

WingTip — Fornacis

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This report documents early concepts and storyboarding for features of the WingTip birdwatching app. This app will serve as both an informative tool for birdwatchers in the field who desire an efficient means of identifying birds by sight, sound, geography, etc. and a social media platform where users can share bird sightings, photographs, events, and other bird related information. For this purpose, team Fornacis developed a number of initial concepts and storyboards and posted them to an online discussion forum for feedback. Based on the feedback and further discussion within the group, three of the concepts were selected for further development.

KEYWORDS

bird watching; social; reference; citizen science

1. Introduction

No matter where you go or where you live, birds are around you. Birds are outside of your window, on your way to work, at the park, and all around the world. There are over ten thousand species of birds and they inhabit all seven continents. Whether in the city or out in the country, birds are everywhere. Birdwatching is a low-cost and geographically accessible hobby which WingTip aims to modernize. WingTip is both a comprehensive reference tool to help users identify birds, and a social media platform for users to share bird sightings, videos, photos, and tips. WingTip is a tool for all birdwatchers, from the novice to the expert, and even for those who are not self-described birdwatchers, but have a more casual interest in learning about birds. Questions that they share:

- “How do I distinguish between different birds?”
- “Where are good places to birdwatch?”
- “Which birds have other birders seen in my area?”
- “What are other birdwatchers talking about?”
- “Is there any local bird watching events in my area?”

This app focuses on giving users a comprehensive tool to efficiently identify birds and a robust social media platform for users to share birdwatching-related information with other enthusiasts. The primary informational tool is an encyclopedia of bird species(a.k.a “Birdpedia”), which will turn a novice into an expert birder. The “Birdpedia” allows users to search bird species based on different characteristics based on habitat, size, color, song,..etc. Wingtip also offers several social features including a “Community Dashboard” where users can check out leaderboards or search and read about what other birders are talking about in forums. Another social feature is the “bird sightings map” which allows users to see submissions of other users' bird sightings on an interactive map. Whether you are a beginner looking for how to get started or an experienced birder looking for specific tips, WingTip offers something for every birdwatcher.

2. Problem Summary

Over the past few weeks, our group has been conducting research with the end goal of understanding people's bird watching habits as well as how technology may already be incorporated into their bird watching experience.

Based on our research, we believe that there is value to users in having an application with a full bird species encyclopedia, the ability to track bird sightings in a given area, share photographs, and interact with the community in challenges and birdwatching leaderboards. Some barriers to new and experienced bird watchers that this application could alleviate, include:

1. Lack of centralized information to help identify unknown species
2. Bird watchers may not know where and when to look for a specific species of bird
3. Birdwatching is typically an individual or small group activity, leaving for some a sense of community and interaction missing

To help new and experienced bird watchers fuel their activity our application will help offer a centralized location where they can learn more about species that they have already identified or would like to look for. Since we are planning to include a large amount of data and information about each species, the application aims to put usability at the forefront, focusing on creating intuitive and memorable ways for a user to navigate through the encyclopedia pages. Our application will allow users to learn from community sightings so that the user can more easily have success finding and interacting with the species of their choice.

Bird watching is often a hobby or field of interest of individuals who have taken a course on birds or may have a relative who already had interest in bird watching. This application will in some cases be a substitute for learning this activity from someone in their life. Following in the footsteps of community members as well as having the ability to share sightings and photographs to other people with a passion for bird watching can be rewarding to new and experienced bird watchers alike.

Next, the storyboards that are being introduced will address the issues discussed above. There will be a storyboard to address the need for community and user leaderboards to keep bird watchers excited and interested in their community. A storyboard to cover the centralized and easy tool that will act as an encyclopedia of bird species information to assist bird watchers when trying to identify or learn about different species of birds. Lastly a storyboard to present how users can view recent sightings in their area to aid their attempts to find a specific species based on the assistance and previous sightings of the community.

3. Interface Concepts

Concept #1 Workflow Design Narrative:

This concept showcases several social features of the app. Although a tool for identifying and learning about birds during bird watching, we also wanted to incorporate a social-media-esque aspect in order to encourage frequent interaction and use. The "Home Screen" shows a number of features that a user might want to interact with upon launching the app. At the top, the "Daily Challenge" is prominent which catches the users attention. Completing these challenges would give the user rewards, such as points or trophies they could display on their profile.

The "Community Dashboard" shows what the -- as the name implies -- community dashboard may look like. At the top of the screen, the user can select from several different categories. Listed are leaderboards, forums, and search. The leaderboard icon would lead the user to view a list of other users ranked by relative achievement. Forums would link the user to forums where they can chat with other users or ask questions about bird sightings, post about their work, and so on and so forth. With the search bar they could look for other users if they know that user's name ahead of time. On the toolbar found at the bottom of the screen, the icon representing the "Community" tab is highlighted, indicating to the user where they are within the menus. Let's imagine the user taps on "Leaderboards" at the top of the screen.

On the "leaderboard" page, the user is presented at the top with a small piece of text explaining the scope of the leaderboard. The default in this case is for the user's local area, say within 25

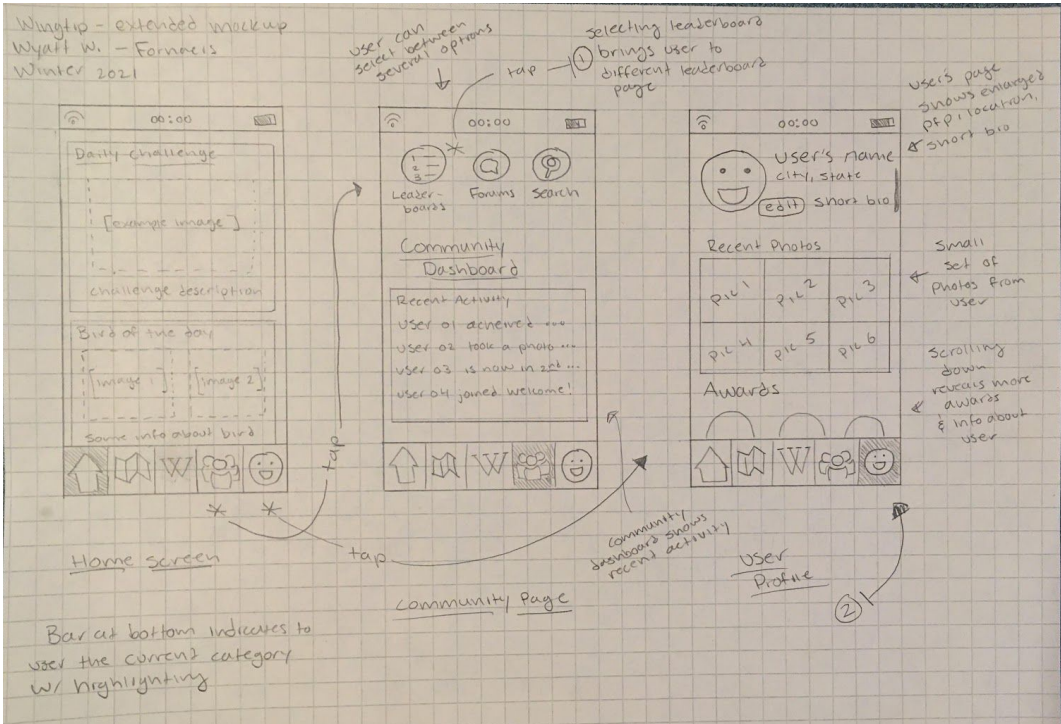
miles of their current location. They see a list of users, ranked with small numbers to indicate their ranking. The user in first place has an entry which takes up more screen space than the others which serves as a visual reminder that they are both at the top of the list and that this user holds a special place within the ranking. At each entry, the user's profile image, username, and mini icons representing their awards and accolades can be seen. These serve as a visual indicator of the "distance" between each rank as it currently stands. That is to say, it is made obvious whether one user is far ahead of the next down or whether the ranking could be changed with only a small amount of effort. Let's imagine the user decides they want to view the leaderboard for a larger region.

The user selects the text at the top and a drop-down menu appears (not pictured) and selects "State." The text changes accordingly. The user is now presented with the same interface, but populated with different users to reflect the wider area of competition. Let's imagine the user sees their own profile on this list and taps on it.

The user is then brought to their own profile. The navigation bar at the bottom of the screen now highlights the "user" section, serving as a visual indicator that the user has moved away from the community tab and is now looking at the profile section. The user sees their profile as others might, except for the addition of a small "edit" button which would allow them to change their displayed pseudonym, location, and biography. The user's most recent images are also displayed. Displaying their photos allows other users to see a brief example of that user's photos and style of photography. Below this are the awards and accolades the user has earned. In the case they have earned more than are able to be displayed on screen, they will be able to swipe and navigate left/right on that section to view all awards.

Starting back from the homepage, the user may simply tap on their profile image on the navigation bar, which would also bring them to their profile screen. This is to demonstrate that there are multiple ways of accessing their own profile depending on the workflow they have followed. In the case they had selected a different user's profile from the leaderboard, they would be shown that user's profile and the "Community" tab on the bottom of the screen would remain highlighted.

Extended version of concept #1



Concept #2 Workflow Design Narrative:

This concept showcases WingTip's primary informational feature: a searchable encyclopedia of bird species (a.k.a. the "Birdpedia"). This allows users to search for bird species based on a variety of criteria and view information about the species' habitat, diet, behavior and other biological and ecological information, as well as view maps displaying recent sightings of each species and images and videos uploaded by other users. For this workflow, the persona is a casual birdwatcher who wants to look at pictures of a particular bird species.

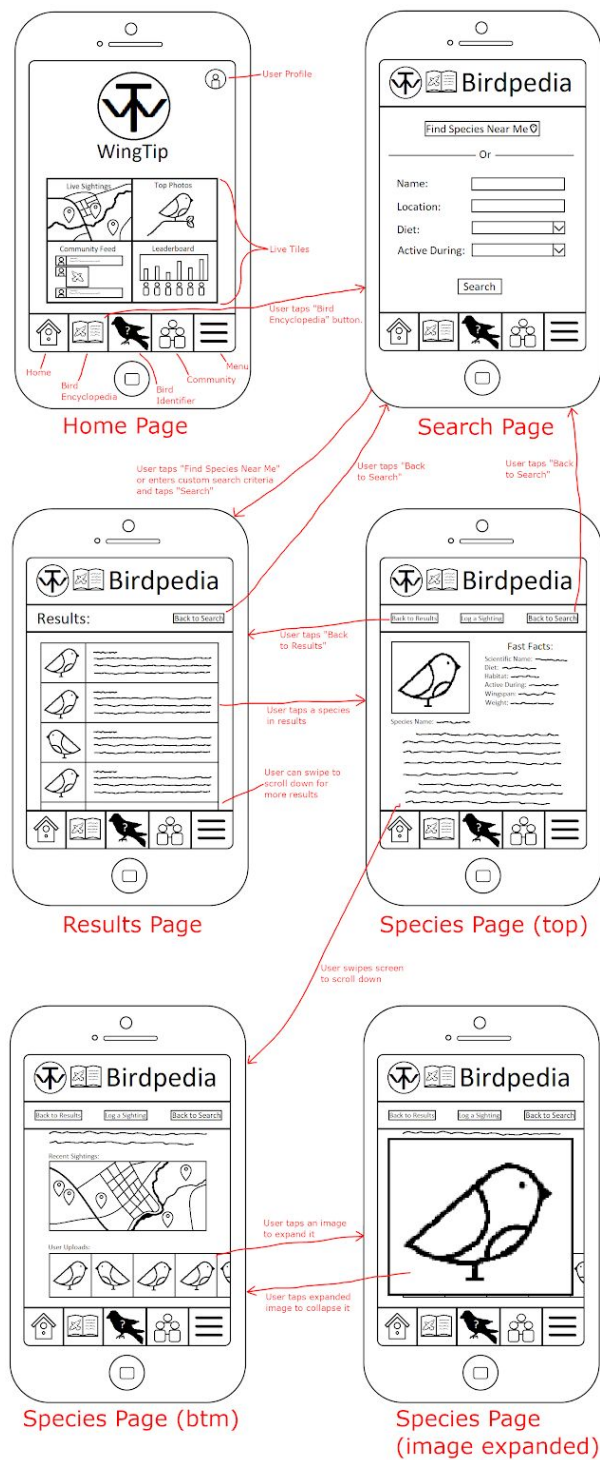
In the first image, the user has opened the app to the home screen and is already logged in. The home screen prominently displays the app's logo and name. In the upper right corner there is a button to access the user's profile. In the center of the screen, there are several live tiles that display interesting information and images. These tiles update periodically and can be tapped to open their dedicated pages. At the bottom of the screen is the app's navigation bar. This bar is displayed on every page in the app, providing easy access to its main features. The leftmost button is the home button, which returns the user to this screen from anywhere in the app. To the right of the home button is the bird encyclopedia button, which will take the user to the Birdpedia. In the center is the button for the app's bird identification features, which will allow the user to identify the species of a bird based on an image or a recording of the bird's call. To the right of that is the community button, which links to the app's social features. Lastly, on the far right is the menu button. When tapped, this button expands a menu which includes links to app and profile settings, as well as other features that aren't housed on the main navigation bar. Since the user wants to view images of a particular species, they tap on the Birdpedia button.

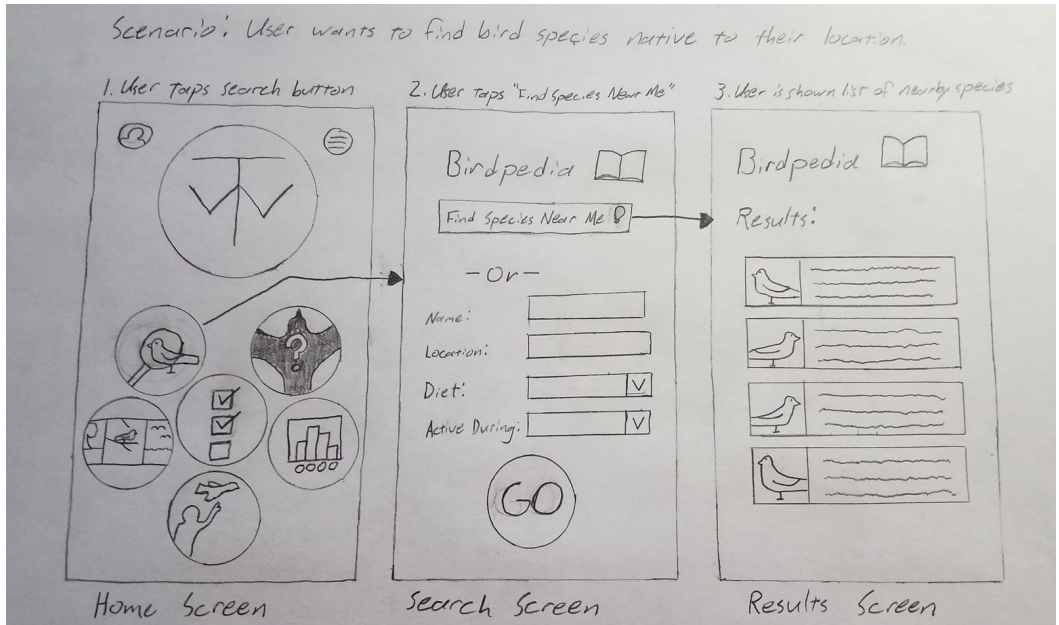
The user is then taken to the Birdpedia's search screen. This screen features a quick search button at the top that the user can tap to be shown a list of species native to their area using the location of their device. The availability of precise location data is one reason that WingTip is being designed as a mobile application. Below the quick search button, the user can enter various search criteria to find the species that they are looking for. The user can then tap the search button at the bottom of the screen to search based on their specified criteria. Since our user is looking for images of a specific species, they will enter the name of the species in the name field and then tap the search button.

Now the user is shown the results screen. At the top of the screen, there is a button to return the user to the search screen. If the user taps on this, they will be taken back to the search screen and their search criteria will be preserved in the input fields. The majority of the results screen is taken up by a list of species that matched the user's search criteria. If the list is too large to fit on the screen, the user can swipe up and down to scroll through it. If the list is empty, a message will be displayed, informing the user that no species matched their search criteria and that they should tap the "return to search" button to try again. We will assume that our user locates the species that they are looking for in the results list. The user then taps on that species and is taken to its dedicated page in the Birdpedia.

At the top of the species page, there are buttons that allow the user to return to the results or search pages, as well as a button that allows them to log a sighting of the species. In the main part of the page, the user is shown a representative image of the species, its name, and a list of "fast facts" about it at the top of the page. Below this is a longer form description of the species, which contains more detailed information about its biology, ecology, and behavior. This screen can be swiped up and down to scroll. Our user scrolls down below the description where they see a live map of recent sightings of the species, as well as their final goal: a gallery of user-uploaded photos and videos of the species. Both the map and the photos and videos can be tapped to expand them, and then tapped again to collapse them. When expanded, the map can be panned by swiping or zoomed in and out by pinching. When the user expands a video, it begins playing. The user can swipe left or right on the image gallery to scroll through it. To end this workflow, the user locates an image they like and taps to expand it.

Extended Version of Concept #2:



Initial Version of Concept #2:**Concept #3 Workflow Design Narrative:**

Concept #3 demonstrates the workflow involved in utilizing the "bird sightings map". This feature is integrated with the social/community post functionality, and allows users to view bird sightings submitted by other users in an interactive map interface, allowing them to more easily find bird sightings and locales for birdwatching. This feature benefits both experienced and inexperienced birdwatchers who are actively searching for specific bird species, ideal bird watching locations, or unique and rare bird species.

Beginning from the homepage (1), which is the initial screen upon entering the application, a user will see a feed of various post types including the daily challenge-- which is highlighted at the top of the feed, event posts-- which represent scheduled events hosted by other users, discussion posts-- which are forum posts for posing questions, discussions, and socialization among users, bird sightings submitted by other users, and news posts. These various categories can be filtered using the menu accessed via the top left button, and new posts can be created by using the hovering "new post" button in the top center of the screen. If the user wishes to navigate to other tools and features of the app, they may do so using the bottom toolbar which includes access to the homescreen, bird encyclopedia, bird sightings map, species identification features, and user profile.

When the user accesses the bird sightings map, they are met with a typical map layout reminiscent of common map applications which the user will already be accustomed to (2). The main difference is the presence of pinpoints in various locations representing recent bird sightings. These pinpoints can be filtered using the top left button, and can be discerned by different categories such as species, time since posted, distance from current location, etc.

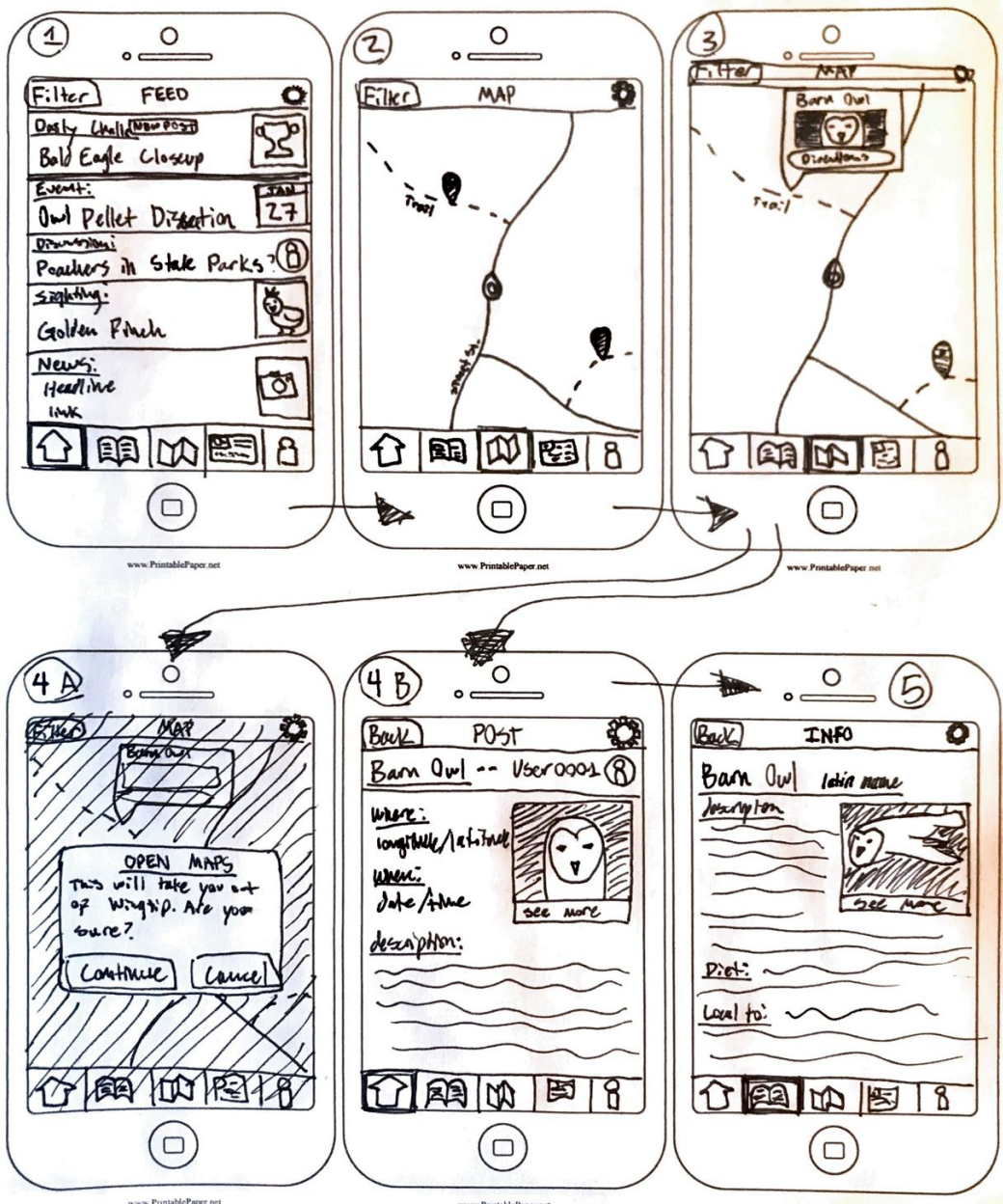
If the user selects a specific pinpoint, the expanded view (3) is opened, where the pinpoint displays some basic information about the bird sighting, including the species and a photo. There is also a button in the bottom of the expanded window labeled "directions". If the user selects this button, a modal is displayed (4.A) which warns the user they are about to be redirected to their device's default mapping application. If the user confirms this action, they will be redirected and the map will be preloaded with directions to the bird sighting location.

Another way the user can interact with the expanded pinpoint (3) is by clicking anywhere else on it. In this scenario, the user is redirected to the bird sighting post (4.B) associated with the bird

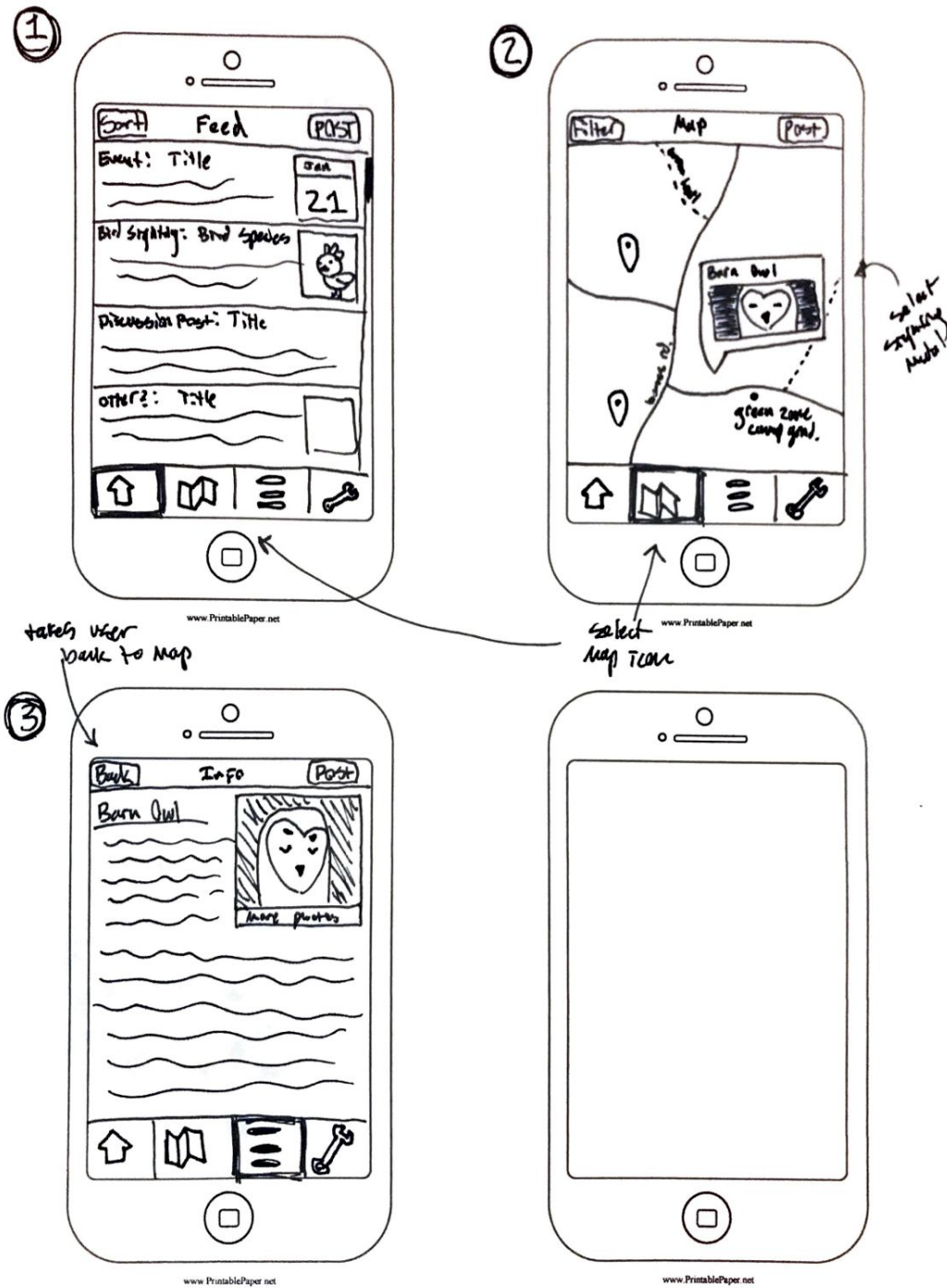
sighting in the map view. This screen contains specific information supplied by the user responsible for the bird sighting, including the species, location, time, and a description which can be used to input other helpful information such as hiking trail names, instructions on where to look, etc.

If the user wishes to learn more about the specific species of bird associated with the sighting post, they may select the hyperlinked species name in the top of the screen in 4.B. This will redirect them to the species' wiki page in the bird encyclopedia, which will provide detailed information on the species. From any screen redirected to by the map, a user can hit the back button in the top left to return to the previous screen.

Extended Version of Concept #3:



Initial Version of Concept #3:



4. Concept Discussion and Justification

Concept #1 Discussion and Justification:

- The edits made to the original design were done to facilitate navigation between sections and make more clear to the user the section they are in. This is accomplished with tab highlighting. The user would not need to ask themselves “okay, so where am I now?” Instead, a quick glance at the bottom navigation bar would tell them with a visual clue alone. It also provides more options for navigation, expanding only three sections into 5, with more appropriate categorization. The icons were also changed to be more indicative of sections, which reduces the need for extra text which takes up unnecessary space on the screen.
- The home screen was changed to take advantage of a card-based layout, which is a design motif with which users are likely to be more familiar. This also serves to divvy up the home page objects such that it is more clear where one category ends and another begins. For example the “Daily Challenge” in the original design could be mistaken as connected with the “Feed,” although these elements are not related with one another. By putting each on their own card, the separation is made clear without need for explanation from an online tutorial or fellow user. This makes navigating the home page easier for new users who are not yet familiar with the application layout.
- The “Recent Activity” feed was moved to the community tab. This probably isn’t something a user would care to see on the home screen. Furthermore, the home screen should be the same for all users, and the activity feed could potentially change. It generally just fits better there.
- A “Bird of the Day” card was added to the home screen. Tapping on this would lead to the wiki page for the bird. This could encourage community participation and serve as a learning tool for those users who don’t necessarily care about the community features. However, this may not make its way into the working prototype, as we care more about the structure of the cards and how the information is presented rather than the exact content of the cards themselves.

Concept #2 Discussion and Justification:

- This concept was designed as a mobile application for two main reasons. The first reason is that several interviewees in our formative research mentioned that the only resource they normally took with them when bird watching was their phone. The second reason is that mobile devices have a number of features that would enable us to implement several easy-to-use functions in the application that would most likely appeal to casual bird watchers, which is how most of our interviewees described themselves. These mobile features include a camera and microphone, as well as precise location information.
- Many of our interviewees also mentioned searching for information about birds using general search engines like Google and general informational websites such as Wikipedia. Therefore, a simple, searchable encyclopedia dedicated to birds seemed like it would appeal to these users.
- The initial concept for this feature was only meant to show how a user might search for local species. However, one of the main points of feedback that we received about this concept was that it didn’t feel like a “complete idea.” For this reason, we decided to expand on the concept to show how it would be integrated into the app as a whole, and how it would be interlinked with many other features.
 - To this end, a button to access the Birdpedia was added to a navigation bar at the bottom of the screen to show that it could be accessed from anywhere within the app.
 - Additionally, the updated concept shows the dedicated species page that the user can access by tapping on a search result. Integrated into this page are

other features such as reporting bird sightings, live bird sighting maps, and user-uploaded content.

- Another point of feedback that we received from the initial concept was that it didn't provide any way to easily navigate back and forth between the pages. To correct this, we added the navigation bar with the home button, as well as the "return to search" button on the results screen and species page and the "return to results" button on the species page.

Concept #3 Discussion and Justification:

- This feature is intended to tie together the social and informational sides of the application together, and enable the crowdsourcing of bird watching information for local areas--something which is currently lacking in current solutions.
- The bird sightings map is a valuable feature to all the app's potential stakeholders: inexperienced bird watchers will appreciate the ability to filter and search for specific bird species in a local proximity, or search greater geographies when planning trips. Inexperienced users will be able to find local areas which are ideal for birdwatching based on the frequency of bird sightings in various locations, and delve into the hobby with greater independence through the access to live information on bird sightings.
- Changes to the original concept and the reasoning for them are as follows:
 - Added intermediary screen from bird sightings map to bird encyclopedia entry: This intermediary screen is the bird sighting post as submitted by the associated user, and allows a user of the bird sightings map to access more specific information on the bird sighting itself before being taken to the bird species' encyclopedia entry. This workflow is more logical for a user who wishes to travel to the location of the bird sighting.
 - Added external mapping tools: The bird sighting pinpoint's expanded view now includes the option to enter the user device's native mapping application. When this option is selected, the user will be redirected to the mapping app, and the location of the bird sighting will be automatically loaded for navigation. This too benefits users who desire to travel to the location of recent bird sightings.
- Feedback pertaining to this concept was positive, and mostly focused on the features provided in the bird sightings map. People suggested specific functionality for the filter menu, including the ability to filter by bird-species, rareness and friends' sightings. Overall, the concept is valuable-- the challenges arise in what functionality to include while maintaining simplicity/usability.

Peer Evaluation

Member Name	Role	Responsibilities / Assigned Task	Task Completion Grade (0-5)
Ethan Hirsch	User Research and Communication	Concept 3	5
Joseph Tong	Writing/Deliverables	Concept 2	5
Kyle Folk-Freund	Visual Design/UX Design	Introduction/Problem Summary	5
Nicholas Minton	Visual Design/UX Design	Introduction/Problem Summary	5
Wyatt Whiting	Leader/Manager	Concept 1	5