sold for 3 million dollars in 2017 [14].

5) Lesson's for YeetPost: By studying Yik-Yak's downfall and the User Experience Honeycomb, YeetPost hopes to further improve its User Experience. From the beginning, YeetPost will focus on making the application useful. YeetPost will be a location based forum web application. For the desirable guideline, We will focus on designing YeetPost to target past Yakkers and college students. As previously mentioned, if a web application does one thing well, the application can attract customers [13]. This ensures time will be mainly spent on the UX guideline of usefulness. By useful, we mean that the application will be good at viewing, filtering, posting, replying, upvoting, and flagging yeets based on a location. See Figure 2 for a Use case diagram of the application.

IV. Proposed Project

We plan to release YeetPost in the summer of 2020. This application will be accessible online to anyone with an email address, and YeetPost will allow users to post forums called yeets. The user will be able to browse and discuss yeets from various cities across United States of America. The application is welcoming to everyone, but its main targets are college students and past Yik-Yak users. The web application will be accessible on the latest version of Google Chrome, Mozilla Firefox, and Microsoft Edge. A complete wireframe of the application can be found in , and a use case diagram has been shown in Fig. 2.

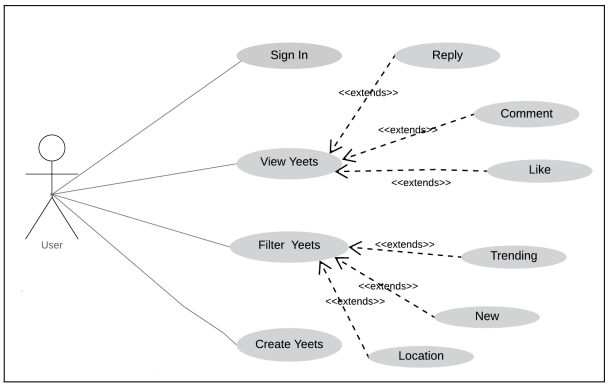

Fig. 2. UML Diagram

A. YeetPost Summary

Upon entering the application, the user is greeted with a welcome page, which tells the users what the application is and where they can sign up. A mockup has been shown in Fig. 3. After the user successfully makes an account or signs in, the user is redirected to the Yeet page. The Yeet page will display the yeets from a location that the users has picked. If a user has not picked a location, he/she will be taken to the Collegedale Yeet page. Thus, all new users will be redirected to the Collegedale Yeet page (See Fig. 6 for a wireframe of the Yeet page).

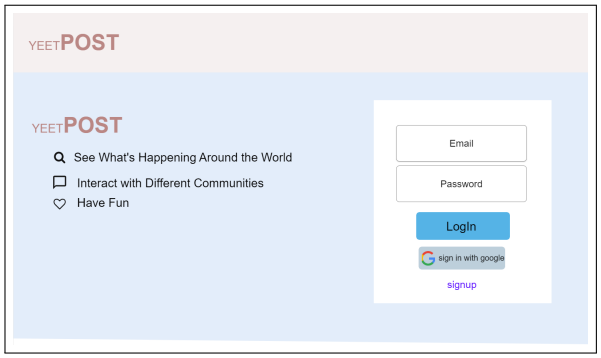

Fig. 3. Welcome screen

The Yeet page will consist of yeets. As previously mentioned, yeets are forum discussions posted by individuals in specific locations. The yeets will be in the forms of cards much like a yak from Yik-Yak or a tweet from Twitter. These cards will have the name of the person who posted on the top of the card and will have the yeet or discussion topic in the body of the card. It will also have social interactions such as upvote on the bottom of the yeet and the flag to the top right of the yeet.

Social interactions such as upvoting a yeet is key to the enjoyment of YeetPost. According to [15], reputation in forms of social interaction is one of the seven functional blocks of social media. Having social interactions is a way users can give themselves a sense of status that will enhance the user's experience of the application. The user will also be able to flag the post. Once the card is flagged five times, the yeet will be sent to the moderators of YeetPost to analyze it. Furthermore, if the user's yeet appears on the Yeet page, the user has the ability to delete the yeet. Lastly, if a card is clicked, the user will be directed to a thread page.

This thread page will contain the yeet, its social interactions and a comment section. The yeet will be in the center of the page, and the comments will be right underneath it. There will also be a back button that redirects to the Yeet page. A web prototype can be found in Fig. 9.

Moving back to the Yeet page, to the left of the screen there will be four tabs. These tabs are the new tab, create tab, trending tab, and location tab. The create tab will allow the user to create a new post (see Fig. 7). The new tab will allow the user to browse the page by most recent yeets (see Fig. 4). The trending tab filters the yeet page by popular yeets, (see Fig. 6). Lastly, the location tab allows the user to filter the page by location (see Fig. 8).

Let us assume the user clicked the create yeet tab. The tab would open up a modal, in which the user can write his/her yeet. This yeet would be posted in the location the Yeet page is filtered by.

If a user clicks the location tab, a modal will pop up and locations from all over the United States would appear in the drop down box with a go and cancel button underneath it. Once a location is selected and the go button is hit, the Yeet page

will be refreshed with a new filter of yeets from a different location.

Furthermore, the user's profile name will show at the top right of the Yeet Page. If the user clicks the his/her profile name, the user will be directed to their profile page. In the profile page the user can view his/her name and all the yeets the user has posted. The user will also be able to delete his/her own yeet. If a yeet is clicked, the page will redirect to the thread page of that yeet. Also if a user clicks the yeet logo on the top left of the screen, the browser redirects to the yeet page. A prototype is shown in Fig. 10.

Lastly, the banning system and crowd-sourced flagging system will work to prevent inappropriate yeets from being posted. If a yeet receives 5 flags, a moderator will receive an email to look at the yeet and decide what should happen. There will be a role value in YeetPost's database, and a moderator would have access to the database. This means moderators can change the role of users or delete a yeet. If a person's role is banned, he/she will then be welcomed with a banned screen and will not be able to browse YeetPost until his/her role is changed in the database. A prototype is shown in Fig. 11.

B. YeetPost Development

The application will be completed in sprints. A sprint is a period of time in which we have to complete a set amount of work [16]. For this project the sprints will last over 20 hours and will span approximately 3 weeks. YeetPost is a web application that will be developed on the .NET Core framework. .NET Core is an open-sourced software framework that is a successor to .NET Framework [17]. Our .NET Core application will also be connected to our database.

The database is going to be set up with Google FireStore. FireStore is an online NoSql database that is a part of Google Cloud Services. Although there are two cloud-hosted NoSql databases from Google Cloud Services, Firestore and Firebase, we are going to use Firestore. Our reasoning is that Firestore organizes complex hierchal data better [18]. Firebase also requires sharding your data accross multiple databases; however, Firestore does this automatically. Firestore also supports ACID transactions, much like how a relational database [19]. Once the database is connected to my .NET Core Application, We will then start developing the front end.

The front end will be designed with CSS, Vuetify, and Vue.js. Vue.js describes itself as a progressive framework for designing beautiful User Interfaces [20]. According to [21], Vue.js is very lightweight, thus it has better speed in performance compared to other javascript libraries such as Ember.js, React.js and Angular. YeetPost will also be developed on Vuetify. Vuetify is a material framework that adopts material design standards into its User Interface alongside Vue.js [22]. Furthermore, Vuetify is also an alternative to Bootstrap. Bootstrap is a CSS framework that makes websites mobile friendly [23]. Vuetify also has the ability to make websites mobile friendly [24].

All of this will be done on a computer that would run the latest version of Windows, 8 gigabytes of ram, and have at least 50 gigabytes free of SSD. The application will be tested on the latest version of Google Chrome, Microsoft Edge, and Mozilla Firefox.

TABLE I
TOTAL HOURS

Sprint	Task	Hours
1	Database Setup, Authentication, and Welcome page	25
2	The YeetPage with yeets	25
3	Profile page, Crowd Sourced Flagging, and Banning System	25
4	Social Media Interactions and Thread Page	25
5	Testing and Final Fixes	30
	Total Hours	130

The development is going to take about a hundred hours of work, and it will be divided into 5 sprints. Table I displays all the hours and tasks the developer is required to finish before publishing.

1) Database Setup, Authentication, and Welcome Page:
The first sprint is to setup the database, authentication and create the welcome page. This would require us to initialize our .NET Core application and connect it to our database. We are then going to setup authentication with Google O-Auth 2.0. which will allow us to create a sign-in with google button. This button automatically creates a YeetPost account with someone's gmail account [25]. Since our app is using Google's Firestore, it is easy to integrate other Google libraries together. It is important to note, Google O-Auth does not limit the creation of accounts to gmail accounts. Lastly, we will create the welcome page. This sprint will take about 25 hours.

2) The YeetPage with yeets:
This sprint will focus on the development of the Yeet page, in which we will create the yeets and four tabs. As previously mentioned, these four tabs are the create tab, trending tab, new tab, and location tab. We will design the tabs and yeets on the front end; then we will create supporting functions that handle the data in our back end. Completion of this sprint will take an estimated 25 hours.

3) Profile Page, Crowd Sourced Flagging and Banning System:
We will begin this sprint by creating the profile page. This includes all the yeets he/she has posted. We are going to design the yeets in this sprint and bring yeets from our database to our profile page. However, the social interactions will not be implemented until the next sprint. We plan to have the deletion button of each yeet the user makes available on this page as well. In this sprint, we will also work on crowd-sourced flagging and banning users. This means we will provide the ability for users to flag yeets, and a banned user will be restricted from using YeetPost. Lastly, we will have our top left logo of yeetpost redirect to the Yeet page. This sprint will take up to 25 hours to complete.

4) Socia lMedia Interactions and Thread Page:
The next sprint requires the developer to implement social

TABLE II
TESTING AND TOOLS USED

Tests	Tools	Process
Unit Test	xUnit [27]	Test individual functions or units
Integration testing	xUnit [27]	Test units that work together called modules
System Test	VSTS and Azure [28]	Performance and Stress test the application
Acceptance testing	questionnare	Test the application with users

interactions. As mentioned before, social interactions are the ability to upvote and comment a given yeet. Since we have already designed the social interactions in the previous sprint, we plan to have classes and functions in the back end that handle these social interactions. Furthermore, this sprint also requires the developer to make the thread page. The thread page will have these social interactions as well as the comment section. This sprint will take about 30 hours to implement.

5) Testing and Final Fixes:
The final step is to test the complete application and fix every bug that is encountered. The developer plans to run the application through all phases of (ASIMU). YeetPost will have acceptance, system, integration, and unit tests. This is to ensure that YeetPost is a fully functional web-application that can be deployed. With testing, we can ensure quality to our customers and have an effective performance. Bug fixes also become more expensive as the application grows, thus it is cheaper to fix bugs as soon as possible [26]. More information can be found in Section V of this paper. Once these bugs are fixed and YeetPost passes the acceptance test, version 1.0 of YeetPost will be complete.

V. TESTING AND EVALUATION

We plan to test the application in all levels of (ASIMU). We are going to run the application through unit tests, then integration and module tests, followed by system tests, and finally an acceptance test done by six college students. . The unit and integration testing will happen during and after the development of the project; the system and acceptance tests will occur after the project has been developed. More of this is explained in the sub sections below, and Table II shows the levels of tests YeetPost would undergo and the tools used.

A. Unit Testing

The developer plans to use xUnit Test (Core) to unit test the application. xUnit Test is a community focused unit testing tool for .Net Core applications [27]. The plan is to test our individual functions in our controllers. Our next step would be testing functions that work together called modules.

B. Integration and Module Testing

The module tests will be done with xUnit as well [29], but It will be kept seperate from the unit tests. Integration testing is needed to verify that two separate systems are working. Furthermore, xUnit will also be able to test the API's of the application. xUnit is able to test http requests such as (GET, POST, PUT, UPDATE), and it can also test the results of the http request.

C. System testing

System testing will cover a range of tests that will exercise the application's ststem. The developer plans to improve the performance by using VSTS (Visual Studio Team Services) and Azure [28]. VSTS provides different testing tools for .NET Core application to test with. With VSTS we are able to run the app through Performance, Load, UI, and Manual testing [30]. For this version of YeetPost we will focus on performance and load tests. The load and performance test will test the amount of users an application can handle [31]. The goal is to ensure YeetPost can handle multiple user requests.

D. acceptance testing

The application is going to be tested by the users to make sure the application has met the requirements of the project. The requirements are as shown in Appendix A of this paper. The application is intended for college students and people that have used Yik-Yak before. Hence, a selection of six college students with at least two of them that have used Yik Yak before would test the application. They would need to complete a questionnaire. This survey is a checklist for all the requirements. The questionnaire has been posted in Appendix B. Once the survey is completed, the developer of Yeet Post would look at the survey and fix any missing requirements, then send the survey again to the user that reported the missing requirement. Once five surveys out of six have been completed with every functional requirement met, YeetPost version 1.0 is complete

VI. FUTURE WORK

There are so many features we want to add to YeetPost that we could not fit into Version 1.0. For example, we want people to be able to post pictures, audio files, gifs, and videos. We also want people to be able to share yeets on other social media platforms such as, Facebook, Twitter, and Reddit. Furthermore, we want users to be able to follow other users and display a follower count on their profile page. Once a user follows another user, he/she will see their yeets on the Yeet page regardless of location. Future profile pages will allow users to choose a profile picture and a background much like Facebook's wall.

Also, We plan to expand the idea of location-base forums. In the future, we hope users will be able to select colleges and historical sites as well. We plan to have a sub-location in a location. For example, a user can post a Yeet regarding to a college's cafeteria.

Lastly, we want to improve crowd-sourced flagging. If YeetPost ever gets big, we want to have a dedicated team of moderators to decide what to do with flagged yeets.There is an intent to make an Admin controller that can setup roles for moderators. We also want to have a separate access for moderators, admins, and regular users.

VII. Conclusion

YeetPost is a location based forum web-application whose audience will be previous Yakkers and college students. The application will be developed on .NET Core with Blazor, Vue.js, and Google Firestore. The application will be able to run on the latest versions of Microsoft Edge, Firefox, and Google Chrome. Features of this app will grant users the ability to create, upvote, flag, and filter location-based forums called yeets. YeetPost will go through all levels of (ASIMU) testing to ensure quality. Lastly, YeetPost hopes to hit the web market in summer 2020.

VIII. Acknowledgment

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References

[1] Wikipedia, "Yik yak." Available:https://en.wikipedia.org/wiki/Yik_Yak, Oct 2019. [Accessed: Aug. 15,2019].

[2] G. Williams and A. Mahmoud, "Modeling user concerns in the app store: a case study on the rise and fall of yik yak," in *2018 IEEE 26th International Requirements Engineering Conference (RE)*, pp. 64–75, IEEE, 2018.

[3] C. Newton, "Amid slowing growth, yik yak adds a chat function." [Online]. Available: https://www.theverge.com/2016/4/25/11503796/yik-yak-chat-private-messaging, Apr 2016. [Accessed: Sept. 22,2019].

[4] K. Crawford and T. Gillespie, "What is a flag for? social media reporting tools and the vocabulary of complaint," *New Media & Society*, vol. 18, no. 3, pp. 410–428, 2016.

[5] M. Hassenzahl and N. Tractinsky, "User experience-a research agenda," *Behaviour & information technology*, vol. 25, no. 2, pp. 91–97, 2006.

[6] E. L.-C. Law, V. Roto, M. Hassenzahl, A. P. Vermeeren, and J. Kort, "Understanding, scoping and defining user experience: a survey approach," in *Proceedings of the SIGCHI conference on human factors in computing systems*, pp. 719–728, ACM, 2009.

[7] M. Nordhoff, T. August, N. A. Oliveira, and K. Reinecke, "A case for design localization: Diversity of website aesthetics in 44 countries," in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, p. 337, ACM, 2018.

[8] B. Foundation, "Home of the blender project - free and open 3d creation software." [Online]. Available: https://www.blender.org/, 2019.

[9] makeprintable, "Learning 3d modeling through the blender community." [Online]. Available: https://makeprintable.com/blog/learning-3d-modeling-blender-community/, May 2017. [Accessed: Dec. 05,2019].

[10] C. Házi, "Re-designing the ux honeycomb - a simple way to understand what ux really is." [Online]. Available: https://bit.ly/2Lw1LUj, Nov 2017. [Accessed: Oct. 28,2019].

[11] P. Morville and P. Sullenger, "Ambient findability: libraries, serials, and the internet of things," *The serials librarian*, vol. 58, no. 1-4, pp. 33–38, 2010.

[12] D. Wesolko, "Peter morville's user experience honeycomb." [Online]. Available: https://bit.ly/2RxAu7D, Oct 2016. [Accessed: Oct. 28,2019].

[13] L. Bollini, "Beautiful interfaces. from user experience to user interface design," *The Design Journal*, vol. 20, no. sup1, pp. S89–S101, 2017.

[14] J. Graham, "Yik yak, the once popular and controversial college messaging app, shuts down." [Online]. Available:https://www.usatoday.com/story/tech/talkingtech/2017/04/28/yik-yak-shut-down/101045670/, Apr 2017. [Accessed: Oct. 10,2019].

[15] J. H. Kietzmann, K. Hermkens, I. P. McCarthy, and B. S. Silvestre, "Social media? get serious! understanding the functional building blocks of social media," *Business horizons*, vol. 54, no. 3, pp. 241–251, 2011.

[16] M. REHKOPF, "Sprints." [Online]. Available: https://www.atlassian.com/agile/scrum/sprints, 2019. [Accessed: 12/05/2019].

[17] Wikipedia, ".net core." [Online]. Available: https://en.wikipedia.org/wiki/.NET_Core, Nov 2019. [Accessed: Nov. 25,2019].

[18] S. Modi, "How does firestore differ from firebase?." [Online]. Available: https://inheritx.com/how-does-firestore-differ-from-firebase/. [Accessed: Aug. 9,2019].

[19] "Cloud firestore — google cloud." [Online]. Available: https://cloud.google.com/firestore/, 2019. [Accessed: Aug. 9,2019].

[20] Vue.js, "Introduction - vue.js." [Online]. Available: https://vuejs.org/v2/guide/. [Accessed: Sept. 10,2019].

[21] TechMagic, "React vs angular vs vue.js - what to choose in 2019?." [Online]. Available: https://bit.ly/2Lyxcxm, Jun 2019. [Accessed: Sept. 10,2019].

[22] Vuetify.js, "Vue material design component framework - vuetify.js." [Online]. Available: https://vuetifyjs.com/en/. [Accessed: Oct. 28,2019.

[23] w3schools, "What is bootstrap?." [Online]. Available: https://www.w3schools.com/whatis/whatis_bootstrap.asp. [Accessed: Oct. 25,2019].

[24] Vuetify.js, "Why vuetify? - vuetify.js." [Online]. Available: https://vuetifyjs.com/en/getting-started/why-vuetify, 2019. [Accessed: Oct. 10,2019].

[25] google, "Authorizing your app with gmail — gmail api — google developers." [Online]. Available: https://developers.google.com/gmail/api/auth/about-auth, 2019. [Accessed: Oct. 20,2019].

[26] R. Luther, A. Shukla, and Andrew, "Home." [Online]. Available: http://tryqa.com/why-is-testing-necessary/, 2017. [Accessed: Oct. 25,2019].

[27] xUnit, "About xunit.net." [Online]. Available: https://xunit.net/, 2019. [Accessed: Nov. 25,2019].

[28] steved0x, "Run url-based cloud load tests - azure test plans." [Online]. Available: https://bit.ly/2Psfk8j. [Accessed: Nov. 25,2019].

[29] D. Pawlukiewicz, "Writing integration tests for asp.net core app with xunit, restease and testhost." [Online]. Available: https://bit.ly/2RvAZ1Y, Jun 2018. [Accessed: Nov. 25,2019].

[30] S. TimmsSimon, "Asp.net core testing tools and strategies." [Online]. Available: https://stackify.com/asp-net-core-testing-tools/, Aug 2018. [Accessed: Nov. 30,2019].

[31] "Web application load and performance testing." [Online]. Available: https://azuredevopslabs.com/labs/azuredevops/load/. [Accessed: Dec. 02,2019].

APPENDIX

APPENDIX A
YEETPOST REQUIREMENT SPECIFICATION

A. YeetPost Requirements

1) Welcome Page and Login Page (14 hours):

- New and unsigned users will be directed to a welcompe page that present what YeetPost is about. (2 hours)
- The welcome page will allow users to signup/signin with Google O-Auth (2 hours)
- If a user is new I has to create a new account with any email or password. (2 hours)
- If a user creates an account with an email that has already been used, the transaction should not be allowed (2 hours)
- The login/signup page should have form validations (2 hours)
- Upon entering new users has the ability to choose the create a profile name (2 hour)
- If a new account is made the user is redirected to the Collegedale Yeet page (2 hours)

2) The YeetPage (15 hours):

- Users should be able to see yeets from the location he/she chose ri filter by (2 hours)
- Users should be able to create yeets within the location he/she filtered by (2 hours)
- Users should be able to find a tab on the side of the page that allows users to filter by location, create, sort by most recent yeets and most popular (1 hours)
- Users should be able to switch location of viewing yeets by clicking the location tab (2 hours)
- Users should be able to filter popular yeets by trending (2 hours)
- Users should be able to filter yeets by most recent (2 hours)
- Users should be able to delete his/her yeets if their yeet is shown on the Yeet page (2 hours)
- Users should be able to direct his/her user profile by clicking their user profile name on the top right corner (1 hours)
- Users should be able to View a thread of yeets by clicking the yeet post (1 hours)

3) Social Interactions (12 hours):

- Users should be able to upvote a yeet once (2 hours)
- Users should be able to flag a post once (2 hours)
- Users should be able to choose a reason for flagging the post (2 hours).
- If a yeet is clicked the browser will redirect the user to the thread page of the yeet (2 hour)
- If a post receives 5 flags, it will send an email to the moderators (2 hours)
- Users should have the ability to comment on yeets (2 hours)

4) Profile YeetPage (4 hours):

- The page should display all the yeets the person has created (2 hours).
- The user should be able delete his/her own yeet (1 hour).
- The user should be able to click on a yeet to visit the thread page of that yeet. (1 hour)

B. Non-Functional Requirements

- Support for a computer with 8 GB's of ram.
- This application will be connected to the internet
- The devices listed show version of internet browsers supported
  - Google Chrome(Windows) Version 64.0.3282.140 and up
  - Google Chrome(Mac) Version 64.0.3282.140 and up
  - Microsoft Edge Version 44.18362.449.0 and up
  - Opera Version 65.0.3467.62 and up
  - Safari Catalina Version 13.0.3 and Up

APPENDIX B
YEETPOST REQUIREMENT QUESTIONNAIRE

Acceptance Test Questionnaire

Please fill out the questionnaire below. Use a check mark if a requirement has been met and leave it blank if it has not.

Full Name: _____

Class Standing: _____

Date: _____

- Functional Requirements.
  - ☐ I can create an account
  - ☐ I can post a yeet.
  - ☐ I can browse by new.
  - ☐ I can browse by trending.
  - ☐ I can view the yeets he or she has posted.
  - ☐ I can browse by location.
  - ☐ I can upvote.
  - ☐ I can downvote.
  - ☐ I can flag another person's yeet.
  - ☐ I can delete my own yeet
  - ☐ I can click on a yeet.
- Other Requirements.
  - ☐ I believe there is a use for this application in the future.
  - ☐ The application was easy for me to use.
  - ☐ The web pages loaded fairly fast.
  - ☐ I have used Yik Yak before and Yeet Post resembles Yik Yak in some type of way.
    .

APPENDIX C
YEETPOST PROTOTYPES

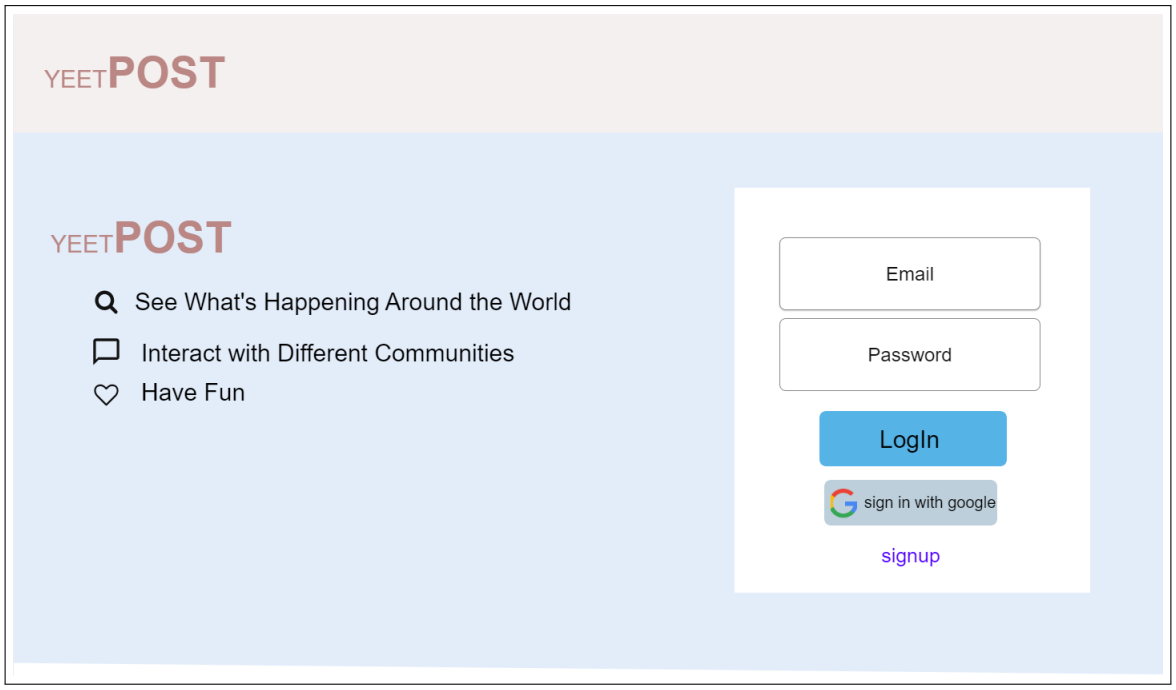

Fig. 4. Welcome page

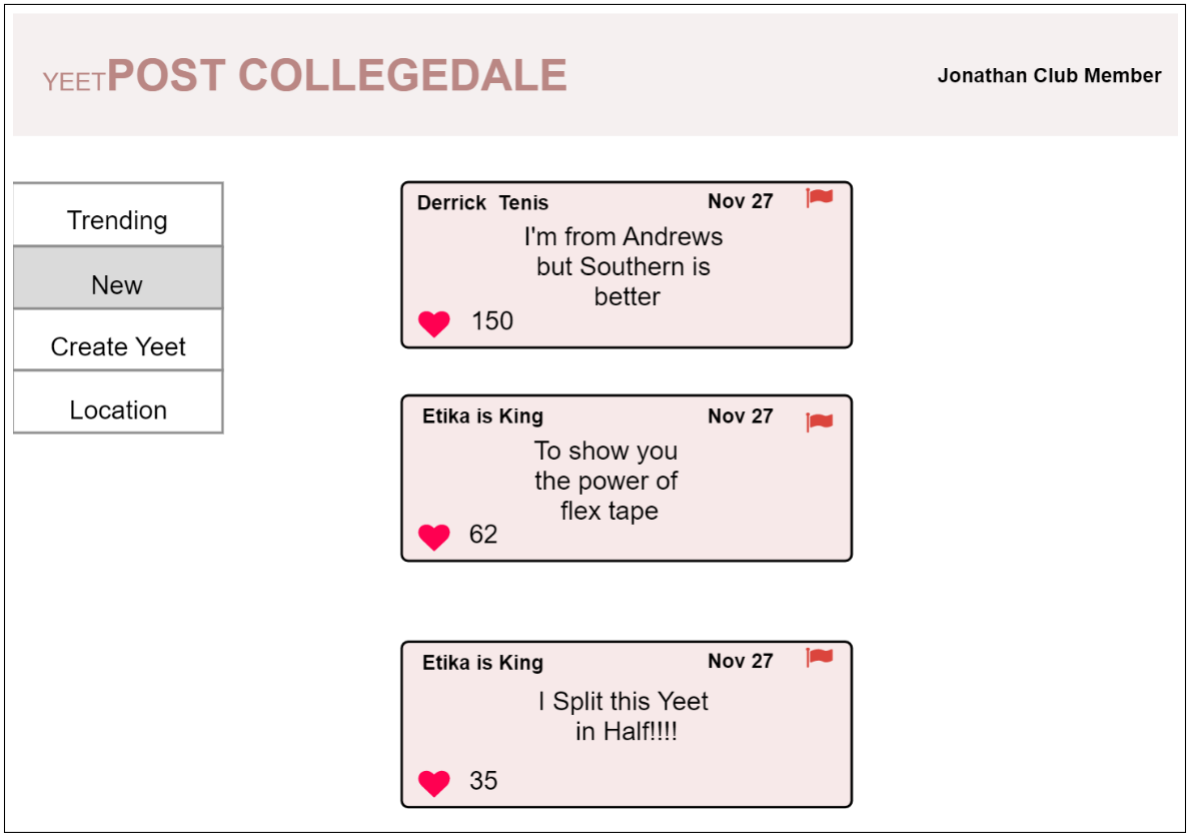

Fig. 5. Yeet Page filtered by new

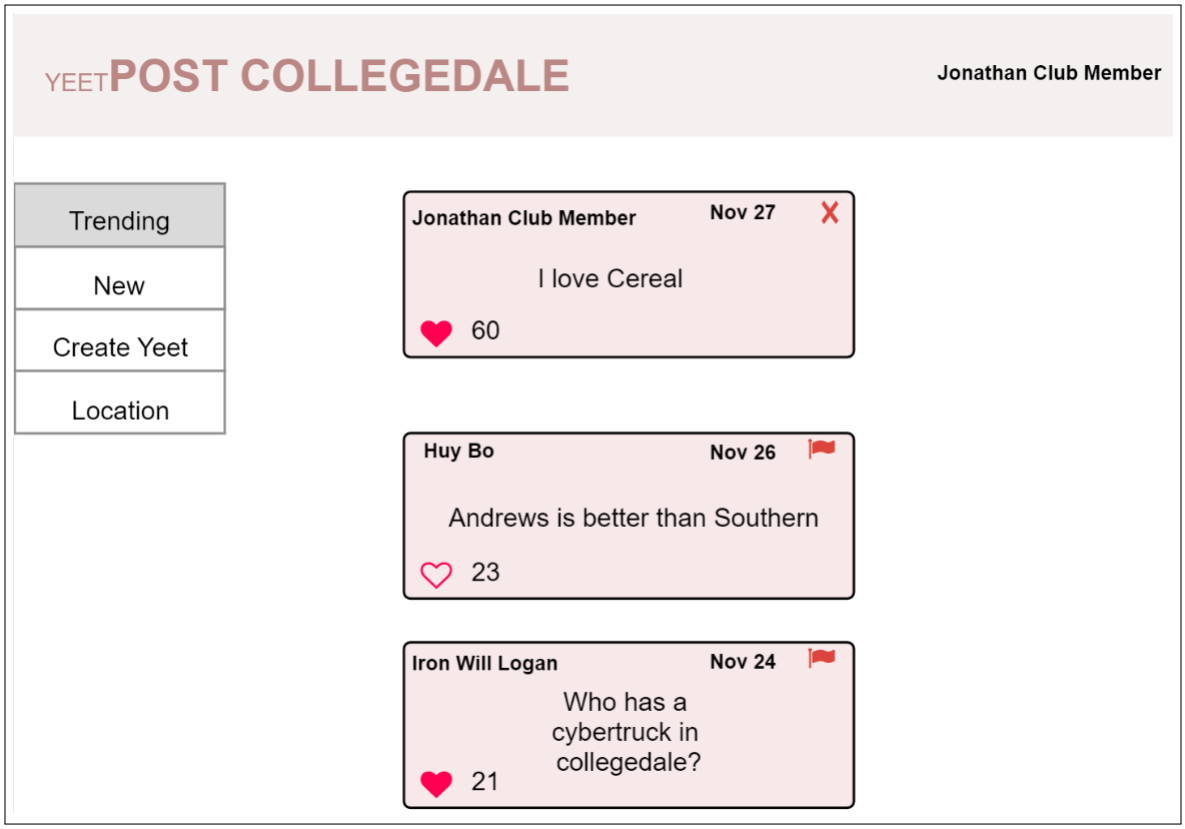

Fig. 6. Yeet Page filtered by trending

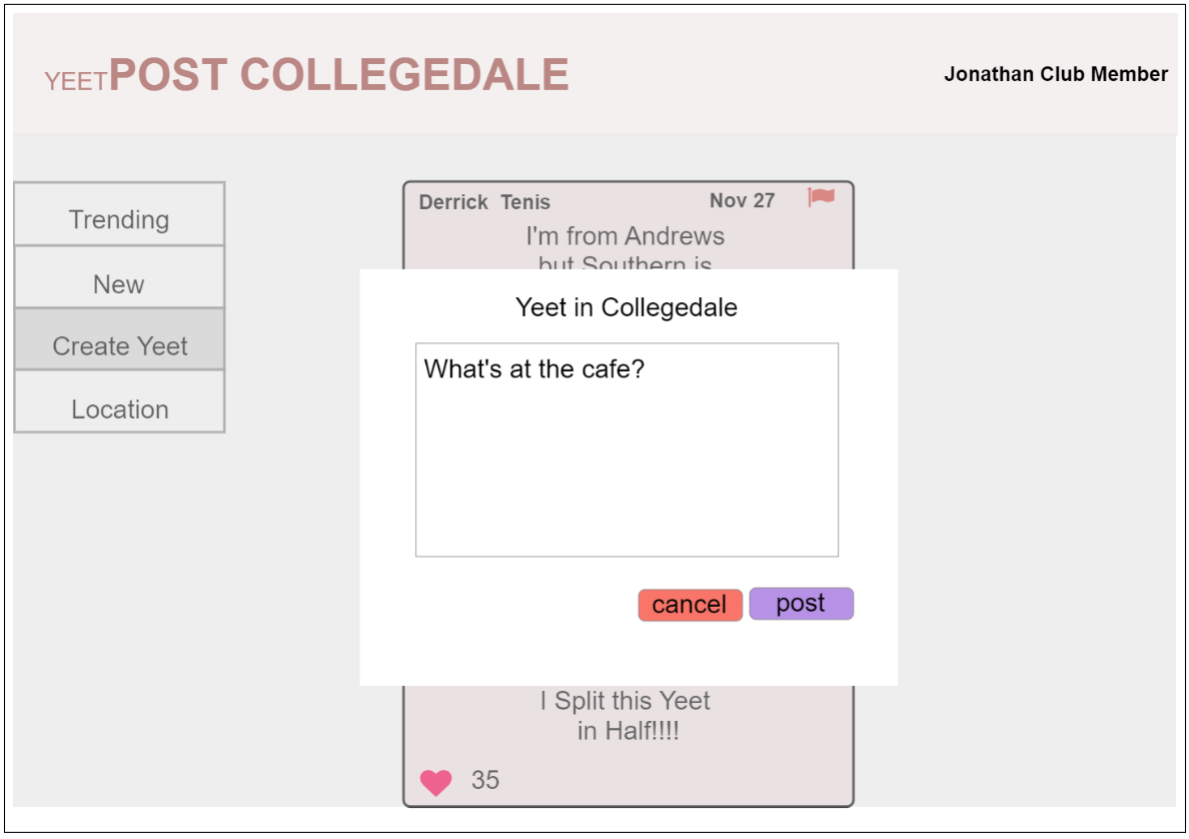

Fig. 7. Create Yeet Tab

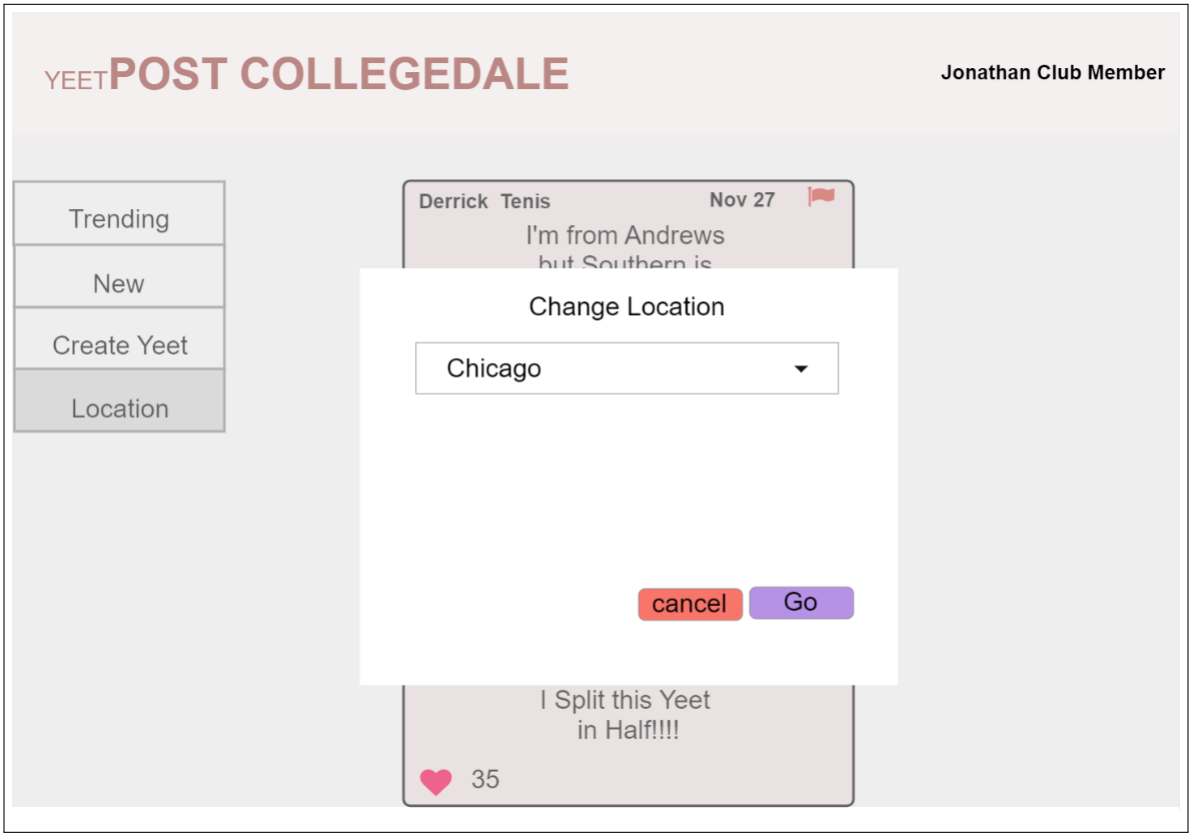

Fig. 8. Location Tab

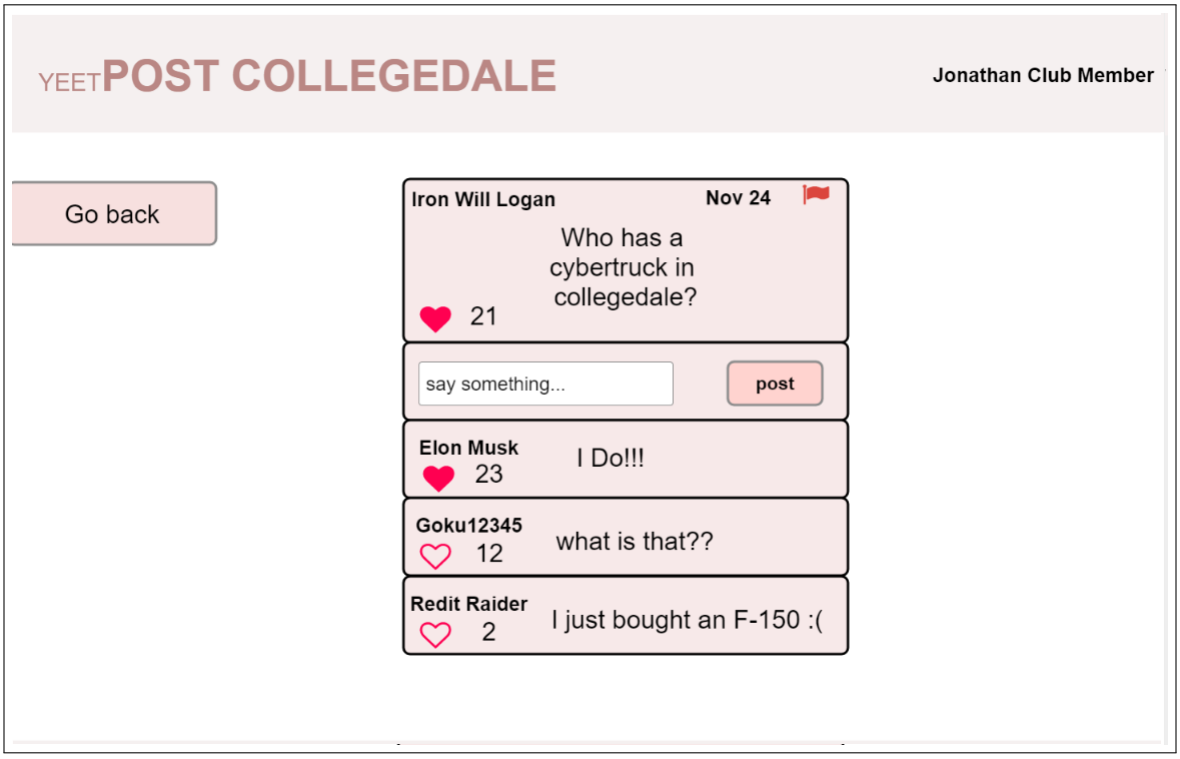

Fig. 9. Thread page of a yeet

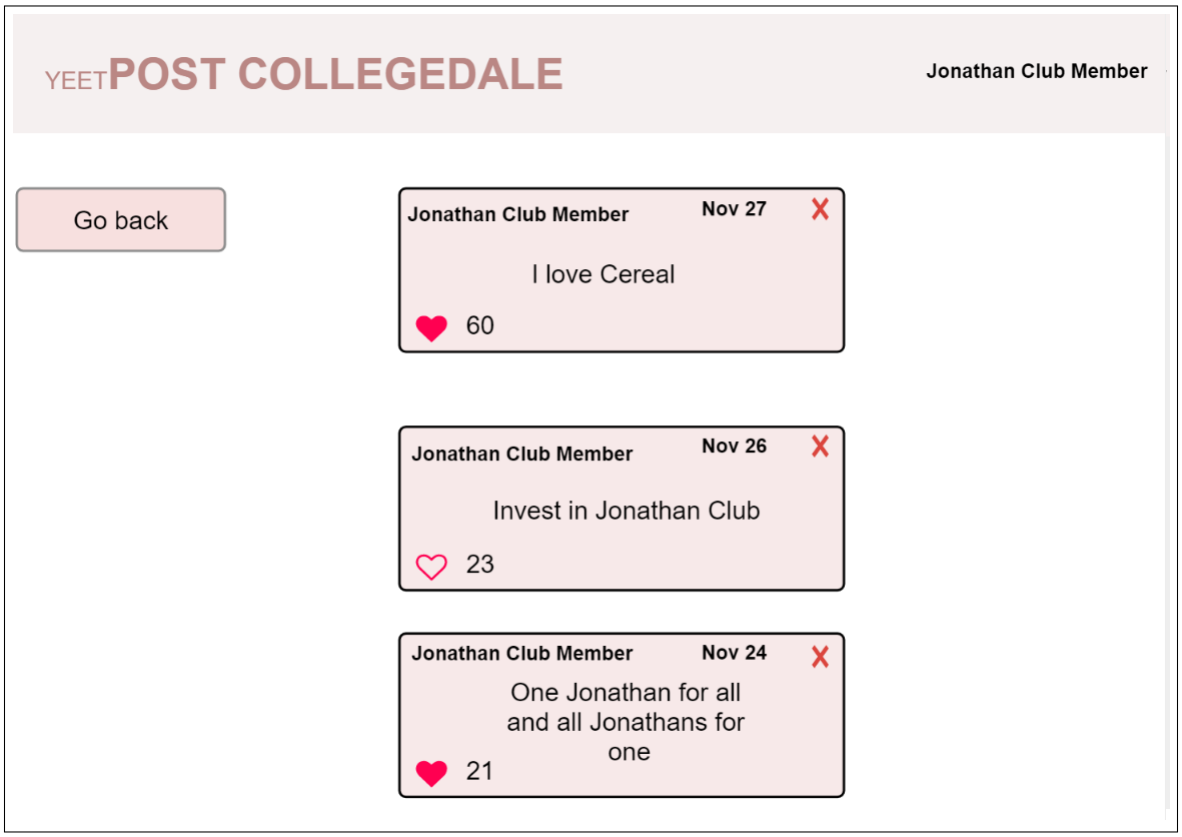

Fig. 10. Profile Page

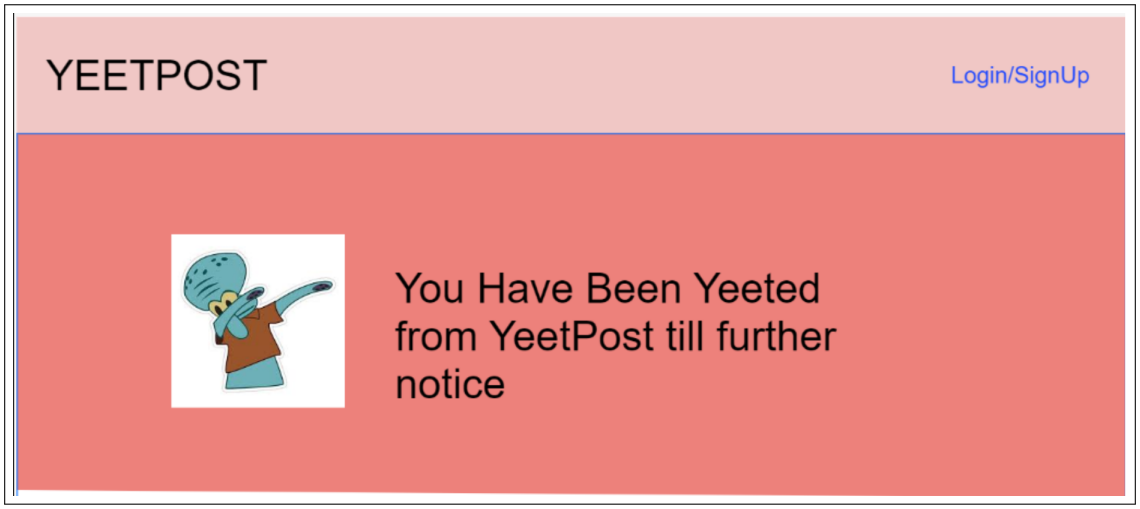

Fig. 11. Banned Page

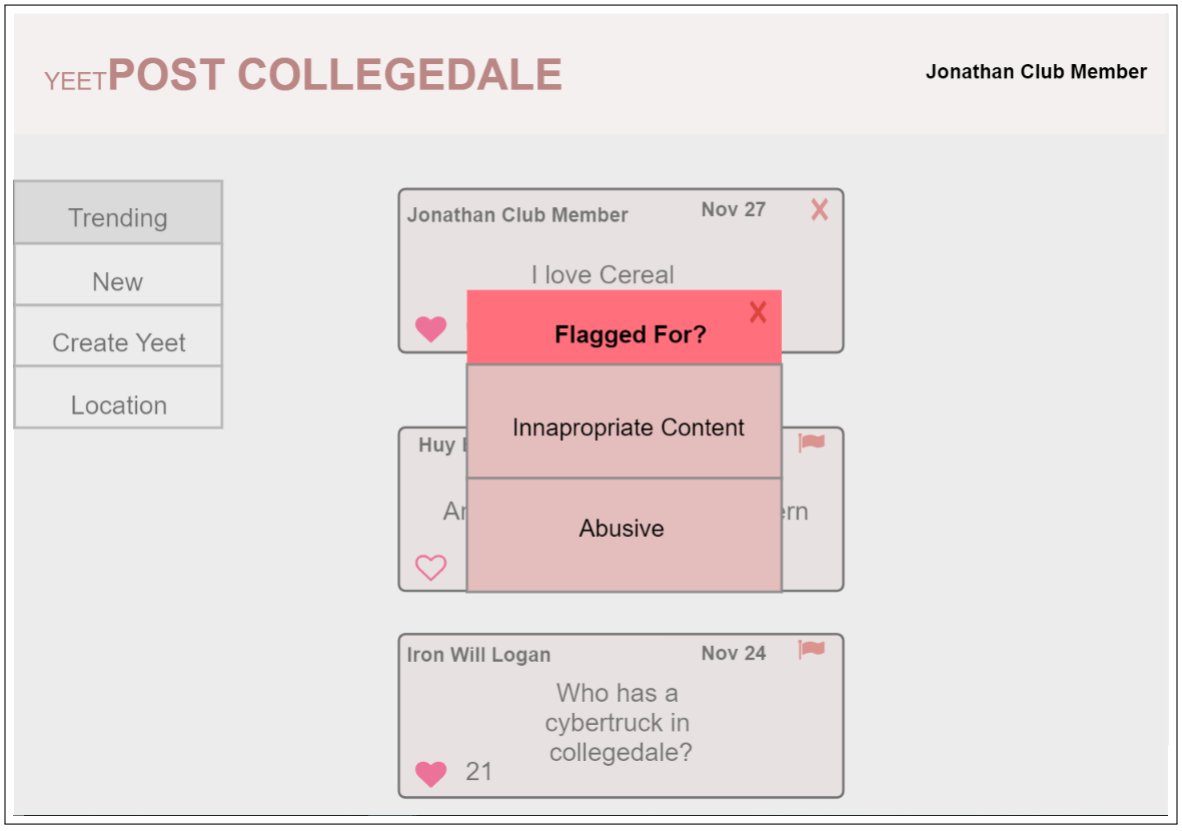

Fig. 12. Flagged Modal