Team 14 Project Proposal

Team Members:

Nick Alvarez
Sahil Hirani
Leon Kleyn
Rohan Choudhari
David Iordan

Project Name:

· Toucan

Project Synopsis: (1-25 words)

· Social networking app that places users in groups containing multiple text channels based on location with the option of maintaining complete anonymity.

Project Description: (150-250 words)

1. Why is the project being undertaken?
    - A large number of people tend to share their experiences via social media platforms like Snapchat, Facebook, Instagram, and Twitter during an event. According to Harris Insights and Analytics, 31% of 18-34 year olds who own a smartphone and go to live events, say they are on their phone during half of the event or longer. Whereas less than 15% of that group said that they “never” use their phone during a live event. There’s tremendous potential in terms of social networking, content sharing, and marketing if all these people are connected through a platform.
    - The app will also provide the team with valuable app development experience. Working on the app will involve the following components of app development:
        - Data security
        - UI/UX Design
        - Multi-platform implementation
        - Testing:
            - Usability testing
            - Security testing
            - Performance testing
2. Describe an opportunity or problem that the project is to address.
    - The app can potentially prove be useful in a wide range of scenarios. It can be used to connect people in events like the following:
        - Concerts
        - Conferences
        - Hackathons
        - Campus events
        - Fundraisers
        - Football, basketball games etc
3. What will be the end result of the project?

    A working social networking application

Project Milestones:

<u>First Semester</u>:

- Initial brainstorming and research: **October 12, 2018**
- Choose platforms, languages, and tools: **October 19, 2018**
- Design application functions and architecture and start initial code: **November 9, 2018**
- Create user interface: **November 16, 2018**
- Initial implementation (coding initial foundation/ running app): **December 2018**

<u>Second Semester</u>:

- Structure and code to complete application: **January 2019**
- Integrate backend and frontend: **February 2019**
- Start testing: **February 2019**
- Make revisions: **March 2019**
- Deploy application: **April 2019**

Project Budget:

· Hardware, software, and/or computing resource
  Software: IDE for application building
  Hardware: A smart phone, both Iphone and Android needed for cross platform testing
  Computing resources: Computers that have and can run said IDE's
· Estimated cost: $0
· Vendor: Our team is building this application outside of any vendors description
· Special training (e.g., VR): Training/testing will be done on our teams smartphones
· When they will be required: Requirements will be created by our own team since we are not affiliated with a vendor. Requirements include: Must give individuals in a large area the ability to freely communicate with others near them about varying topics through channels while remaining anonymous.

Work Plan:

· Who will do what

David, Sahil, and Nick will collaborate to design the front end of the app and create a easy to understand and non-threatening user interface.

Rohan and Leon will collaborate to design a well-organized backend that can provide information in an efficient manner

Every Member will help bridge the frontend and backend by keeping track of system specifications in order for easy integration

Every member will begin a week of research and collaboration to best decide what software would be best fit for our application.

Gantt Chart:

PROJECT TITLE	TOUCAN				TEAM	14
TEAM MEMBERS	DAVID I, ROHAN C, LEON K, SAHIL H, NICK A				DATE	OCTOBER 21 , 2018

TASK TITLE	START DATE	DUE DATE	DURATION	PERCENT OF TASK COMPLETE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
					M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F	M T W R F
Semester I															
Initial Brainstorming	10/8/18	10/12/18	4	100%											
Select Platforms, Languages and	10/10/18	10/23/18	13	90%											
Design App Functions and	10/19/18	11/9/18	20	20%											
Create User Interface	3/16/18	3/22/18	6	10%											
Initial Implementation	11/5/2018	12/21/18	46	0%											
Semester II															
Structure and Code and	1/14/19	2/15/19	31	0%											
Integration of Backend and	02/04/19	02/22/19	18	0%											
Testing	2/25/19	3/15/19	20	0%											
Revisions	3/4/19	3/22/19	18	0%											
Deploy Application	3/25/19	04/12/19	17	0%											

Figure A: Gantt Chart

Preliminary Project Design:

Our software will work by providing users with a primary interface built entirely with the React Native framework. The purpose of our software is to simplify communication in large areas where events are taking place. Users will have the ability to allow the app to use their location and initially they will be placed in general groups based on their location. This being said, the users will still have the option to join other groups that interest them more. These groups will be created based on an input location or the location being recorded given by the user's permission. Each of the groups will be a set distance away from the location that is used. This can be accomplished by using the haversine equation or through a map API.

Each group will have multiple channels called nests. There will be default nests, but users are not constrained to just these defaults. The creator of the group will have the ability to create more nests pertaining to specific purposes. An example of this is a nest created for sales or deals that are at some event. The reasoning behind having nests this way is to allow the user to choose whether or not they want to view advertisements. Users who wish to purchase food or merchandise can easily navigate to these designated nests and find all of the information they may need to assist in their purchase. Having these designated nests will be a major drawing factor for businesses looking to get more customers to buy products from them.

With the magnitude of users we intend to have we will need strong back-end support. For this we will be using Google's Firebase database and Python. Firebase is a mobile platform that allows for easy data storing through a created project on the firebase website. This will massively cut down on our time developing a back-end with the typical languages such as PHP or SQL and instead let us focus on the rest of the system. Our database will store users

latitudes and longitudes and well as latitudes and longitudes of events created by users. Python will be used so that this information can be delivered to the database easily while also being a great tool to read from the database as well with its strong and well documented libraries.

There will be three layers into how this process works; an interface layers, a system layer, and a backend layer. The interface layer will be responsible for correctly taking input from the user. This includes everything from detecting clicks to validating email before it's sent to the backend for storage to making a noise when the user gets a message; essentially it is the layer that the user solely interacts with. Once this is done then the system layer will be responsible for the information inputted. The system layer is responsible for correctly handling data and sorting it before it is placed in the backend. The system layer is also responsible for delivering information from the backend layer to the front end/interface layer. For this Python will be used. Of course the system layer is also persistent, meaning that it needs to be constantly checking for user input to decide what needs to be done. And finally the backend layer will store all necessary data for later use.

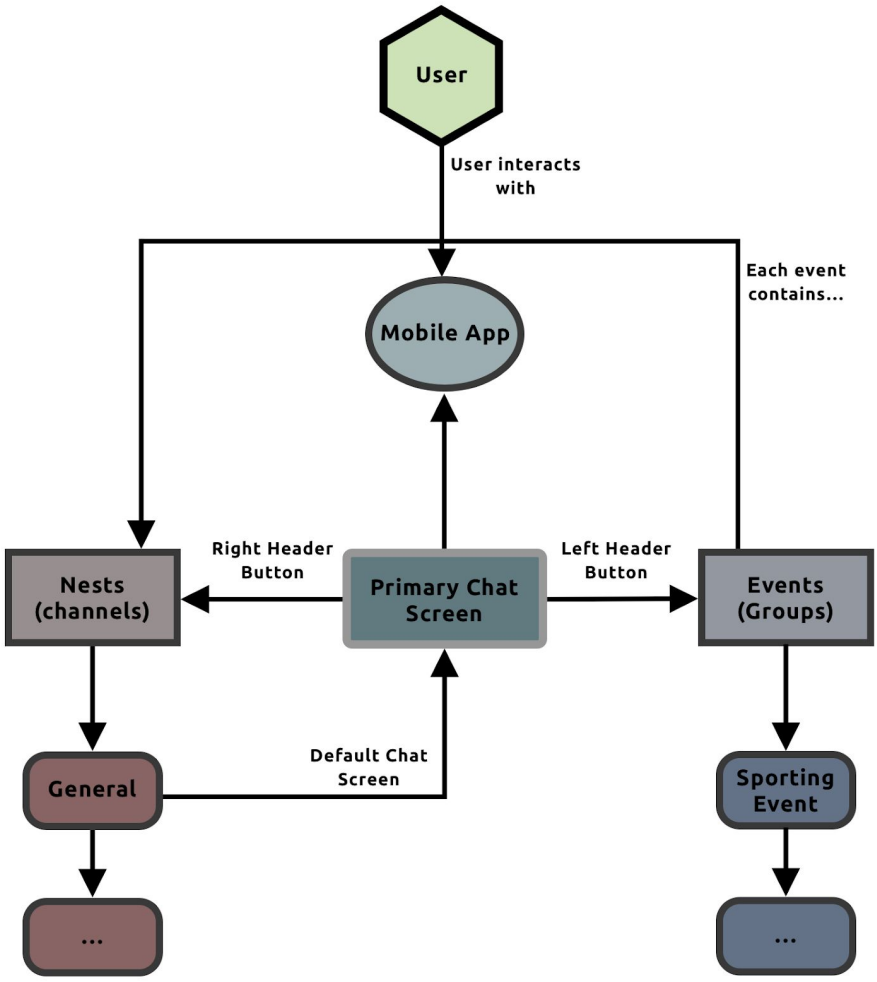

Figure B: General user interface design for Toucan

A large business constraint is our ability to roll out a widespread group chat within our allotted time. Designing, programming, testing, and releasing a widespread group chat application is not an easy task and will require real work, if it plans to be done by the end of the year. To have a working finished product would mean all units have been tested and integrated without fail before the end of the year. Budget will not be a constraint unless we are needed to pay for server usage. This has the potential to become a large constraint depending on how popular out application becomes. Another constraint has to do mostly with our team make up. Because we are all people with more than one thing to do most of the time scheduling to meet and work on our project. We will be naturally constrained by how available we can make ourselves throughout the projects development.

A technical constraint that will be present in the production of this project will be upkeep. Once this project is completed if there is a desire for it to become a successful app then it will require programmers to monitor traffic and provide support for any unforeseen bugs or issues after deployment. This will also become relevant when the operating systems running our application need to be updated or a new phone with a completely different operating system becomes popular. In this cases, in order for the app to continue to thrive it requires a team of developers to be dedicated to upkeep. This is not a shared desire by any of the group.

One constraint to this project includes the security that we can provide. Whether or not this application becomes successful it is imperative that we keep users information private unless specified by the user themselves. In this application security will be especially important since we will be storing geo locations. Good security will need to be provided whether or not our application becomes successful and will cause our time that we could spend developing the application to include more features to be focused on an important but invisible aspect of the program.

Licensing and following a terms and conditions will be extremely relevant and important when developing this project. Letting the users decided whether they want to give the application their location and letting them know who we share that information is very important. We will need to follow strict guidelines in order not to break any laws on information sharing and it goes without saying that users will need to sign their own terms and conditions when using the application as well.

One large design constraint with app development is the lack of support through operating systems. We will overcome this issue in a small portion by using language specific versions of the same software in order for portability to multiple systems be seamless if implemented correctly. One business constraint includes the market in which this application will be useful. Businesses would be interested in how easily our app attracts consumers and many people would also be interested in deals, sales, and events going on in their area but we are limited to the crowd that goes out often enough to want to use our application.

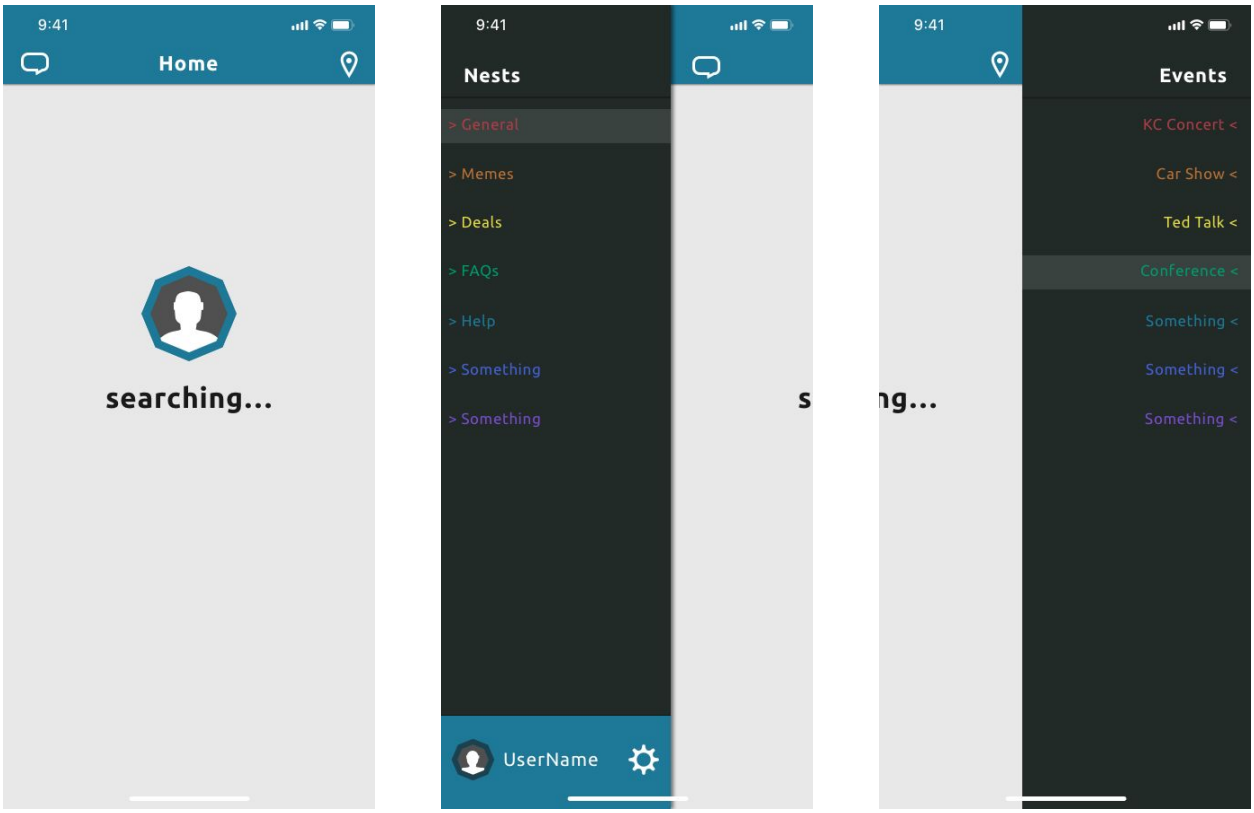

Figure C: Preliminary App UI Design

Ethical and Intellectual Property Issues:

Ethical Issues:

The primary concern we have regarding ethical issues is user privacy. The app itself will be storing sensitive location information which has the potential of being misused. Users will have the ability to maintain complete anonymity, and while this is a positive it has the potential to be used in a way that covers someone from association with their in-app actions. This complete anonymity may allow the following to happen:

1. Cyberbullying or badgering: Since the minimum age requirement for our app will be 13 years old, there is a high chance for bullying or badgering to take place in nests. This is something that we will have to put a lot of thought into so as to protect people from any form of bullying that may occur in our app. A user agreement will need to be created that we will have users agree to in order to use the app. Among other things, we plan have a section dedicated for bullying. It will be the user's responsibility to go over this and ensure that they follow the rules we define.
2. NSFW or disturbing content: Not every user is going to be a saint. We understand that there will be people that post things that are horribly disturbing and inappropriate. We plan to have a moderation system where users will be able to report posts. This reporting will kick off the necessary steps to getting the content removed. Just as mentioned above with cyberbullying, we will include a section within our user agreement dedicated

to NSFW and disturbing content. We know that this app can be a platform that may be used to cause users discomfort and will take the necessary steps to prevent that.

3. Potential cause for havoc: This app will be built entirely on promoting the communication among people at large events. Users who attempt to be “edgy” or who wish to cause mass chaos will see this app as a streamlined process for their antics. False alarms may be raised at crowded events and users who are unable to determine the authenticity of the alarm can panic, causing havoc and chaos. The way to prevent the influx of this happening is to have a zero-tolerance policy regarding false statements intended to cause panic. Users who at any point break this rule will be banned from the app and will be blacklisted, never allowed to use the application again.
4. Soliciting and scamming: Since the primary goal of this app is to connect and communicate with others, users may see it as a golden opportunity to create false connections with the intent of scamming or soliciting. This will be a harder issue to tackle but can be made easier by using the same methods of reporting users and posts just as with NSFW or disturbing content. Since this is not as severe of an issue as the others mentioned we will enforce a strict warning, and should the user make a repeat violation they will have their account locked.

Our platform definitely has the potential of being abused in the above ways, but we will encourage users to use their own discretion while using the application. These will all be issues we take into consideration as the developers of this application.

Intellectual Property Issues:

While there is no other app which offers something close to what our app does, there have been apps in the past that have tried to do something along these lines. These apps, however, failed to incorporate a lot of features that Toucan will. Some available apps like Facebook and Snapchat do try to connect users at events. However, it is through sharing what they call “stories”. Toucan, however, will have a live feed which will be showing user posts. Users will have the options to upvote and comment on these posts providing a true form of interaction. What none of the other apps do is allow users to message each other. Moreso, Toucan has a heavy focus on it being a go-to platform not only for the event attendees, but also for the event organizers. Organizers can post schedules, details, relevant information, and updates. The messaging feature and the organizer’s channel differentiate our app from other apps.

The data the app collects will have certain restrictions on who it can be shared with and how it can be used. The app will need to store and track data for each user for a period to analyze and improve the app experience. To whom the analyzed data belongs to, and how freely can we share it with other entities is something that we will have to look into.

State Diagram:

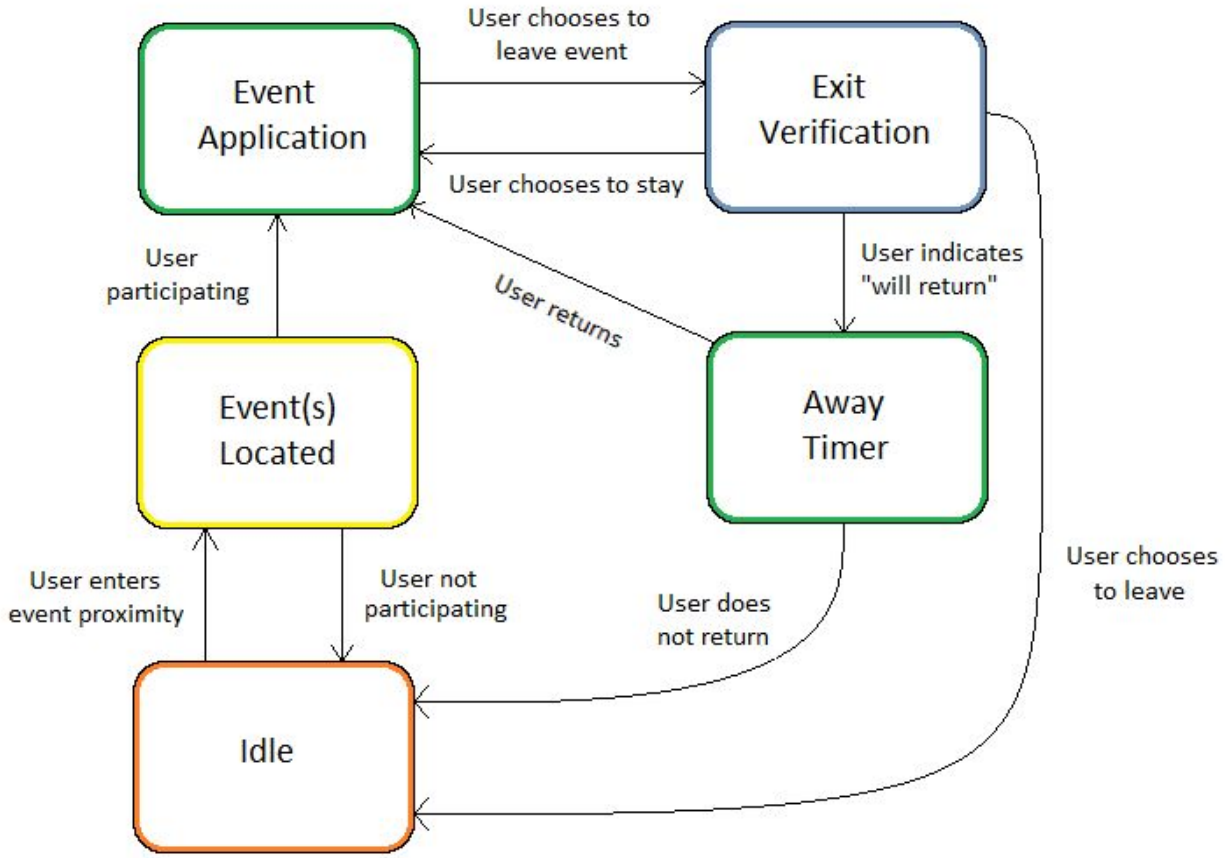

Figure D: Application State Diagram

Change Log:

• Work plan was updated to include what everyone has decided to work on for this project.