INFO2040

SD: Mobile Application Design

Project 1

Colin Bezeau

5610332

Table of Contents

Introduction 3
Description 3
Research 3
Technical Issues 5
Use Cases 7
Entities 11
Content Plans 11
Prototypes 15
Conclusion 19

Introduction

I was assigned the task of developing a concept for an application that creates scavenger hunt events. The purpose of this application is to allow users to be able to create and share scavenger hunt events with the public or friends. The goal of this task was to further develop my understanding of the design process, become familiar with the special constraints and advantages of mobile applications and expand my prototyping skills.

Description

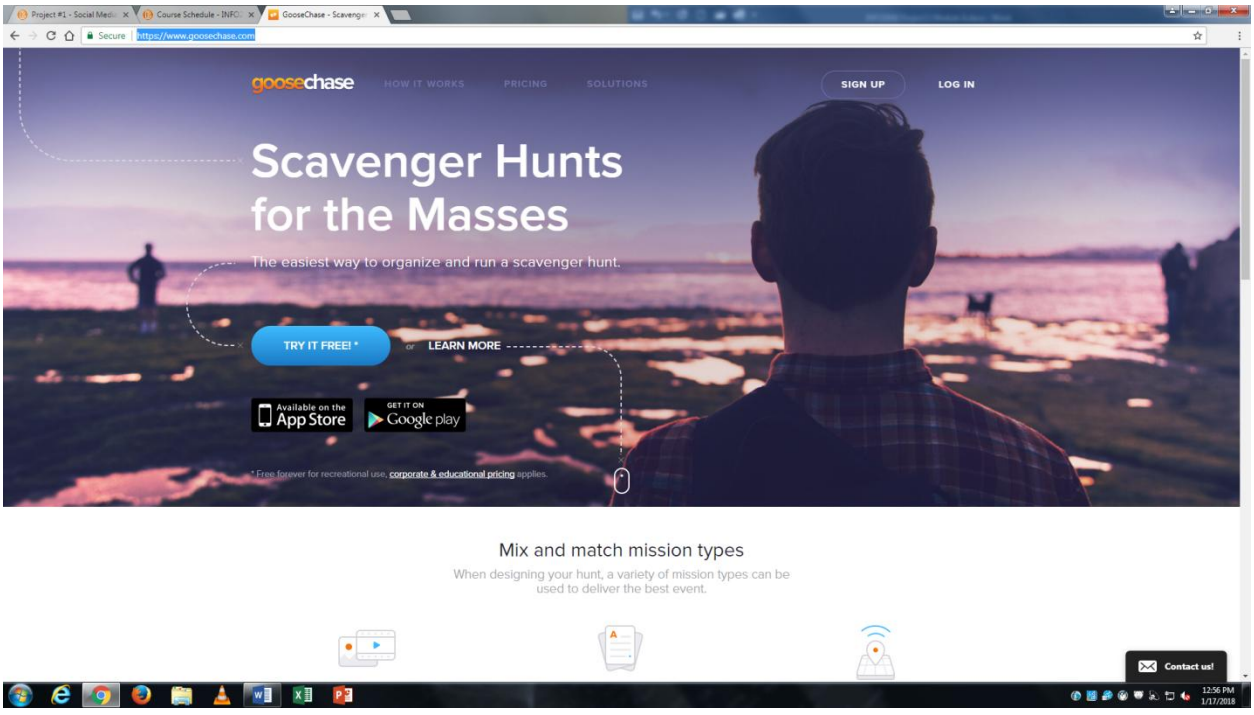
This will be an application that will allow users to create scavenger hunt events along with participating in currently existed scavenger hunts. The application will also allow users to communicate with other participants between events. The purpose of this application is to interact and participate with fellow users who share the same interest as you along with having the option to create or participate in specifically designed scavenger hunts. The application also provides an opportunity for the user and fellow friends to take part in an activities or events that is considered entertaining and time consuming. The business purpose of the application is to organize, create, prepare and communicate scavenger hunts to participants all around the world. The future goals for the application could be to integrate a user base that allows two-way communication through the application. The application could also integrate a score system that portrays the time each group took to complete the specific scavenger hunt and also how many they have completed in total since joining the application. Finally, a revenue stream for the application could be implemented if it becomes successful, that creates a free version with specified targeted advertising and a non-free version that contains no advertising.

Research

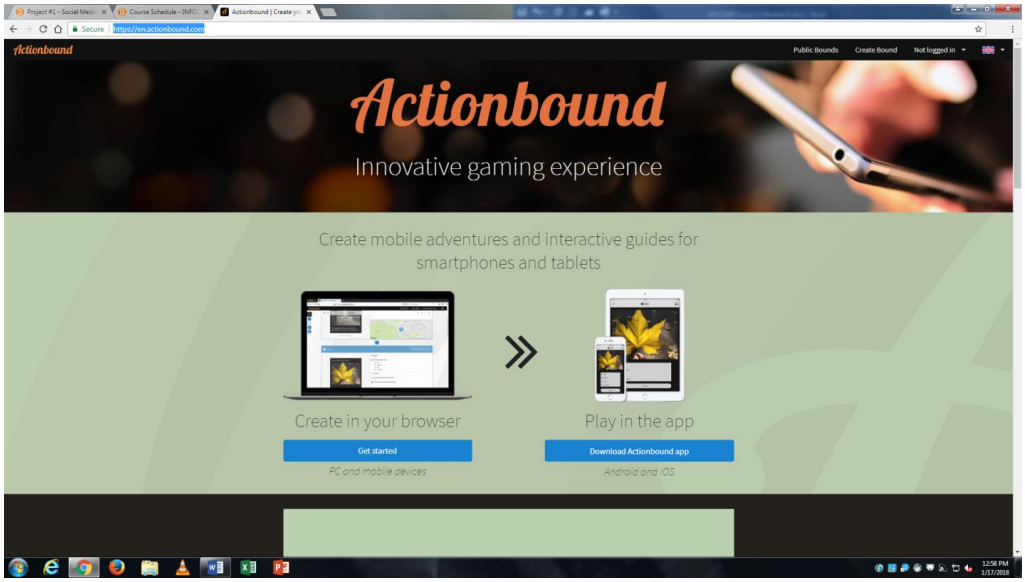
While researching it appears numerous applications already exist that contain the same idea premise. This includes Goosechase and Actionbound that almost have the exact same premise of creating scavenger hunts and having participants try and complete them. People today may use social media sites to try and accomplish the same goals. However, conventional social media sites such as Facebook can serve the same purpose but not to the degree these designed applications can. For people to take part in scavenger hunts through Facebook the user must be a part of a group that contains users that will devote time to create and share a designed scavenger hunt. The communication system will most likely be better between these social media sites but they will have their limitations as they were not specifically designed for the purpose of conducting scavenger hunts. Therefore, if the user is determined enough they can potentially serve the same purpose but not to the degree of the designed applications, which is why they currently exist.

The features that will be needed for this application to be a success are GPS location, video and text editing, database to store user information, maps, guides, progress, and a time/score/evaluation system. These would be the main necessary features that would be needed to create a scavenger hunt application. To differentiate this application from the typical ones that already exist it will need to also possess specifically designed unique features. This shall include a unique messenger system between participants within the application, a tournament feature that will allow participants to compete in large designated scavenger hunts for rewards and allow you to connect your social media accounts to obtain features from those applications. This will allow users to update and provide information about scavenger hunts/ their progress in a scavenger hunt or anything else they wish to incorporate into their social media accounts. It makes sense to develop this application as it encourages team building, creates social activities, encourages users to explore around their area/world and to go outside that enforces exercise and life skills. A couple revenue streams may exist for the application such as a free and paid versions of the app, advertising within the application and registration costs for specific scavenger hunts that contain rewards.

https://www.goosechase.com/



https://en.actionbound.com/



Technical Issues

Hardware Features

- Access to GPS so the application will know the user's position throughout the Scavenger Hunt Event
- Wireless connection via Wi-Fi or LTE so the app can continually update information to the user via data access
- The application should also take into consideration CPU limitations, available accessible memory and battery life

Input Controls or Display Features

- The application will need the ability to adapt to different screen sizes and orientations
- The application will need access to and visibly display a Map of the user's location while they are participating in a Scavenger Hunt Event
- The application will need a special input control that allows the user to create a node on the Scavenger Hunt path
- Understandable error exceptions shall be displayed when they occur
- Touch-screen driven display

Constraints or Advantages with Context

- Application can adjust to geographical locations - context-aware application
- Safety constraints - User's will be travelling while using the application and therefore the application should be able to detect the speed at which the user is moving.

- Environmental conditions - the weather could have significant impact the application due to the general usage of the application being outside. Application configures settings to ensure the best possible experience given the current environment.
- Time - The ability for the application to identify the current date and time as all Scavenger Hunt Events will most likely have start/date times.

Use Cases

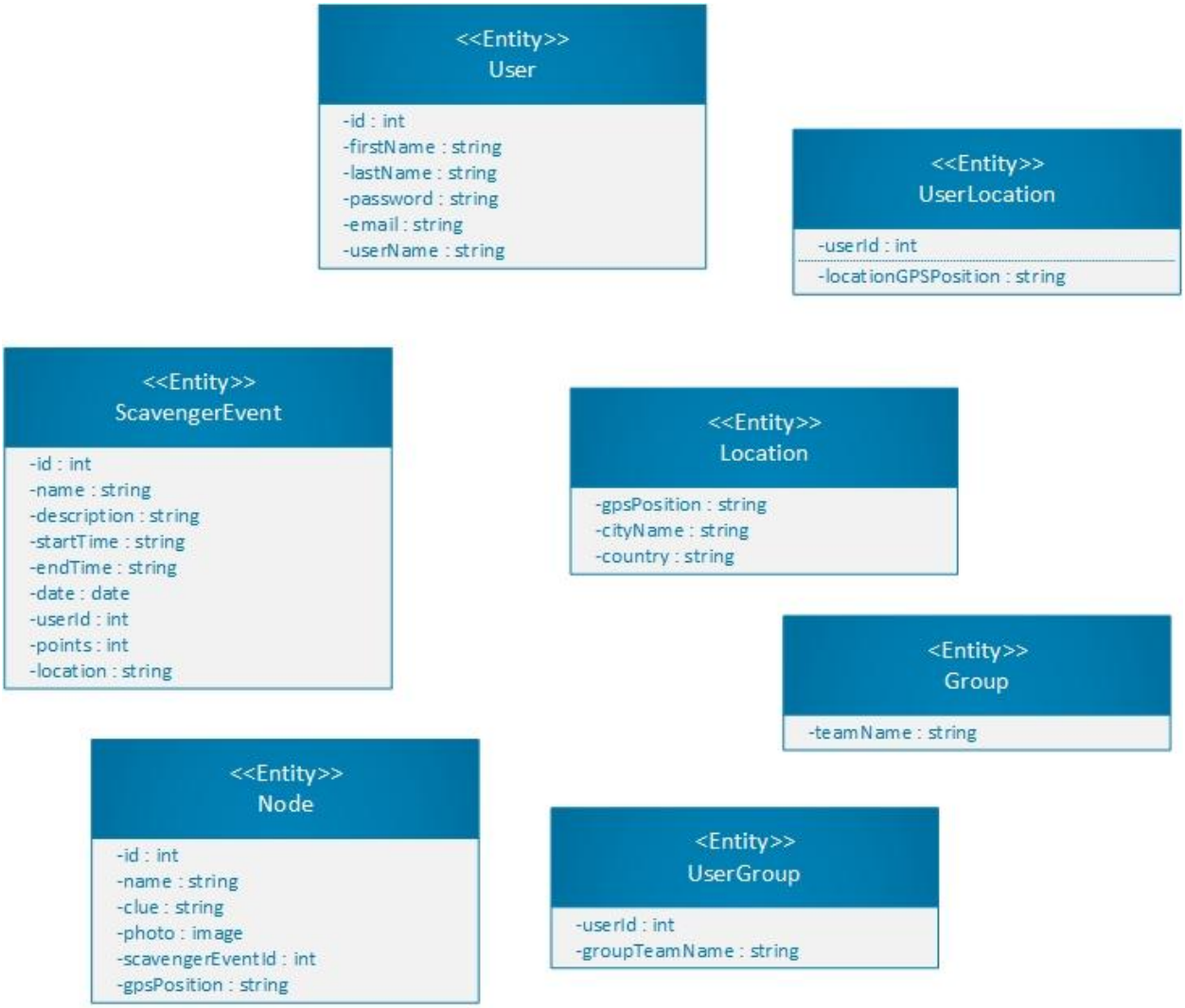
Scavenger Hunt Application Use Case Diagram
Scavenger Hunt System
User Creates Account
User Logs into Account
User Creates Scavenger Hunt Event
extension points
User Invites Friends
<<Extend>>
User Invites Friends
User Joins Scavenger Hunt Event
User Communicates with Event Participants
User Participates in Scavenger Event
User Deletes Account
User
Powered By Visual Paradigm Community Edition

Use Case 1	User Creates Account
Primary Actor	User
Scope	Scavenger Hunt System
Level	User Goal
Description	When a new user has installed the application they must create an account before being able to participate in Scavenger Hunt Events.
Precondition(s)	New User that has not been recorded in the database has been received.
Minimal Guarantee(s)	Information about the new User is not recorded into the database.
Success Guarantee(s)	Information about the new User is recorded into the database.
Main Success Scenario/Flow	1. User initiates creating a new Account in the system. 2. User enters email address. The system checks to make sure the email address is unique and new to the system. 3. User enters username. The system checks to make sure the username is unique and new to the system. 4. User enters personal and contact information into the system 5. The User completes creating a new account record 6. The system saves all added information about the new User and adds it to the database.
Extensions / Alternate Flows	2.1 User enters invalid or non-unique email address for account and is prompted to re-enter email address. 3.1 User enters non-unique username and is prompted to re-enter username.
Related Information	

Use Case 2	User Creates Scavenger Hunt Event
Primary Actor	User
Scope	Scavenger Hunt System
Level	User Goal
Description	When a user initializes and creates a new Scavenger Hunt event through the installed application.
Precondition(s)	New Scavenger Hunt Event has not been recorded into the database.
Minimal Guarantee(s)	Information about the new Scavenger Hunt Event is not recorded into the database.
Success Guarantee(s)	Information about the new Scavenger Hunt Event is recorded into the database.
Main Success Scenario/Flow	1. User initiates creating a new Scavenger Hunt Event in the system. 2. User enters detailed information about the event including name, date, and start/end times. 3. User travels along any path of own choosing via walking or public transit. 4. At various points user stops and selects destinations as nodes on the path. 5. The GPS of the registered point is recorded into the database of the application. 6. The system prompts the user for a clue that the participants will receive at that location. 7. Once user has completed desired path the option to finish Scavenger Hunt must be selected. 8. The system will prompt the user to select friends to participate in newly created Scavenger Hunt Event. 9. User will decide to either make Scavenger Hunt Event private (invite only) or public. 10. The user saves all information about the new Scavenger Hunt Event. 11. The systems persists all added information about the new Scavenger Hunt event and adds it to the database. 12. The user terminates adding a new Scavenger Hunt Event.
Extensions / Alternate Flows	8.1 User is redirected to User Invites Friends Use Case. 9.1 If public selected the system will publish the Scavenger Hunt Event to main board so it is accessible by all participants. 10. The user cancels rather than saving the results. The use case terminates.
Related Information	

Use Case 3	User Joins Scavenger Hunt Event
Primary Actor	User
Scope	Scavenger Hunt System
Level	User Goal
Description	A user wishes to join a Scavenger Hunt Event that has been created already in the application.
Precondition(s)	User has an account and is eligible to join Scavenger Hunt Event on specified date and time.
Minimal Guarantee(s)	User has not joined Scavenger Hunt Event.
Success Guarantee(s)	User has joined Scavenger Hunt Event.
Main Success Scenario/Flow	1. User initiates joining a new Scavenger Hunt Event. 2. The user enters detailed information about desired date/time for a Scavenger Hunt Event. 3. System persists information and returns results based on the data input. 4. User selects desired Scavenger Hunt Event. 5. User completes reading over Scavenger Hunt Event details and accept terms/decides to participate in event. 6. The system saves the information about the user joining the event and notifies the 'Leader' that a participant(s) has joined their Scavenger Hunt Event. 7. The user terminates joining a new Scavenger Hunt Event.
Extensions / Alternate Flows	5. The user cancels rather than joining Scavenger Hunt Event. The use case terminates.
Related Information	

Entities



Content Plans

Home Screen

1. Status Bar

- Cell Signal
- Wi-Fi Signal
- Time
- Bluetooth
- Battery Life Percentage
- Battery

2. Home Panel

- Logo/Image
- Title
- Email
- Password
- Sign In Button
- Create Account Button
- Terms and Service Conditions

Create Account Screen

1. Status Bar

- Cell Signal
- Wi-Fi Signal
- Time
- Bluetooth
- Battery Life Percentage
- Battery

2. Create Account Panel

- Title
- First Name
- Last Name
- Password
- Email
- Username
- Location switch on/off button
- Radio Button for updates and notifications via email
- Checkbox Button for agreeing to the terms of service and privacy policy
- Create Account Button

Scavenger Hunt Events Screen

1. Status Bar

- Cell Signal
- Wi-Fi Signal
- Time
- Bluetooth
- Battery Life Percentage
- Battery

2. Header

- Back Button
- Title
- Search Icon Button

3. Events Panel

- Completed/Remaining Label Tabs
- Scavenger Hunt Title
- Scavenger Hunt Description
- Scavenger Hunt Points
- Scroll Down Icon

4. Footer

- Home Button/Text
- Events Button/Text
- Create Button/Text
- Feed Button/Text
- Settings Button/Text

Creating Scavenger Hunt Event Screen

1. Status Bar

- Cell Signal
- Wi-Fi Signal
- Time
- Bluetooth
- Battery Life Percentage
- Battery

2. Header

- Back Button
- Title

3. Map

- User Location
- Nodes
- Arrows of Path
- Total Time Indication

4. Create Event Panel

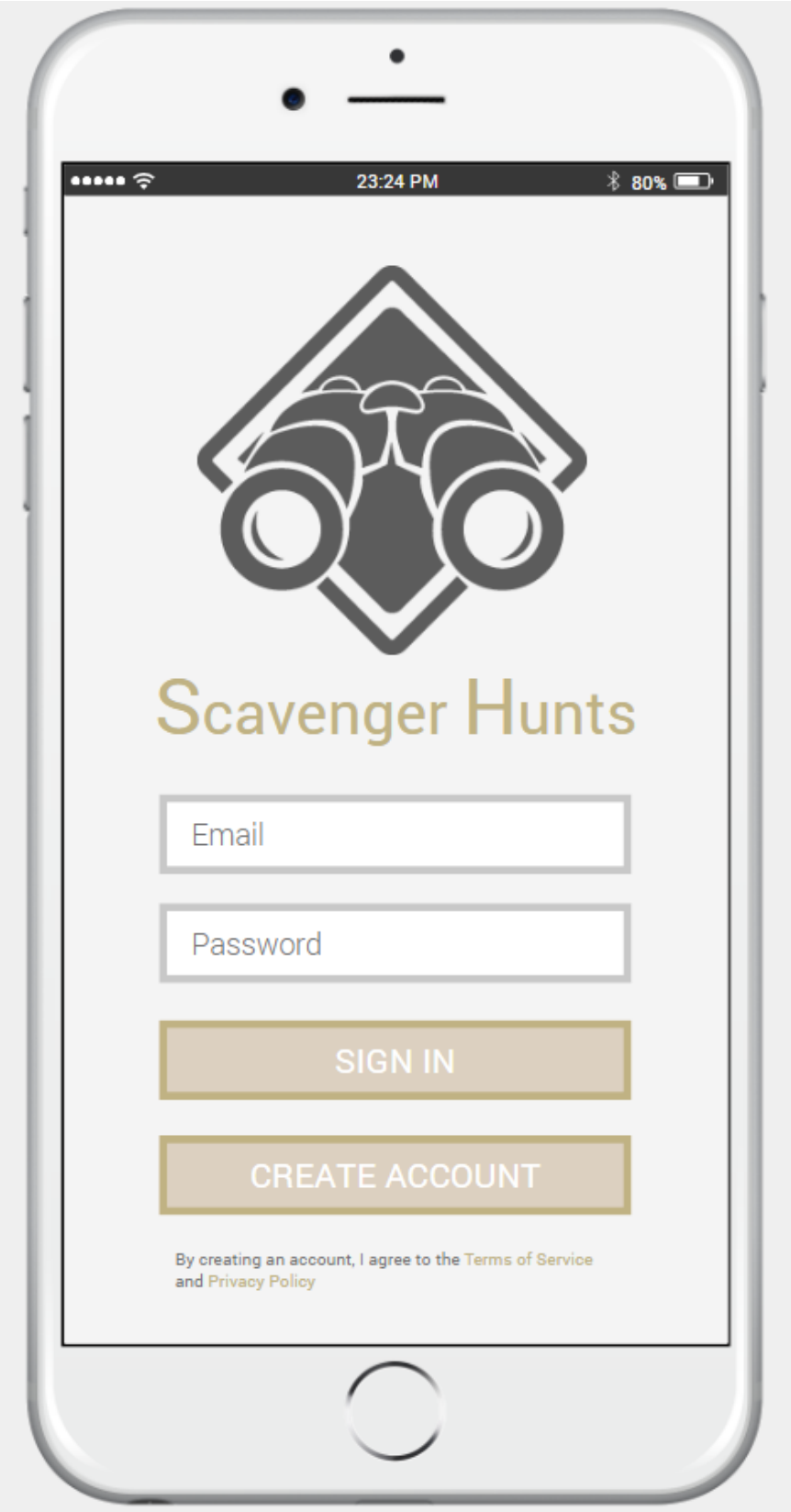
- Info/Start & End Times/Clues Label Tabs

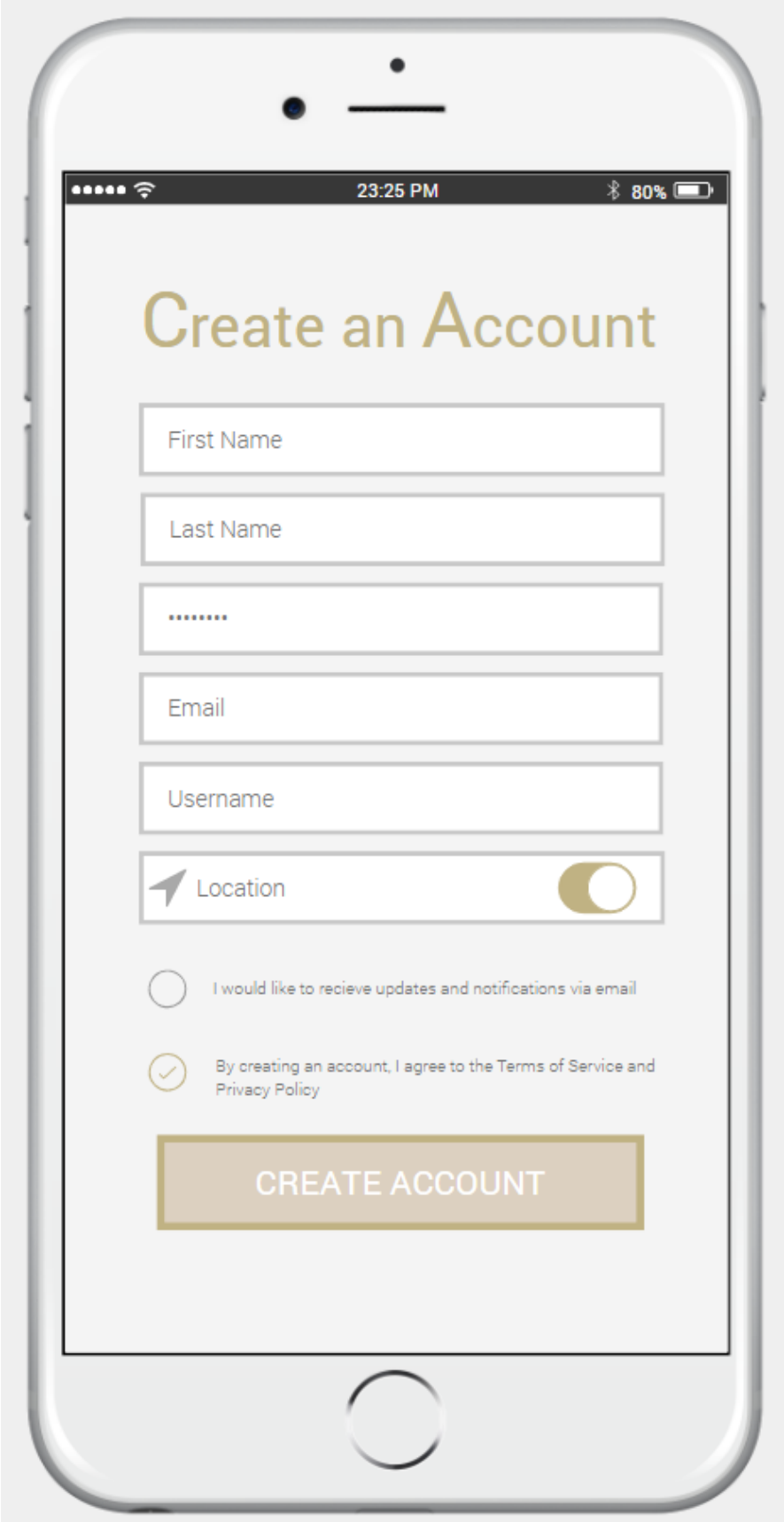
- Scavenger Hunt Name
- Description
- Add Node Button
- Photos Button
- Create Event Button

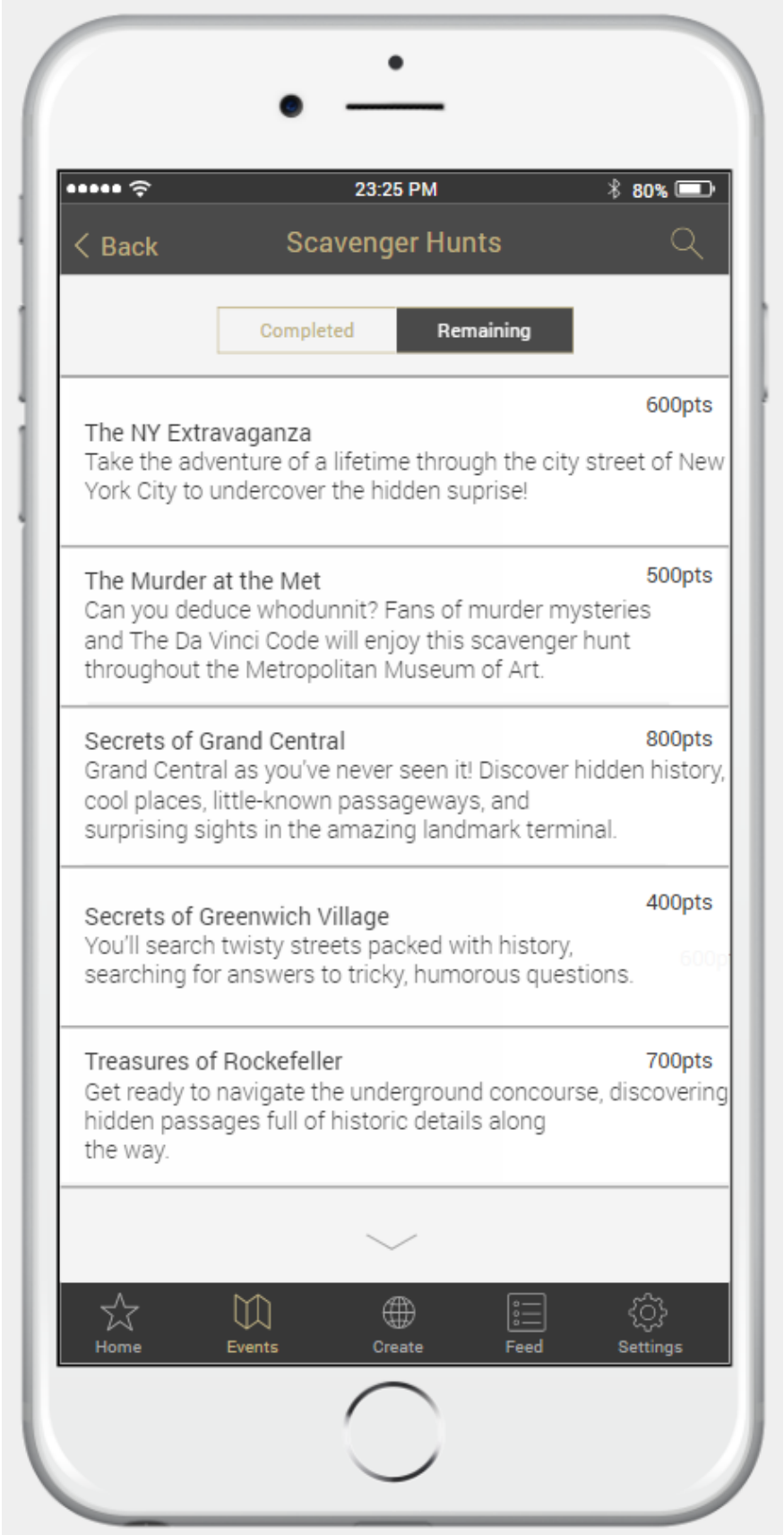
5. Footer

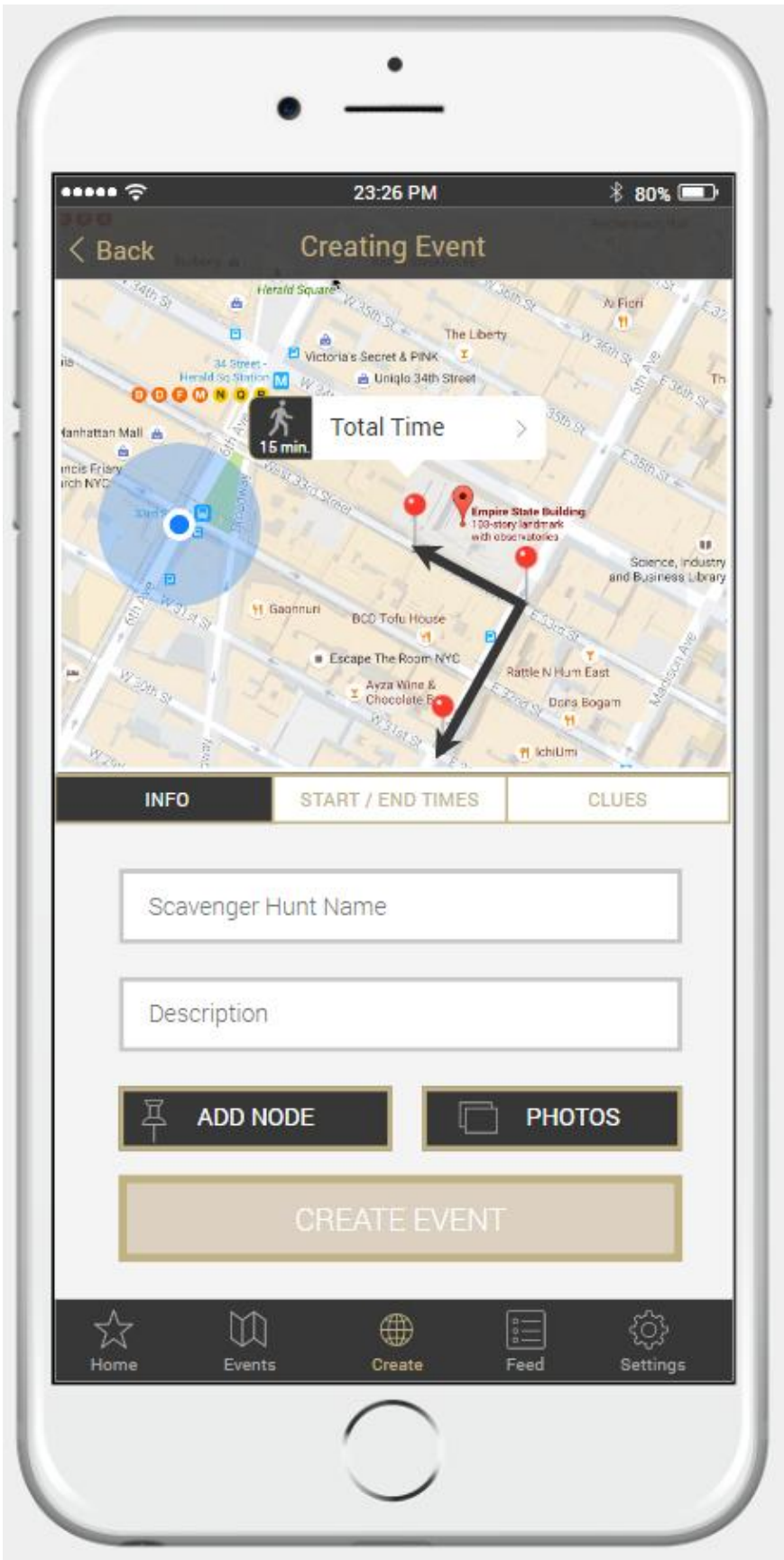
- Home Button/Text
- Events Button/Text
- Create Button/Text
- Feed Button/Text
- Settings Button/Text

Prototypes


23:24 PM
80%
Scavenger Hunts
Email
Password
SIGN IN
CREATE ACCOUNT
By creating an account, I agree to the Terms of Service
and Privacy Policy


23:25 PM
80%
Create an Account
First Name
Last Name
Email
Username
Location
I would like to recieve updates and notifications via email
By creating an account, I agree to the Terms of Service and Privacy Policy
CREATE ACCOUNT


23:25 PM
80%
Back
Scavenger Hunts
Completed
Remaining
600pts
The NY Extravaganza
Take the adventure of a lifetime through the city street of New York City to undercover the hidden suprise!
The Murder at the Met
500pts
Can you deduce whodunnit? Fans of murder mysteries and The Da Vinci Code will enjoy this scavenger hunt throughout the Metropolitan Museum of Art.
Secrets of Grand Central
800pts
Grand Central as you've never seen it! Discover hidden history, cool places, little-known passageways, and surprising sights in the amazing landmark terminal.
400pts
Secrets of Greenwich Village
You'll search twisty streets packed with history, searching for answers to tricky, humorous questions.
Treasures of Rockefeller
700pts
Get ready to navigate the underground concourse, discovering hidden passages full of historic details along the way.
Home
Events
Create
Feed
Settings


23:26 PM
80%
Back
Creating Event
Herald Square
The Liberty
Victoria's Secret & PINK
Uniqlo 34th Street
Total Time
15 min.
Empire State Building
Science, Industry and Business Library
Gaonnuri
BCD Tofu House
Escape The Room NYC
Ayza Wine & Chocolate
Rattle N Hum East
Dora Bogam
IchiUmi
INFO
START / END TIMES
CLUES
Scavenger Hunt Name
Description
ADD NODE
PHOTOS
CREATE EVENT
Home
Events
Create
Feed
Settings

Conclusion

These prototypes represent my first attempt at creating the concept for the scavenger hunt application. The design was intended to be simplistic to allow for easy user experience and navigation throughout the application. Further prototypes will need to be created for the Feed, Settings and Home pages but they shall follow similar design and colour constraints. Furthermore, the feed page will contain all the social media / messaging system content for the application. In conclusion, future mockup and redesigns will most likely be implemented after testing and general feedback from users. This will allow myself to create the most efficient and desired design for the scavenger hunt application.