

# SmartdoorAdventures

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CSCI 380-03

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- Application Name: SmartdoorAdventures
- Application Type: Web based mobile application that can also be used on desktop.
- Application Concept: This application is trying to solve a few goals. First we will focus on safety and what sets this application apart from GoogleMaps is that we will offer current, up to date maps to the user, along with an S.O.S feature if the user is lost, or in distress in the wilderness. Different layers can also be used to view other geographic features of the land, or property you are on. Additionally, a journal entry feature will provide useful information to the user which will record, and track various features to track game patterns.
- User Description: The user is most likely going to be between 15-60 years old, with a wide range of educational backgrounds. This application will be designed with this in mind, and will be kept simplistic. All genders, and classes will be inclusive, along with their profession. This application will be designed where the user does not have to come from a tech related background. The user will most likely be someone who enjoys being outdoors safely.

## ★ User Goals:

- 1) Explore land / wilderness guided by layered maps showing property boundaries.
- 2) Maintain personal safety with the help of the S.O.S feature.
- 3) Keep personal journal entries of interesting things seen during their adventure.
- 4) Keep track of weather patterns / conditions.

- User Tasks: Some representative tasks users will accomplish through your system:
  - 1) Download map to use “offline” feature to conserve the user’s battery
  - 2) Track path walked.
  - 3) Pin current location.
  - 4) Take note and save the current weather conditions.
  - 5) Add Journal entry
  - 6) Send S.O.S of location to contacts

### Phase III:

#### **User Personas:**

Jonathan Holcombe:



Goal: The user wants to use SmartdoorAdventures to track game patterns and follow property boundaries.

Jonathan is a 31 year old hunter and fisher. He dropped out of high school just to deer hunt. Currently, Jonathan works for the Charleston County School District as a technician for HVAC units. While Jonathan can read, and use other maps, he gets frustrated how inaccurate his surroundings are when comparing them to a map. He is not technically gifted and gets frustrated while using his smartphone. He prefers to use physical maps that are given out for free by the Department of Natural Resources. Recently, he has gotten a trespassing ticket for hunting outside the Wildlife Management Area property boundaries.

Lisa Stokes:



Goal: Lisa wants to take her children on camping trips while being safe outdoors.

Lisa Stokes is a 40 year old single mother of two who works a full time job as a kindergarten teacher. Lisa wants to get her boys hooked early on the outdoors instead of video games and would also like the opportunity to have quality time with them. Lisa needs easy to access maps

because while she does use a phone everyday she is not that tech savvy. She is particularly interested in safety features that might be on offer for any app she uses because a fun and safe experience is the ultimate goal. Lisa considers herself an outdoors type of person despite not having hiked in some time and being notorious for getting lost at any opportunity.

Jim Phillips:



Goal: Jim would like to read, and download maps in an offline mode so they can conserve phone battery.

Jim Phillips is a 28 year old investment banker and backpacking enthusiast. Jim gains enjoyment from going on the most remote or risky trails he can find. He plans on making another trip soon and is in the planning phase. Jim is often without cell service and needs an app that can provide him with maps without connection and preferably at a low battery cost. Jim enjoys being as far out in the bush or up a mountain as he can get. As a result he values reliability and efficiency above all else.

Karl Jameson:



Goal: Karl's mother would like to make sure her kid is safe while being outside exploring different hiking trails.

Karl is a 15 year old high school student. He enjoys going out on hikes, but his mother worries about his safety when he is out exploring different hiking trails. He has grown up using computers, and smartphones. Whenever he is out exploring, alone, or with his friends, he gets lost easily because the trails he walks on are not marked. Because he is hiking in remote areas, there may not be any cell service, and his mother just wants to make sure he can contact her in an emergency.

Tim Dowell:



Goal: Tim wants to read current maps, and use the journal entry mode to take note of weather, and other atmospheric conditions he is catching most of his fish.

Tim is a 65 year old, retired senior citizen. While he is older, he enjoys going fishing on the lake with his buddies. Currently, he listens to the National Oceanic and Atmospheric Administration (NOAA) public broadcasting station on the radio. He currently has a smartphone, and is eager to learn, and use new applications. Because he is an older gentleman, he did not grow up with a smartphone.

Conceptual Model:

Objects:	Attributes:	Operations:
Send S.O.S of location to contacts	<ul style="list-style-type: none"> <li>● Owner.</li> <li>● Emergency Contacts.</li> <li>● Date.</li> <li>● Time.</li> <li>● Location.</li> </ul>	<ul style="list-style-type: none"> <li>● Send help.</li> </ul>
Track path walked	<ul style="list-style-type: none"> <li>● Owner.</li> <li>● Current Location.</li> </ul>	<ul style="list-style-type: none"> <li>● Name Path.</li> <li>● Trace Path.</li> <li>● Save Path.</li> <li>● Delete Path.</li> </ul>
Add journal entry	<ul style="list-style-type: none"> <li>● Name.</li> <li>● Date.</li> <li>● Time.</li> <li>● Location.</li> </ul>	<ul style="list-style-type: none"> <li>● New entry.</li> <li>● Edit.</li> <li>● Delete.</li> <li>● Download.</li> </ul>
Check Weather Conditions	<ul style="list-style-type: none"> <li>● Location.</li> <li>● Current Conditions.</li> <li>● Temperature.</li> <li>● Precipitation.</li> <li>● Wind.</li> <li>● Tide.</li> <li>● Moon phase.</li> <li>● Atmospheric pressure.</li> </ul>	<ul style="list-style-type: none"> <li>● Save current conditions</li> <li>● Note current conditions.</li> </ul>

#### Evaluation heuristics:

The S.O.S feature is easily accessible for the user. (user control and freedom)

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

SmartdoorAdventures design is aesthetically pleasing, and simple for the user. (aesthetic and

minimalist design).

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

SmartDoorAdventures has well understood errors when one occurs for the user. (Users recognize, diagnose, and recover from errors)

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

SmartDoorAdventures is consistent and standard throughout the product design. (consistency and standards & aesthetically and minimalist design)

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

The help button is easily accessible to the user. (help and documentation)

- Strongly Agree
- Agree
- Undecided
- Disagree
- Strongly Disagree

#### Phase IV - Low-fidelity Prototyping:

- User Scenarios:
  - 1) Jonathan Holcombe is out hunting a Wildlife Management Area (WMA). He is hunting this unit for the first time and is not sure where the property boundaries are because they are not physically marked. He does not want another trespassing ticket so he decides to use one of the map features that SmartdoorAdventures provides, which is the "show property boundaries" features.

Start → Map Editor → Tools → Show Property Boundaries

- 2) Lisa Stokes is getting ready to go on a hike with her two children. She has everything prepared to make this moderately-strenuous hike enjoyable for her, and her children. Lisa knows that the trails are already marked, but she would still like the added protection of knowing accurately where she is walking while on the trail. She would like to use the “track path” feature that is offered with SmartdoorAdventures.

Start → Map Editor → Tools → Track Path

- 3) Jim Philips is getting ready for another strenuous backpacking trip at Table Rock. While the elevation gain for this hike is 2,000 feet in just 3.4 miles, he knows that there is barely any cell service available. He would like to use the offline feature and download an accurate map so he can take pictures instead of wasting cell phone battery.

Start → Map Editor → Tools → Download Offline Map

- 4) Karl Jameson is out camping on a trip and ends up getting lost. While lost he tries to find his way home and finds out he is lost deep in the woods. He is not with any friends and tries to get home. On his journey to find home, he falls down a slippery cliff and breaks his leg. He needs help right away and notices he can use his SmartDoor Adventures app to call an SOS signal out. He pulls out the app and holds the SOS button for 3 seconds and confirms this is real and an emergency signal is sent out.

Start → SOS → Confirmation → Emergency contacts

- 5) Tim Dowell is out fishing Lake Moultrie with a couple of his fishing buddies. This certain spot is stacked full of fish, and he wants to take note of the spot on the lake, along with the specific weather conditions.

Start → Map Editor → Tools → Pin Location → Save location → Home → Weather → Save Conditions.

#### Prioritized User Tasks:

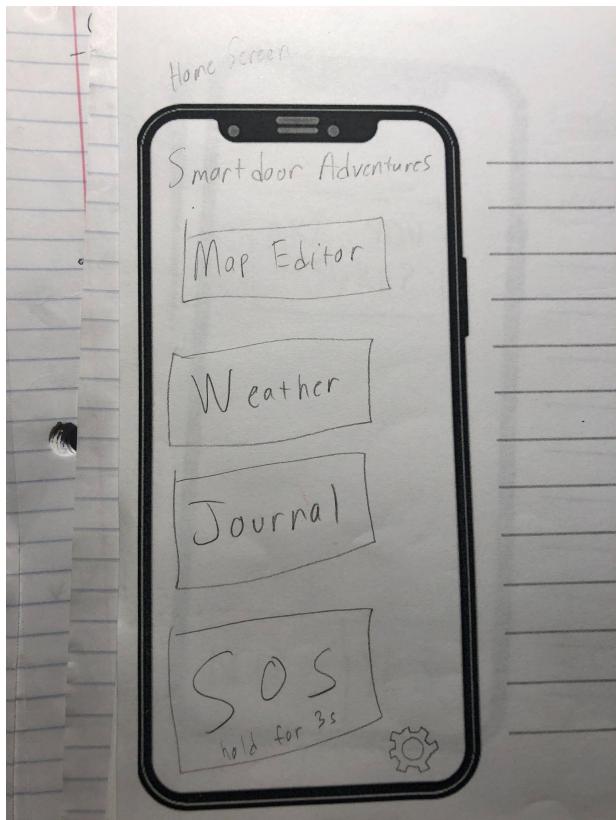
- Using the S.O.S (E.P.I.R.B.) feature when the user is in distress.
  - Activates when exposed to excess water and also activates when clicked upon for 3 seconds.
    - It will send your current coordinates to a satellite from your phone which then sends as a distress call to the nearest Coast Guard that an EPIRB has been activated and someone is in distress and needs help immediately.
- Downloading a map (offline feature)
  - Show property boundaries.
  - Track Path.
  - Pin Location
    - ↳ Drop Pin
    - ↳ Name Pin
    - ↳ Save Pin

- ↳ Edit Pin
- ↳ Delete Pin
- ↳ Share Location.
- Check weather conditions:
  - ↳ Save weather conditions (saves to journal entry mode).
  - ↳ Previous weather analysis / conditions
- Create a journal entry:
  - Name.
  - Save.
  - Edit.
  - Delete.

Phase IV feedback:

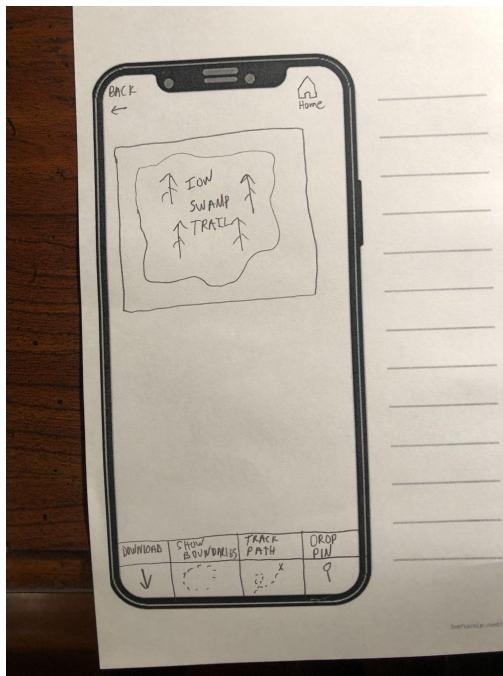
- Updated prioritized tasks. We know that S.O.S is the most important. These were then worded in terms as the user tasks, and not in terms of the system.

- User Scenario #1:



Lisa Stokes scenario (track path):

This is our homescreen (screen 1) once the user opens up the application. Because Lisa wants to track the path that she is on she is going to hit the Map Editor button.



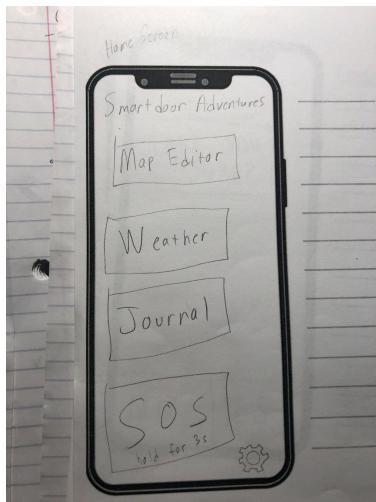
When she hits the Map Editor button, she is then directed (screen 2). She is shown a current map of the trail that she is on (I'on Swap). Because she wants to track her path so she does not become confused, she hits the track path button next.



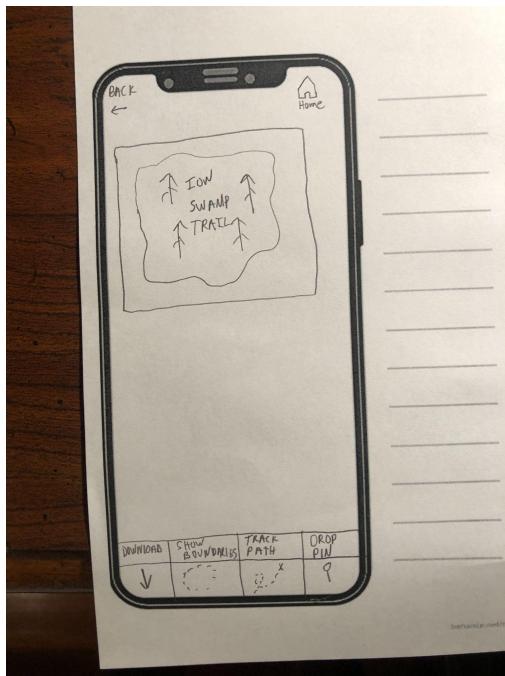
Here is the screen after she has hit the “track path” button (screen 3). It is outlined with a dotted line to show each of her steps.

- Scenario #2:

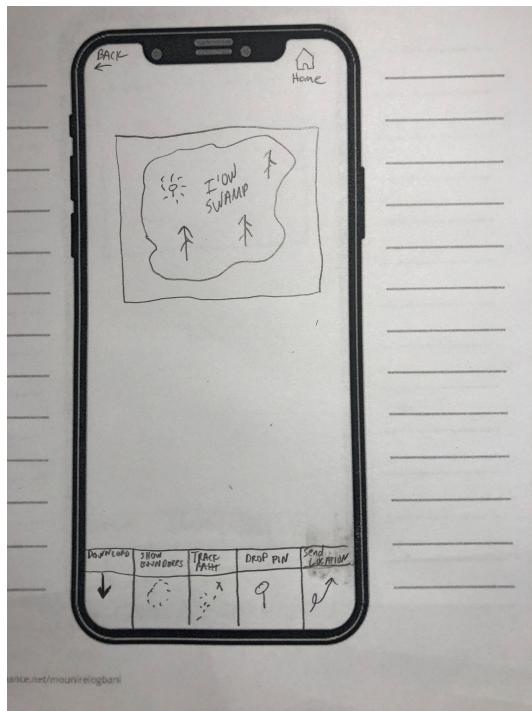
Karl Jameson scenario (send location):



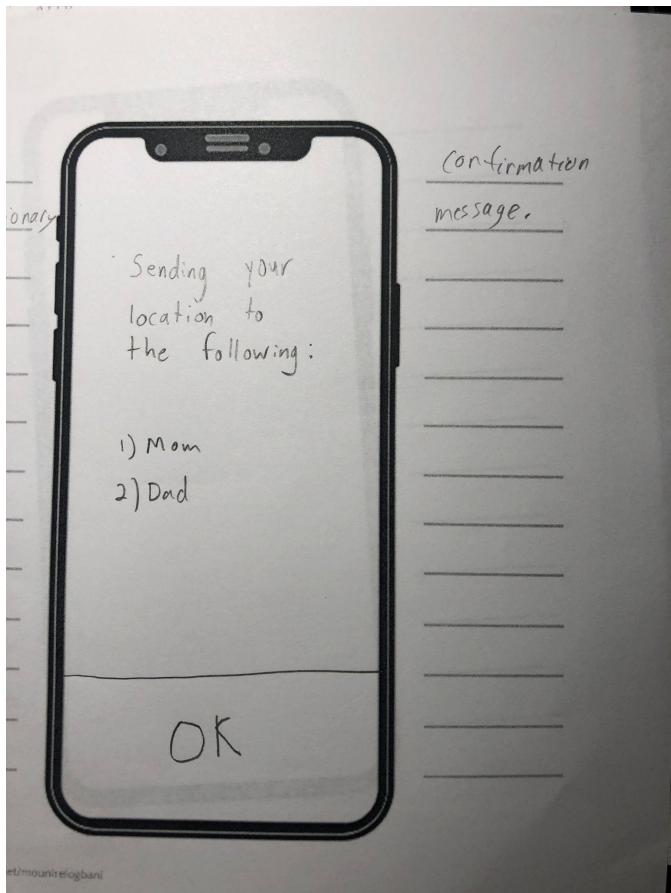
Karl opens up the SmartdoorAdventures application (screen 1). Because he needs to send his location to his mother, he will now be pressing the “map editor” button.



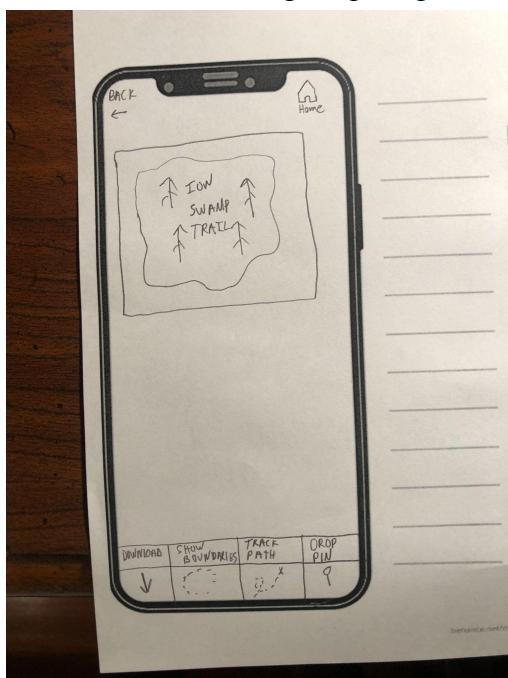
Just like Lisa, he is in the I'on Swamp Interpretive trail (screen 2). He is first going to need to drop a pin, so he hits the “drop pin” button.



He has hit the “drop pin” button and his pin is now ready to send. The user gets another option of sending their location, once they have dropped their initial pin (screen 4). He is now ready to send his location to his pre-existing emergency contacts, which are his mother and father.



A confirmation message is prompted to Karl, and he hits the OK button (screen 5).



Once Karl has hit the OK button, he is redirected to his current map, on the map editor page (screen 2).

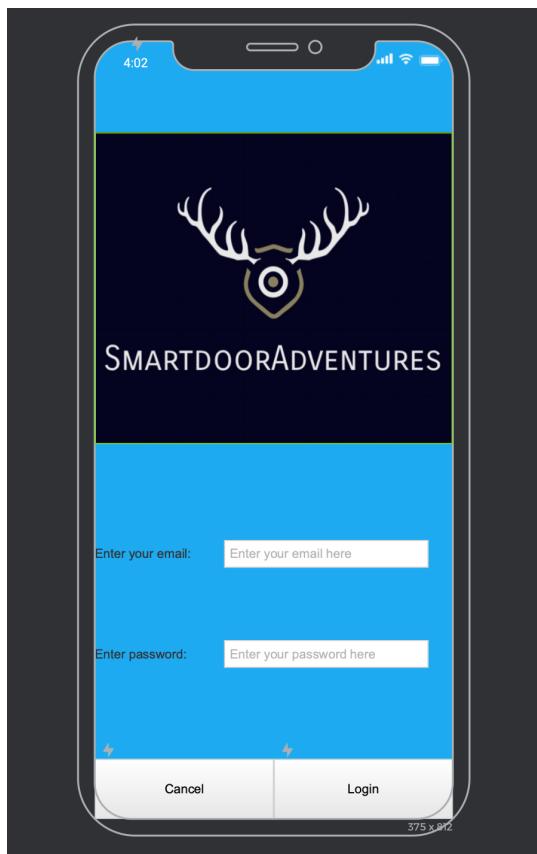
## Phase V:

### Prototyping Environment:

- Our group chose to use Justinmind as our environment for making medium-to-high-fidelity. We looked at other environments which support higher-level prototyping, but many of them are hidden behind a paywall. While Figma offers free collaboration that is not hidden behind a paywall as long as a student emails them with their .edu address, Justinmind has been used by other group members.

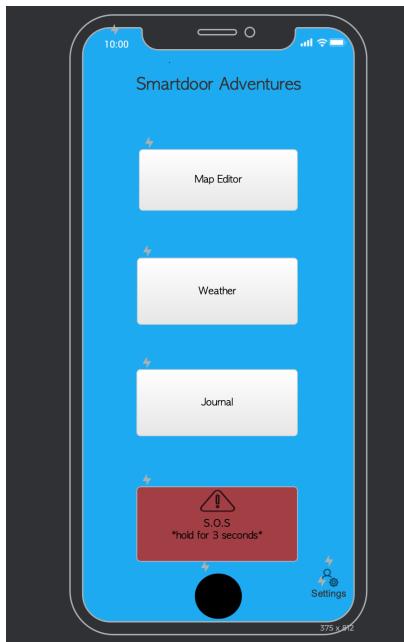
### Screenshots:

- Login / Sign up:



Let's assume that the user already has an account with SmartdoorAdventures, they are then asked to enter their email address, and their password.

- SmartdoorAdventure home screen / main menu.



Once the user has been able to login with their account, they are welcomed to the applications home screen where they have a few options such as using the Map Editor feature, checking the weather, accessing their journal, using the S.O.S feature, and lastly, they can go edit their in case of emergency (I.C.E) contacts in the settings tab.

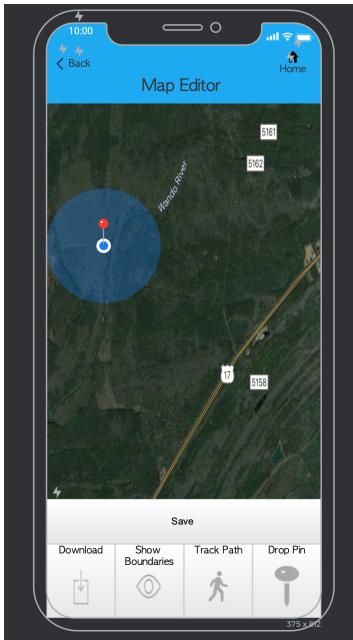
- Map Editor:



If the user was to click on the Map Editor button, they have access to the map editor tools, which include download (to use as an offline feature), show boundaries (to show the property

boundaries), track path (to track the user's path as they are on an adventure), and lastly, drop a pin on their current location.

- Drop pin:



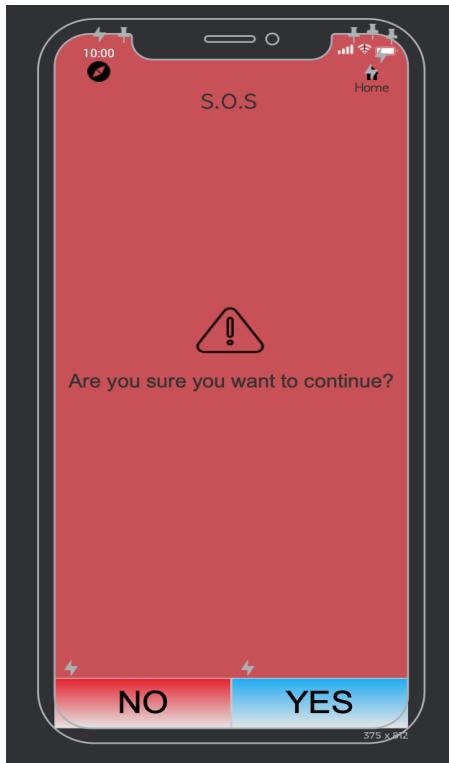
If the user wants to drop a pin on their current location, they are able to save this location directly to their personal journal. The save button for the user pops up once they have actually dropped a pin on their location.

- Weather:



Here is an example of SmartdoorAdventure's weather page. The user has arrived at this page after clicking the weather button on the application's homescreen. Current weather conditions, along with daily tides are displayed to the user. They also have the choice to save these conditions, and write notes alongside saving them directly to their journal.

- S.O.S:

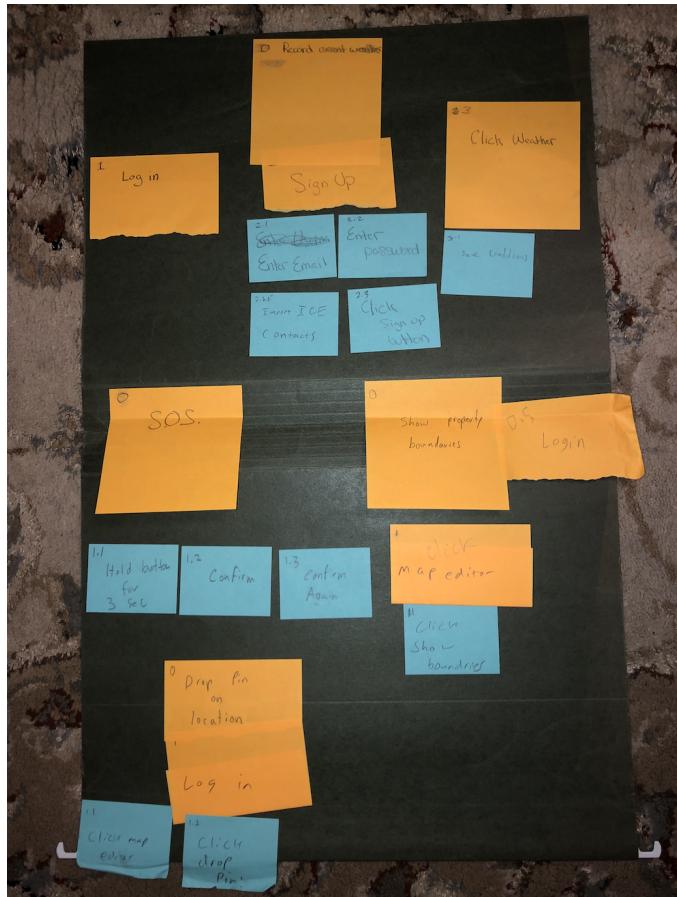


The feature that sets SmartdoorAdventures apart from other applications is the S.O.S feature. The user has arrived at this page by holding the S.O.S button for three seconds. This feature sends the user's location to pre-existing emergency contacts in times of danger. Once they hold the S.O.S button for a total of three seconds, they are then prompted to this confirmation screen which makes sure the user did not click this by accident. They can also hit the home button on the top right to exit if clicked on accident.

Feedback:

- Removed excessive screenshots
- Incorporated feedback from previous phases.

## Phase VI - Hierarchical Task Analysis (H.T.A.):

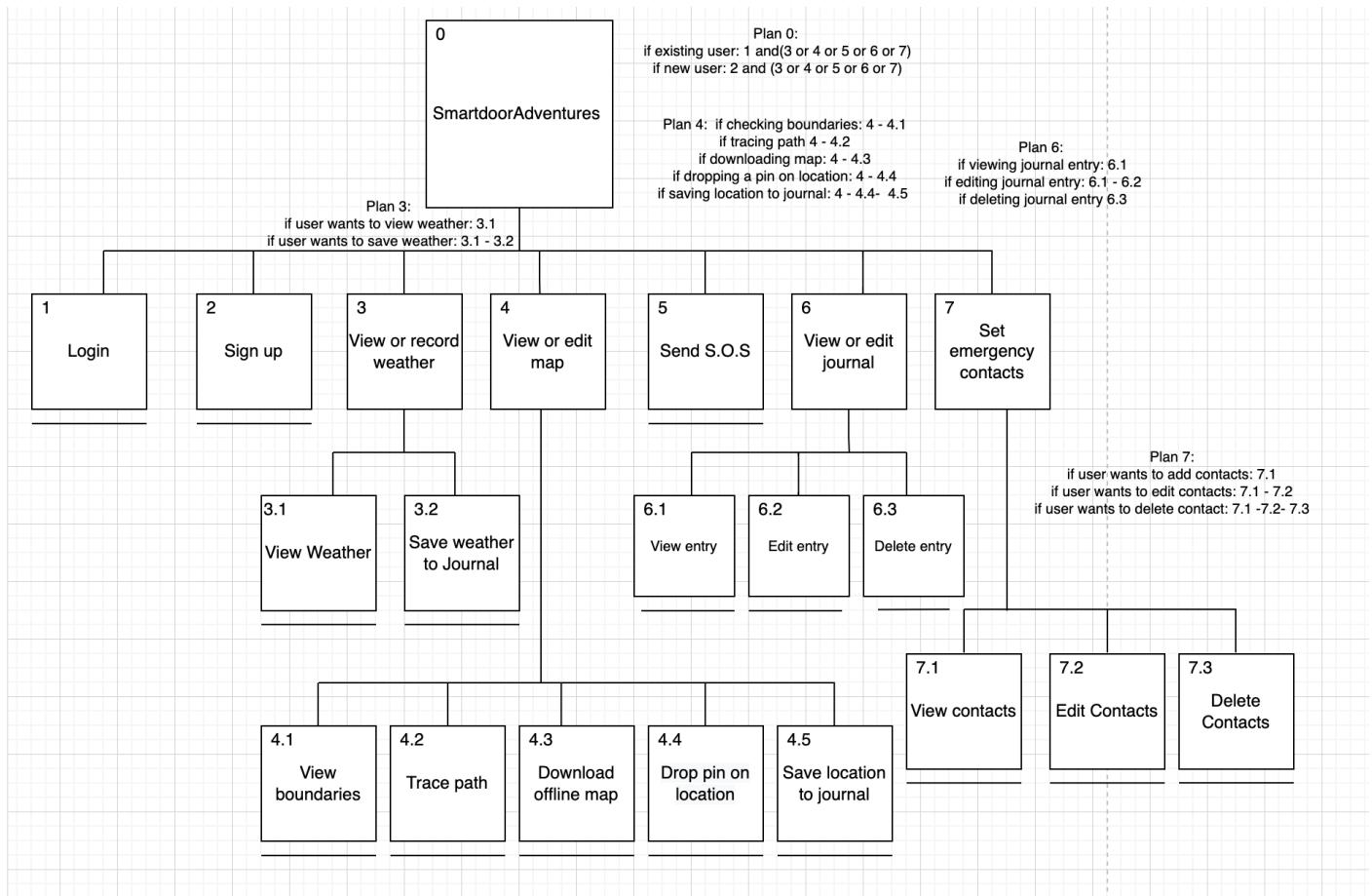


### Changes Made:

- When we did this assignment in class, we focused on single tasks. This helped us put our final HTA together as we found commonalities.
- Removed login / signup subtasks, as these are already understood industry standards.
- Our original HTA is labeled in the form of user buttons; this is incorrect because these should be in the form of tasks. Instead of "S.O.S" this should be send S.O.S.
- We removed S.O.S subtree as the double confirmation is redundant.
- Added view or edit map, view or edit journal, and set emergency contacts.

## Refined HTA:

Figure 1: We kept this task analysis as simple as possible, with minimal steps required for the user to do all tasks that are involved in SmartdoorAdventures. This keeps simplicity, promotes usability, along with keeping safety in mind for all users.



Phase VII:

- 1.A description of how you incorporated the feedback you received from your peers in phase 5
- 2.UI prototyping tool you used (name / URL) and if it is different from what you initially picked in phase 5. If it is, why did you switch?
- 3.Online link to your prototype (if your prototyping tool allows this). If your prototyping tool does not allow this, provide an explanation as to why this is not possible.
- 4.Identify your 2 highest priority tasks
  - a.For the two tasks, show the user flow through the high-fidelity prototype with screenshots
  - 5.Provide a Keystroke-Level Model analysis of the two highest priority user tasks.
    - a.How much time does it take to accomplish them?
    - b.Is there some way to improve this time?
  - 6.Identify other existing apps that would be your competition and explain what your app does better than they do
  - 7.Look at the evaluation heuristics as you posed them in Phase 2.
    - a. How many of them and which ones are satisfied? How are they satisfied?
    - b. How many and which ones are not? Why are they not satisfied