Be Epic

By

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Abstract

Imagine learning a new activity or going somewhere alone without feeling social isolation, loneliness, or anxiety. With Be Epic, you will never feel that way again. Be Epic is a social app which allows the user to select interests that they are already involved with or would like to be and create a personalized profile where they can share their adventures with others in a safe space. It includes different feeds depending on their selected interests where users can post information about what they are doing, where they are going, or who they are with. Users can stay updated and meet with one another in real time. Users can meet new partners, make connections, and even learn with a more experienced user. Never fear learning something new or doing something alone again with the help of Be Epic.

1. Problem Statement

1.1 Problem

Social isolation and loneliness can have a significant impact on personal health. "…Individuals lacking social connections (both objective and subjective social isolation) are at risk for premature mortality" (Holt-Lunstad, 2015). With busy schedules and unknown events causing cancellations, people need help making new connections for when they are looking to get out and enjoy the activities they love, or when they want to dive into a new activity so they can avoid feeling alone and isolated. A social media application for local communities - that focuses on forming friendships through mutual interests - could help reduce feelings of isolation and loneliness.

1.2 Solution

This app would bring people together. It would combine some aspects of Reddit, Instagram and other applications that we would incorporate but improve. Our application will be produced by using Android Studios as our IDE and Firebase. The result is one localized application where you can select your interests, socialize with other people who share the same interests, and have a safe place to connect with those individuals through the app or in real life. For example, our application would narrow an individual's scope of interest to potentially: climb, slackline, camp, hike, run, video game, etc.

1.3 Project Goals

In Scope Goals

- User Profile
- Interest Page

- Firebase for User information
- SQL for data storage and retrieval
- Individual Interest Home Feed
- Sending private messages to other users
- Following (follow other users, unfollowing other users).

Stretch Goal

- A map showing current users in real locations/ real time

1.4 Overview

In the rest of the final report below it outlines the details of how the project was completed. This report includes the sections: project concept/ solution, design objectives, methodology/ technological approach, Gantt chart, user profile, use case diagram, problems encountered, and our conclusion for the fall.

2. Discussion

2.1 Project Concept/ Solution

Earlier this year we brainstormed ideas for our senior design project, thinking what need was not being met and how could we resolve it with a mobile app? We came up with Be Epic when we realized there was an issue of connecting with different people who shared similar interests in their area. Even though there are similar social apps already available, we planned on redesigning how connections are made. Other apps focus on making virtual connections with other people you already know or where you must search for them yourselves. We saw a need for this in our own personal lives and reached out to individuals who also experienced the same dilemma.

2.2 Design Objectives

Our objective and goals for this application are simple.

- Provide users the opportunity to connect with new people who are actively participating in interests that users might want to learn more about.
- Provide personalized interest feeds and profiles for individual users. The use of firebase stores and displays the user's profile information.
- Interests selected by the user in the app will filter what they see specifically,
- It's tailored to what the user's interests are and finds people who share those interests.
- The user can look through other users' pictures and profiles, send messages and follow them.

Our hope is that our application will make forums obsolete, it has one place where you can learn about new interests and gain knowledge from real people in real time.

There will also be a page where users can post on an individual interest feed, and only the people who select the interest can see the other user's posts. Each interest will have a feed where users can post news, helpful information, events, or hangouts; popular locations will have similar feeds associated with them.

With the help of this application, companies would be able to collect information about where interests are most popular, and target different products near those areas or users.

Future goals that would complete the uniqueness and usefulness of Be Epic will eventually include:

- A map feature where users can view the locations of other users who are actively adventuring. This will allow users to meet new friends in their favorite locations.

- Users will have the option to be notified when friends are nearby or doing certain activities.

2.3 Methodology/Technical Approach

2.3.1 Application/ Networking

The application is being built with Android Studio. We built our app in their native platform to provide better performance overall. Android also offers no upfront cost and allows us to be able test our app with the Android emulator. Once our app is created we will use the Google Play store to host our app. The initial cost is $25 dollars to host on the Google Play store with Google receiving a 30% cut from all profits made once ads have been implemented.

2.3.2 Database/Security

The application will use Firebase for all of our back-end needs. Firebase is a Google owned product and will assist in the implementation of Authentication, Push Notifications, Cloud Storage, and RealTime Database updates. Authentication will allow users to sign in and view data feeds that are catered to them. Firebase Authentication also handles the task of a user forgetting their password or user name. Push notifications will be used to let users know if someone has commented on their post. Cloud storage will be used to store user comments, messages and images they upload. RealTime Database will be used to supply the data feeds in real time. It will update the user if new content is available and will also allow users to message each other. Using Firebase will allow us to focus more on another task and while also getting us to market faster. In the case, we see rabid growth, Firebase is easily scalable to suit are needs. There is no initial upfront cost when initially using Firebase. Cost will only start to occur once we reach a certain number of users.

2.4 User Profile

Table 1: User Profile provides an outline of what our potential audience will be, as well as listing out the specific actions our app will have. Our team will use the user profile as a reference throughout our development process in order to stay on track with what we hope to accomplish with our app.

PROJECT: Social connection app for users with shared interests
POTENTIAL USERS: - Anyone wanting to socialize with others with a shared interest/hobby - Anyone looking to start or explore a new interest
SOFTWARE, INTERFACE, AND RELATED EXPERIENCE: This project will be primarily targeted towards individuals wanting to meet new people with a shared interest or hobby. These individuals are likely struggling to meet other local people interested in participating in a shared hobby. The features of the application will focus on connecting these people based on location. Individuals looking to explore a new interest will be able to easily connect with other newly interested people as well as experienced individuals.
EXPERIENCE WITH SIMILAR APPLICATIONS: Users will may have experience with other social media applications. Users may also have experience with online forums specific to a topic or interest. Users will most likely be familiar with an interest feed to post and interact with other users with the same interest.
TASK EXPERIENCE: Users may have experience with creating a personal profile, selecting interests, messaging, posting, and interacting with the interest feed.
FREQUENCY OF USE: The application could be used in any frequency but likely to be weekly to organize meetings or activities, or daily for discussions of a topic.
KEY PROJECT DESIGN REQUIREMENTS THAT THE PROFILE SUGGESTS: - Simple, easy to navigate UI - Quick user profile creation - Content only relevant to a user's interests - Interaction between users

Table 1: User Profile

2.5 Use Case Diagram

Figure 1: Use Case Diagram depicts how our users would interact with our app and the different actions they can perform specifically, depending on if they are the user or users in the interests feeds. As well as how it corresponds with our data source as of right now, later developments will

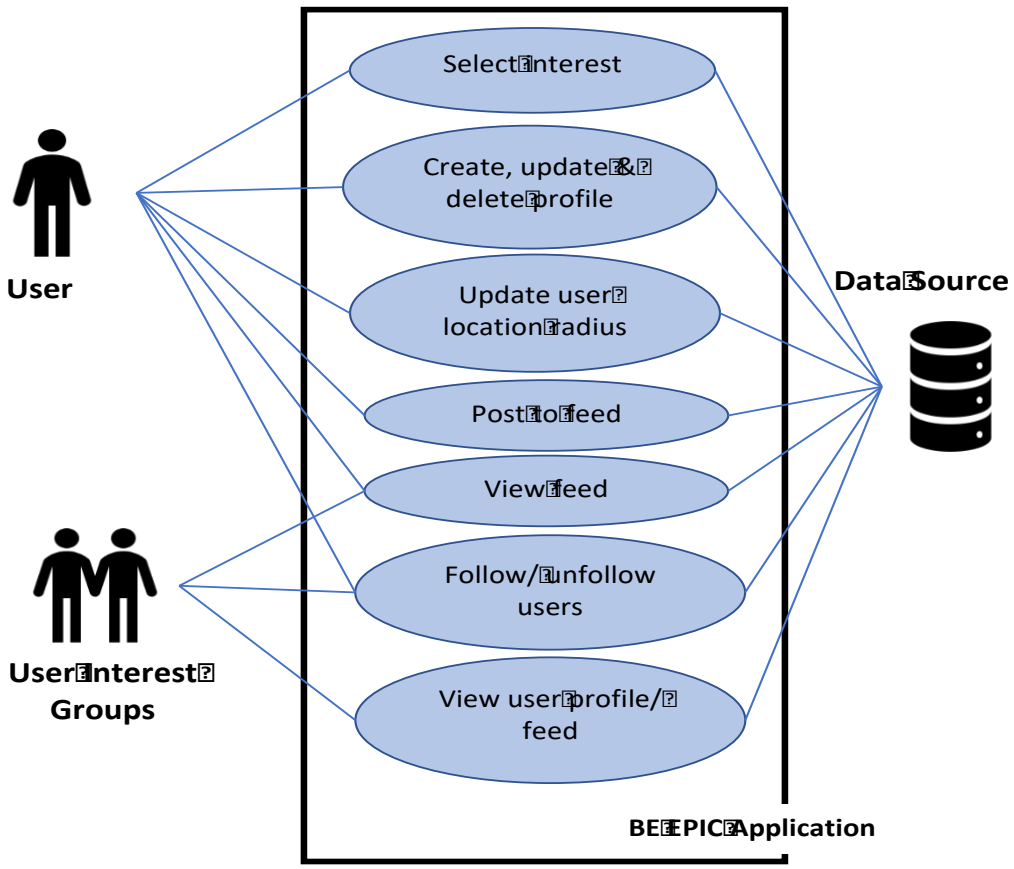


Figure 1: Use Case Diagram

2.6 Technical Discussion

2.6.1 Technical Architecture

Figure 2: Technical Architecture shows how the applications we used to create our Be Epic application worked. We kept it simple by utilizing only two, Google Firebase and Android Studio. Firebase stored all our data, storage, authentication and any changes made to accounts were updates through there. As for the app, we worked with Android Studio to create the look and feel of our app which only works on Android phones.

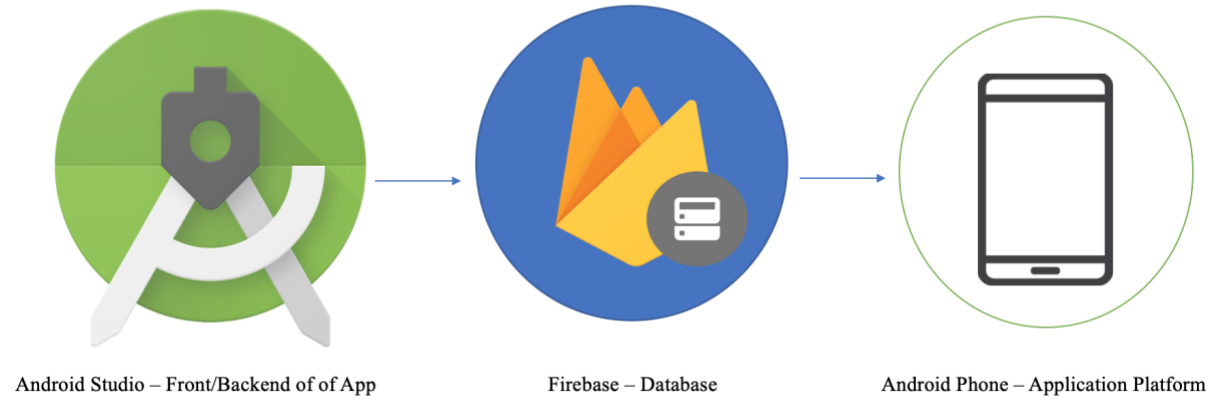


Figure 2: Technical Architecture

2.6.2 Testing Plan

Overview

In this section, it will go over the testing plan in place for the Be Epic mobile application. Be Epic can currently only run on Android. This section will be useful for the developer, project managers, Q & A testers, team members and investors.

Scope

For the scope of testing the objective is to test the functionality of Be Epic on Android. The test will be executed base on the function of the applications we currently have in place.

Objective

The objective of testing is to ensure the accurate function of the code for the application. Each section of code will be tested to see if it populates the database as it should. The test for each portion will be run by the developer(s).

Entry and Exit Criteria

Entry Criteria: Build was completed, self-testing completed, and the test environment is set up.

Exit Criteria: Tests have been run, bugs were documented and fixed.

Logging Test and Reporting

In Be Epic we use a log system to document all our testing. How this works is a log tag is placed within a method, once the method fire, it is then logged in the logcat terminal.

In this example below, we're checking to if the user has input any values before we submit their sign-up credentials. In the appendix, more examples in greater detail are shown of how we tested the code.

Figure 3: Checking field inputs method checks for empty values. The Log.d(TAG "checkInputs: checking inputs for null values" will be logged in the terminal along with a message on the user screen stating, "All fields must be filled out."

```
// checking field inputs
private boolean checkInputs (String email, String username, String password){
    Log.d(TAG,  msg: "checkInputs: checking inputs for null values");
    if(email.equals("") || username.equals("") || password.equals("")){
        Toast.makeText(mContext,  text: "All fields must be filled out.", Toast.LENGTH_LONG).show();
        return false;
    }
    return true;
}
```

Figure 3: Checking field input method

Figure 4: Toast displaying on the screen letting the user know they left the fields blank.

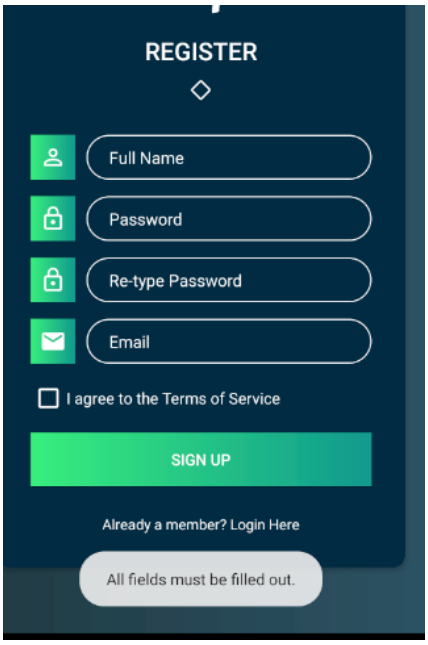


Figure 4: Toast Displaying

Figure 5: Logcat Terminal below shows how the log is being shown.

```
2019-02-05 14:21:08.360 1847-2788/? D/WificondControl: Scan result ready event
2019-02-05 14:21:16.088 6750-6750/com.beepic D/SignUpActivity: checkInputs: checking inputs for null values
```

Figure 5: Logcat Terminal

Pass/ Fail Conditions

It is anticipated that Be Epic must have all tests pass to be successful in every functionality. If during the test it doesn't pass, it will be documented and instigated.

Team Member Testing

Table 2: Team Member Testing shows the team member testing schedule below.

Team Member	Timeline of Completion	Occurrence
Project Manager	02/01/2019 to 04/01/2019	Weekly
Developer	02/01/2019 to 04/01/2019	Weekly
Database Specialist	02/01/2019 to 04/01/2019	Weekly

Table 2: Member Testing

2.6.3 Budget

Table 3: Be Epic Budget displays the project budget for development costs. It shows a real-world cost example from the start of development until the current state of the application. This includes labor for 2 software developers for 9 months working full-time as a developer, and the estimated monthly cost of Google Firebase used in the development.

Item	Unit	Cost	Total
Labor	1500 Hours	$70/hr	$105,000
Google Firebase	9 Months	$40/month	$360
Total			**$105,360**

Table 3: Be Epic Budget

2.7 Gantt Chart

Figure 6: Gantt chart lays out our entire project scope and when we will complete different aspects of our project.

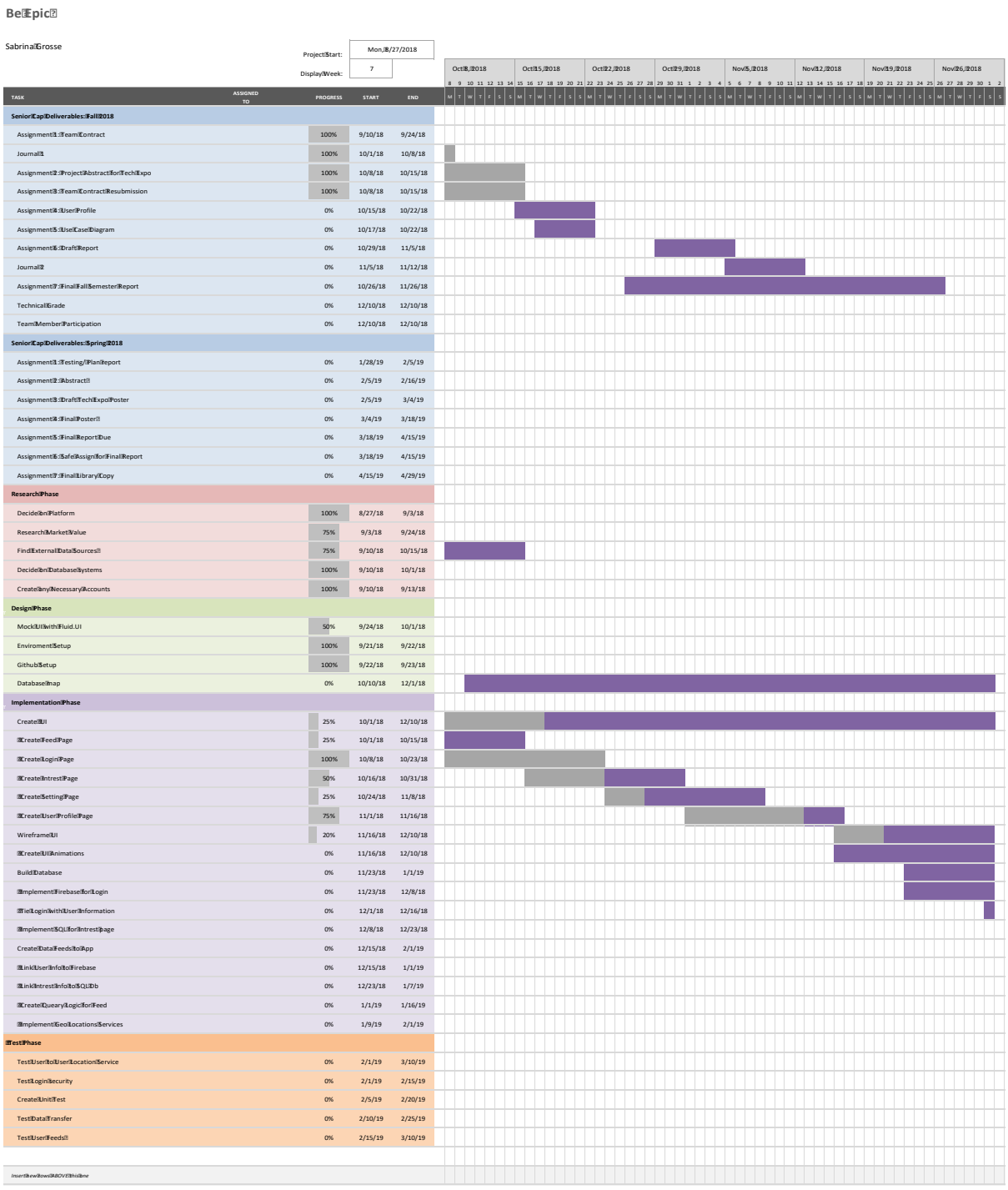


Figure 6: Gantt Chart

2.7 Problems Encountered

Over all our group been lucky and successful in the way of not having any major issues throughout this whole project work. We started off with an idea and developed it early on so we could avoid having any issues in the long run. So far are most troubling problem being with one of our images in our prototype wasn't loading correctly. We thought it was the image and our code that was causing the issue but after some in depth reading and investigating on proper use of image view, we discovered it was the actual image itself. After some time, our resolution was to just find a new image and it worked!

2.9 Future Recommendations

If there was an opportunity to do it over again we would use something other than Android studio. Xamarin would be an alternative platform we'd use because we'd be able to target both android and IOS phones. Starting the coding portion a little sooner would allow more feature to be implemented. Under estimating the complexity of some of the items caused some issues in the development portion.

If there was more time we'd work on implementing features missed. Would like to have been able to search for users, friending users, messaging users, and commenting on users post completed before Expo.

People wanted to make sure there was some way to be able to see other users Full name. It was more of a safety feature. People also wanted to see more interest to select from and how we would handle sub categories.

Rebuild the project in Xamarin as mentioned above and implement the feature that were missing. Possibly take it to market but it would have to be controlled due to scaling issue with location-based services.

3. Conclusion

3.1 Fall Conclusion

We began the Fall Semester with the idea to create an Android application to help solve a problem that we, and others have faced. We agreed that we all have had difficulty finding people, even among friends, who are interested in participating in a group activity or sport alongside us. First, we conducted research to determine if there were any existing applications that would fit our needs as a solution to our problem. Several existing applications were tested and were deemed to be insufficient for our problem. Then, we decided on the important factors that we wanted our application to have.

Our application will require minimal information to create a user profile and to begin using the application. The application will have an interest feed that will only show other users posts that fall within the categories of a user's interests selected during profile creation. Location data will be used to filter the interest feed to keep posts local to a user's location. Furthermore, the application will have a simple interface that is easy and effective to use. By using Android studio, the registration, login, and interest's screens have been created along with the interest feed, several dummy profiles and posts to test the interface of the application.

3.2 Spring Conclusion

Timing is everything. During the fall semester, it seemed like we had endless time and we could get everything done but with this last semester, time flew by. We had to dedicate a lot of work as a team to make sure that we dotted our I's and crossed our T's before our final presentation,

expo, and for our last portion of our paper. We couldn't procrastinate any development work or paper writing during this final semester.

As a team, we developed the ability to work with people who have very different schedules and figure out how we can accomplish everything we want with those kinds of restrictions. I know Todd gained a ton of great developing skills that will help him in the future and Sabrina learned how to manage a team which will help on future technical projects.

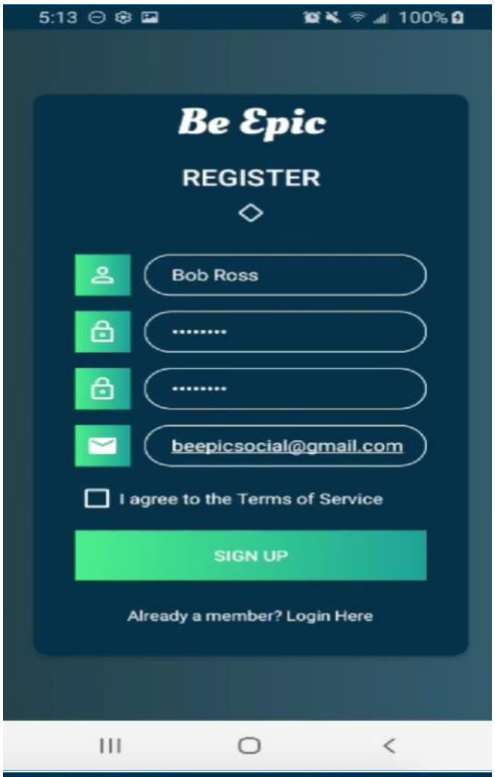
Since the fall, a lot of improvements have been made to the app. We accomplished everything we set out to have done by this spring, even the harder functionalities that took a lot of time and dedication to get finished. Specifically, we completed: the authentication, user profile, ability to edit usernames, create posts, load pictures from the gallery, upload profile photo and use geolocation services.

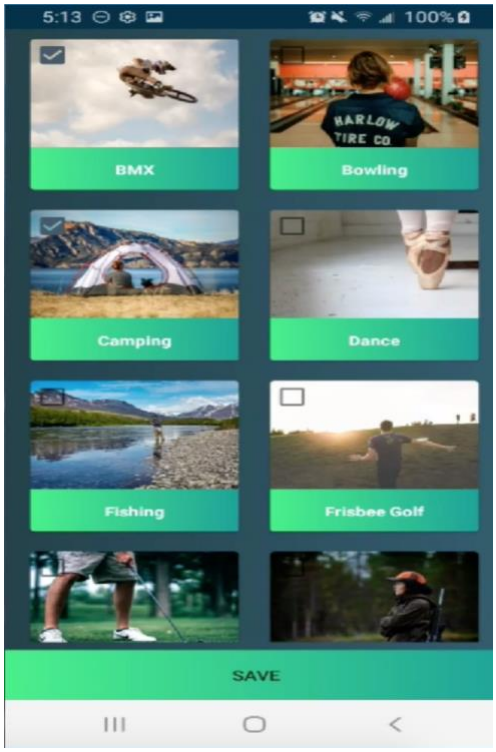
As far as the expo, there we a few things we experienced as we presented our project for the first time to people who weren't seeing it throughout the year. Additionally, we all enjoyed expo but wished more people would have come to our booth. Also, wished more companies walked around to let us showcase our project and sell ourselves. We found ourselves disappointed in our performance during the judging portion because we were first and hadn't talked to anyone first so even though we practiced we were still caught off guard. We think that if we had spoken to a couple of other people first we would've done better but overall it was a learning experience and the rest of expo was great. We were surprised by the number of people who were interested in our app and who were hoping it was going to be on the market. It's one of our goals for the future

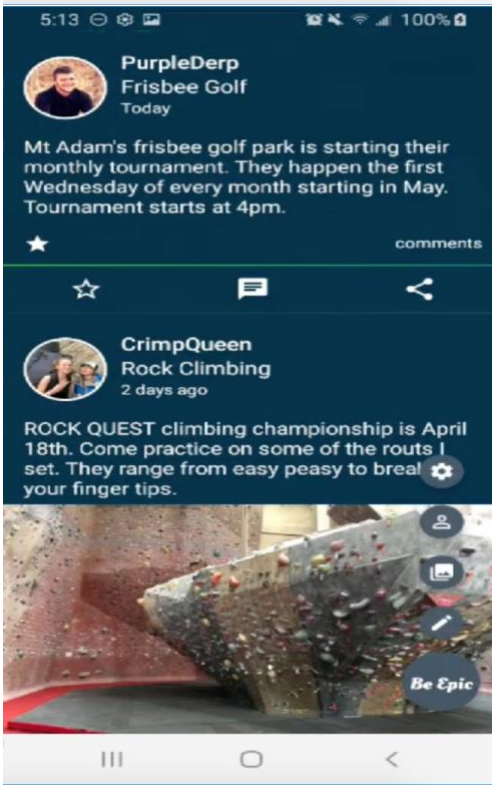
Reference

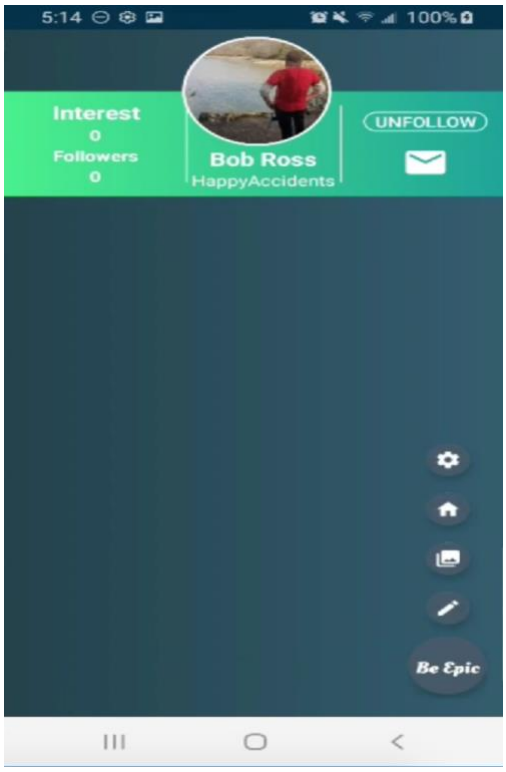
Holt-Lunstad, Julianne, et al. “Loneliness and Social Isolation as Risk Factors for Mortality.” Perspectives on Psychological Science, vol. 10, no. 2, 11 Mar. 2015, pp. 227–237., doi:10.1177/1745691614568352.

Appendix A. Visuals









Appendix B. Tech Expo Poster

Be Epic

Redesigning How Connections Are Made

Abstract

Be Epic app allows users to see others who share the same interest based on the radius a user sets. Connect with new friends while doing what you love.

Problem

- Busy schedules
- Social isolation and loneliness
- Not knowing where or how to start with a new interest/ hobby

Software Used

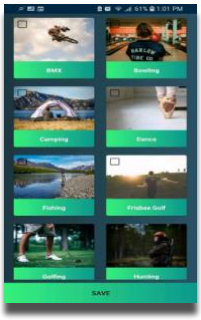
Android Studio

Firebase

Solution

A clean and simple place where users can meet and make friends with people who share the same interest within a radius the user sets. With the help of Be Epic, connecting with others has never been easier!

The homepage where users will see posts from other users with similar interests



The interest page where users can select their interest/ hobbies

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